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DES ARMÉES

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NOTEBOOK

2022 Edition



INTERNATIONAL DEFENCE COMPANIES

Let's build together
the future of defence



NOTEBOOK

2022 Edition

INTERNATIONAL DEFENCE COMPANIES



Manuscript completed on 3 January 2022

French defence procurement agency (DGA)

Industrial Affairs and Economic Intelligence Department

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FOREWORD

Paris, January 3, 2022

Despite the health crisis and the difficulties encountered in the supply of components and raw materials, the defence sector has demonstrated its resilience over the past year. It is in this context that the Department for Industrial Affairs and Economic Intelligence presents, on behalf of the French Defence Procurement Agency (Direction générale de l'armement, DGA), the 2022 edition of the "International Defence Companies" notebook.

This publication provides key data from publicly available open sources, for a selection of international companies that were chosen according to their main activities in the defence sector.

The notebook should in no way be considered as reflecting the opinions or positions of the DGA, nor of XERFI Spécific, which contributed to its preparation.

A digital version of the notebook, both in French and English, is available on the DGA's website at www.defense.gouv.fr/DGA.

I wish you a pleasant reading.

Alexandre Lahousse

Director, Department for Industrial Affairs and Economic Intelligence, DGA
Ministry of Armed Forces

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METHODOLOGICAL NOTE

SCOPE

The 2022 edition of the Notebook on International Defence Companies covers a panel of 61 companies. A specific section, "Key Data", presents the following consolidated financial indicators for each company, provided such information is available ("N/A" meaning that data is not available):

- Revenue (in euros)
- Revenue variation (as a percentage change; calculated from data in local currency)
- Defence revenue (as a % of total revenue)
- Export revenue (as a % of total revenue)
- Operating profit/loss (in euros)
- Operating margin (as a %)
- Net income (in euros) or net income attributable to shareholders
- Order book at the end of the fiscal year (in euros)
- Headcount

To ensure consistency, consolidated financial statements were the preferred source of information. Emphasis was placed on the most recent, restated financial indicators. Furthermore, some data contained in the previous edition have been revised, corrected or modified for this edition in order to take into account more recent currency exchange rates (see below).

Currency conversions were calculated using the annual average exchange rate (source: European Central Bank) during each company's fiscal year. However, order book values were converted using the exchange rates at the closing date of each company's fiscal year. Average annual exchange rates used for conversions are presented in the table below. It should be noted that all financial indicators were converted using the average exchange rate for their corresponding year. To avoid a bias when calculating annual changes of monetary indicators, variations (as a percentage change) were calculated in the original currency used in each company's financial statement.

SOURCES

The defence industry ranking is based on data from the Defense News magazine 2020 top 100 list. For publicly listed groups or those that publish annual statements of consolidated accounts, the following sources were used:

- Annual reports and reference documents
- Consolidated balance sheets and profit & loss statements
- Financial and investor presentations

For unlisted groups or those that do not publish annual statements of consolidated accounts, the following sources were used:

- Press releases, company presentations
- Data bases : Factiva, Diane
- Business press and specialist publications

List of companies that do not publish, or only partially publish, financial statements:

- ArianeGroup
- Arqus
- China Shipbuilding Group (CSG)
- Cobham
- Diehl Defence
- General Atomics
- Hanwha Defense
- Iveco Defence Vehicles
- KMW + Nexter Defense Systems (KNDS)
- MBDA
- Naval Vessels Lürssen Group
- Polska Grupa Zbrojeniowa (PGZ)
- Rafael Advanced Defense Systems
- TechnicAtome
- Thales Alenia Space (TAS)
- ThyssenKrupp Marine Systems (TKMS)
- Turkish Aerospace
- United Aircraft Corporation (UAC)

OWNERSHIP

The "Ownership structure" section draws data from the following sources:

- Company publications (websites, reference documents, investor presentations)
- Brokerage firms and major trading platforms (Morningstar, EDGAR, NYSE Euronext, Nasdaq, LSE, Borsa Italiana, Tokyo Stock Exchange, etc).

CHARTS

Charts represent the sales breakdown by business segment (i.e. branches or divisions as presented by the company) and geographical region.

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

The "Main programmes, cooperations and export partnerships" section presents the main programmes highlighted by companies in their public media releases (excluding upstream study programmes). Partnerships for each programme are also listed, without further details. These partnerships can take several forms: co-contractorship, co-development or co-production agreements, subcontracting agreements (for tier-1 equipment suppliers considered as "strategic partners"), marketing agreements, joint ventures (JV), or partnerships with foreign companies as part of offset agreements.

Due to the very concise format of the notebook, this section cannot claim to be exhaustive.

EURO EXCHANGE RATES*

COUNTRY	CURRENCY	1 EURO =			
		2017	2018	2019	2020
Australia	Australian dollar	1,473	1,580	1,611	1,655
China	Yuan	7,629	7,808	7,736	7,875
South Korea	Won	1276,740	1299,070	1 305,320	1 345,580
United States	U.S dollar	1,130	1,181	1,120	1,142
India	Rupee**	73,532	80,733	78,836	84,639
Japan	Yen	126,710	130,400	122,010	121,850
Norway	Krone	9,327	9,596	9,851	10,723
Poland	Zloty	4,257	4,262	4,298	4,443
United Kingdom	Pound sterling	0,877	0,885	0,878	0,890
Russia	Ruble	65,938	74,042	72,455	82,725
Sweden	Krona	9,635	10,258	10,589	10,848
Switzerland	Swiss franc	1,112	1,155	1,112	1,071

*Exchange rates used for conversions were calculated as the annual average rate from January 1 to December 31 (source: European Central Bank)

**The Indian numbering system groups the rightmost three digits together and thereafter groups digits by sets of two. To facilitate the reading of large numbers, the Indian system uses "crore". For instance, one crore rupee is equivalent to ten million (10,000,000) rupees.



AIRBUS

Leading European aerospace and defence group, ranked 3rd worldwide in the military helicopter segment and 12th worldwide in the defence sector.

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Commercial and military aircraft
- ▶ Commercial and military helicopters
- ▶ Unmanned aircraft systems (UAS)
- ▶ Commercial and military space (satellites, services)
- ▶ Defence electronics
- ▶ Cybersecurity

GOVERNANCE

Chairman R. Obermann
 Chief Executive Officer G. Faury
 CEO Airbus Defence & Space* M. Schoellhorn

**In July 2021, Michael Schoellhorn succeeded Dirk Hoke as CEO Airbus Defence & Space*

KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017*	2018	2019	2020
Revenue	59 022	63 707	70 478	49 912
Δ (%)	-11,35%	7,94%	10,63%	-29,18%
Defence (%)	17%	15%	14%	21%
Export (%)**	73%	72%	68%	59%
Operating profit/loss	2 665	5 048	1 339	-510
Operating margin	4,52%	7,92%	1,90%	-1,02%
Net income***	2 361	3 054	-1 362	-1 133
Order book	996 822	459 525	471 488	373 127
Employees	129 442	133 671	134 931	131 349

**Figures restated*

***Based on revenue in European markets*

****Net income attributable to shareholders*

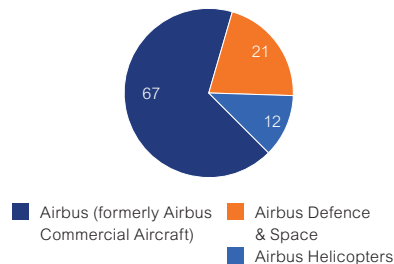
OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	AIR
Listed on	NYSE Euronext
Market Cap (€m)	90 373

Major shareholders (as of 17.11.2021)

SOGEPA (French State)	10,90%
GZBV (German State)	10,90%
Capital Research & Management Co. (World Investors)	5,13%
SEPI (Spanish State)	4,11%

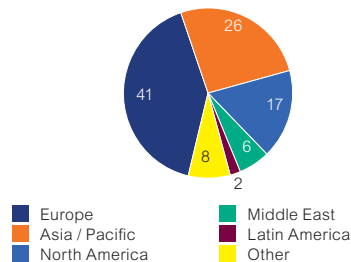
REVENUE BY BUSINESS SEGMENT (%)



MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
MBDA	37,5%	France
Eurofighter Jagdflugzeug	46%	Germany
ArianeGroup	50%	France
ATR	50%	France
NHIndustries	62,5%	France
AirTanker Holdings	40%	United Kingdom

REVENUE BY REGION (%)



MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Thales	BAE Systems	Northrop Grumman*	Leonardo	Safran	Dassault Aviation	TAI	Naval Group	Rolls-Royce
Military aircraft and Unmanned aircraft systems									
A400M tactical and strategic military transport aircraft	●			●		●			
C295 and AC295 tactical transport aircraft	●	●							
A330 Multi Role Tanker Transport (MRTT) aircraft	●							●	
A320neo MPA (Maritime Patrol Aircraft)	●			●					
Eurofighter Typhoon fighter aircraft		●		●				●	
European MALE RPAS (Eurodrone programme)				●		●			
VSR700 future shipborne UAS	●			●			●		
Future NGF fighter aircraft (FCAS programme)	●			●	●				
Military helicopters									
H125M single-engine transport helicopter (2t)	●			●					
H135M and H145M twin-engine transport helicopters (3t)	●			●					
AS565 Mbe (4t) and H160M (6t) twin-engine multi-role helicopters	●			●					
H215M (9t) and H225M (11t) twin-engine multi-role helicopters	●			●					
NH90 twin-engine multi-role helicopter (11t)	●			●	●				
Tiger HAP / HAD twin-engine attack helicopter (6t)	●			●					
Space									
CSO Earth observation satellite programme	●								
CERES space-born military intelligence system	●								
Syracuse 4 military communications satellite	●			●					
Cybersecurity									
Stormshield Data Security	●								

*Innovation Systems division, formerly Orbital ATK

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Airbus revenues fell 29.2% to €49.9bn in 2020, mainly due to the impact of the global health crisis on commercial aircraft deliveries (-34%). The decline was less severe in the Airbus Defence & Space branch (-4.2%), while revenues even increased in the Airbus Helicopters branch (+7.2%).
- ▶ In response to the global health crisis, Airbus in June 2020 announced an adaptation plan that includes the reduction of about 15,000 positions worldwide. However, in March 2021, the group announced that there would be no compulsory redundancies in France (more than 4,200 jobs affected), Germany and the UK.
- ▶ In June 2021, Airbus Helicopters acquired ZF Luftfahrttechnik, a German supplier of maintenance, repair and overhaul services for the majority of the German Army's helicopter fleet and manufacturer of gearboxes for the H135 and Tiger helicopters.
- ▶ In July 2021, Michael Schoellhorn was appointed CEO of Airbus Defence & Space, succeeding Dirk Hoke.
- ▶ In October 2021, Airbus Helicopters received a €2.1m grant as part of France's post-pandemic recovery plan for its research project on composite materials. As part of the research project, the Airbus subsidiary plans to hire 150 employees at its Dugny site (Greater Paris Area), which specialises in the manufacture of helicopter blades.

Home markets (Germany, Spain, France, United Kingdom)

- ▶ In November 2020, Airbus is awarded two contracts in Germany for the supply of 38 Eurofighter Typhoon aircraft for the Air Force (Quadriga project worth €5.5bn) and 31 NH90 Sea Tiger helicopters for the Navy.
- ▶ Between 2020 and 2021, Airbus also won several major contracts in France: supply of the joint tactical signals intelligence (SIGINT) system with Thales, supply of 22 DVF 2000/Aliaca mini-UAVs, eight H225M Caracal helicopters, 10 NH90 FS helicopters (via the NHIndustries joint venture), etc.
- ▶ In April 2021, the Bundestag approved the financing of the European Medium Altitude Long Endurance (MALE) UAV developed by Airbus, Dassault Aviation and Leonardo. Pending funding approval by Spain, the first deliveries of the UAV are scheduled for 2028, three years later than initially planned.
- ▶ In May 2021, after several months of negotiations, an agreement was reached between Germany, Spain and France for the launch of Demonstrator phase 1B of the €3.5bn FCAS (Future Combat Air System) programme. The workload and governance of the programme are shared between the three states. In the summer of 2021, Dassault Aviation and Airbus agreed on the shared workload of the NGF (Next Generation Fighter) during phase 1B. Dassault Aviation will provide 38% and Airbus 62%, of which 32% from Germany and 30% from Spain.

Export markets

- ▶ In September 2021, Kazakhstan ordered two A400M Atlas military transport aircraft from Airbus. The contract includes maintenance and training services.
- ▶ In September 2021, India furthermore approved the purchase of 56 C-295MW transport aircraft in a contract estimated at €2.5bn. Airbus will deliver 16 aircraft within four years of the contract's signature, while the remaining 40 will be manufactured by Tata in India within 10 years under the Make in India initiative.
- ▶ The Eurofighter consortium (Airbus Defence & Space, BAE Systems and Leonardo) is currently in the running for a tender in India for the supply of 110 combat aircraft. On the other hand, the consortium lost the Swiss and Finnish tenders for the purchase of respectively 36 and 64 fighter aircraft, which were won by Lockheed Martin's F-35 in June and December 2021.

Technology and Innovation

- ▶ The group's self-financed R&D expenditure amounted to €2.9bn in 2020, representing 5.7% of revenues.



ARIANEGROUP

Leading European aerospace company and among the world leaders in the space industry. Specialised in the design and production of orbital launch vehicles.

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Commercial launch services (launchers and services)
- ▶ Ballistic missiles
- ▶ Propulsion systems
- ▶ Pyrotechnics (for launchers and satellites)
- ▶ Space instrumentation and equipment (optical, optronic, neutronic)
- ▶ Complex and secure infrastructures

GOVERNANCE

Chairman and CEO

André-Hubert Roussel

Defence Programmes
Director

Philippe Clar

KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017	2018	2019	2020
Revenue	3 221	3 587	3 069	2718
Δ (%)	44,63%	11,36%	-14,44%	-11,44%
Defence (%)	N/A	N/A	N/A	N/A
Export (%)	N/A	N/A	N/A	N/A
Operating profit/loss	228	251	133	-6
Operating margin	7,08%	7,00%	4,33%	-0,22%
Net income*	266	237	54	-20
Order book	N/A	N/A	N/A	N/A
Employees	≈ 9 000	≈ 9 000	≈ 9 000	≈ 9 000

*Total comprehensive income

OWNERSHIP STRUCTURE

Symbol

Listed on

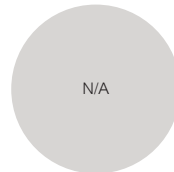
Unlisted group

Market Cap

Major shareholders (as of 17.11.2021)

Airbus	50%
Safran	50%

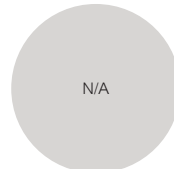
REVENUE BY BUSINESS SEGMENT (%)



MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Arianespace	74%	France
Nucléotides	98,9%	France
CILAS	63%	France
Pyroalliance	90%	France
Sodern	90%	France
EuroCryospace	45%	France
Europropulsion	50%	France
Regulus	40%	France

REVENUE BY REGION (%)



MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Airbus	Safran	Thales	Naval Group	Avio	RUAG	MT Aerospace	SABCA**	Air Liquide
Commercial launch services									
Ariane 6 future launcher	●	●	●			●	●	●	●
Ariane 5 launcher	●	●	●			●	●	●	●
Launch services (Ariane 5, Vega, Soyouz)									
Ballistic missile									
M51 submarine-launched ballistic missile	●	●	●	●					
Propulsion systems									
Vulcain 2 (Ariane 5) and Vulcain 2.1 (Ariane 6) rocket engines		●							
Vinci rocket engine (Ariane 6)		●							
P120C rocket engine (Ariane 6, Vega-C)				●					
Prometheus rocket engine project	●	●							
Bipropellant thrusters (4N, 10N, 22N, 200N, 400N)									
Chemical monopropellant hydrazine thrusters (1N, 20N, 400N)									
Electric orbital propulsion systems (RIT 2X, RIT 10 EVO, RIT μX)									
M10 hold down and release mechanisms (ME0032, ME0038)									
Pyrotechnics (for launchers and satellites)									
Vulcain Turbine Pump Starter		●							
Vinci engine ignition system		●							
Vega's Zefiro-9 third-stage engine ignition system				●					
Equipment									
Vision future daylight stellar finder system		●							
HELMA-P laser effector									

*OHB group **Blueberry group

STRATEGIC HIGHLIGHTS

Business trends

- ▶ ArianeGroup generated revenues of €2.7bn in 2020 (-11.4% year-on-year) and had around 9,000 employees in France (9 sites, including 1 in French Guiana) and Germany (4 sites). During 2020, the group was directly impacted by the global health crisis, in particular due to the suspension of launches at the Kourou Space Centre in French Guiana between mid-March and mid-June 2020 and the shutdown of several production sites in France and Germany in March 2020.
- ▶ At the end of 2020, Arianespace's order book stood at €3.2bn (representing more than three years of activity), including 15 launches for the OneWeb satellite constellation in 2021 and 2022, the maiden flight of Vega in 2021, as well as 12 satellites to be put in orbit on Ariane 5 and Ariane 6 launch vehicles.
- ▶ As a result of technical problems and development delays caused by the health crisis, the maiden flight of Ariane 6, initially planned for the second half of 2020, is now expected to take place in 2022, after having already been postponed in 2021.
- ▶ Due to deteriorating results (operating loss of €6m in 2020), ArianeGroup in March 2021 announced the implementation of a new business plan ("Shift") aimed at improving efficiency and reducing operating costs by profoundly reorganising activities. In October 2021, ArianeGroup announced that it would cut 588 jobs in France and Germany by the end of 2022, of which 530 in France.
- ▶ As part of France's post-pandemic recovery plan, the Vernon site (Normandy) will benefit from a €30m investment, half of which will be allocated to accelerating testing of the Prometheus engine, while the other half has been earmarked for research on hydrogen propulsion. Production of the Vinci engine, currently carried out at the Vernon site, will be transferred to Germany following an agreement reached between France and Germany on the Ariane 6 programme in July 2021. The agreement guarantees the programme's financing, cooperation between the two countries on launchers, as well as European preference in space launchers.

Home market

- ▶ Arianespace completed 10 launches in 2020 (compared with 22 planned at the beginning of the year), enabling 166 satellites to be placed in orbit.
- ▶ In 2020 and 2021, Arianespace and the European Space Agency (ESA) signed several contracts: initial development phase of the Themis reusable stage demonstrator, development of a complementary stage for Ariane 6 (ASTRIS), launch of the Euclid Earth observation satellite, etc.
- ▶ In September 2020, OneWeb confirmed an order for 16 satellite launches between the end of 2020 and the end of 2022.
- ▶ In early 2021, ArianeGroup and CNES (the French government space agency) signed a contract for the testing of the Prometheus rocket engine by the end of the year at ArianeGroup's Vernon site.
- ▶ As part of the European Defence Industrial Development Programme (EDIDP), the European Commission in June 2021 selected ArianeGroup for three projects in the area of space surveillance and early warning (SAURON, INTEGRAL and ODIN'S EYE).

Technology and Innovation

- ▶ With the support of France's Defence Innovation Agency (DIA) and the Centre-Val de Loire Region, ArianeGroup subsidiary Cilas (specialised in laser and optics technology) is developing an anti-UAV laser effector called HELMA-P. The weapon system is offered in a fixed configuration or integrated on a vehicle or ship.
- ▶ In early 2021, Sodern (90% owned by ArianeGroup and 10% by CEA, a French public government-funded research organisation) and Safran Electronics & Defense successfully completed tests on an innovative celestial navigation system (i.e. independent from satellite positioning systems) for the Vision military aircraft.



ARQUUS

Defence subsidiary of the Volvo group. One of the European leaders in land armaments.

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Wheeled armoured vehicles
- ▶ Tactical and logistic vehicles
- ▶ Propulsion systems for armoured vehicles
- ▶ Weapon systems (Remote Control Weapon Systems, RCWS)
- ▶ Maintenance and modernisation services

GOVERNANCE

Chairman and CEO	Emmanuel Levacher
Senior Vice President Finance & Strategy	Christian Cusset
Vice President Operations	Frédéric Gratien

OWNERSHIP STRUCTURE

Symbol	
Listed on	Unlisted subsidiary
Market Cap	

Major shareholders (as of 17.11.2021)

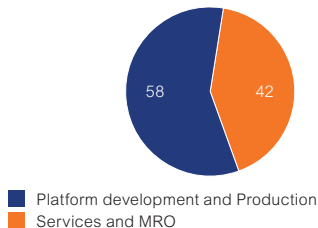
Volvo Group Government Sales	100%
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KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017*	2018*	2019	2020
Revenue	≈ 340	≈ 450	≈ 620	≈ 558
Δ (%)	N/A	25,00%	37,78%	-10,00%
Defence (%)	100%	100%	100%	100%
Export (%)	N/A	N/A	42%	27%
Operating profit/loss	N/A	N/A	N/A	N/A
Operating margin	N/A	N/A	N/A	N/A
Net income	N/A	N/A	N/A	N/A
Order book	N/A	6 000	5 800	5 500
Employees	≈ 1 500	≈ 1 500	≈ 1 500	≈ 1 570

*Figures restated

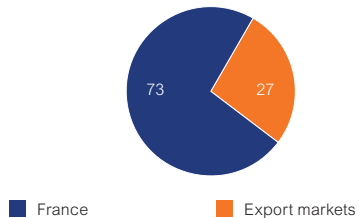
REVENUE BY BUSINESS SEGMENT (%)



MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
SOFEMA	4%	France
ODAS	2%	France

REVENUE BY REGION (%)



MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Nexter*	Thales	AM General
Reconnaissance vehicles			
4x4 VBL Mk2 light armoured vehicle			
4x4 PVP light protected vehicles			
Scarabée light armoured vehicle			
Armoured combat and transport vehicles			
6x6 Jaguar reconnaissance and combat armoured vehicle (EBRC) and 6x6 Griffon multi-role armoured vehicle (VBMR) (Scorpion and CaMo programmes)	●	●	
Maintenance for VAB armoured personnel carrier and transport vehicle			
6x6 VAB Mk3 medium weight armoured vehicle		●	
Bastion and Fortress Mk2 armoured personal carrier/combat vehicles			●
VBCI armoured infantry fighting vehicle	●		
Light tactical vehicles			
VLRA, VLRA 2, Sherpa Light and ALTV			
4x4 VT4			
Heavy tactical and logistics trucks			
4x4 / 6x6 / 8x4 / 8x8 Armis			
Special forces vehicles			
Areg, Torpedo, Sabre, Patsas			
Weapon systems			
Hornet family of remote controlled weapon stations			

*KND5 group **Russian company ***ACOEM group

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Arquus revenues reached nearly €560m in 2020, down 10% from a record level of around €620m in 2019. The company's order book stood at €5.5bn at the end of 2020 (representing almost 10 years of revenue), 5% lower than in 2019 as a result of difficulties in client acquisition and delayed or cancelled arms contracts in the context of the global health crisis.
- ▶ In early 2020, Arquus presented a new industrial strategy with the objective of turning its production sites into centres of excellence. A €12m budget has been earmarked for the programme, including €8.5m for the Limoges site in central France, which will be dedicated to the production of new vehicles.
- ▶ Arquus expects its business to rebound in 2021 and is aiming for organic growth of 5% per year during the decade to 2030. In the longer term, the group aims to achieve €1bn in sales by 2030, with a well-balance footprint both in terms of sales regions and activities.

Home market

- ▶ Arquus, Nexter (KNDS) and Thales are jointly in charge of the Scorpion programme for the supply of wheeled armoured vehicles to the French Army. 1,872 Griffon multi-role armoured vehicles (VBMR) as well as 300 Jaguar armoured reconnaissance and combat vehicles (EBRC) will be delivered by 2030, half of which by 2025. Despite the health crisis, no delivery delays were recorded in 2020.
- ▶ Arquus delivered the 3,000th VT4 tactical 4x4 vehicle to the French Armed Forces in December 2021. By 2025, the group is to produce another 1,300 vehicles, mainly for the French Army.
- ▶ As part of the programme to upgrade 800 light armoured vehicles (véhicules blindés légers, or VBL) in the Ultima version for the French Army by 2030, Arquus in September 2020 announced that it would deliver 50 vehicles by the end of the year and 90 in 2021.
- ▶ Arquus plans to participate in the replacement of tactical trucks for the French Army.

Export markets

- ▶ Arquus, which has customers in more than 60 countries, aims to expand its export sales, which accounted for 27% of revenue in 2020. The company ambitions to eventually generate half of its revenues in export markets. African and Middle Eastern countries are among the group's main target markets, as well as the United States.
- ▶ Together with Nexter and Thales, Arquus is participating in the CaMo (Motorised Capability) programme for the supply of 60 Jaguar EBRCs and 382 Griffon VBMRs to the Belgian Army from 2025 onwards. This €1.6bn contract includes training and maintenance services.
- ▶ In 2020, Arquus won several contracts, including for the supply of Fortress vehicles to Sweden's National Task Force and 36 Sherpa and 300 VLRA light tactical vehicles to Morocco. The Fortress Mk2 was also shortlisted by the Polish Ministry of National Defence for its Pegaz programme for the supply of 4x4 light armoured vehicles to police and army special forces.
- ▶ In early 2021, Arquus launched a new business unit, named Hornet, dedicated to the international promotion and marketing of the new models of its Hornet remote-controlled turret range (Hornet and Hornet Lite), developed as part of the Scorpion programme.

Technology and Innovation

- ▶ Arquus invests around 4% of its revenues (around €20m) in R&D every year. The group is in particular working on the development of fully autonomous vehicles (new version of the Dagger) and hybrid propulsion vehicles (Scarabée 4x4 armoured vehicle and Griffon VBMR).



ASC

Australia's leading naval defence group, involved in the construction and maintenance of submarines and surface ships

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Submarines
- ▶ Surface ships
- ▶ Maintenance services
- ▶ Training

GOVERNANCE

Chairman	Bruce Carter
Chief Executive Officer	Stuart Whiley
Chief Financial Officer	Ashley Menadue

KEY FIGURES (Fiscal year ended : June 30th)

€ millions	2017-18	2018-19	2019-20	2020-21
Revenue	497	466	410	368
Δ (%) [AUD]*	-5,67%	-2,89%	-9,03%	-12,93%
Defence (%)	100%	100%	100%	100%
Export (%)	0%	0%	0%	0%
Operating profit/loss	27	25	22	36
Operating margin	5,46%	5,38%	5,33%	9,67%
Net income**	21	19	14	23
Order book	N/A	N/A	N/A	N/A
Employees	≈ 2 200	≈ 1 300	1 345	1 336

*Variation based on revenue in local currency
See € / AUD p.7

**Net income attributable to shareholders

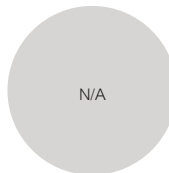
OWNERSHIP STRUCTURE

Symbol	
Listed on	Unlisted group
Market Cap	

Major shareholders (as of 17.11.2021)

Australian State	100%
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REVENUE BY BUSINESS SEGMENT (%)

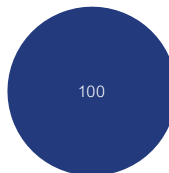


MAIN JOINT VENTURES AND ASSOCIATES*

Name	%	Country
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*No information available

REVENUE BY REGION (%)



■ Australia

MAIN PROGRAMMES, COOPERATIONS
AND EXPORT PARTNERSHIPS

	General Dynamics	Raytheon Technologies*	Balbock International	BAE Systems Australia	Lockheed Martin	Forgacs Marine & Defence**	L3Harris Technologies***	Navantia	Luerssen Australia****	Saab	Penske
Surface ships*****											
Hobart-class Air Warfare Destroyer (AWD programme)*****	●	●		●	●	●	●	●			
Arafura-class OPV (SEA 1180 programme)					●	●		●	●	●	
MRO, training and support											
Collins-class submarine maintenance and training	●	●	●							●	
Swedish Royal Navy's A26 Blekinge-class submarine services (engineering, design)									●		

*Merger of Raytheon and UTC

**Cimtec group

***Merger of L3 Technologies and Harris Corporation

****Naval Vessels Lürssen group (formerly Lürssen Defence)

*****Excluding Hunter-class anti-submarine warfare frigate (SEA 5000 programme) built by ASC Shipbuilding, now a subsidiary of BAE Systems Australia, the prime contractor of the programme

*****Based on F-100-class frigate (Spanish Navy)

STRATEGIC HIGHLIGHTS

Business trends

- ▶ ASC revenues reached AU\$589m (€368m) during fiscal year 2020-2021, down 13% year-on-year in local currency. It was the fourth consecutive year of declining revenues for the group, mainly due to reduced work on the group's two surface ship programmes (AWD programme for Hobart-class air warfare destroyers and SEA 1180 programme for Arafura-type offshore patrol vessels), which are nearing completion.
- ▶ The impact of the global health crisis remained limited during 2020-2021. ASC did not experience any disruption during the financial year and work on its various programmes progressed as planned.
- ▶ At the end of 2018, ASC Shipbuilding (approximately 1,000 employees) officially became a subsidiary of BAE Systems Australia for the duration of the construction of the nine Hunter-class anti-submarine warfare frigates (SEA 5000 programme, a contract estimated at AU\$35bn, or approximately €24bn), for which the British group is prime contractor. The Australian government has kept a stake in the shipbuilding company and will recover all of the capital upon completion of the programme, which is expected to last 10 years.

Home market

- ▶ In early 2020, ASC delivered the third and final Hobart-class destroyer, named Sydney, to the Royal Australian Navy. The AWD programme is scheduled to be officially completed by January 2022.
- ▶ In June 2021, the Australian Department of Defence announced the launch of the LOTE (Life-of-Type Extension) programme from 2026. This AU\$6bn (€3.8bn) programme aims to extend the life of the six Collins-class submarines by 10 years, i.e. to the 2040s. ASC will be responsible for upgrading the vessels, potentially in partnership with Saab Kockums (designer of the Collins-class submarines).
- ▶ In September 2021, Australia cancelled the contract for the supply of 12 conventional attack submarines signed with France in 2016 (currently estimated to be worth €56bn). Instead, the government announced it would acquire eight nuclear-powered submarines from the United States and the United Kingdom as part of a new trilateral military alliance between the two countries and Australia, known as Aukus. ASC, which was to build the Naval Group-designed submarines, has since launched a process, in partnership with the Australian government, to redeploy all affected employees to other naval programmes. The possible role of ASC in the construction of future nuclear submarines, which officially are to be built - at least partly - in Australia, remains uncertain.
- ▶ The construction of the first two of the 12 Arafura-class offshore patrol vessels ordered by the Royal Australian Navy (for which Luerssen Australia is the prime contractor and ASC and Civrtec are tier-1 subcontractors) continued during 2020-2021. The two ships are expected to enter service in 2022 and March 2023 respectively, several months behind the original schedule. Civrtec, which is responsible for the supply of the other 10 patrol vessels, has also launched the construction of two vessels during 2020-2021.

Technology and Innovation

- ▶ In June 2020, ASC announced a strategic partnership with the Commonwealth Scientific and Industrial Research Organisation (CSIRO), a public research entity, and DMTC, a defence innovation specialist, to integrate 3D printing technologies into the maintenance of Collins-class submarines.
- ▶ In March 2021, ASC launched a digital transformation programme in partnership with Deloitte Australia, with the objective to improve the efficiency of its industrial processes. The group plans to create around 35 jobs as part of the initiative.



BABCOCK INTERNATIONAL

Aerospace and defence company specialising in support services (MRO, site management, etc.) for armed forces and military shipbuilding

BUSINESS AREAS

Engineering support services company and platform manufacturer

- ▶ Engineering support services, production and integration of equipment (naval and land)
- ▶ Naval MRO, support and services
- ▶ Airbase and naval base support and management
- ▶ Outsourcing contracts (training, fleet management service)

GOVERNANCE

Chairman	Ruth Cairnie
Chief Executive Officer	David Lockwood
Chief Executive Marine	Will Erith

OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	BAB
Listed on	LSE
Market Cap (\$m)	2 176

Major shareholders (as of 17.11.2021)

Invesco Asset Management Ltd.	9,93%
Abrams Bison Investments LLC	5,80%
Polaris Capital Management LLC	5,75%
Jupiter Asset Management Ltd.	4,99%

MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Ascent Flight Training	50%	UK
AirTanker Services	23,5%	UK
ALC Superholdco	50%	UK
Naval Ship Management	50%	Australia
Duqm Naval Dockyard	49%	Oman

KEY FIGURES (Fiscal year ended : March 31st)

€ millions	2017-18	2018-19	2019-20***	2020-21
Revenue*	5 277	5 073	5 061	4 684
Δ (%) [£]**	2,47%	-3,97%	-1,03%	-5,55%
Defence (%)	47%	46%	52%	56%
Export (%)	32%	34%	33%	33%
Operating profit/loss	420	223	-86	-1 840
Operating margin*	7,95%	4,39%	-1,71%	-39,28%
Net income****	381	226	-135	-1 906
Order book	nd	nd	10 722	10 211
Employees	35 427	35 289	34 220	32 409

*Excluding joint ventures and associated holdings

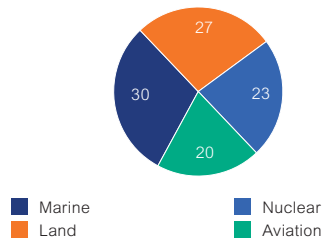
**Variation based on revenue in local currency

See €I.E. p.7

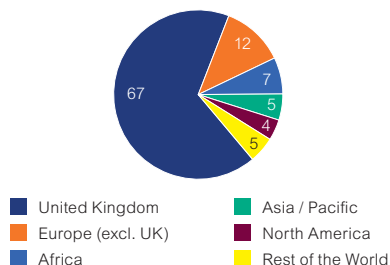
***Figures restated

****Net income attributable to shareholders

REVENUE BY BUSINESS SEGMENT (%)



REVENUE BY REGION (%)



MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	BAE Systems	Rolls-Royce	Thales	DSME	Airbus	Lockheed Martin	Dassault Aviation	ASC	UGL	BMT	PT PAL
Engineering and systems											
Royal Navy's Queen Elizabeth-class aircraft carrier (HMWHS*)	●	●	●								
Royal Navy's Type 26 frigate (weapon systems)	●	●	●								
Royal Navy's Type 31 future frigate (General Purpose Frigate programme)			●							●	●
Republic of Korea Navy's KSS-III Dosan Ahn Changho-class submarine (WHLs**)				●							
MRO and support services											
Royal Navy's Type 23 frigates life extension programme (LIFEX)	●										
Royal Navy's Vanguard-class submarines life extension programme	●										
Royal Australian Navy's Anzac-class frigates and Canberra-class LHD MRO	●								●		
Royal Australian Navy's Collins-class submarines MRO							●				
VISSC programme (Royal Canadian Navy's Victoria-class submarines MRO)	●										
FSTA programme (Royal Air Force's Voyager tanker aircraft MRO)		●	●		●						
HADES programme (Royal Air Force support services ; 20 sites)											
Naval base management											
Future Maritime Support Programme (HM Naval Base Devonport and HM Naval Base Clyde)											
Outsourcing contracts											
Phoenix II Project (fleet management service)											
UK Military Flying Training System (MFTS) programme						●					
F-Air 21*** programme (French Air Force training)							●				

*Highly Mechanised Weapons Handling System **Weapon Handling and Launch System ***ex-FOMEDEC

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Babcock revenues fell 5.6% to £4.18bn (€4.68bn) during 2020-2021 (excluding joint ventures and associated holdings). The Land division (27% of the group's revenues) recorded a 27.1% fall in activity over the year, while revenues increased at Babcock's other three divisions. Although the order book fell by 8.4% year-on-year, the business outlook remains rather favourable thanks to several multi-year maintenance and training service contracts.
- ▶ Babcock reported an operating loss of £1.64bn (€1.84bn) during 2020-2021, representing 39.3% of its revenue, as a result of accounting changes for contract profitability and balance sheet (CPBS). Without this change, the group would have recorded an operating loss of £28m (€31m), or 0.7% of its turnover.
- ▶ In April 2021, the group embarked on a debt reduction plan which will result in the loss of 1,000 jobs, including 850 in the UK, and the sale of subsidiaries for £400m (€463m). In September 2021, the group announced an agreement to sell its 15.4% stake in AirTanker Holdings to UK-based investment fund Equitix Investment Management for £126m (€146m).
- ▶ Babcock signed two partnerships in the summer of 2021: with South Korea's Hyundai Heavy Industries (HHI, a KSOE Group subsidiary) on the future CVX light aircraft carrier programme, and with UkrOboronProm to improve the capabilities of the Ukrainian Navy as part of the UNCEP (Ukrainian Naval Capabilities Enhancement Programme), which was launched in October 2020 by Ukraine.

Home market

- ▶ Two-thirds of Babcock's revenues are generated in the UK, a share that has remained stable in recent years.
- ▶ The group is a key partner of the British Ministry of Defence (MoD). Babcock has in particular been providing support and other services at the naval bases at Clyde and Devonport since 2014, a partnership that in October 2021 was extended for a period of four and a half years as part of the Future Maritime Support Programme (contract worth around £3.5bn, or €4.1bn).
- ▶ Having successfully completed the critical design review phase, Babcock began the construction of the Royal Navy's first Type 31 frigate, named *Venturer*, at the Rosyth Shipyard (Fife, Scotland) in September 2021. The ship is expected to be launched during 2023.
- ▶ In September 2021, Babcock signed a £110m (€127m) 9-year contract with the MoD for the supply of the Defence Strategic Radio Service (DSRS), a new strategic communications system that uses the ionosphere (the Earth's upper atmosphere).

Export markets

- ▶ The share of exports in Babcock's total revenues remained above 30% in 2020-2021, a target the group has set itself in recent years.
- ▶ In March 2021, the Canadian government extended by two years the VISSC programme for the maintenance of the Royal Canadian Navy's Victoria-class submarines, which has been in force since 2008. The contract now runs until June 2023.
- ▶ In June 2021, Duqm Naval Dockyard (DND), a joint venture between Babcock and Oman Drydock Company, completed the double engine replacement on the Royal Navy's Type 23 frigate HMS *Montrose*. DND, which is a strategic entity for Babcock to win business in the Middle East, specialises in naval repair and maintenance within the Duqm port complex located in Oman.
- ▶ In September 2021, Babcock won its first export contract for its Arrowhead 140 design (Type 31 frigate) in Indonesia. The two ships ordered by the country will be built locally under license by PT PAL, a state-owned shipbuilding company.



BAE SYSTEMS

Diversified defence group (aviation, naval, land, etc.). Strong presence on the U.S. market and 7th-largest defence contractor worldwide.

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Military aircraft (manned and unmanned aircraft)
- ▶ Naval platform and systems (surface ships and submarines)
- ▶ Land platform and systems (armoured vehicles and artillery systems)
- ▶ Defence electronics
- ▶ Cybersecurity

GOVERNANCE

Chairman Roger Carr
 CEO Charles Woodburn
 Managing Director, Air Chris Boardman

OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	BA
Listed on	LSE
Market Cap (£m)	17 863

Major shareholders (as of 17.11.2021)

Invesco Asset Management Ltd.	5,02%
Veritas Asset Management LLP	4,68%
Barclays Bank Plc (Private Banking)	4,02%
Templeton Investment Counsel LLC	3,54%

MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Eurofighter	33%	Germany
Panavia Aircraft	42,5%	Germany
MBDA	37,5%	France
CTA International	50%	France
Rheinmetall BAE Systems Land	45%	United Kingdom
FADEC International	50%	United States

KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017**	2018	2019	2020
Revenue	19 640	19 007	20 849	21 660
Δ (%) [£]*	-3,18%	-2,34%	8,82%	5,31%
Defence (%)	92%	91%	92%	95%
Export (%)	80%	78%	80%	81%
Operating profit/loss	1 618	1 814	2 163	2 169
Operating margin	8,24%	9,54%	10,37%	10,01%
Net income***	943	1 130	1 681	1 460
Order book	43 630	54 078	53 349	50 278
Employees	83 200	85 800	87 800	89 600

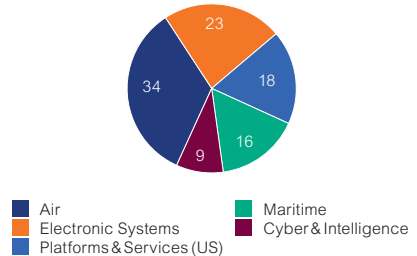
*Variation based on revenue in local currency

See €/£, p.7

**Figures restated

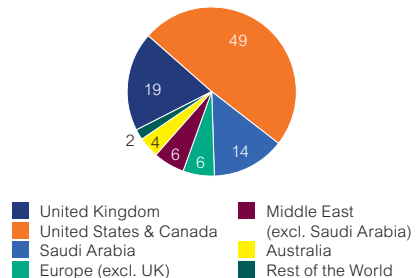
***Net income attributable to shareholders

REVENUE BY BUSINESS SEGMENT (%)*



*Excluding Headquarter division

REVENUE BY REGION (%)



MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Airbus	Leonardo	Thales	Lockheed Martin	Northrop Grumman	General Dynamics	Babcock International	Raytheon Technologies*	Rolls-Royce	Iveco Defence Vehicles	ASC	Nexter**	Seab
Military aircraft													
Tempest future fighter aircraft		●	●				●	●					
F-35 Lightning II fighter aircraft (Lockheed Martin's level 1 partner)				●	●								
Eurofighter Typhoon fighter aircraft	●	●	●										●
Hawk trainer aircraft				●				●					
Naval platforms and systems													
Hunter-class frigate (SEA 5000 programme)			●	●						●			●
Type 26 frigate (Global Combat Ship programme)		●						●					
CSC future frigate (Canadian Surface Combatant)***			●					●					
Queen Elizabeth-class aircraft carrier		●				●		●					
Dreadnought-class ballistic missile submarine			●			●		●					
Astute-class nuclear-powered attack submarine		●			●		●	●					
Land platforms and systems													
Amphibious Combat Vehicle (ACV)								●					
Armored Multi-Purpose Vehicle (AMPV)													
CV90 infantry fighting vehicle		●											●
M109A7 self-propelled howitzer													
40mm Cased Telescoped Armament System (40CTAS)****												●	
M982 Excalibur advanced precision guided artillery shell							●						
Cyber & Intelligence													
GEOINT-ISR	●												

*Merger of Raytheon and UTC **KNDS group ***Based on Type 26 frigates ****CTA International, joint venture between BAE Systems and Nexter

STRATEGIC HIGHLIGHTS

Business trends

- ▶ BAE Systems revenues reached £19.3bn (€21.7bn) in 2020, 95% of which from defence. Revenue grew by 5.3% in local currency over the year thanks to sales of electronic warfare systems for the F-35 and deliveries of Eurofighter Typhoon fighters and Hawk trainers to Qatar. The company is the leading supplier of defence equipment to the UK, Saudi Arabia and Australia, as well as one of the top 10 defence contractors to the U.S. Department of Defense.
- ▶ BAE Systems aims to become the world's leading defence, aerospace and security company within the next 5-10 years by focusing on three areas: increasing its export sales, strengthening its services offering, and restructuring certain activities (land platforms in particular).
- ▶ In April 2021, BAE Systems sold its Israeli subsidiary Rokar International to Israeli defence company Elbit Systems. Rokar specialises in the development, production and integration of GPS receivers and guidance systems for military applications. Following the sale, the British group is no longer present in Israel.

Home market

- ▶ BAE Systems generated 19% of its turnover in the UK during 2020, a share that has been on a downward trend for several years (-3.3 percentage points compared to 2014).
- ▶ The group is the prime contractor for the Tempest future fighter aircraft programme, alongside the British Ministry of Defence, Rolls-Royce, Leonardo UK and MBDA UK, and more recently the Swedish Ministry of Defence (ahead of a possible participation by Saab) as well as several Italian industrial groups (Elettronica, Leonardo Italy, MBDA Italy and Avio Aero). In October 2020, it announced that the number of people working in the United Kingdom on the Tempest project would increase from 1,800 at the end of 2020 to 2,500 in 2021.
- ▶ In April 2021, BAE Systems launched the fifth of the Royal Navy's seven Astute-type SNAs, named Anson (S123), for sea trials. The last two units are being built at the Barrow-in-Furness shipyard in North West England.
- ▶ In June 2021, BAE Systems began construction of the Royal Navy's third Type 26 frigate, named Belfast. The first two units are still under construction.

Export markets

- ▶ In 2020, 81% of the group's revenue came from exports. BAE Systems is increasingly reliant on the U.S. market (nearly half of consolidated turnover), whose share in total revenues should increase even further in the coming years due to the growing weight of the F-35 programme.
- ▶ In November 2020 and February 2021, respectively, the U.S. Marine Corps awarded two contracts worth a combined US\$368m (€322m) to BAE Systems for the supply of 72 ACV amphibious armoured personnel carriers. 80 additional units could subsequently be ordered each year over a 5-year period.
- ▶ In February 2021, BAE Systems signed a \$247m (€205m) deal with the U.S. Missile Systems Center for the design and production of a new small GPS receiver and chipset, as part of the Military GPS User Equipment (MGUE) Increment 2 Miniature Serial Interface programme.
- ▶ In May 2021, the Swedish Army ordered 127 BvS10 Beowulf all-terrain vehicles from BAE Systems Hägglunds in a contract worth around \$200m (€175m). Deliveries are expected to take place between 2022 and 2024.
- ▶ In July 2021, the U.S. Army awarded BAE Systems a contract worth up to \$600m (€525m) over five years for maintenance and support of the Armored Multi-Purpose Vehicle (AMPV) over that period.

Technology and Innovation

- ▶ BAE Systems' self-funded R&D expenditure reached £236m (€265m) in 2020, representing 1.2% of revenue.



BOEING

Industrial group with civil and military activities (in particular military aviation with the FA-18 combat aircraft, CH-47 Chinook helicopter, etc.). Third-largest defence contractor.

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Commercial aircraft
- ▶ Military aircraft (combat, transport, surveillance and unmanned aircraft systems)
- ▶ Defence electronics and C4ISR
- ▶ Missile systems
- ▶ Space

GOVERNANCE

Chairman	L. W. Kellner
Chief Executive Officer	D. L. Calhoun
CEO Defense, Space & Security	L. G. Caret

OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	BA
Listed on	NYSE
Market Cap (\$m)	132 702

Major shareholders (as of 17.11.2021)

Newport Trust Co.	7,46%
The Vanguard Group, Inc.	6,93%
Capital Research & Management Co.	6,69%
Evercore Trust Company, NA	5,74%

MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Hellfire Systems	50%	United States
United Launch Alliance	50%	United States
Initium Aerospace	50%	United States
Ural Boeing Manufacturing	50%	Russia
Tata Boeing Aerospace	50%	India

KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017**	2018	2019	2020
Revenue	83 190	85 628	68 356	50 926
Δ (%) [\$]**	0,54%	7,58%	-24,29%	-24,04%
Defence (%)***	25%	26%	34%	45%
Export (%)****	54%	56%	50%	37%
Operating profit/loss	9 154	10 150	-1 763	-11 180
Operating margin	11,00%	11,85%	-2,58%	-21,95%
Net income	7 485	8 857	-568	-10 456
Order book	395 863	428 368	412 647	296 173
Employees	140 800	153 000	161 100	141 000

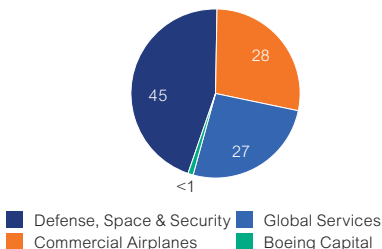
*Variation based on revenue in local currency
See €/\$, p.7

**Figures restated

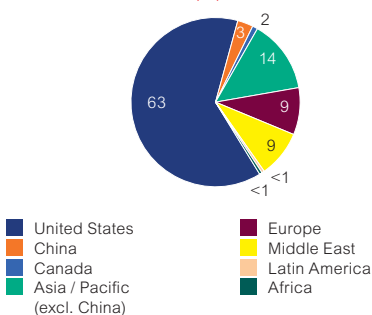
***Defense, Space & Security division only

****Excluding 737 MAX-related impacts in 2019 and 2020

REVENUE BY BUSINESS SEGMENT (%)



REVENUE BY REGION (%)*



*Excluding 737 MAX-related impacts

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Kawasaki	Heavy Industries	Saab	Northrop	Grumman	Raytheon	Technologies*	Bell	Helicopter**	Lockheed	Martin	Teledyne	Aerogel	Rocketdyne	Bombardier	Mahindra	Defence Systems	Rohde & Schwarz	Leonardo	HAL
Military aircraft																				
F/A-18E/F Super Hornet fighter aircraft			●											●						●
KC-46A Pegasus tanker aircraft																				
CL-605 future Maritime Surveillance Aircraft (MSA) (embedded system)													●							
T-7A Red Hawk future trainer aircraft			●																●	
Military helicopters																				
SB>1 DEFIANT future twin-engine multi-role helicopter								●												
MH-139 Grey Wolf twin-engine multi-role helicopter																				●
CH-47 Chinook twin-engine multi-role helicopter	●																●		●	
V-22 Osprey multi-role tiltrotor aircraft								●												
AH-64 Apache twin-engine combat helicopter			●	●				●												●
Unmanned systems																				
MQ-25 Stingray refueling Unmanned Aircraft System (UAS)																				
Wave Glider Unmanned Surface Vehicle (USV)																				
Echo Voyager Unmanned Underwater Vehicle (JUUV)																				
Guided ammunition and missile systems																				
Harpoon anti-ship missile													●							
Joint Direct Attack Munition (JDAM)																				
Space																				
CST-100 Starliner spacecraft														●						
Future Space Launch System (SLS)			●					●	●	●										

*Merger of Raytheon and UTC **Textron group

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Boeing revenues reached \$58.2bn (€50.9bn) in 2020, down 24% year-on-year in local currency. The decline was mainly related to the difficulties of the Commercial Airplanes branch, whose revenues fell by 49.9% during the year, as only 157 aircraft were delivered compared to 380 in 2019. During 2019-2020, the group was particularly hit by the grounding of the 737 MAX aircraft, effective since 13 March 2019 and resulting in financial compensation for airlines, delivery delays, and order cancellations or conversions. The aircraft was finally cleared to return to service in the United States in November 2020, and in Europe in January 2021.
- ▶ The difficulties relating to the 737 MAX were compounded by the Covid-19 crisis, which had a major impact on demand for commercial aircraft and in 2020 led Boeing to cancel the planned purchase of 80% of Embraer's civil activities, scale back production rates for the 787 and 777/777X long-haul aircraft, announce a cut of more than 10% of its workforce (over 16,000 jobs), and to issue a \$25bn (€22.7bn) bond sale. Boeing also indicated that it would not be able to pay new dividends to its shareholders for several years.
- ▶ The group operates in the military sector via its Defense, Space & Security branch (military aircraft and helicopters, aerial and submarine drones, missiles and guided munitions, space launchers, etc.), which generated sales of \$26.3bn (€23.0bn) in 2020.

Home market

- ▶ Boeing generated 63% of its revenue in the United States in 2020, up 13 percentage points from 2019 due to the fall in sales of commercial aircraft overseas (particularly in China). In defence, the U.S. remain by far Boeing's largest market (75% of sales).
- ▶ In January 2021, the U.S. Air Force awarded Boeing two contracts for the production of batches 6 and 7 of the KC-46A Pegasus tanker aircraft, including \$1.69bn (€1.40bn) for 12 units to be produced by April 2023, and \$2.12bn (€1.76bn) for 15 units to be produced by May 2024, raising the total number of aircraft ordered by the U.S. since 2016 to 94.
- ▶ In February 2021, Boeing began production of the T-7A Red Hawk trainer aircraft for the U.S. Air Force, as part of a \$9.2bn (€7.8bn) contract signed in 2018 to supply 351 aircraft and 46 simulators.
- ▶ In July 2021, the U.S. Army launched the call for tenders for its Future Long-Range Assault Aircraft programme, designed to replace the UH-60 Black Hawk multi-role helicopter from Sikorsky (a Lockheed Martin subsidiary) from 2030. Boeing and Sikorsky are offering their SB-1 DEFIANT and are competing with the V-280 Valor from Bell (Textron). The winner of the tender is to be announced in 2022.

Export markets

- ▶ The group generated 37% of its revenues from exports in 2020. A large share of export sales (around 40%) was generated by the Commercial Airplanes branch.
- ▶ In November 2020, the U.S. Department of Defense awarded Boeing a contract worth up to \$9.8bn (€8.6bn) over five years to maintain and support the Royal Saudi Air Force's F-15S and F-15SA fighter aircraft (under FMS process), with a renewal option for an additional five years.
- ▶ In June 2021, Germany's Federal Ministry of Defence ordered five P-8A Poseidon maritime patrol aircraft from Boeing in a contract worth around €1.1bn (under FMS programme), making Germany the eighth country to use the aircraft.

Technology and Innovation

- ▶ Boeing's total R&D expenditure reached \$2.5bn (€2.2bn) in 2020, down 23.1% year-on-year.



CHINA SHIPBUILDING GROUP (CSG)

World's largest civil shipbuilding company, resulting from the merger of CSIC and CSSC in November 2019. 10th-largest defence company in the world

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Commercial shipbuilding
- ▶ Naval diesel engines and turbines
- ▶ Military shipbuilding (surface ships, submarines, naval drones, etc.)
- ▶ Naval ammunition (torpedos)
- ▶ Industrial building
- ▶ Renewable energies

GOVERNANCE

Chairman Lei Fanpei
 Chief Executive Officer Yang Jincheng

KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2019 (CSIC)	2019 (CSSC)	2020 (CSG)
Revenue	49 194	29 907	58 591
Δ (%) / \$)*	12,50%	8,18%	N/A
Defence (%)	≈ 20%	≈ 16%	≈ 20%
Export (%)	N/A	N/A	N/A
Operating profit/loss	N/A	N/A	N/A
Operating margin	N/A	N/A	N/A
Net income	N/A	N/A	N/A
Order book	N/A	N/A	N/A
Employees	173 200	70 000	≈ 245 000

*Variation based on revenue in US dollars
 See €/\$, p.7

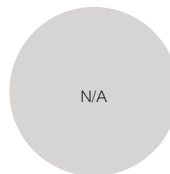
OWNERSHIP STRUCTURE

Symbol Unlisted group
 Listed on
 Market Cap

Major shareholders (as of 17.11.2021)

SASAC (Chinese State) | 100%

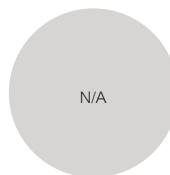
REVENUE BY BUSINESS SEGMENT (%)



MAIN JOINT VENTURES AND ASSOCIATES*

Name | % | Country

REVENUE BY REGION (%)



*No information available

CHINA SHIPBUILDING GROUP (CSG)

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Naval Shipyard	Khulna Shipyard	KS&EW*
Surface ships			
■ Type 003 future aircraft carrier			
■ Type 002 aircraft carrier			
■ Type 075 Landing Helicopter Dock (LHD)			
■ Type 071 Landing Platform Dock (LPD)			
■ Type 074A Landing Ship Medium (LSM)			
■ Type 052D and Type 055 destroyers			
■ Type 054A/B frigate			
■ Type 056/056A corvette	●		
■ Keris-class Littoral Mission Ship (LMS)			
■ Durjoy-class Large Patrol Craft (LPC)		●	
■ Type 903 and Type 901 replenishment tankers			
Submarines			
■ Type 094/094A ballistic missile submarines (SSBN) and Type 096 future ballistic missile submarine			
■ Type 093 nuclear-powered attack submarine (SSN) and Type 095 future nuclear-powered attack submarine			
■ Type 039G/G1 and Type 041 conventionally-powered submarines (SSK)			●
■ Type 035G/B conventionally-powered submarine (SSK)			
■ Type S20 conventionally-powered submarine (SSK)**			
■ Type S26T conventionally-powered submarine (SSK)***			
Unmanned surface vessels			
■ JARI multi-purpose unmanned combat vessel			
■ Marine Lizard autonomous amphibious vehicle			

*Karachi Shipyard & Engineering Works **Based on Type 039B ***Based on Type 041

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Created at the end of November 2019, China Shipbuilding Group (CSG) is the result of the merger between China's two main shipbuilding players, CSIC (China Shipbuilding Industry Corporation) and CSSC (China State Shipbuilding Corporation), until then the world's second and third-largest shipbuilding groups. CSG, which is now the world's largest civil shipbuilding company with a 20% market share (by volume), concentrates almost all of China's capacity in naval defence across a dozen large shipyards. In 2020, CSG revenues reached \$66.9bn (€58.6bn), of which around 20% from defence.
- ▶ In December 2020, China Shipbuilding Group signed two strategic cooperation agreements with China Aerospace Science & Technology Corporation (CASC) and China Aerospace Science & Industry Corporation (CASIC) to integrate C4ISR systems, UAVs, missiles and advanced weapons into the group's naval programmes.
- ▶ The group is currently in the construction phase of a new 4.32 km² shipyard on Changxing Island (Shanghai) which will be able to produce six ships (civil or military) per year. The first construction stage, covering an area of 2.15 km², should be completed by 2023.

Home market

- ▶ The group is very dependent on its domestic defence market, but benefits from China's major efforts to upgrade and expand its naval fleets.
- ▶ The first Type 075 landing helicopter dock (LHD), a class of amphibious assault ship, entered service with the Chinese Navy in April 2021. Two more units are being built by CSG. A total of 4 to 6 Type 075 vessels could be produced.
- ▶ The second and third Type 055 destroyers entered service in the Chinese Navy in March and April 2021. Four of the last five Type 055 destroyers to be delivered are in the sea trial phase. Their construction is being carried out alternately by the Jiangnan (ex-CSSC) and Dalian (ex-CSIC) shipyards.
- ▶ In parallel to the construction of the two future Type 003 aircraft carriers, China Shipbuilding Group is working on the design of the Type 004 aircraft carrier. This future aircraft carrier, with a maximum displacement of 110,000 tonnes (compared to 85,000 tonnes for the type 003) could be built at the end of the 2020s and is likely to be equipped with a nuclear propulsion system.

Export markets

- ▶ Exports of military vessels (including the sale of former Chinese Navy ships) are progressing but remain limited to a handful of countries (Bangladesh, Malaysia, Pakistan, Thailand, Algeria, Nigeria, etc.).
- ▶ In June 2020, Algeria ordered a corvette based on the Type 056. With a total length of 96 meters, the vessel was launched in August 2021 and should be delivered in 2022.
- ▶ Thailand's planned acquisition of two more new Type S26T conventional submarines was finally delayed due to the Covid-19 health crisis, after the Thai Navy's 2020 budget was cut by one third. The first S26T, ordered in 2017 for THB 13.5bn (€360m), should be delivered in 2023.

Technology and Innovation

- ▶ In July 2020, China Shipbuilding Group presented its new Type 076 landing helicopter dock (LHD). With a displacement of 40,000 tonnes, the vessel could accommodate up to 30 helicopters as well as UAVs, hovercrafts, amphibious tanks, armoured vehicles, boats, and hundreds of marine infantry for ground attacks.



COBHAM

Aviation manufacturing company focusing on defence electronics since its takeover by U.S. private equity company Advent International in late 2019

BUSINESS AREAS

Systems integrator/equipment supplier

- ▶ Defence electronics and sensors
- ▶ Radiocommunications and SATCOM systems
- ▶ Aeronautics (avionics systems, communication systems, services)

GOVERNANCE

Co-President

Michael J. Ristano

Co-President

Donald E. Whitt

President & CEO, Cobham

Mike Kahn

Advanced Electronic Solutions

OWNERSHIP STRUCTURE

Symbol

Listed on

Unlisted group

Market Cap

Major shareholders (as of 17.11.2021)

Advent International

100%

MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Aviation Defence Service	45%	France

KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017***	2018	2019	2020
Revenue*	2 385	2 105	N/A	2 227
Δ (%) [€]**	7,60%	-10,92%	N/A	N/A
Defence (%)	60%	64%	N/A	N/A
Export (%)	91%	92%	N/A	N/A
Operating profit/loss	122	126	N/A	108
Operating margin	5,11%	6,01%	N/A	4,86%
Net income****	96	83	N/A	21
Order book	2 928	2 984	N/A	N/A
Employees	10 813	10 069	N/A	8 823

*Revenue from continuing operations in 2020

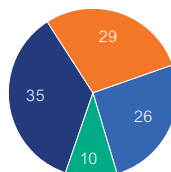
**Variation based on revenue in local currency

See €|€, p.7

***Figures restated

****Net income attributable to shareholders

REVENUE BY BUSINESS SEGMENT (%)*



Advanced Electronic Solutions

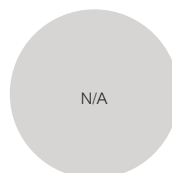
Mission Systems*

Communications and Connectivity

Aviation Services Australia

*Division sold to Eaton in June 2021

REVENUE BY REGION (%)



MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Bombardier	Boeing	Lockheed Martin	Northrop Grumman	Airbus	Thales	Collins Aerospace*	BAE Systems	Leonardo	Textron
Avionics systems										
Electronic warfare suites		●	●						●	
Navigation systems										
Aviator UAV 200 connectivity system for UAVs										
JetLAN advanced servers and routers		●	●		●					
Oxygen systems		●								
Defence systems										
Electromagnetic microwave modules		●	●	●	●			●	●	
Sensor systems: RWR, antennas, radars, missiles, navigation										
SPS Series Precision Positioners		●	●	●				●	●	
Transmitters for jamming systems										
AESA radar antennas and radar subsystems		●		●						
Communication systems										
Tactical communications and surveillance systems				●		●	●			
Intercom and radio management systems						●			●	●
ELT, VHF/UHF antennas		●	●		●					
SATCOM terminals			●	●						
Aeronautical services										
Airborne surveillance of the Australian exclusive economic zone**	●									

*Raytheon Technologies group (merger of Raytheon and UTC)

**Subcontracting with the Australian Border Force

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Cobham revenues from continuing operations reached \$2.5bn (€2.2bn) in 2020, or \$2.6bn (€2.3bn) when including revenues from the Aviation Services UK division (training services for Air Force and Marine pilots) which Cobham sold to Draken International, a U.S.-based provider of fighter aircraft training services, in September 2020.
- ▶ Following its takeover by U.S. private equity firm Advent International in December 2019, Cobham embarked on a major restructuring plan involving the disposal of several businesses. After the Aviation Services UK business in 2020, the group sold its Aero Connectivity division (antennas and countermeasure systems for land, sea and air) to TransDigm in January 2021 for \$965m (€809m) and its Mission Systems business (air-to-air refuelling systems, actuation systems, robotics, etc.) to Irish industrial group Eaton in June 2021 for \$2.83bn (€2.37bn). These activities encompassed 750 and 2,000 employees respectively.
- ▶ Meanwhile, Cobham in July 2021 announced plans to acquire Ultra Electronics, a British military communications equipment manufacturer. Valued at £2.6bn (€3.0m), the deal is subject to UK government approval, as Ultra Electronics, which supplies sonar systems to the Royal Navy, is considered a strategic defence operator.
- ▶ In April 2021, Cobham entered into a strategic partnership with Switzerland's SWISSto12, a leader in 3D printing for the defence industry, for the design and licensed production of components for the U.S. market.

Home market

- ▶ Until the possible purchase of Ultra Electronics, Cobham is left with a marginal presence in the UK, which up until then was already only the group's third-largest market (less than 10% of revenue in 2018), behind the U.S. and Australia in 2018.
- ▶ The Aero Connectivity division, which was sold in January 2021, had been under contract since March 2020 with the British Ministry of Defence to develop advanced anti-jamming techniques for satellite positioning systems (GNSS).

Export markets

- ▶ Cobham remains highly dependent on the U.S. market, which already accounted for around 50% of its revenue in 2018. The group supplies many systems and components for Lockheed Martin's F-35 Lightning II fighter as well as Boeing's KC-46A Pegasus tanker aircraft.
- ▶ Cobham, through its Advanced Electronic Solutions division, has been part of a consortium of eight defence contractors (including Lockheed Martin, Northrop Grumman and BAE Systems) involved in the Advanced Technology Support Program IV, a programme to upgrade the U.S. Department of Defence's electronic systems since 2016. Initially worth \$7.2bn (€6.5bn), the contract's funding ceiling was raised to \$17.4bn (€15.2bn) in June 2020. The contract will run until March 2026.
- ▶ In July 2021, Vinnova, the Swedish government agency responsible for funding R&D projects, awarded Cobham a contract to develop next-generation microprocessors based on the RISC-V architecture to enable, among other things, the control of spacecraft and avoid interference from other parts of the navigation system.

Technology and Innovation

- ▶ The group's self-financed R&D expenditure amounted to \$115m (€101m) in 2020.

DASSAULT AVIATION

Aerospace and defence group operating in civil (business jets) and military aviation (including the Rafale fighter jet). 34th-largest defence company in the world.

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Executive jets
- ▶ Fighter aircraft
- ▶ Unmanned aircraft systems
- ▶ Maritime patrol aircraft
- ▶ Pyrotechnics and space activities
- ▶ Artificial intelligence (AI)

GOVERNANCE

Chairman and CEO	Éric Trappier
Chief Operating Officer	Loïc Segalen
Senior Executive Vice-President, International	Richard Lavaud
Executive Vice President, Military and Space Programmes	J-M. Gasparini
Senior Executive Vice President, Military Customer Support	Bruno Chevalier
Senior Executive Vice President, Sales	Gérard Giordano

KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017*	2018	2019	2020
Revenue	4 876	5 084	7 341	5489
Δ (%)	35,97%	4,27%	44,39%	-25,23%
Defence (%)	38%	49%	70%	59%
Export (%)	89%	78%	88%	89%
Operating profit/loss	357	669	765	261
Operating margin	7,32%	13,16%	10,42%	4,75%
Net income**	410	681	814	396
Order book	19 460	19 376	17 798	15 895
Employees	11 398	11 494	12 757	12 441

*Figures restated

**Net income attributable to shareholders

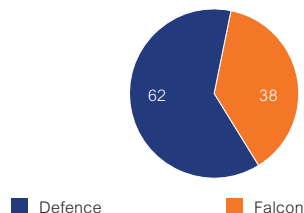
OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	AM
Listed on	NYSE Euronext
Market Cap (€m)	7 656

Major shareholders (as of 17.11.2021)

GIMD (Dassault family)	62,20%
Airbus	9,91%
T. Rowe Price International Ltd.	2,63%
DNCA Finance SA	1,34%

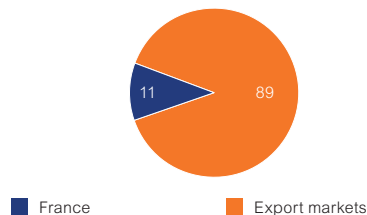
REVENUE BY BUSINESS SEGMENT (%)



MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Thales	25%	France
SECBAT	54%	France
Sogitec	100%	France
Dassault Reliance Aerospace	49%	India

REVENUE BY REGION (%)



MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Thales	Safran	HAL	Naval Group	L3Harris Technologies*	HAL	Leonardo	RUAG	Airbus	Honeywell	Saab
Fighter aircraft											
Rafale (F3R and F4 standards, RAVEL)	●	●									
Mirage 2000	●	●	●								
NGF future fighter aircraft (FCAS programme)	●	●						●			
Maritime patrol and reconnaissance aircraft											
Future maritime and patrol reconnaissance aircraft (AVSIMAR programme)**	●										
Falcon 2000 MRA/MSA	●			●							
ATL2 modernisation	●		●								
Strategic intelligence aircraft (ARCHANGE programme)	●										
Unmanned aircraft systems											
nEUROn UCAV demonstrator					●	●	●	●			●
European MALE RPAS (Eurodrone programme)						●		●			
Artificial Intelligence											
Man Machine Teaming advanced study programme	●										

*Merger of L3 Technologies and Harris Corporation

**Based on Falcon 2000 LXS

STRATEGIC HIGHLIGHTS

Business trends

- ▶ After reaching record levels in 2019, Dassault Aviation revenues fell by 25% to €5.5bn in 2020. The decline was mainly concentrated in the Defence branch, where activity dropped by almost 37% after a strong performance - particularly in export markets - during 2019. In 2020, the group delivered 13 Rafale aircraft to India and Qatar, compared with 26 units delivered to international customers in 2019.
- ▶ The company's order book declined by 8% year-on-year to €15.9bn at the end of 2020 (of which 87% for the Defence branch). It still represented nearly three years of sales.
- ▶ For 2021 as a whole, Dassault Aviation expects an increase in revenues, mainly driven by the delivery of 25 Rafale and 25 Falcon aircraft.
- ▶ Dassault Aviation's industrial modernisation plan also remains on track, with the relocation of the Argenteuil factory to Cergy-Pontoise (both in the Greater Paris Area) by 2023 and the commissioning of a new office building in Mérignac (southwestern France).

Home market

- ▶ In 2020, Dassault Aviation won the OCEAN (Optimisation Continue de l'Entretien des Atlantique 2 de l'Aéronautique Navale) maintenance and support contract (excluding engines) for the French Army's ATL2 maritime patrol aircraft over a 10 year period.
- ▶ At the beginning of 2021, France ordered 12 Rafales for the French Air and Space Force to replace the 12 Rafales from its fleet that were sold as second-hand aircraft to Greece. Dassault Aviation also delivered the first refurbished Mirage 2000D multirole fighter aircraft to the French Air and Space Force. The military programming law for the 2019-2025 period provides for the modernisation of 55 aircraft in total.
- ▶ After several months of negotiations, an agreement was finalised between Germany, Spain and France in May 2021 for the launch of Demonstrator phase 1B of the FCAS (Future Combat Air System) programme, which will represent an investment of €3.5bn. Dassault Aviation is the industrial leader of the future NGF (New Generation Fighter) aircraft.
- ▶ In April 2021, the Bundestag approved the financing of the European MALE RPAS (Medium Altitude Long Endurance Remotely Piloted Aircraft System) developed by Airbus, Dassault Aviation and Leonardo. Pending funding approval by Spain, the first deliveries of the UAV are planned for 2028, three years later than initially planned.

Export markets

- ▶ The group generated 89% of its revenues from exports in 2020.
- ▶ As of 15 December 2021, Dassault Aviation had four firm orders for 2021: 30 Rafale jets for Egypt, 12 second-hand Rafale jets for Croatia, 80 Rafale F4 jets for the United Arab Emirates and 18 Rafale jets for Greece (12 second-hand and 6 new). Greece furthermore announced plans to acquire six more fighter jets.
- ▶ In June 2021, Indonesia reportedly signed a letter of intent for the acquisition of a fleet of 36 Rafale jets.
- ▶ On the other hand, Dassault Aviation lost the Swiss and Finnish tenders for the purchase of respectively 36 and 64 fighter aircraft, which were won by Lockheed Martin's F-35 in June and December 2021.

Technology and Innovation

- ▶ The group's self-financed R&D expenditure amounted to €538m in 2020, representing 9.8% of revenues.



DIEHL DEFENCE

Defence division of German industrial conglomerate Diehl. One of the leading European players in the missiles segment.

BUSINESS AREAS

Missile manufacturer and systems integrator/
equipment supplier

- ▶ Missile systems and air defence systems
- ▶ Ammunition
- ▶ Surveillance and reconnaissance systems
- ▶ Transmission systems and vehicle support services

GOVERNANCE

Executive Chairman	Helmut Rauch
Chief Financial Officer	Thomas Bodenmüller
R&D Manager	Frank Kienzler

KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017	2018	2019	2020
Revenue	456	464	516	571
Δ (%)	4,83%	1,75%	11,21%	10,66%
Defence (%)	100%	100%	100%	100%
Export (%)	46%	42%	53%	57%
Operating profit/loss	N/A	N/A	N/A	N/A
Operating margin	N/A	N/A	N/A	N/A
Net income	N/A	N/A	N/A	N/A
Order book	N/A	N/A	N/A	N/A
Employees	2 341	2 509	2 666	2 797

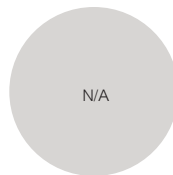
OWNERSHIP STRUCTURE

Symbol	
Listed on	Unlisted division
Market Cap	

Major shareholders (as of 17.11.2021)

Diehl group	100%
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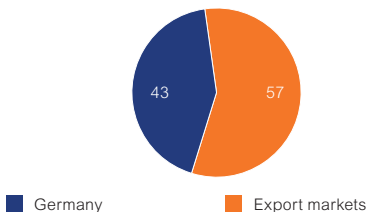
REVENUE BY BUSINESS SEGMENT (%)



MAIN JOINT VENTURES AND ASSOCIATES*

Name	%	Country
Eurospike	40%	Germany
Junghans Microtec	55%	Germany
GIWS	50%	Germany
PARSYS	50%	Germany
RAM-System	50%	Germany
Diehl & Eagle-Picher	55%	Germany

REVENUE BY REGION (%)



*JVs and associates of Diehl group

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	MBDA	Rafael	TKMS*	Leonardo	Saab	Rheinmetall Defence	Raytheon Technologies**	Elbit Systems	Kongsberg	Lockheed Martin	Safran	Boeing	Airbus
Missiles and air defence systems													
IRIS-T and IRIS-T SLS/SLM air-to-air missiles	●			●				●					
AIM-9 Sidewinder air-to-air missile						●							
HUSSAR future air-to-ground light missile										●			
IDAS surface-to-air missile			●										
RIM-116 RAM Block 2 surface-to-air missile	●					●							
RBS15 Mk3 anti-ship missile				●									
PARS 3 LR air-to-ground anti-tank missile	●												
Spike family of anti-tank missiles		●			●								
Falcon air defence system				●					●				
Ammunition													
40 mm infantry ammunition													
76 mm and 127 mm naval ammunition													
127 mm and 155 mm Vulcano guided ammunition				●									
GBU-54 Laser JDAM (Joint Direct Attack Munition) weapon system											●		
Surveillance and protection systems													
SIMONE infrared monitoring system													
Integration of the DIRCM J-MUSIC countermeasure system (Luftwaffe's military aircraft A400M)							●						●

*ThyssenKrupp Marine Systems, ThyssenKrupp group

**Merger of Raytheon and UTC

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Diehl Defence revenues reached €571m in 2020, up for the fifth consecutive year (+10.7%). The branch accounted for 19.2% of the Diehl Group's total turnover and 16.6% of its workforce in 2020.
- ▶ The division is involved in many key programmes. Among others, it is partnering with Saab (RBS15 Mk3 anti-ship missile), Rheinmetall Defence and Rafael (Spike anti-tank missiles), Leonardo (Vulcano guided munitions), Roxel - a joint venture between Safran and MBDA - (rockets for artillery munitions), and Safran (HUSSAR ultra-light air-to-ground missile).

Home market

- ▶ As a key supplier to the German Armed Forces, Diehl Defence expects to benefit from the country's increasing military spending to strengthen its position in its domestic market, where it generated 43% of its sales in 2020.
- ▶ In December 2020, Diehl Defence signed an agreement with the German Navy to supply 127 mm training ammunition for the F125 Baden-Württemberg-class frigates. 7,000 rounds of ammunition are expected to be delivered in several batches between 2021 and 2025. A further 6,000 rounds could be ordered by 2027.
- ▶ In March 2021, EuroSpike, a joint venture between Diehl Defence, Rheinmetall Defence and Rafael, signed a €88m contract with Germany's Bundeswehr for the supply of 666 MELLs (Spike) anti-tank guided missiles and 82 launch units over the 2022-2024 period.
- ▶ In March 2021, Diehl Defence, Hensoldt and Rheinmetall Defence formed the ARGE NNbS consortium to bid in the Bundeswehr's planned short-range air defence system programme (LVS NNbS). The latter was announced shortly after the TLVS programme, a more comprehensive defensive system against sophisticated ballistic missiles, was shelved due to excessive costs. As part of the LVS NNbS programme, Diehl Defence would provide its IRIS-T SLM missile.

Export markets

- ▶ Diehl Defence export sales grew by 18.1% to €326m in 2020 and, with a share of 57% of total turnover, exceeded sales in Germany for the second year in a row.
- ▶ In February 2021, the Croatian Ministry of Defence awarded EuroSpike a contract for the supply of Spike LR missiles, which will be integrated on the UT30 MK2 unmanned turrets (Elbit Systems) of the Croatian Army's AMV 8x8 armoured vehicles (Patria).
- ▶ In March 2021, Diehl Defence signed a three-year service contract with the Swedish Defence Materiel Administration (FMV) for the maintenance of the country's Eldenhet 98 air defence system, for which Diehl Defence has supplied its IRIS-T SLS system.
- ▶ In June 2021, Diehl Defence and NIOA, an Australian weapons and munitions prime contractor, signed a memorandum of understanding for the supply and production of ammunition for Australia, in particular 127 mm naval ammunition for the Royal Australian Navy's future Hunter-class frigates (SEA 5000 programme).

Technology and Innovation

- ▶ Diehl Defence's R&D investments are mainly focused on the development of the next generation of RBS15 anti-ship missiles alongside Saab, as well as the modernisation of the RIM-116 Rolling Airframe Missile (RAM) system alongside Raytheon Technologies.
- ▶ Diehl Defence is part of a consortium led by Finland's Insta and consisting of 10 other companies, research institutes and universities from six countries, which aims to develop military drone swarms designed to confuse, disable and destroy enemy air defence systems. The project, called SEAD Swan, is part of the European Union's Emerging Game Changers programme for the development of artificial intelligence-based technologies for military applications.



DSME

South Korean shipbuilder with civil and military activities, in the process of being acquired by KSOE (holding company for HHI) to form one of the world's largest shipbuilding

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Commercial ships
- ▶ Offshore plants
- ▶ Naval ships (surface combatants and submarines)

GOVERNANCE

Chairman & CEO
Chief Financial Officer

Sung Geun Lee
Yong Seok Choe

OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	42660
Listed on	Korea Stock Exchange
Market Cap (KRW bn)	2 789

Major shareholders (as of 17.11.2021)

South Korean State	55,70%
Hana Financial Group Inc.	8,40%
National Pension Service of Korea	5,04%
Woori Financial Group Inc.	2,32%

MAIN JOINT VENTURES AND ASSOCIATES*

Name	%	Country
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* No information available

KEY FIGURES (Fiscal year ended : December 31st)

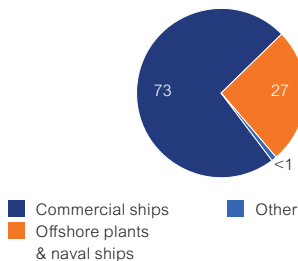
€ millions	2017	2018	2019	2020
Revenue	8 695	7 424	6 404	5 225
Δ (%) [KRW]*	-13,40%	-13,13%	-13,33%	-15,89%
Defence (%)	9%	8%	9%	N/A
Export (%)	4%	1%	2%	1%
Operating profit/loss	574	789	224	114
Operating margin	6,60%	10,63%	3,50%	2,18%
Net income**	487	265	-36	64
Order book (USD)	20 000	20 100	18 600	16 620
Employees***	27 692	26 927	26 183	9 032

*Variation based on revenue in local currency
See €/KRW, p.7

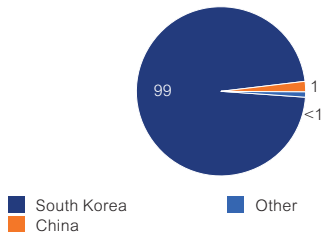
**Net income attributable to shareholders

***Direct employees in 2020

REVENUE BY BUSINESS SEGMENT (%)



REVENUE BY REGION (%)*



*Revenue distribution based on total sales excluding eliminations

MAIN PROGRAMMES, COOPERATIONS
AND EXPORT PARTNERSHIPS

	Lockheed Martin	GE Aviation	Indra	Sistemias	TKMS*	BMT Defence Services	Raytheon Technologies**	NGV Tech / Grade One Marine	LIG Nex1	Thales	Hanwha	Rolls-Royce	PT PAL	Babcock	HHI
Surface ships															
KDX-II Chungmugong Yi Sun-sin-class destroyer	●	●				●	●	●							●
KDX-III Sejong Daewang-class destroyer	●	●				●	●	●			●				●
FFX-II Daegu-class frigate						●	●			●	●				●
Tide-class tanker					●	●									
ASR-II future submarine rescue ship															
Royal Malaysian Navy's Gagah Samudera-class training ship						●				●					
Conventionally-powered attack submarines															
KSS-I Chang Bogo/Nagapasa-class (based on TKMS' HDW-class 209)				●			●					●			
KSS-II Son Won-il-class (based on TKMS' HDW-class 214)				●			●	●							●
KSS-III Dosan Ahn Chang-ho-class		●		●			●		●				●	●	
MRO and services															
KSS-I Chang Bogo-class (based on TKMS' HDW-class 209) submarine MRO				●								●			

*ThyssenKrupp Marine Systems (including Atlas Elektronik), ThyssenKrupp group

**Merger of Raytheon and UTC

STRATEGIC HIGHLIGHTS

Business trends

- ▶ DSME revenues reached 7,030bn KRW (€5.2bn) in 2020, down 15.9% year-on-year in local currency. The group's activity was particularly affected by declining orders for freighters in the context of the global health crisis.
- ▶ Initiated in March 2019, the buyout by KSOE (holding company owning Hyundai Heavy Industries, or HHI) of a 55.7% capital share in DSME held by the state-owned Korea Development Bank (KDB) remains suspended pending the approval of the competition authorities of South Korea, Japan and the European Union. In fact, the takeover would create the world's second-largest shipbuilding group by volume, behind China Shipbuilding Group.

Home market

- ▶ DSME is a major supplier to the Republic of Korea Navy, along with its domestic peer HHI.
- ▶ Together with HHI, DSME is in charge of the construction of the Dosan Ahn Changho-class attack submarines. The Republic of Korea Navy (ROKN) is expected to acquire 9 of these submarines by 2029, divided into 3 batches of 3 units each. After having supplied the first two submarines of the first batch, DSME will also build the first two units of the second batch. In September 2021, the ROKN awarded DSME a contract worth 985.7bn KRW (€728m) for the construction of the second submarine of batch 2, which is scheduled to be delivered by the end of 2028.
- ▶ DSME and HHI also take turns in the construction of the eight Daegu-class frigates of the ROKN's FFX-II programme. In September 2021, DSME launched the sixth unit of the programme, which is scheduled for delivery in 2023.
- ▶ DSME is furthermore involved in the construction of the second batch of three Sejong the Great-class destroyers (KDX-III) alongside HHI, which will supply the first unit.
- ▶ HHI and DSME are also competitors in the ROKN's future CVX-class light aircraft carrier programme, for which the two shipbuilders have respectively partnered with UK-based Babcock and Italy's Fincantieri for the design phase. The class is scheduled to enter service in 2033.
- ▶ For the ROKN's future stealth destroyer programme (KDDX), which is expected to be officially launched in 2024, South Korea Defense Acquisition Program Administration (DAPA) is reportedly considering Hyundai Heavy Industries' bid over DSME's.

Export markets

- ▶ DSME is competing with France's Naval Group, Spain's Navantia, Germany's TKMS and Russia's JSC Rosoboronexport (Rostec Group) to become India's foreign partner in the P75I programme to locally build six conventional submarines for the Indian Navy. DSME is offering the DSME3000, whose design is based on the Dosan Ahn Changho-class submarines designed for the ROKN. Discussions are also underway with the Philippines for the supply of conventional attack submarines.
- ▶ The Indonesian government is reportedly considering cancelling the order for three Nagapasa-class KSS-I submarines (an upgraded version of the Jang Bogo-class) awarded to DSME in April 2019 in a contract worth \$1.02bn (€903m) due to a planned reduction in military spending over the next few years. Indonesia is now reportedly assessing new suppliers, including Naval Group (Scorpene-class) and Turkey's Golcük Shipyard, which might offer a derivative of TKMS's Type 214 submarine.

Technology and Innovation

- ▶ DSME's R&D expenditure amounted to 70.9bn KRW (€52.7m) in 2020, representing 1% of the group's total revenues.



ELBIT SYSTEMS

Israel's main defence group, world leader in the area of helmet-mounted sights and displays for aircraft pilots. 30th-largest defence contractor worldwide.

BUSINESS AREAS

Systems integrator/equipment supplier

- ▶ Military aircraft and helicopter systems
- ▶ Unmanned systems
- ▶ C4ISR systems
- ▶ Electro-optic systems, EW and SIGINT
- ▶ Land systems and artillery systems
- ▶ Cybersecurity
- ▶ Simulation and training

GOVERNANCE

Chairman	M. Federmann
Chief Executive Officer	B. Machlis
General Manager of Airborne Systems	Y. Shmueli

OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	ESLT
Listed on	NASDAQ and TASE
Market Cap (\$m)	6 784

Major shareholders (as of 17.11.2021)

Michael Federmann	44,30%
1832 Asset Management LP	4,56%
Cial Pension & Provident Funds Ltd.	3,09%
Altshuler Shaham Mutual Funds Management Ltd.	1,75%

MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
UAV Tactical Systems (U-Tacs)	51%	United Kingdom
AEL Sistemas	75%	Brazil
Collins Elbit Vision Systems	50%	United States
Opgal-Optronic Industries	50%	Israel
Halbit Avionics	26%	India
Adani Elbit Advanced Systems India	49%	India

KEY FIGURES (Fiscal year ended : December 31st)

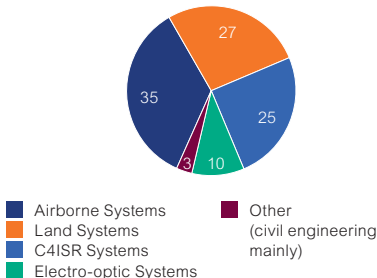
€ millions	2017	2018	2019	2020
Revenue	2 989	3 119	4 025	4 083
Δ (%) [\$]**	3,62%	9,06%	22,38%	3,42%
Defence (%)	97%	97%	97%	97%
Export (%)	78%	80%	76%	76%
Operating profit/loss**	287	248	287	285
Operating margin**	9,60%	7,95%	7,13%	6,99%
Net income***	212	175	203	208
Order book	6 306	8 209	8 931	8 985
Employees	12 781	16 149	16 575	16 676

*Variation based on revenue in US dollars
See €/\$, p.7

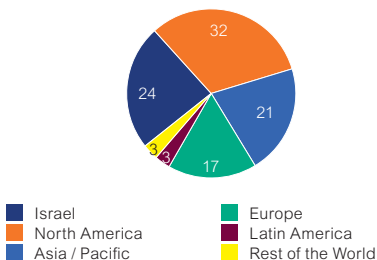
**2017 figures restated

***Net income attributable to shareholders

REVENUE BY BUSINESS SEGMENT (%)



REVENUE BY REGION (%)



ELBIT SYSTEMS

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Airbus	Boeing	Thales	Dielhi Defence	UAC*	Collins Aerospace**	Adani	Kraken Robotics	Embraer	Lockheed Martin	Leonardo	IAI
Aircraft systems and equipments												
Avionic systems (F-16I, MiG-21, MiG-29)				●					●			
Modernisation projects (F-5, F-16, MiG-21, MiG-29, Su-25, C-130, Mi-8/17)				●					●		●	
Helmet-Mounted Display System (HMDS) (F-35)					●				●			
Joint Helmet-Mounted Cueing System (JHMCS) (F-15, F-16, F/A-18)	●				●				●			
Helmet Display and Tracking System (HDTs) ANVIS/HUD												
Unmanned systems												
Hermes (45, 450, 900, 900 StarLiner) family of UAVs		●				●						
Skylark (I-LEX, 3, C) family of small UAVs												
Seagull Unmanned Surface Vehicle (USV)							●			●		
C4ISR systems												
Weapon-integrated Battle Management System (WinBMS)												
Tadiran and E-Lynx tactical radio and communication systems												
CoMPASS (MicroCoMPASS, DCoMPASS) and SPECTRO XR electro-optic payloads												
SkEye Wide Area Persistent Surveillance (WAPS)												
Electronic warfare												
J-MUSIC Directed IR Countermeasures (DIRCM) system	●	●		●					●	●	●	
Land systems and artillery systems												
RCWS, DRWS, UT30 and UT30 MK2 remote weapon stations												
ATMOS 155 mm self-propelled howitzer												

*Rostec group **Raytheon Technologies group (merger of Raytheon and UTC)

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Elbit Systems revenues reached \$4.7bn (€4.1bn) in 2020, up 3.4% year-on-year in U.S. dollar terms, of which 97% was from defence activities. The Electro-optic Systems branch was the group's main growth driver (+27.3% year-on-year in U.S. dollars) following the acquisition of Harris' Night Vision business.
- ▶ In March 2021, Elbit Systems and Korea Aerospace Industries signed a letter of intent to develop new-generation UAV for ISTAR missions for the Republic of Korea Armed Forces and other export markets.

Home market

- ▶ The Israeli market accounted for 24% of Elbit Systems' business in 2020, a share that was boosted by the acquisition of Israeli weapons manufacturer IMI Systems in 2018.
- ▶ In April 2021, Elbit acquired BAE Systems' Israeli subsidiary Rokar International for \$31m (€26m). Rokar specialises in the development, production and integration of GPS receivers and guidance systems for defence applications.

Export markets

- ▶ Exports accounted for 76%, or \$3.6bn (€3.1bn), of the group's sales in 2020. Elbit Systems alone accounts for around 40% of Israeli arms exports by value.
- ▶ In December 2020, Elbit Systems won two European contracts: a \$1.68bn (€1.47bn) contract over 20 years from the Hellenic Air Force for the supply of training services, and a \$338m (€296m) contract over six years from Switzerland's Federal Department of Defence (DDPS) for the supply of an army-wide tactical Software Defined Radio (SDR) solution based on the open architecture E-LynX SDR family, as part of the "Ersa mob Komm" programme for the digitisation of the Swiss Armed Forces' communication solutions.
- ▶ In February 2021, BAE Systems awarded Elbit Systems a \$82m (€68m) contract over four and a half years to supply the Iron Fist active protection system and COAPS electro-optical commander sights for the CV90 armoured combat vehicles of the Royal Netherlands Army (RNLA), as part of the RNLA's armoured vehicle modernisation programme.
- ▶ In February 2021, Elbit Systems announced it had signed a \$46m (€38m) contract with an undisclosed Asian-Pacific country (probably the Philippines) for the supply of 28 VBTP-MR Guarani 6x6 armoured personnel carriers within three years. Designed by Iveco Defence Vehicles for the Brazilian Army, these vehicles will be produced in Brazil and will be equipped with several of Elbit Systems' electronic systems (E-LynX software radio, TORCH-X combat management system, etc.).
- ▶ In March 2021, the group signed a \$300m (€249m) contract with an undisclosed Asian country for the sale of Hermes 900 Unmanned Aircraft Systems (probably 12 units) and associated subsystems over a period of five years.
- ▶ In April 2021, Elbit Systems of America acquired Sparton from Cerberus Capital Management for \$380m (€333m). Sparton, which specialises in electronic systems for undersea warfare, employs more than 700 people at two sites in the U.S. and one in Canada.

Technology and Innovation

- ▶ Elbit's R&D expenditure, 84% of which was self-financed, amounted to \$428m (€375m, or 9.2% of revenues) in 2020.
- ▶ In January 2021, the UK's Ministry of Defence awarded Elbit Systems UK a five-year, \$137m (€114m) contract to develop the future target acquisition solution under the Dismounted Joint Fires Integrators (D-JFI) programme. The solution will include several of the group's technologies, including the TORCH-X Battle Management Application, the Hattorix system for undetectable generation of high-precision targets, the CORAL electro-optical payload for enhanced target acquisition, and the Rattler XR long range laser designator.



EMBRAER

Aerospace manufacturing group mainly present in civil and military aviation. Leading Brazilian defence company and 95th worldwide.

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Commercial and military aircraft (fighter aircraft, transport aircraft, reconnaissance aircraft)
- ▶ Radar systems
- ▶ C4I systems
- ▶ Space

GOVERNANCE

Chairman	A. Gonçalves Silva
Chief Executive Officer	F. Gomes Neto
President & CEO, Defense & Security	J. M. de F. Schneider

OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	EMBR3, ERJ
Listed on	B3 (55%), NYSE (45%)
Market Cap (\$m)	2 784

Major shareholders (as of 17.11.2021)

Brandes Investment Partners LP	6,45%
BNDES Participações SA	5,37%
The Vanguard Group, Inc.	2,65%
Itaú Unibanco SA	2,00%

MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
OGMA-Indústria Aeronáutica de Portugal	65%	Portugal
Visión Tecnología Espacial	51%	Brazil

KEY FIGURES (Fiscal year ended : December 31st)

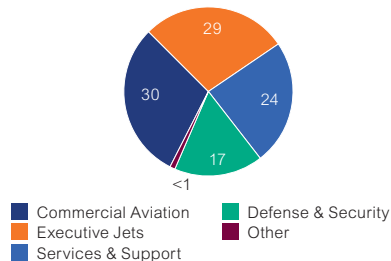
€ millions	2017**	2018**	2019**	2020
Revenue	5 185	4 294	4 877	3 302
Δ (%) [€/\$]*	-5,55%	-13,45%	7,72%	-30,97%
Defence (%)	N/A	9%	11%	17%
Export (%)	87%	91%	89%	90%
Operating profit/loss	303	30	-69	-283
Operating margin	5,84%	0,70%	-1,41%	-8,58%
Net income***	234	-151	-288	-641
Order book	15 294	14 236	14 920	11 706
Employees	18 433	18 520	18 734	15 658

*Variation based on revenue in U.S. dollars
See €/\$, p.7

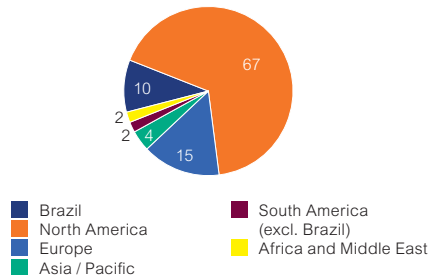
**Figures restated

***Net income attributable to shareholders

REVENUE BY BUSINESS SEGMENT (%)



REVENUE BY REGION (%)



MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Boeing	AEL Sistemas*	Sierra Nevada Corp.	DRDO**	Telebras	Safran	BAE Systems	CTE***	Thales	Alenia Space	Raytheon Technologies****	Elta Systems*****	TKMS*****	Leonardo	Saab
Light attack and trainer aircraft															
EMB 314 Super Tucano (A-29)		●	●						●						
A-4 Skyhawk modernisation programme	●														
A-1M (AMX) modernisation programme														●	
Fighter aircraft															
F-39E/F (JAS 39 Gripen E/F) fighter aircraft		●													●
AEW&C aircraft															
P600 future AEW&C aircraft										●					
EMB 145 AEW&C aircraft				●						●					●
Transport aircraft															
C-390 Millennium tactical transport aircraft	●	●				●	●		●						
Radar and C4ISR systems															
SABER-M60, SABER M200, SABER-S200 3D surveillance radars								●							
SISFRON integrated border monitoring system		●							●						●
Satellites															
SGDC Geostationary Defense and Strategic Communications Satellites					●			●							
Naval systems															
Tamandaré-class corvette						●	●							●	

*Elbit Systems group **Defence Research and Development Organization (India) ***Centro Tecnológico do Exército (Brazil)
 ****Merger of Raytheon and UTC *****Israel Aerospace Industries (IAI) group *****ThyssenKrupp Marine Systems, ThyssenKrupp group

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Embraer revenues amounted to \$3.77bn (€3.3bn) in 2020, down 31% in US dollar terms year-on-year. During the year, activity significantly declined in the Commercial Aviation (-50.1%), Services and Support (-26.1%) and Business Aviation (-23.3%) divisions against the backdrop of the global health crisis. On the other hand, Defence and Security revenues increased 13.5% thanks to the production ramp-up for the C-390 Millennium military transport aircraft.
- ▶ Embraer again recorded an operating loss in 2020 (-\$323m, or -€283m), resulting in an operating margin of -8.6%. After having already implemented three voluntary redundancy plans (1,600 people affected in Brazil), the group in September 2020 announced that it planned to cut around 900 additional positions, mainly in Brazil, amid the sharp drop in demand linked to the health crisis.
- ▶ In October 2021, Embraer entered into a partnership with Dutch companies Fokker Techniek and Fokker Services, which specialise in the maintenance, modification and conversion of aircraft. This agreement could be a prelude to the acquisition of four C-390 Millennium military transport aircraft by the Royal Netherlands Air Force.

Home market

- ▶ Embraer is the main beneficiary of the major military programmes launched by the Brazilian government in the last decade (C-390 Millennium, F-39 fighter aircraft, etc.). In fact, 45.5% of the Defence and Security branch's revenues were generated in the group's domestic market in 2020.
- ▶ In November 2020, Embraer subsidiary Atech delivered the first of a series of upgraded E-99 aircraft to the Brazilian Air Force. The E-99 electronic surveillance aircraft (EMB 145 AEW&C) was upgraded to the E-99M standard with new equipment, including the Saab Erieye radar, the Thales TSC 2030 IFF transponder and a COMINT suite from AEL Sistemas (Elbit Systems). Atech will be upgrading four more aircraft.
- ▶ In December 2020, Embraer delivered the fourth of 28 C-390 Millennium military transport aircraft ordered in 2017 by the Brazilian Ministry of Defence. However, in June 2021 the Brazilian Air Force announced that it might order only 13 to 16 aircraft in order to acquire an additional 24 to 34 F-39 fighter aircraft (based on Saab's JAS 39 Gripen), with final assembly to be performed by Embraer in Brazil.

Export markets

- ▶ Export activity (54.5% of the Defence and Security branch's revenues in 2020) was supported by sales of EMB 314 Super Tucano light attack aircraft (currently in service in 18 countries) and C-390 Millennium military transport aircraft (five aircraft acquired by Portugal and two by Hungary in 2019-2020).
- ▶ In July 2021, Nigeria took delivery of the first six of 12 A-29 Super Tucano light attack aircraft ordered by the Nigerian Air Force from Embraer and Sierra Nevada Corp. (a U.S.-based aircraft modification and integration specialist) in 2018.
- ▶ In October 2021, Embraer's Portuguese subsidiary OGMA delivered two helicopters following maintenance operations: an SA330 Puma medium transport/utility helicopter (Airbus) to the French Air Force, and an EH101 Merlin medium-lift helicopter (Leonardo) to the Portuguese Air Force.
- ▶ Portugal may also order 10 EMB 314 Super Tucano light attack aircraft.

Technology and Innovation

- ▶ R&D expenditure fell 53.9% year-on-year to \$151.2m (€132.4m) in 2020.
- ▶ In April 2021, Embraer and the Brazilian Air Force signed a letter of intent to develop a future UAV.



FINCANTIERI

Among the leading European players in naval defence and world's leading cruise shipbuilding group, 49th-largest defence company worldwide.

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Commercial and military shipbuilding
- ▶ Offshore (drilling units, offshore support vessels)
- ▶ Naval systems (propulsion systems, guidance systems)
- ▶ Maintenance and services

GOVERNANCE

Chairman	G. Massolo
Chief Executive Officer	G. Bono
General Manager Naval Vessels	G. Giordo

OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	FACT
Listed on	Borsa Italiana
Market Cap (€m)	1 159

Major shareholders (as of 17.11.2021)

Italian State	71,30%
Cassa Nazionale di Previdenza ed Assistenza per gli Ingegneri	2,20%
The Vanguard Group, Inc.	0,74%
Dimensional Fund Advisors LP	0,42%

MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Orizzonte Sistemi Navali	51%	Italy
Ethihad Ship Building	35%	UAE
Marinette Marine	87,44%	United States
Centro Per Gli Studi Di Tecnica Navale Cetena	86,1%	Italy
Vard Holdings	98,3%	Singapore
Naviris	50%	Italy

KEY FIGURES (Fiscal year ended : December 31st)

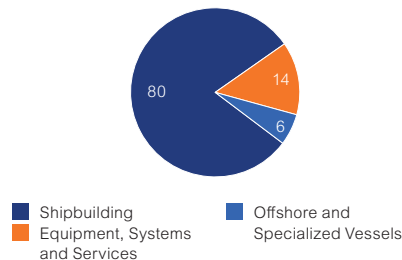
€ millions	2017	2018*	2019	2020
Revenue	5 020	5 416	5 849	5879
Δ (%)	13,34%	7,89%	7,99%	0,51%
Defence (%)**	24%	24%	23%	30%
Export (%)	85%	83%	82%	87%
Operating profit/loss	221	285	153	148
Operating margin	4,40%	5,26%	2,62%	2,52%
Net income***	57	72	-141	-240
Order book	22 053	25 524	28 590	27 781
Employees	19 545	19 274	19 823	20 150

*Figures restated

**Naval vessels revenue

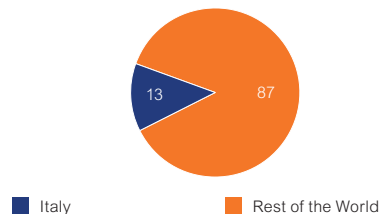
***Net income attributable to shareholders

REVENUE BY BUSINESS SEGMENT (%)*



*Revenue distribution based on total sales excluding eliminations

REVENUE BY REGION (%)



FINCANTIERI

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	TKMS*	MAN	Leonardo	Gibbs & Cox	Lockheed Martin	Naval Group	GE Aviation	Rolls-Royce	LMG Marin	MTU Aero Engines	Electronica	Wartsila
Surface ships												
Cavour aircraft carrier		●				●		●		●	●	
Trieste Landing Helicopter Dock (LHD)	●	●					●			●		
San Giusto-class Landing Platform Dock (LPD)		●								●	●	
Constellation-class future guided-missile frigate (FFG(X) program)			●		●							
FREMM Bergamini-class multi-purpose frigate		●			●	●				●		
Horizon-class air defence frigate		●			●	●						
Freedom-class LCS frigate			●	●			●					
Multi-Mission Surface Combatant (MMSC)			●	●								
Doha-class guided-missile corvette		●										
PPA Thao di Revel-class multi-purpose Offshore Patrol Vessel (OPV)	●	●				●			●	●		
Jan Mayen-class coastguard vessel								●				
Vulcano-class Logistic Support Ship (LSS)	●	●								●		
BRF replenishment vessel (FLOTLOG programme)**					●							
Submarine												
Todaro-class conventionally-powered attack submarine (U212 design under TKMS licence)	●									●		
Propulsion and guidance systems												
Shaft lines and propellers												
Propulsion systems												
Fin stabilizers												
Turbines												
Rudder roll governance and stabilization systems												

*ThyssenKrupp Marine Systems, ThyssenKrupp group**Based on Italian Navy's Vulcano-class LSS

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Fincantieri revenues slightly increased (+0.5%) to €5.9bn in 2020, mainly supported by its military shipbuilding business (+28.9%). The group nevertheless reported net losses of €240m, or 4.1% of revenues, due to the financial difficulties of its Norwegian subsidiary Vard (ex-STX OSV).
- ▶ Defence revenues grew by 28.9% to €1.9bn (before intra-group eliminations). During fiscal year 2020, Fincantieri delivered one Freedom-class littoral combat ship (LCS-19) to the U.S. Navy and one FREMM multipurpose frigate (Spartaco Schergat), the 9th of 10 FREMM frigates ordered by the Italian Navy.
- ▶ In the spring of 2020, Fincantieri and TKMS entered discussions over a possible merger in the form of a 50-50 joint venture. The resulting entity would have a combined turnover of around €3.4bn.
- ▶ Meanwhile, in January 2021 the Italian and French governments jointly agreed to abandon plans for the acquisition of Chantiers de l'Atlantique by Fincantieri. The agreement to sell Chantiers de l'Atlantique, first signed by the French government, Fincantieri and Naval Group in February 2018, was due to end on 31 January 2021, after being extended five times.

Home market

- ▶ With nine shipyards and over 9,800 employees in Italy, Fincantieri is the prime contractor for the Italian Navy's main programmes (surface ships, special vessels, submarines under German licence, naval systems, etc). However, the group generates a small share of its sales on its domestic market (less than 13% in 2020).
- ▶ In February 2021, the Italian Navy signed a €1.35bn contract with OCCAr for the supply of two Type 212 NFS submarines (an updated version of TKMS' Type 212A), including an option for two additional units. The submarines will be built by Fincantieri under a technology transfer agreement and are expected to be delivered in 2027 and 2029. TKMS will produce some components, such as the bow and fuel cell sections, while Leonardo will supply the combat system.
- ▶ In March 2021, Fincantieri launched the construction of the third of seven Thaon di Revel-class PPA multipurpose offshore patrol vessels ordered by the Italian Navy. Named Raimondo Montecuccoli, the vessel is being built at the Riva Trigoso shipyard near Genoa and will be delivered in 2023.

Export markets

- ▶ Export sales accounted for around 87% of the group's revenues in 2020. Through its subsidiaries Marinette Marine and Vard (ex-STX OSV), the group is well positioned in the United States and Northern Europe (Nordic countries, Ireland).
- ▶ In February 2021, Naviris (a 50-50 joint venture between Naval Group and Fincantieri) signed a memorandum of understanding with Spanish shipbuilder Navantia to cooperate on the European Patrol Corvette (EPC) military programme. The programme, which is led by Italy and was jointly launched with France in November 2019 to replace the Italian Navy's Commandante and Cassiopea-class offshore patrol vessels as well as the French Navy's surveillance frigates, is supported by the European Defence Agency. Other countries (Spain, Portugal, Greece) subsequently joined the programme.
- ▶ In May 2021, the U.S. Navy awarded Marinette Marine a \$554m (€459m) contract to build the second of 10 Constellation-class multi-mission guided-missile frigates (FFG-62 programme, formerly FFG-X).
- ▶ In June 2021, the group signed a contract with the Indonesian Navy for the construction of six FREMM-class frigates and the modernization and sale of two Maestrale-class frigates, which Fincantieri will acquire from the Italian Navy once decommissioned.

Technology and Innovation

- ▶ The group's total R&D expenditure amounted to €144m in 2020, up 7.5% year-on-year.



GENERAL ATOMICS

Family-owned group, a leading player in the global UAV market (MQ-9 Reaper, MQ-9B SkyGuardian). Operates in the defence, space and nuclear energy sectors.

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Unmanned aircraft systems
- ▶ Sensors
- ▶ Weapon systems
- ▶ Electromagnetic aircraft launch and recovery systems
- ▶ Satellite and space systems
- ▶ Nuclear engineering (fusion and fission technologies)

GOVERNANCE

Chairman & CEO
 Chief Financial Officer
 CEO GA-ASI

James N. Blue
 Liam Kelly
 Linden P. Blue

KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017	2018	2019	2020
Revenue	≈ 2 572	≈ 2 440	≈ 2 979	N/A
Δ (%)	N/A	N/A	N/A	N/A
Defence (%)	N/A	N/A	N/A	N/A
Export (%)	N/A	N/A	N/A	N/A
Operating profit/loss	N/A	N/A	N/A	N/A
Operating margin	N/A	N/A	N/A	N/A
Net income	N/A	N/A	N/A	N/A
Order book	N/A	N/A	N/A	N/A
Employees	N/A	≈ 15 000	≈ 15 000	≈ 15 000

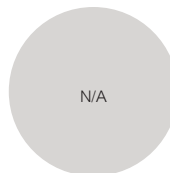
OWNERSHIP STRUCTURE

Symbol	
Listed on	Unlisted group
Market Cap	

Major shareholders (as of 17.11.2021)

Blue family	100%
-------------	------

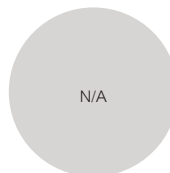
REVENUE BY BUSINESS SEGMENT (%)



MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
ConverDyn	50%	United States

REVENUE BY REGION (%)



GENERAL ATOMICS

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Cobham	Lockheed Martin	Northrop Grumman	BAE Systems	Leonardo	Pratt & Whitney*	Huntington Ingalls Industries	L3Harris Technologies**	GKN Aerospace	Raytheon Technologies*	QinetiQ	Honeywell	SABCA
Unmanned aircraft systems													
Predator XP MALE UAV													
Gray Eagle MQ-1C and Gray Eagle Extended Range (GE-ER) UAVs		●	●	●					●				
Predator B/Reaper MQ-9 UAV							●	●	●			●	
Skyguardian and Seaguardian MQ-9B ISTAR MALE UAVs	●				●			●	●		●	●	
Avenger/Predator CUCAV					●				●				
Sensors													
Lynx multi-mode radar													
Highlighter Gen I airborne electro-optical sensor and Highlighter Gen II future sensor													
Claw 3 integrated sensor payload control and analysis software													
Weapon system													
High Energy Liquid Laser Area Defense System (HELLADS)		●											
Battery systems													
Lithium-ion Fault Tolerant (LiFT) battery systems		●											
Aircraft launch and recovery systems													
Electromagnetic Aircraft Launch System (EMALS)							●					●	
Advanced Arresting Gear (AAG)							●					●	
Ground control stations													
Legacy GCS, STORM GCS and Advanced Cockpit GCS													

*Raytheon Technologies group (merger of Raytheon and UTC) **Merger of L3 Technologies and Harris Corporation

STRATEGIC HIGHLIGHTS

Business trends

- ▶ A privately held company wholly owned by the Blue family, General Atomics regularly makes acquisitions to integrate new technologies into its solutions. In 2021, for example, General Atomics acquired Synopta, a Swiss company specialising in the supply of opto-electronic equipment, and CCRi, a U.S. company that specialises in software engineering and data analysis.
- ▶ General Atomics also relies on several partnerships. In October 2020, the group teamed with Boeing to develop a high-energy laser weapon system for air and missile defence activities. In February 2021, General Atomics selected UK-based GKN Aerospace to manufacture the V-tails for the MQ-9B SkyGuardian remotely piloted aircraft system (RPAS).

Home market

- ▶ General Atomics is a key supplier to the U.S. government. For example, the group is expected to supply MQ-9 Reaper RPAS worth around \$344m (€287m) to the U.S. Air Force in 2021. However, U.S. drone requirements are changing and the U.S. Air Force may stop purchases of MQ-9 Reapers from 2022, as they may no longer be suitable against new threats.
- ▶ In November 2020, General Atomics won a \$93m (€81m) contract from the U.S. Department of Defense's Joint Artificial Intelligence Center (JAIC) to work on improving autonomous detection capabilities of UAVs.
- ▶ General Atomics is also involved in the U.S. Navy's Ford-class aircraft carrier programme as a supplier of Electromagnetic Aircraft Launch Systems (EMALS) and Advanced Arresting Gear (AAG).

Export markets

- ▶ The group's export strategy is constrained by the U.S. Administration's ITAR regulations and Missile Technology Control Regime (MTCR). Most sales are made under the FMS (Foreign Military Sales) programme and mainly on the basis of unarmed offers. Western European countries are among the target markets for General Atomics, whose MQ-9A UAV is operational in the British, Spanish, French and Italian armed forces.
- ▶ In November 2020, General Atomics delivered two MQ-9A Block 5 UAVs and a ground control station to the Spanish Air Force, fulfilling a contract for the supply of four MQ-9A Block 5 UAVs and three ground control stations that began in 2019.
- ▶ In May 2021, the group was awarded a contract for the mid-life update of the Italian Air Force's fleet of MQ-9 UAVs from Block 1 to Block 5 configuration. The contract also covers the modernisation of the ground control stations.
- ▶ In July 2021, the UK Ministry of Defence (MoD) exercised an option for the supply of 13 additional Protector RG Mk1 Remotely Piloted Air Systems (RPAS), bringing to 16 the number of Protectors that will be delivered to the Royal Air Force under a contract signed in 2020.
- ▶ In July 2021, General Atomics also completed production of the first of four MQ-9A Block 5 RPAS as well as the first of four ground control stations ordered by the Netherlands in 2019. Both are expected to be delivered to the Royal Netherlands Air Force by the end of 2021.

Technology and Innovation

- ▶ In a demonstration conducted by General Atomics in July 2021, an Avenger combat drone for the first time autonomously tracked and followed targets of interest, after being equipped with Lockheed Martin's Legion Pod's infrared search and track system.



GENERAL DYNAMICS

Aerospace and defence group, mainly operating in the military segment (C4ISR, land armaments, naval platforms, weapons systems, etc.). Fifth-largest defence contractor.

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Commercial aircraft (Gulfstream, Jet Aviation)
- ▶ Armoured vehicles
- ▶ Weapon systems, artillery systems, ammunition
- ▶ Naval (surface ships and submarines)
- ▶ C4ISR
- ▶ IT solutions and cybersecurity

GOVERNANCE

Chairman and CEO Phebe N. Novakovic

Chief Financial Officer Jason W. Aiken

Executive VP Marine Systems Robert E. Smith

OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	GD
Listed on	NYSE
Market Cap (\$m)	56 045

Major shareholders (as of 17.11.2021)

Capital Research & Management Co.	11,2%
Longview Asset Management LLC	10,8%
Evercore Trust Company, NA (Inv't Mgmt)	7,77%
The Vanguard Group, Inc.	6,84%

MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
GR Dynamics	50%	United States
Defense Munitions International	50%	United States
GD Mission Systems Middle East	N/A	UAE
Range Generation Next	50%	United States

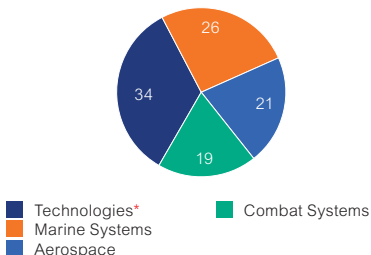
KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017	2018	2019	2020
Revenue	27 410	30 646	35 134	33 209
Δ (%) [\$]*	1,35%	16,85%	8,72%	-3,62%
Defence (%)	63%	62%	62%	66%
Export (%)**	24%	22%	19%	18%
Operating profit/loss	3 749	3 721	4 080	3 619
Operating margin	13,68%	12,14%	11,61%	10,90%
Net income	2 577	2 832	3 111	2 773
Order book	52 690	59 276	77 422	72 933
Employees	98 600	105 600	102 900	100 700

*Variation based on revenue in local currency
See €/\$, p.7

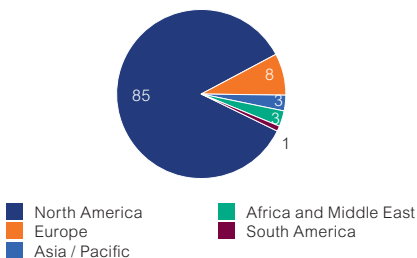
**Excluding foreign military sales

REVENUE BY BUSINESS SEGMENT (%)



*As of 1 January 2020, the Technologies branch includes the former Information Technology and Mission Systems branches

REVENUE BY REGION (%)



GENERAL DYNAMICS

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Rafael	Thales	HI*	Northrop Grumman	Raytheon Technologies**	Lockheed Martin	L3Harris Technologies***	Honeywell	BAE Systems	Leonardo	Austral USA	IAI
Aeronautics												
Gulfstream multi-mission jets												●
Submarines												
Columbia-class ballistic missile submarine		●	●									
Virginia-class nuclear-powered attack submarine		●	●					●				
Surface ships												
Zumwalt-class (DDG-1000) destroyer		●		●	●			●				
Arleigh Burke-class (DDG-51) destroyer		●		●	●			●				
Armoured vehicles												
Abrams M1A1, M1A2 et M1A2C main battle tanks	●							●		●		
Ajax armoured fighting vehicle		●		●	●							
Stryker armoured infantry fighting vehicle				●	●					●		
Piranha family of armoured infantry fighting vehicles												
LAV family of light armoured vehicles				●								
Weapon and artillery systems, ammunition												
SAMSON remote controlled weapon station	●											
70 mm Hydra-70 family of rockets												
Mission systems and C4ISR												
Bowman and Morpheus future C4I systems				●	●			●	●			
Warfighter Information Network-Tactical (WIN-T)				●	●	●		●				
Open architecture computing infrastructure (OPEN CI) (LCS frigates)											●	
Common Hardware Systems-5 (CHS-5) programme												

*Huntington Ingalls Industries **Merger of Raytheon and UTC ***Merger of L3 Technologies and Harris Corporation

STRATEGIC HIGHLIGHTS

Business trends

- ▶ General Dynamics revenues reached \$37.9bn (€33.2bn) in 2020, down 3.6% year-on-year in local currency. The decline was largely driven by the Aerospace branch (-17.6%), which reported a drop in deliveries of Gulfstream aircraft amid restrictions related to the Covid-19 pandemic.
- ▶ In defence (66% of total revenues in 2020), the group has a very diversified portfolio of activities: armoured vehicles (General Dynamics Land Systems), weapons, artillery systems and ammunition, surface ships and submarines (Electric Boat, Bath Iron Works), cyber security, etc. The Aerospace branch, however, is predominantly civilian-oriented (9% of defence turnover in 2020). It includes the Gulfstream family of aircraft, some of which are suited for military missions (transporting very important people, for example).
- ▶ As of 1 January 2020, General Dynamics reorganised its organisational structure to better integrate the activities of CSRA, which it acquired in 2018, with its historical activities (particularly in defence electronics). The reorganisation led to the creation of the Technologies branch, a merger between the former Information Technology and Mission Systems branches.

Home market

- ▶ The United States remain General Dynamics' largest market, accounting for 82% of total revenues in 2020. The U.S. Department of Defense alone accounted for 55% of revenues in 2020.
- ▶ In December 2020, General Dynamics and BAE Systems delivered their prototypes for the Mobile Protected Firepower light tank programme to the U.S. Army. Assessments conducted in 2021 should lead to the appointment of the prime contractor for this programme around the end of 2022.
- ▶ In March 2021, Gulfstream signed a 10-year, \$696m (€570m) maintenance contract for the U.S. Air Force's fleet of Gulfstream C-20G, C-37A and C-37B multi-mission aircraft.
- ▶ Construction of the 74th Arleigh Burke-class guided missile destroyer, named Harvey C. Barnum Jr. (DDG-124), began in April 2021 at the Bath shipyard (Maine). The ship is expected to be delivered to the U.S. Navy during 2024.
- ▶ In July 2021, the U.S. Marine Corps selected General Dynamics and Textron to develop prototypes of the future Advanced Reconnaissance Vehicle (ARV) that will replace General Dynamics' LAV-25. The prime contractor for this programme should be appointed in the first half of 2023. A total of up to 500 vehicles could be ordered.

Export markets

- ▶ The group generated 18% of its revenues from exports in 2020 (excluding FMS programmes), mostly via its European subsidiary GDELS (armoured vehicles), through which it has a solid presence in continental Europe (Germany, Austria, Denmark, Spain, Czech Republic, Romania and Switzerland), and General Dynamics UK (United Kingdom).
- ▶ In March 2021, the U.S. State Department approved the sale of 54 Stryker eight-wheeled armoured fighting vehicles (in Commander, Infantry Carrier, and Mortar Carrier variants) to North Macedonia for \$210m (€172m) under the FMS programme.
- ▶ In March 2021, the British Army announced that it had received the first Ajax armoured fighting vehicle in its Ares variant (reconnaissance vehicle) from General Dynamics UK. Of the 589 vehicles ordered in 2014 (all variants), 116 have been delivered or were in the process of being delivered by July 2021. However, trials revealed various design issues causing excessive vibration and noise inside the vehicles.

Technology and Innovation

- ▶ Self-financed R&D expenditure amounted to \$374m (€327m) in 2020, representing 1% of the group's revenues.



GENERAL ELECTRIC AVIATION (GE AVIATION)

Subsidiary of the General Electric conglomerate. One of the world's leading manufacturers of engines for civil and military aircraft and ships. 29th-largest defence contractor.

BUSINESS AREAS

Engine manufacturer, systems integrator/
equipment supplier

- ▶ Propulsion systems (fighter aircraft, transport aircraft and helicopter engines, gas turbines)
- ▶ Aircraft systems and equipment (avionics, structures)
- ▶ Support services and maintenance solutions

GOVERNANCE

Chairman & CEO

John Slattery

Chief Financial Officer

Shane Wright

KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017	2018	2019	2020
Revenue	23 905	25 881	29 353	19 301
Δ (%) [\$]*	2,95%	13,15%	7,55%	-32,95%
Defence (%)**	≈ 13%	≈ 15%	≈ 13%	≈ 21%
Export (%)	60%	59%	59%	49%
Operating profit/loss	4 752	5 475	6 082	1 076
Operating margin	-19,90%	-21,20%	-20,70%	-5,60%
Net income	N/A	N/A	N/A	N/A
Order book	167 000	195 200	243 300	212 235
Employees	≈ 44 500	≈ 48 000	≈ 52 000	≈ 40 000

*Variation based on revenue in local currency

See €/\$, p.7

**Military division

OWNERSHIP STRUCTURE

Symbol

Listed on

Unlisted subsidiary

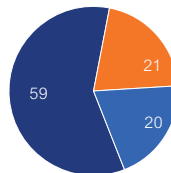
Market Cap

Major shareholders (as of 17.11.2021)

General Electric

100%

REVENUE BY BUSINESS SEGMENT (%)

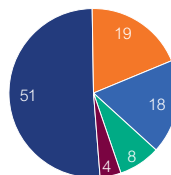


- Commercial Engines & Services
- Military
- Systems & Other

MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
CFM International	50%	United States
NGS Advanced Fibers	25%	Japan
TUSAS Engine Industries	46%	Turkey
Advanced Ceramic Coatings	50%	United States
GE Aviation / Woodward	50%	United States

REVENUE BY REGION (%)



- United States
- Europe
- Asia
- Africa and Middle East
- Americas (excl. United States)

GENERAL ELECTRIC AVIATION (GE AVIATION)

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Hawthia Aerospace	Safran	MTU Aero Engines	IHI	ITP	GKN Aerospace	TransCanada	Aviall*	Leonardo Turbines	Standard DRS**	TAE Aero	Navantia	HAL
Aircraft engines													
XA-100 Adaptive Cycle Engine													
F110 (F-16C/D, F-16E/F, F-15, F-15EX)	●	●	●		●				●				
F404 (F/A-18C/D Hornet, T-50, T-7A Red Hawk, JAS-39 Gripen E/F)	●				●					●			
F414 (F/A-18E/F, EA-18G, JAS-39 Gripen E/F, Tejas Mk II, KF-X)		●		●	●					●			
F108/CFM56-7B (Boeing AEW&C, P-8A Poseidon)		●											
F138/CF6 (C-5M, KC-10, B767 AWACS, A310 MRTT, C-2)		●											
Helicopter engines													
T700/CT7 (UH-60, AH-64, NH90, Surion)	●		●	●			●						
T408 (formerly GE38) (CH-53K)		●											
T901 future turboshaft engine (AH-64, UH-60)													
Gas turbines													
GE LM2500 (FREM, Arleigh Burke, Cavour, Vikrant, Independence, Constellation)	●	●	●		●	●		●			●	●	
GE LM500 (PKX-A, PKX-B, 24DDH, 22DDH)	●		●										
Systems and aerostructures													
Landing gear systems (X-47B, T-38)													
External fuel tanks (F/A-18, Eurofighter Typhoon)													
Refuelling probes (A400M)													
Pylons (P-8A Poseidon)													
Propellers (C-27J, C-130J, US-2, Saab 2000, Fokker 50/60, Q400)													

*Boeing group **U.S. subsidiary of Leonardo

GENERAL ELECTRIC AVIATION (GE AVIATION)

STRATEGIC HIGHLIGHTS

Business trends

- ▶ General Electric Aviation (GE Aviation) is the largest branch of U.S. conglomerate General Electric (GE), accounting for 27.7% of its consolidated revenue and 23% of its total workforce in 2020. It is the world's leading supplier of engines for commercial aircraft (through CFM International, its joint venture with Safran) and is one of the world's top three engine manufacturers for military aircraft, alongside Rolls-Royce and Pratt & Whitney.
- ▶ In 2020, GE Aviation revenues fell 33% year-on-year to \$22.0bn (€19.3bn), as the business was hit hard by falling deliveries of civil engines in the context of the global health crisis. During that year, the Military division (production and maintenance of engines and turbines for military aircraft and ships) accounted for 20.7% of total sales.
- ▶ GE Aviation's outlook remains uncertain in the civil market, due to the consequences of the health crisis but also to the difficulties encountered by Boeing, in particular on the 737 MAX programme for which the LEAP engine, supplied by CFM International, is the exclusive propulsion system. In this context, the Aviation branch implemented a \$3bn savings plan in 2020, involving around 12,000 job cuts. In the military sector, however, the outlook remains positive.

Home market

- ▶ GE Aviation generated 51% of its sales in the United States in 2020. However, the military engine business remains heavily reliant on orders from the U.S. Department of Defense.
- ▶ In June 2020, the U.S. Air Force Life Cycle Management Center (AFLCMC) awarded GE Aviation a contract to produce 19 F110 engines for the U.S. Air Force's new F-15EX fighter aircraft (Boeing).
- ▶ In October 2020, GE Aviation was selected to supply LM2500 gas turbines for the U.S. Navy's future Constellation-class frigates (FFG-62), built by Fincantieri's U.S. subsidiary Marinette Marine.
- ▶ In January 2021, GE Aviation signed a \$111.9m (€93.3m) contract with the U.S. Navy's Naval Air Systems Command (NAVAIR) to equip the Marine Corps' CH-53K King Stallion helicopters (Sikorsky) with T408 engines.
- ▶ GE Aviation is also continuing to develop the T901 turboshaft engine (ITEP programme, won in February 2019), which will power the U.S. Army's AH-64 Apache and UH-60 Black Hawk helicopters. The branch is also bidding for several U.S. Army tenders: the Adaptive Engine Transition Program (AETP) for the design of an engine for new-generation combat aircraft, and the Future Long-Range Assault Aircraft (FLRAA) programme for future utility and assault helicopters.

Export markets

- ▶ Most of GE Aviation's export sales relate to civil engines, mainly in Europe and Asia. In Europe, GE Aviation owns, among others, Italian aerospace company Avio Aero (supplier of engine components, resulting from the acquisition of Avio's aviation business in 2013) and the British engineering company Dowty Propellers, a manufacturer of propeller blades.
- ▶ In 2020, GE Aviation won several export contracts for naval propulsion systems: in March 2020, it was selected by the Republic of Korea Navy to supply LM500 gas turbines for the PKX-B programme's patrol boats 13 to 16. In October, it secured a contract with Turkey's STM to supply LM2500 gas turbines for the Pakistan Navy's new MILGEM corvettes, as well as a contract for the supply of four LM2500 gas turbines to power the Finnish Navy's new Pohjanmaa corvettes. GE Aviation is also bidding for two new programmes of the Republic of Korea Navy, the CVX aircraft carrier and the KDDX destroyer.
- ▶ In 2020, GE Aviation was furthermore selected by the Japan Self-Defense Forces to equip its C-2 transport aircraft with CF6 engines, and by Morocco to supply T700 turboshaft engines for its AH-64E attack helicopters.

Technology and Innovation

- ▶ Self-financed R&D expenditure amounted to \$707m (€619m) in 2020, representing 3.2% of total revenues.



HANWHA DEFENSE

Defence subsidiary of South Korean conglomerate Hanwha. Specialised in armoured vehicles, artillery and anti-aircraft systems. Increasingly present in the export market

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Armoured tracked and wheeled vehicles
- ▶ Artillery systems
- ▶ Air defence systems
- ▶ Unmanned ground vehicles
- ▶ Energy storage system

GOVERNANCE

Chief Executive Officer

Jae Il Son

KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017	2018	2019	2020
Revenue	1 129	1 133	1 121	1 067
Δ (%) [€]*	-0,23%	4,86%	-6,20%	-2,95%
Defence (%)	100%	100%	100%	100%
Export (%)	N/A	N/A	N/A	N/A
Operating profit/loss	N/A	N/A	N/A	N/A
Operating margin	N/A	N/A	N/A	N/A
Net income	N/A	N/A	N/A	N/A
Order book	N/A	N/A	N/A	N/A
Employees	N/A	N/A	N/A	N/A

*Variation based on revenue in U.S. dollars
See €/\$, p.7

OWNERSHIP STRUCTURE

Symbol

Listed on

Unlisted subsidiary

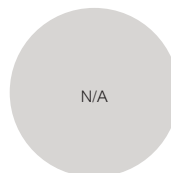
Market Cap

Major shareholders (as of 17.11.2021)

Hanwha group

100%

REVENUE BY BUSINESS SEGMENT (%)



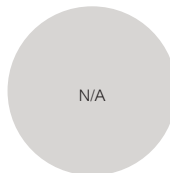
MAIN JOINT VENTURES AND ASSOCIATES*

Name

%

Country

REVENUE BY REGION (%)



*No information available

HANWHA DEFENSE

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Elbit Systems	Unimog*	Kia Motors	MTU Friedrichshafen**	Kongsberg Defence Australia***	Hyundai Rotem	S&T Dynamics	LIG Nex1	BAE Systems	Hanwha Systems
Tracked armoured vehicles										
K21 Infantry fighting vehicle						●				
AS21 Redback Infantry fighting vehicle**	●									
Korea Amphibious Assault Vehicle (KAAV)						●		●		
KAAV-II future amphibious assault vehicle						●				
Wheeled armoured vehicles										
6x6 Tigon wheeled armoured vehicle										
4x4 Barracuda wheeled armoured vehicle		●								
Artillery systems										
105 mm evolved wheeled self-propelled howitzer (Evo-105)			●							
Chunmoo K239 Multiple Launch Rocket System										
K9 Thunder 155 mm self-propelled howitzer			●	●		●				
K10 ARV Fully-automated Robotic Ammunition Resupply Vehicle				●		●				
Remote Controlled Weapon Stations						●				
Air defense systems										
Anti-Aircraft Gun Wheeled (AAGW) vehicle system					●	●				●
Biho, Hybrid Biho, Biho II air defense systems						●	●			
Unmanned ground vehicles										
Multi-Purpose Unmanned Ground Vehicle (MPUG) and Intelligent, Multi-Purpose Unmanned Ground Vehicle (I-MPUG) future unmanned ground vehicles										

*Mercedes-benz group **Rolls-Royce group ***Kongsberg group

****Enhanced version of the K21 proposed to Australia as part of the LAND 400 Phase 3 programme

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Hanwha Defense revenues reached \$1.22bn (€1.07bn) in 2020, down 2.95% year-on-year in US dollar terms.
- ▶ In 2020, Hanwha Defense benefitted from government support measures (government orders to ensure the workload and financial base, export support, etc.) to deal with the impact of the global health crisis, the impact of which remains fairly limited. The Republic of Korea Army's modernisation needs are also significant, particularly in the current context of tensions with North Korea, thus providing favourable business prospects for the group.

Home market

- ▶ Hanwha Defense is a major supplier to the Republic of Korea Army. In its domestic market, the group competes with its domestic peer Hyundai Rotem (a subsidiary of Hyundai Motor Group), mainly in the armoured and autonomous vehicle segments.
- ▶ In August 2021, the South Korean Defense Acquisition Program Administration (DAPA) awarded Hanwha Defense a KRW 500bn (€370m) contract to produce M3 Amphibious Rig crossing systems under licence from General Dynamics European Land Systems (GDELS). 110 units of the M3K variant, adapted to the needs of the Republic of Korea Army, are expected to be delivered from 2024.
- ▶ In September 2021, DAPA granted Hanwha Defense a budget of KRW 2,100bn (€1.55bn) for the development of the future KAAV-II (Korea Amphibious Assault Vehicle II) of the Republic of Korea Marine Corps. The KAAV-II, which by 2036 should replace the KAAVs produced by Hanwha Defense under license from BAE Systems, will be designed and produced locally by the group.

Export markets

- ▶ Although the South Korean market still accounts for the bulk of its business, Hanwha Defense aims to achieve 45% of its revenues from exports by 2025.
- ▶ Hanwha Defense is to supply 30 K9 howitzers and 15 K10 AARVs (called AS9 Huntsman and AS10 respectively in Australia) from 2025 as part of Australia's LAND 8116 Phase 1 programme. Hanwha Defense's AS21 Redback (an upgraded version of the K21) is also competing with Rheinmetall Defence's Lynx KF41 in the LAND 400 Phase 3 programme, which will see Australia acquire 450 tracked armoured infantry fighting vehicles. The Australian Army is expected to select a contractor in 2022.
- ▶ In March 2021, South Korea offered India cooperation on the development of a battle tank for the Indian Army, weighing about 30 tonnes and equipped with a 105 or 120 mm gun. Indian company Larsen & Toubro would be the prime contractor for this programme, in which Hanwha Defense would participate as a subcontractor.
- ▶ In July 2021, the consortium led by U.S.-based Oshkosh Defense and consisting of Hanwha Defense USA, Plasán, QinetiQ and Rafael, was selected by the U.S. Army to participate in the design phase of the OMFV (Optionally Manned Fighting Vehicle) programme to replace the Bradley Fighting Vehicle (BFV).
- ▶ In September 2021, Hanwha Defense joined British manufacturers Leonardo UK, Pearson Engineering, Horstman Defence Systems and Soucy Defense within Team Thunder to offer the K9A2 self-propelled howitzer in the competition for the British Army's Mobile Fires programme.

Technology and Innovation

- ▶ The development of autonomous vehicles and unmanned ground combat systems is a major development focus for Hanwha Defense. In October 2021, the group unveiled the I-MPUGV (Intelligent, Multi-Purpose Unmanned Ground Vehicle), a prototype of an AI-powered 6x6 wheeled multi-role vehicle.



HENSOLDT

Defence electronics group whose largest shareholder, buyout group KKR, sold a large stake in 2021 to German State and 64th-largest defence company worldwide.

BUSINESS AREAS

Systems integrator/equipment supplier

- ▶ Radar systems
- ▶ Defense electronics
- ▶ Optronics
- ▶ Communications and display systems
- ▶ Identification Friend or Foe (IFF) systems

GOVERNANCE

Chairman of the
Supervisory Board

Johannes P. Huth

Chief Executive Officer

Thomas Müller

Chief Financial Officer

Axel Salzmann

OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	HAG
Listed on	XETRA
Market Cap (€m)	1 399

Major shareholders (as of 17.11.2021)

Kohlberg Kravis Roberts & Co. LP*	42,90%
German State	25,10%
CI Investments, Inc.	4,52%
Lazard Asset Management LLC	3,66%

*Ongoing sale of a 25.1% stake in the group to Leonardo

MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
DEGFA	66,67%	Germany
Hensoldt Cyber	51%	Germany
Euro-ART International EWIV	50%	Germany
Euro-ART Advanced Radar Technology	25%	Germany
EuroMIDS	25%	France
Atlas Optronics	49%	UAE
SCAFSE	49%	Algeria

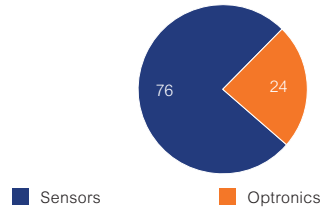
KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017	2018	2019	2020
Revenue	1 077	1 110	1 114	1 207
Δ (%)	N/A	3,06%	0,36%	8,35%
Defence (%)*	≈ 95%	≈ 95%	≈ 95%	≈ 95%
Export (%)	N/A	55%	57%	50%
Operating profit/loss	N/A	22	62	69
Operating margin	N/A	1,98%	5,57%	5,72%
Net income**	N/A	-61	6	-65
Order book	2 052	2 261	2 202	3 424
Employees	4 220	4 457	5 461	5 605

*SIPRI estimation

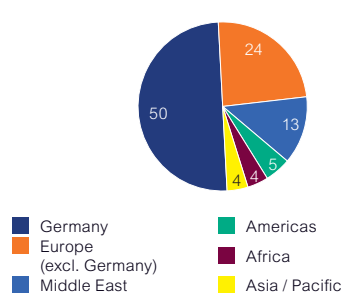
**Net income attributable to shareholders

REVENUE BY BUSINESS SEGMENT (%)*



*Revenue distribution based on total sales excluding eliminations

REVENUE BY REGION (%)*



*Revenue distribution based on total sales excluding eliminations

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Thales	Indra Sistemas	Leonardo	BAE Systems	Lockheed Martin	Electronica	Safran	Rohde & Schwarz	Diehl Defence	Madses	ESG
Radar systems											
Future Captor-E AESA radar (Typhoon)		●	●								
PrecISR and ASR air surveillance radars											
Counter Battery Radar (COBRA)	●				●						
TRS-3D and TRS-4D naval radars											
Defence electronics											
Defence electronics of the NGF future fighter aircraft (FCAS programme)								●	●		●
Praetorian Defensive Aids Sub-System (DASS) (Typhoon)		●	●	●		●					
European MALE RPAS' future ISTAR solution	●	●				●					
Airborne Missile Protection System (AMPS)											
MILDS and MILDS-F missile warning systems											
Advanced Laser Threat Alerting System (ALTAS)											
Kalaetron family of radar warning receivers											
Multifunctional Self-protection System (MUSS) for armoured vehicles											
Optronics											
European MALE RPAS' Euroflir 610 future multispectral electro-optical targeting and observation system							●			●	
SETAS optronic system for armoured vehicles											
Communications and display systems											
MIDS Low Volume Terminals (MIDS-LVT)	●	●	●								
Identification Friend or Foe (IFF) systems											
MSR 1000 I and MSSR 2000 I IFF interrogators			●								

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Hensoldt revenues reached €1.2bn in 2020 (+8.3% year-on-year), almost all of which from defence activities.
- ▶ The group completed two acquisitions during the first quarter of 2021: Austrian company Sail Labs, which specialises in OSINT (open source intelligence) data processing solutions and has since been renamed Hensoldt Analytics, and French company Mahytec, which specialises in the production of hydrogen storage tanks and renewable energy storage systems for civilian and military applications. The size of both deals remained undisclosed.
- ▶ KKR, the former majority shareholder of Hensoldt, sold 25.1% of the group's capital to the German state-owned investment and development bank KfW in March 2021, and another 25.1% stake to Italy's Leonardo in April 2021. Upon completion of both transactions, KKR will hold about 18% of Hensoldt's capital.

Home market

- ▶ A major supplier to Germany's armed forces, Hensoldt generated 50% of its revenues on its domestic market in 2020. The group aims to strengthen its position in Germany, in particular by benefiting from the major national and cooperative military programmes planned for the coming years.
- ▶ In March 2021, Diehl Defence, Hensoldt and Rheinmetall Defence formed the ARGE NNbS consortium to jointly bid on the Bundeswehr's planned short-range air defence programme (LVS NNbS). The latter could replace the TLVS missile defence programme, which is considered too costly and is being phased out by the German government. Hensoldt would supply the radar for this future system.
- ▶ In June 2021, Hensoldt won a contract worth an estimated €1.25bn from the Bundeswehr for the production of the SIGINT PEGASUS airborne intelligence system, to be integrated on its Global 6000 surveillance aircraft (Bombardier).
- ▶ In June 2021, Europe's Organisation for Joint Armament Cooperation (OCCA) awarded the consortium comprising Hensoldt and THEON Sensors an order for 9,500 Binocular Night Vision Goggles (BNVG) (5,000 for Germany and 4,500 for Belgium), to be delivered between 2021 and 2024. The contract includes an option to supply an additional 20,000 systems for Germany's armed forces.
- ▶ In July 2021, Germany's Federal Office of Bundeswehr Equipment (BAAINBw) awarded a contract worth around €200m to Hensoldt and Elta Systems (a subsidiary of Israel Aerospace Industries) to produce four long-range S-band radars for ballistic missile defence.

Export markets

- ▶ Export sales accounted for 50% of the group's total revenues in 2020. Nearly half of these were generated in Europe.
- ▶ In 2021, Hensoldt UK signed two export contracts for its Kelvin Hughes SharpEye Mk11 radar technology: a contract for two units for the Polish Navy's new Kormoran II-class minehunters in April 2021, and a contract for six units for the French Navy's future Offshore Patrol Vessels (OPVs) in July 2021. Hensoldt will also supply the MSSR 2000 I IFF interrogators (surveillance radars) for the French vessels.
- ▶ In April 2021, Hensoldt signed a €75m contract with KMW (KNDS Group) for the supply of BAA II NL observation and reconnaissance systems as part of a programme to upgrade the Royal Netherlands Army's 188 Fenek light armoured reconnaissance vehicles, with deliveries scheduled between 2022 and 2027. KMW will be responsible for systems integration.

Technology and Innovation

- ▶ The group's self-financed R&D expenditure amounted to €25m in 2020 (2.1% of turnover).



HINDUSTAN AERONAUTICS LTD (HAL)

State-owned company mainly operating in military aviation. Prime contractor for the LCA Tejas national fighter aircraft programme, and 41st defence contractor worldwide.

BUSINESS AREAS

Platform manufacturer, engine manufacturer and systems integrator

- ▶ Fighter aircraft
- ▶ Helicopters
- ▶ Structures and components
- ▶ Avionics
- ▶ Propulsion systems
- ▶ Modernisation and maintenance services

GOVERNANCE

Chairman & CEO R. Madhavan
Chief Financial Officer C.B. Ananthkrishnan

KEY FIGURES (Fiscal year ended : March 31st)

€ millions	2017-18	2018-19	2019-20	2020-21
Revenue	2 422	2 448	2 694	2 583
Δ (%) [INR]*	3,86%	8,41%	7,10%	5,38%
Defence (%)	N/A	N/A	N/A	N/A
Export (%)	2%	2%	1%	1%
Operating profit/loss	429	462	500	493
Operating margin	17,72%	18,88%	18,55%	19,09%
Net income	263	290	361	373
Order book	7 612	7 538	6 389	9 397
Employees	29 035	28 345	27 384	26 432

*Variation based on revenue in local currency
See €/INR, p.7

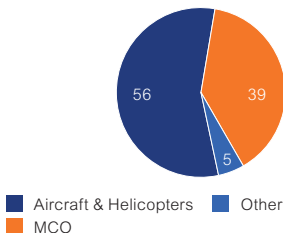
OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	HAL, 541154
Listed on	NSE, BSE
Market Cap (INR bn)	470

Major shareholders (as of 17.11.2021)

Indian State	75,20%
Life Insurance Corp of India	14,50%
HDFC Asset Management Co. Ltd. (Invnt Mgmt)	3,41%
Nippon Life India Asset Management Ltd. (Invnt Mgmt)	0,65%

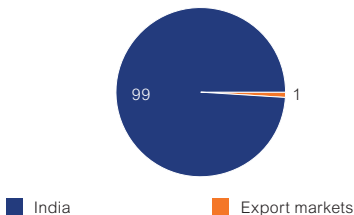
REVENUE BY BUSINESS SEGMENT (%)



MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
BAeHAL Software	49%	India
Safran HAL Aircraft Engines	50%	India
Indo Russian Aviation	48%	India
HATSOFF Helicopter Training	50%	India
SAMTEL HAL Display Systems	40%	India
TATA-HAL Technologies	50%	India

REVENUE BY REGION (%)



HINDUSTAN AERONAUTICS LTD (HAL)

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Thales	Safran	RUAG	Dassault Aviation	BAE Systems	Boeing	Airbus	Elbit Systems	UEC Saturn	GE Aviation	Rolls-Royce	UAC
Military aircraft												
Future Advanced Medium Combat Aircraft (AMCA)									●			
LCA Tejas Mk1/Mk1A fighter aircraft	●						●		●			
Su-30 MKI* fighter aircraft	●						●	●				●
Hawk* trainer aircraft and Hawk i future trainer aircraft				●							●	
Do-228* surveillance and patrol aircraft		●										
HTT-40 future trainer aircraft												
Military helicopters												
Light Utility Helicopter (LUH) future multi-role helicopter		●										
Light Combat Helicopter (LCH) twin-engine multi-role helicopter		●										
ALH-Dhruv and Rudra** twin-engine multi-role helicopters		●										
Cheetah*/Cheetal*** and Chetak*/Chetan*** multi-role helicopters		●				●						
Aircraft modernisation												
Mirage 2000 fighter aircraft	●		●									
Jaguar DARIN-III* fighter aircraft												
Aerostructures												
Weapons bay doors (F/A-18E/F, P-8)					●							
Propulsion systems												
AL-31FP* turbojet engine (Su-30 MKI)								●				
Artouste III B* (Cheetah, Chetak) and Ardiden 1H1* (Dhruv, LCH) turboshaft engines		●										
HTSE-1200 future turboshaft engine (ALH-Dhruv/Rudra, LUH, LCH)												
Cryogenic propellant tanks for space launchers												

*Sub-licensed production **Armed version of ALH-Dhruv ***Re-engined versions

STRATEGIC HIGHLIGHTS

Business trends

- ▶ HAL revenues reached Rs 22,639 crores (€2.6bn) in 2020-2021, up 5% year-on-year in local currency. The impact of the health crisis on the company's business remained limited, despite various factory and production line disruptions.
- ▶ In 2020-2021, HAL produced 44 aircraft (including Su-30 MKI and LCA Tejas fighters, Do-228 patrol and surveillance aircraft, Dhruv and Chetak multi-role helicopters and LCH attack helicopters) and 102 engines. The group also completed maintenance operations on 198 aircraft and 506 engines.
- ▶ Almost all of the company's business is in the defence sector. HAL's know-how was mainly acquired from Russian and European players via technology transfer agreements. The company should also benefit from the India's recovery plan, called "Atmanirbhar Bharat", which includes gradual import bans for about a hundred items of military equipment by the end of 2022.

Home market

- ▶ The group remains highly dependent on its domestic market, which accounted for 99% of its sales during fiscal year 2020-2021.
- ▶ In early 2021, the Indian Ministry of Defence confirmed an order, announced several years earlier, for 83 LCA Tejas Mk1A aircraft, including 73 single-seat fighters and 10 two-seat trainers. The contract, which includes logistical support and maintenance services, is valued at Rs 48,000 crores (€6.1bn). Deliveries are expected to take place between 2024 and 2029, with a planned production rate of 16 aircraft per year.
- ▶ In autumn of 2021, India's Defence Acquisition Council (DAC) approved the purchase of 25 ALH-Dhruv helicopters for Rs 3,850 crores (€445m) as well as 12 LUH helicopters. Larger orders for LUHs are expected in the coming years in order to replace the country's Cheetah and Chetak helicopters (around 400 units).
- ▶ In October 2021, India confirmed plans to acquire 114 multi-role combat aircraft to be produced locally under the "Make in India" programme, at an estimated cost of more than €14bn. HAL will be the key partner of the winner of the MMRCA 2.0 tender, in which Boeing, Saab, Dassault Aviation, Lockheed Martin, UAC and the Eurofighter consortium are contenders.

Export markets

- ▶ HAL supports export sales of its LCA Tejas fighter, which has not recorded any foreign orders yet. A version of the Tejas Mk1A, called LIFT (Lead in Fighter Trainer), was proposed in 2020 to the Royal Australian Air Force and the U.S. Navy.
- ▶ In June 2021, HAL responded to Malaysia's tender for 18 light combat aircraft with an offer around the LCA Tejas. The group is competing with Russia's UAC (MiG-35), China's CATIC (L-15), Korea Aerospace Industries (FA-50), Turkish Aerospace (Hürjet) and Italy's Leonardo (M-346). HAL is also interested in offering the LCA Tejas to Argentina.
- ▶ The Philippine Coast Guard expressed interest in purchasing seven ALH-Dhruv light helicopters and eight Do-228 aircraft. Discussions are also underway with Mauritius (one ALH-Dhruv and one Do-228), the Maldives and Sri Lanka (Do-228).

Technology and Innovation

- ▶ The group's R&D expenditure amounted to Rs 1,687 crores (€195m) in 2020-2021, representing nearly 8% of turnover. HAL is continuing to develop the LUH and IMRH helicopters, the HTT-40 trainer aircraft and the HTFE-25 and HTSE-1200 engines. An amphibious version of the Do-228 aircraft is also planned.
- ▶ In October 2021, the Indian Air Force confirmed plans to put the 5th-generation Advanced Medium Combat Aircraft (AMCA) in service early next decade.



HONEYWELL

Engine and systems manufacturer mainly operating in the civil sector and also present in the military aviation and space sectors. 21st-largest defence contractor worldwide.

BUSINESS AREAS

Engine manufacturer, systems integrator/
equipment supplier

- ▶ Commercial and military aerospace (propulsion systems, avionics, electric power)
- ▶ Defence electronics and ISR systems
- ▶ Protection solutions
- ▶ Infrastructures, energy
- ▶ Healthcare, pharmaceutical industry

GOVERNANCE

Chairman and CEO	Darius Adamczyk
CEO Honeywell Aerospace	Mike Madsen
Chief Financial Officer	Greg Lewis

OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	HON
Listed on	NYSE
Market Cap (\$bn)	152

Major shareholders (as of 17.11.2021)

The Vanguard Group, Inc.	7,74%
SSgA Funds Management, Inc.	5,05%
Capital Research & Management Co. (World Investors)	3,34%
Massachusetts Financial Services Co.	3,14%

MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
ITEC	50%	United States
ATEC	50%	United States
LHTEC	50%	United States
Integrated Guidance Systems	50%	United States
Honeywell TAECO Aerospace (Xiamen)	65%	China

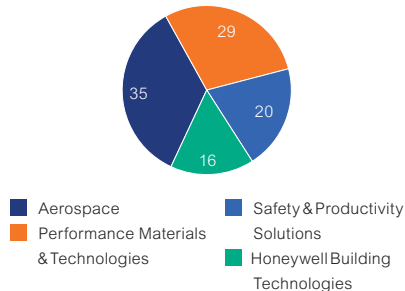
KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017	2018	2019	2020
Revenue	35 871	35 395	32 776	28 579
Δ (%) [\$]*	3,13%	3,13%	-12,18%	-11,09%
Defence (%)	10%	11%	15%	18%
Export (%)	56%	56%	55%	52%
Operating profit/loss	5 578	5 677	6 117	4 988
Operating margin	15,55%	16,04%	18,66%	17,45%
Net income**	1 367	5 728	5 485	4 185
Order book	14 754	21 703	22 807	21 496
Employees	131 000	114 000	113 000	103 000

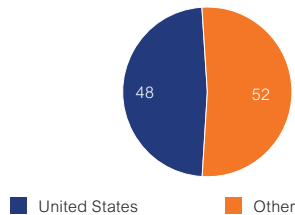
*Variation based on revenue in local currency
See E/S, p.7

**Net income attributable to shareholders

REVENUE BY BUSINESS SEGMENT (%)



REVENUE BY REGION (%)



MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Rolls-Royce	Lockheed Martin	AIDC*	Raytheon Technologies**	PT Dirgantara Indonesia	Turkish Aerospace	KHI	HAL
Propulsion systems and Auxiliary Power Units (APU)								
255 turboshaft engine (CH-47, SB>1 DEFIANT)								●
CTS800 turboshaft engine (AW159 Wildcat, T129 ATAK, T625 Gökbey)	●				●			
F124/F125 turboprop engines (M346 Master, L-159 Alca, F/A-259 Striker)			●					
TPE331 turboprop engine (MQ-9 Reaper, HTT-40, NC-212i)				●				●
AGT1500 gas turbine (M1 Abrams)								
36-150 series APUs (AH-64, UH-60, CH-47)								
G230 and G250 series APUs (F-35, F-22)								
Avionics and navigation systems								
Enhanced Ground Proximity Warning System (EGPWS)								
Embedded GPS/INS (EGI)								
Weather radar systems								
RDR-4000/7000 weather radar systems								
Security and maintenance								
Health and Usage Monitoring System (HUMS)								
Control actuation system								
CAS and FCA directional steering control systems for missiles and GMLRS	●		●					
TVC steering control system for launch vehicles and spacecraft	●							
Satellite communications systems								
JetWave satellite communications system								

*Aerospace Industrial Development Corp. **Merger of Raytheon and UTC

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Honeywell revenues declined 11.1% to \$32.6bn (€28.6bn) in 2020, mostly as a result of the global health crisis' significant impact on the Aerospace (aviation and defence, -17.9%) and Performance Materials and Technologies (industrial equipment, -13.0%) branches. The company's Defense and Space division, a subdivision of the Aerospace branch, accounted for 18% (\$5.8bn, or €5.1bn) of Honeywell's sales in 2020.
- ▶ In August 2020, Honeywell created a business unit dedicated to unmanned aerial vehicles (UAV) and urban air mobility (UAM) within the Defense & Space division of its Aerospace branch. However, these activities should be mainly focused on civil applications (electrically-powered air taxis, hybrid-electric cargo drones, delivery drones, etc.).

Home market

- ▶ In 2020, Honeywell generated 48% of its revenues in the United States. Sales to the U.S. Department of Defense amounted to \$3.7bn (€3.2bn), or approximately 66% of the group's defence business.
- ▶ Under various multi-year contracts, Honeywell is involved in the maintenance and modernisation of equipment for the U.S. Army. The group is in particular in charge of updating the T55 turboshaft engine that powers the U.S. Army's CH-47 Chinook helicopters. In October 2020, the group signed a new contract, worth \$259m (€227m) over five years, to maintain the T55 engines of the U.S. Army's CH-47 helicopters. In March 2021, Honeywell was also awarded a \$476m (€396m) contract by Boeing to supply T55-GA-714A turboshaft engines and spare parts for new CH-47 helicopters to the U.S. Army and partner countries by 2024.
- ▶ In 2020, Honeywell signed two contracts to maintain the AGT1500 gas turbine engines that power the U.S. Army's M1 Abrams main battle tanks, as part of the TIGER programme: \$190m (€166m) in July and \$125m (€109m) in December, bringing the total order value to more than \$1.6bn (€1.4bn) since the programme began.
- ▶ In autumn 2020, Honeywell signed two contracts, worth \$16m (€14m) and \$73m (€64m) respectively, for the supply of spare parts and the repair of six weapons systems for the U.S. Navy's V-22 Osprey tiltrotor helicopters (Bell/Boeing).

Export markets

- ▶ In 2020, 52% of Honeywell's sales came from exports. 40% of production is located outside the U.S., mainly in Europe and Asia.
- ▶ Operational maintenance services (MCO) are key drivers of export sales, and are particularly supported by engine production licences and partnerships, for example with Japan's KHI (for the T55s engines of the CH-47 JA helicopters, also built by KHI), Turkey's Turkish Aerospace (for the CTS800s of the T129 ATAK and T625 Gökbey helicopters) and Taiwan's AIDC (for the F125s of the F-CK-1 Ching-kuo multirole combat aircraft).

Technology and Innovation

- ▶ Honeywell's self-financed R&D expenditure amounted to \$1.33bn (€1.17bn) in 2020, representing 4.1% of the group's revenues.
- ▶ In 2020, Honeywell presented three new alternative navigation technologies : an infrared camera system, a celestial object observation system, and a magnetic anomaly measurement system.
- ▶ In December 2021, Honeywell successfully carried out tests for its new T55-714C engine, which will power the US Army's C-47 Chinook helicopters.



HUNTINGTON INGALLS INDUSTRIES (HII)

Leading military shipbuilder in the United States and 17th largest defence company in the world

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Nuclear-powered aircraft carriers
- ▶ Submarines (SSN, SSBN)
- ▶ Surface ships
- ▶ Amphibious assault ships (LHA, LPD)
- ▶ Autonomous systems (USVs, UUVs)
- ▶ Training, integrated logistic support, MRO and modernisation
- ▶ Energy sector services

GOVERNANCE

Chairman	K. H. Donald
Chief Executive Officer	M. Petters
President of Newport News Shipbuilding	J. Boykin
President of Ingalls Shipbuilding	K. Wilkinson

KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017	2018	2019	2020
Revenue	6 585	6 923	7 946	8 197
Δ (%) [\$]*	5,28%	9,88%	8,84%	5,19%
Defence (%)	93%	93%	91%	90%
Export (%)	N/A	N/A	N/A	N/A
Operating profit/loss**	780	805	657	700
Operating margin	11,80%	11,60%	8,30%	8,50%
Net income	424	708	490	609
Order book	17 821	20 083	41 402	37 504
Employees	≈ 38 000	≈ 40 000	≈ 42 000	≈ 42 000

*Variation based on revenue in local currency

See €/\$, p.7

**2017 figure restated

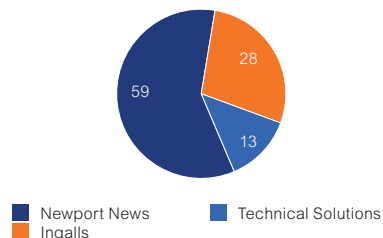
OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	HII
Listed on	NYSE
Market Cap (\$m)	7 544

Major shareholders (as of 17.11.2021)

The Vanguard Group, Inc.	11,10%
SSgA Funds Management, Inc.	7,99%
Greenlight Capital, Inc.	5,33%
Eton Park Capital Management LP	4,48%

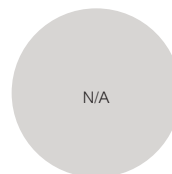
REVENUE BY BUSINESS SEGMENT (%)



MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
NSI	N/A	Australia
Newport News Nuclear BWXT-Los Alamos (N3B)	N/A	United States

REVENUE BY REGION (%)



HUNTINGTON INGALLS INDUSTRIES (HII)

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Northrop Grumman	General Atomics	Bechtel Marine Propulsion Corporation	GE Electric	General Dynamics	Lockheed Martin	Raytheon Technologies**
Aircraft carriers							
Ford-class aircraft carrier	●	●	●				●
Nimitz-class aircraft carriers refueling and complex overhaul	●		●				●
Submarines							
Virginia-class nuclear-powered attack submarine	●			●	●	●	
Future columbia-class ballistic missile submarine*	●			●	●	●	
Surface ships							
Arleigh Burke-class destroyer	●		●	●	●	●	
Legend-class National Security Cutter (NSC)			●			●	
Amphibious assault ships							
America-class Landing Helicopter Assault (LHA)			●			●	
San Antonio-class Landing Platform Dock (LPD)				●	●	●	
Autonomous systems							
REMUS family of UUVs							
Proteus USV							
Integrated logistic support							
US Navy's surface vessel and submarine integrated logistic support							

*Subcontractor of General Dynamics Electric Boat

**Merger of Raytheon and UTC

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Huntington Ingalls Industries (HII) generated revenues of nearly \$9.4bn (€8.2bn) in 2020, up 5.2% year-on-year in local currency. Designated as critical infrastructure by the U.S. Department of Defense, the group's two shipyards (Newport News Shipbuilding and Ingalls Shipbuilding) were able to continue operations during the global health crisis. All the group's divisions therefore contributed to revenue growth in 2020, in particular Newport News (+6.5%) and Ingalls (+4.8%).
- ▶ HII generated around 90% of its revenues in the defence sector in 2020. As a strategic partner of the U.S. Navy, HII benefits from favourable prospects thanks to the U.S. Navy's various renewal programmes. At the end of 2020, HII had a backlog of \$46bn (€37.5bn), enabling it to keep its shipyards running until 2032.
- ▶ Meanwhile, HII is developing its capabilities in unmanned maritime systems to meet the needs of the U.S. Navy. In early 2020, the group acquired Hydroid, a U.S. subsidiary of Kongsberg which develops and produces the REMUS and Seaglider families of autonomous underwater vehicles (AUV). In January 2021, the group also acquired an undisclosed yet significant stake in Sea Machines Robotics, a U.S. supplier of autonomous navigation systems for ships and AUVs, and acquired the autonomous systems activities of U.S. company Spatial Integrated System (SIS).

Home market

- ▶ HII operates almost exclusively in the U.S. naval defence sector, with the U.S. Navy and U.S. Coast Guard as its main customers.
- ▶ As the main subcontractor of General Dynamics Electric Boat on the Columbia-class SSBN programme, HII in November 2020 was awarded a contract valued at \$2.2bn (€1.9bn) for the supply of six modules for each of the first two Columbia-class SSBNs ordered by the U.S. Navy.
- ▶ In February 2021, HII won a \$2.9bn (€2.5bn) contract with the U.S. Navy to refuel and upgrade the John C. Stennis Nimitz-class nuclear-powered aircraft carrier (CVN 74) by the end of 2025. At the same time, HII is continuing work on the construction of the second Gerald R. Ford-class aircraft carrier, the John F. Kennedy (CVN 79), which is scheduled for delivery to the U.S. Navy in 2024.
- ▶ In March 2021, the U.S. Navy exercised an option for a 10th Virginia-class Block V SSN to be delivered in 2024. The total value of the Virginia-class Block V contract signed in 2019 is now approximately \$24.4bn (approximately €20.3bn), of which \$9.8bn (€8.2bn) is for HII, which is co-building the ships alternately with General Dynamics.
- ▶ In June 2021, HII launched the first of six new Arleigh Burke-class Flight III destroyers ordered in 2018 by the U.S. Navy under a \$5.1bn (€4.3bn) contract.

Export markets

- ▶ HII won its first export contract for the REMUS 300 autonomous underwater vehicle (AUV) from the Royal New Zealand Navy in 2020. The four AUVs ordered, which will be used for surveillance and mine countermeasures missions, are expected to be delivered by summer 2022. New Zealand's fleet already includes six REMUS 100 AUVs acquired from Hydroid in the late 2000s.

Technology and Innovation

- ▶ The group's self-financed R&D expenditure amounted to \$31m (€27m) in 2020, representing 0.3% of revenues. Most of the R&D costs of its programmes are funded by government contracts.
- ▶ In May 2021, HII conducted a successful sea demonstration of the Proteus unmanned surface vessel (USV), whose SM300 autonomous navigation system is provided by Sea Machines Robotics.



INDRA SISTEMAS

Company with civil and military activities, leader in the Spanish defence electronics market, involved in the FCAS programme, and 100th-largest defence contractor worldwide.

BUSINESS AREAS

Systems integrator/equipment supplier

- ▶ Defence and security (air defence systems, radar systems, defence electronics, surveillance systems, C4ISR systems)
- ▶ Transportation
- ▶ Energy and Industry
- ▶ Financial Services
- ▶ Public and Health sectors
- ▶ Telecom and media

GOVERNANCE

Non-executive Chairman	Marc Murtra
Managing Director	Ignacio Mataix
Managing Director	Cristina Ruiz

OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	IDR
Listed on	Bolsa de Madrid
Market Cap (€m)	1 941

Major shareholders (as of 17.11.2021)

Spanish State	18,70%
Corporación Financiera Alba, S.A.	9,99%
Fidelity Management & Research Co. LLC	9,85%
Santander Asset Management SA SGIC	3,39%

MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Saes Capital	49%	Spain
Eurofighter Simulation System	26%	Germany
Euromids	25%	France
A4 Essor	21%	France
Inmize Sistemas	40%	Spain
UTE Indra-Eurocopter	62,5%	Spain
UTE VCR 8x8	37,94%	Spain

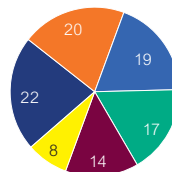
Key figures (Fiscal year ended : December 31st)

€ millions	2017	2018	2019	2020
Revenue	3 011	3 104	3 204	3 043
Δ (%)	11,15%	3,09%	3,22%	-5,02%
Defence (%)*	20%	18%	18%	17%
Export (%)	54%	50%	50%	48%
Operating profit/loss	196	199	221	-33
Operating margin	6,51%	6,41%	6,90%	-1,08%
Net income**	127	120	121	-65
Order book	3 612	4 065	4 511	5 229
Employees	40 020	43 707	50 349	47 980

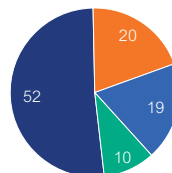
*Defence and security division

**Net income attributable to shareholders

REVENUE BY BUSINESS SEGMENT (%)



REVENUE BY REGION (%)



INDRA SISTEMAS

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Navantia	Hensoldt	Airbus	Dassault Aviation	Lockheed Martin	Electronica	BAE Systems	Santa Bárbara Sistemas*	Leonardo	Boeing	Thales
Defence electronics											
FCAS programme (Sensors pillar, Combat Cloud pillar)		●	●	●							●
InSHIELD DIRCM countermeasure system (A400M)			●								
EuroDIRQM IR countermeasure system					●						
RF ALQ-500 countermeasure system (Spanish F/A-18)											
Praetorian Defensive Aids Sub-System (DASS) (Eurofighter Typhoon)		●			●	●		●			
RIGEL electronic defence system											
C4ISR systems											
Mission system of the future 8X8 DRAGON wheeled combat vehicles							●				
SILVER Battlefield Management System (BMS)											●
ISTAR system for European MALE RPAS		●			●						●
Simulators											
Aircrew Synthetic Training Aids (ASTA) simulator (Eurofighter)											
Transport aircraft simulators (A400M, C130, A330 MRTT)			●								
Helicopter simulators (Tigre, NH90, AW159, Chinook, etc.)			●					●	●		
Radar and sonar systems											
Naval suite for submarines (209/212/214, S-80)	●										
Lanza 3D radar family											
E-Captor and ECRS MK1 AESA radars (Eurofighter Typhoon)		●									
S-Band AESA naval radar (F-100/F-110)	●				●						
X-Band maritime surveillance radar (F-110)	●										

*Spanish subsidiary of General Dynamics

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Indra Sistemas (Indra) reported sales of €3.0bn in 2020, down 5% year-on-year. The group's activity was weighed down by the Covid-19 crisis, in particular due to factory shutdowns - and the resulting production delays - that affected certain branches over the April-June period. The Defence and Security division, which comprises the bulk of the group's defence activities, was particularly affected, with a 7.9% decline in revenues in 2020.
- ▶ In response to the financial difficulties caused by the global health crisis (net loss of 2.1% in 2020), the group launched an adjustment plan (targeted cost cuts, improvement of internal processes, etc.) as well as a staff reduction plan involving more than 2,300 positions (4.7% of its 2020 workforce). As a result of these measures, the group achieved savings of more than €160m in 2020 and expects further savings of around €100m in 2021.
- ▶ In May 2021, Marc Murtra was appointed non-executive Chairman of Indra following the dismissal of Fernando Abril-Martorell, who had been holding executive positions. Ignacio Mataix and Cristina Ruiz, responsible for the Transport & Defence and Minsait divisions respectively, were jointly appointed Managing Directors of the company.

Home market

- ▶ Indra generated more than half of its revenues in its domestic market in 2020. In defence, the group has privileged access to orders from the Spanish Army, particularly through its role as a subcontractor of General Dynamics European Land Systems (GDELS) and Navantia (participation in the F-110-class frigate modernisation programmes, the 8x8 Dragón wheeled combat vehicles, etc.). Indra also participates in various European programmes: the Future Combat Air System (FCAS) programme, the Eurofighter Typhoon combat aircraft, the NH90 heavy helicopter, the European MALE RPAS UAV project, etc.
- ▶ In December 2020, the group signed a €111m contract with the Spanish Ministry of Defence to equip the 23 NH90 multirole military helicopters ordered in December 2018 with protection systems (ALR-400FD radar warning receivers, InShield Directed Infrared Counter Measure System (DIRCM), etc.).
- ▶ In February 2021, Spain's General Directorate of Armament and Material (DGAM) awarded Indra a contract for the creation of a training centre for the Spanish Army. The centre will be equipped with 28 Pizarro simulators.
- ▶ After several months of negotiations, an agreement was finalised between Germany, Spain and France in May 2021 for the launch of phase 1B of the FCAS demonstrator programme, which will represent an investment of €3.5bn. The workload and governance of the programme are shared equally between the three countries. Indra, the industrial coordinator of the programme for Spain, is the leader of the Sensors pillar, with Thales and the FCMS consortium (Hensoldt, Rohde&Schwarz, Diehl and ESG) as main partners. Indra is also a main partner alongside Thales in the Combat Cloud pillar, which is led by Airbus D&S GmbH.

Export markets

- ▶ Indra generated 48% of its sales from exports in 2020, mainly in the civilian sector.
- ▶ In July 2021, the group won several contracts totalling €100m to equip 38 Eurofighter Typhoon fighters acquired by Germany's Federal Ministry of Defence from Airbus in November 2020 (Quadriga project). Indra Sistemas will supply the ECRS Mk1 AESA radar as well as components of the Praetorian DASS (Defensive Aid Sub-System), which was designed by the EuroDASS consortium that includes Leonardo, BAE Systems, Elettronica, Hensoldt and Indra.

Technology and Innovation

- ▶ The group's R&D expenditure amounted to €265m in 2020, or 8.7% of total revenues.



ISRAEL AEROSPACE INDUSTRIES (IAI)

Aerospace and aviation manufacturing group with civil and military activities. Highly export-oriented, particularly to the U.S. market.

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Defence electronics
- ▶ Commercial and military aircraft
- ▶ Unmanned systems
- ▶ Missile and air defence systems
- ▶ Naval equipment and platforms
- ▶ Cyber defence
- ▶ Observation and communications satellites

GOVERNANCE

Chairman	Harel Locker
Chief Executive Officer	Boaz Levy
Deputy Chief Executive Officer	Eyal Younian

OWNERSHIP STRUCTURE

Symbol	ARSPB1
Listed on	TASE
Market Cap	Unlisted group

Major shareholders (as of 17.11.2021)

Israeli State	100%
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MAIN JOINT VENTURES AND ASSOCIATES

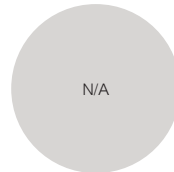
Name	%	Country
EAE Aerospace Solutions	50%	Brazil
D.T.S.	50%	Chile
Tiltan Systems Engineering	30%	Israel
Pioneer UAV	50%	United States
HELA Systems	26%	India

KEY FIGURES (Fiscal year ended : December 31st)

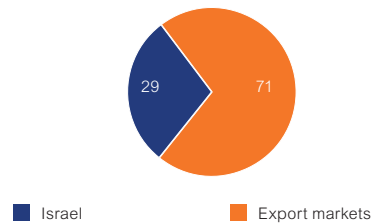
€ millions	2017	2018	2019	2020
Revenue	2 981	3 288	3 597	3 664
Δ (%) [$\$/$]*	-1,59%	4,60%	11,57%	1,85%
Defence (%)	70%	72%	73%	79%
Export (%)	76%	74%	74%	71%
Operating profit/loss	102	11	106	171
Operating margin	3,44%	0,33%	2,95%	4,66%
Net income	69	-39	79	116
Order book	9 782	12 021	10 921	10 269
Employees	14 857	14 917	14 922	14 331

*Variation based on revenue in U.S. dollars
See €/\$, p.7

REVENUE BY BUSINESS SEGMENT (%)



REVENUE BY REGION (%)



ISRAEL AEROSPACE INDUSTRIES (IAI)

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Airbus	Rheinmetall Defence	Boeing	DRDO*	Aero Vodochody	Elbit Systems	L3 MAS**	Honeywell	Embraer	Indra	Sistemas***	Gulfstream***	Rafael
Defence electronics													
ELL-8212, ELL-8222, ELL-8265, ELL-8260 and ELL-8270 systems for aircraft protection													
Military aircraft													
P600 Airbone Early Warning (AEW) aircraft (radar, electronic systems, etc.)								●					
G550 Oron surveillance aircraft (radar, electro-optical systems, etc.)												●	
F/A-259 Striker light attack aircraft				●									
GPS Anti-Jam Navigation System							●						
Wide Area Surveillance Payload													
Unmanned systems													
Heron TP (Eitan) MALE UAS	●	●				●					●		
Green Dragon, Harop, Harpy and Rotem loitering munition systems													
Missile and air defence systems													
Rampage long range air-to-ground missile					●								
LORA long range surface to surface missile													
Arrow 2 and Arrow 3 missile defence systems and Arrow 4 future system			●		●								
BARAK MX air defence system			●									●	
ELM-2084 multi-mission radar		●											
Naval equipment and platforms													
Super Dvora MK3 fast patrol boat													
ELM-2248 and ELM-2258 multi-mission radars													
Space													
Dror 1 future communications satellite													

*Defence Research and Development Organization (India) **L3Harris Technologies group (merger of L3 Technologies and Harris Corporation)

***General Dynamics group

STRATEGIC HIGHLIGHTS

Business trends

- ▶ IAI revenues reached \$4.1bn (€3.7bn) in 2020, up 1.85% year-on-year in US dollar terms. Growth was mainly driven by good performances in the group's ELTA Systems and Systems Missiles & Space subsidiaries. Conversely, revenues fell by 18% in the Aviation Group subsidiary due to the downturn of the global civil aviation market in the context of the Covid health crisis. The share of defence activities in IAI's total sales consequently rose by six percentage points over the year, to 79%.
- ▶ In November 2020, Boaz Levy replaced Nimrod Sheffer as the group's CEO.

Home market

- ▶ IAI generated 29% of its sales in its domestic market in 2020. A major player in the Israeli defence sector alongside Elbit Systems and Rafael, IAI among others supplies the Barak MX Air & Missile defence system for the Sa'ar 6-class corvettes supplied by TKMS to the Israeli Navy.
- ▶ In April 2021, the group delivered the first G550 Oron to the Israeli Defence Forces. The G550 is a modified Gulfstream G550 aircraft equipped with IAI's EL/W-2085 airborne early warning and control radar system, and will be dedicated to aerial imaging, control and radar tasks.
- ▶ In April 2021, Israel's Ministry of Defense awarded IAI a contract to supply nine ZMAG all-terrain vehicles, with an option for 21 additional vehicles. The contract followed IAI's May 2020 acquisition of the manufacturing operations of Zibar, Zmag, and ZD off-road vehicles from Israeli off-road vehicle manufacturer Ido Cohen. As part of the deal, IAI received rights to the design and exclusive marketing of the vehicles in their military configurations.

Export markets

- ▶ IAI generated 71% of its sales from exports in 2020.
- ▶ A partner of many U.S. defence companies, IAI in 2021 completed the delivery of WindGuard radar systems (ELM-2133) that will be integrated by Leonardo DRS Land Systems (U.S. subsidiary of Italy's Leonardo) into the Trophy active protection system (developed by Israeli defence company Rafael) of the U.S. Army's Abrams tanks. During the year, IAI also began developing the future Arrow 4 missile-intercepting defence system in collaboration with the U.S. Missile Defense Agency (MDA).
- ▶ In 2021, IAI won several contracts in Asia: a contract worth over \$100m (€83m) for the supply of prowlter ammunition to three Asian countries (February 2021); a \$200m (€167m) contract for the supply of services related to the use of Heron UAVs for an undisclosed Asian country; and a \$50m (€42m) contract to update Kfir multirole fighter aircraft for the Sri Lanka Air Force.
- ▶ In Europe, IAI was selected by Slovakia in March 2021 to supply 17 ELM-2084 multi-mission radars under a €148m contract, and by Germany in June 2021 to supply 69 ELM-2180 WatchGuard ground surveillance radars in cooperation with its German peer ESG under a €36m contract.
- ▶ Following the signing of the Abraham agreements between Israel, Bahrain and the United Arab Emirates in September 2020, IAI for the first time participated in the Abu Dhabi IDEX exhibition in February 2021. A month later, the group signed a cooperation agreement with EDGE, a UAE-based technology company, for the development of an anti-drone system.

Technology and Innovation

- ▶ IAI's self-financed R&D expenses amounted to \$196m (€172m) in 2020, representing 4.7% of revenues.
- ▶ In April 2021, IAI successfully completed a series of tests of the new BARAK ER interceptor missile which has an extended range of 150 km.



IVECO DEFENCE VEHICLES

Subsidiary of Italian company Iveco, a division of the CNH Industrial conglomerate.
Specialised in military vehicles (armoured, amphibious, transport and special vehicles).

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Military vehicles (light multirole vehicles, armoured and amphibious vehicles)
- ▶ Civil security vehicles

GOVERNANCE

CEO of On-Highway business*

Gerrit Marx

CEO Iveco Defence Vehicles

Claudio Catalano

* Following the split into two independent entities of CNH Industrial, On-Highway business (Iveco, Iveco Astra, Iveco Bus, Heuliez Bus, Magirus, Iveco Defense Vehicles, FPT Industrial and Iveco Capital) has been set up.

OWNERSHIP STRUCTURE

Symbol

Listed on

Unlisted subsidiary

Market Cap

Major shareholders (as of 17.11.2021)

CNH Industrial*

100%

*CNH Industrial's majority shareholder (27,1%) is Exor, a Netherlands based investment company controlled by the Agnelli Family.

MAIN JOINT VENTURES AND ASSOCIATES

Name

%

Country

Consorzio Iveco
Oto-Melara

50%

Italy

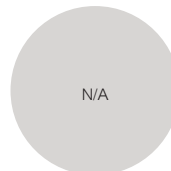
KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017	2018	2019	2020
Revenue	337	292	356	366
Δ (%)	-1,75%	-13,35%	21,92%	2,81%
Defence (%)	100%	100%	100%	100%
Export (%)	N/A	N/A	N/A	N/A
Operating profit/loss	1	2	-13	3
Operating margin	0,19%	0,62%	-3,68%	0,83%
Net income	-7	-6	-19	-3
Order book	N/A	N/A	N/A	N/A
Employees	863	838	814	809

REVENUE BY BUSINESS SEGMENT (%)



REVENUE BY REGION (%)



IVECO DEFENCE VEHICLES

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Leonardo	BAE Systems	KMW**	Lohr - Soframe	Cristanini	FPT Industrial**
Main battle tank						
Ariete main battle tank	●					
Armoured infantry and fighting vehicles						
Centauro II and Freccia armoured infantry fighting vehicles	●					
8x8 Superav amphibious armoured vehicle		●				
6X6 VBTP amphibious armoured vehicle						●
4x4/6x6 PUMA light armoured vehicles	●					
4x4 Medium Protected Vehicle (MPV)			●			
12kN medium multirole protected vehicle						
4x4 VTM multirole tactical vehicle			●			
Tactical and logistic wheeled vehicles						
8x8 PPT tactical vehicle				●		
Military Utility Vehicle (MUV) and M40.15 WM light range						●
8x8 M1250.70T WM tactical vehicle						●
Trakker and Eurocargo logistic vehicles						
Light multirole vehicles						
Light Multirole Vehicle (LMV/Lynx)		●			●	
Light Multirole Vehicle 2 (LMV 2/Lynx 2)						

*KNDS group

**CNH Industrial group

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Iveco Defence Vehicles revenues reached €366m in 2020, accounting for only 1.6% of total revenues of its parent company, Dutch incorporated U.S.-Italian conglomerate CNH Industrial (CNHI).
- ▶ While the company has faced financial difficulties in recent years (€35m in cumulative losses between 2017 and 2020), it has been supported by orders from the Italian government. The Italian Army is in fact planning a major acquisition programme for Centauro II and Freccia armoured vehicles (total value of €2.2bn over 2020-2032) as well as Iveco LMV-2 light multirole vehicles.
- ▶ CNH's corporate split into two independent and listed entities, which was announced in September 2019, should be finalised in 2022. The Iveco Defence Vehicles business will be merged into the On-Highway entity, which will also combine the other activities of the Commercial & Speciality Vehicles business and the Powertrain business. The second entity, called Off-Highway, will include the activities of the Construction and Agriculture divisions.

Home market

- ▶ Iveco Defence Vehicles is a major supplier of land vehicles to the Italian Army, in particular through the Iveco-Oto Melara (CIO) consortium, in which it holds a 50% stake alongside Leonardo.
- ▶ After ordering a first batch of ten Centauro II tank destroyers in July 2018, the Italian Army placed an order for a second batch of 86 vehicles from the Iveco-Oto Melara consortium in December 2020. In February 2021, production of the first Centauro II armoured vehicle was completed. Both contracts are part of a planned 150-vehicle order by the Italian Army.
- ▶ The consortium is also in charge of supplying 30 Freccia 8x8 wheeled infantry fighting vehicles (25 in Anti-tank version and 5 in Combat version) ordered by the Italian Army in December 2019.

Export markets

- ▶ Iveco Defence Vehicles is a key partner of the Brazilian Army, to which it supplies VBPT 6x6 armoured personnel carriers as part of the Guarani programme (a €2bn contract signed in 2009, with more than 480 vehicles delivered between 2012 and 2021). In 2019, Iveco Defence Vehicles was also chosen by the Brazilian Army to supply 32 LMV-BR 4x4 light multirole armoured vehicles, the first of which will be delivered in July 2021. All of these vehicles are produced in Brazil, at the Sete Lagoas plant.
- ▶ In January 2021, Germany's Federal Office of Bundeswehr Equipment, Information Technology and In-Service Support (BAAINBw) awarded Iveco Defence Vehicles a blanket order for the supply of 1,048 8x8 Trakker heavy duty trucks. Deliveries will be made over 2021-2028. 224 vehicles are expected to be delivered in the first batch.
- ▶ In April 2021, Iveco Defence Vehicles inaugurated the Petresti plant in Romania. The construction of the site, which is part of a contract for the supply of 2,900 logistics vehicles signed at the end of 2019 with the Romanian Army, represented a €50m investment. 440 tactical and logistics vehicles are expected to be produced at the site each year.
- ▶ The CNH Industrial subsidiary is participating, as a partner of BAE Systems, in the supply of Amphibious Combat Vehicles (ACV) to the U.S. Marine Corps. Iveco Defence Vehicles is also involved in the production (chassis) of the French Army's multi-purpose military truck (PPT programme), in partnership with Soframe.

Technology and Innovation

- ▶ In February 2021, the Iveco-Oto Melara consortium presented the Digital Tactical Command Post version of the VBM Freccia 8x8 wheeled infantry fighting vehicle. This new version is equipped with a communications system that seamlessly integrates into the Army and Joint tactical battle command network.



KAWASAKI HEAVY INDUSTRIES (KHI)

Japanese conglomerate of about 50 companies, operating in the military aerospace and maritime defence sectors. Ranked 51st defence company in the world

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Commercial and military aircraft
- ▶ Shipbuilding
- ▶ Space
- ▶ Railway construction
- ▶ Energy
- ▶ Industrial equipment
- ▶ Motorcycles

GOVERNANCE

Chairman Y. Kanehana
 Chief Executive Officer Y. Hashimoto

OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	7012
Listed on	JPX
Market Cap (JPY bn)	348

Major shareholders (as of 17.11.2021)

Sumitomo Mitsui Trust Asset Management Co., Ltd.	5,82%
Nikko Asset Management Co., Ltd.	4,25%
Nomura Asset Management Co., Ltd.	3,98%
Nippon Life Insurance Co.	3,42%

MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Enseada Indústria Naval	31,09%	Brazil

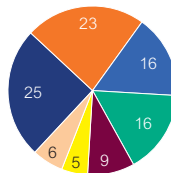
KEY FIGURES (Fiscal year ended : March 31st)

€ millions	2017-18	2018-19	2019-20	2020-21
Revenue	12 130	12 420	13 591	12 028
Δ (%) [JPY]*	3,65%	1,30%	2,92%	-9,31%
Defence (%)	15%	14%	16%	N/A
Export (%)	57%	58%	57%	53%
Operating profit/loss	431	499	514	-43
Operating margin	3,55%	4,01%	3,78%	-0,36%
Net income**	223	214	155	-156
Order book	N/A	N/A	13 687	11 865
Employees	35 805	35 691	36 332	36 691

*Variation based on revenue in local currency
 See €/JPY, p.7

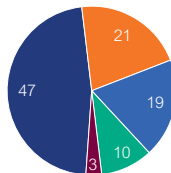
**Net income attributable to shareholders

REVENUE BY BUSINESS SEGMENT (%)



- Aerospace Systems
- Motorcycle & Engine
- Precision Machinery & Robot
- Energy System & Plant Engineering
- Rolling Stock
- Ship & Offshore Structure
- Other

REVENUE BY REGION (%)



- Japan
- North America
- Asia (excl. Japan)
- Europe
- Other

KAWASAKI HEAVY INDUSTRIES (KHI)

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	IHI Corporation	Mitsubishi Heavy Industries	Lockheed Martin	Northrop Grumman	Toshiba	Boeing	Saab	Honeywell	Leonardo	GE Aviation
Military aircraft										
P-1 maritime patrol aircraft	●				●					
C-2 transport aircraft										●
T-4 trainer aircraft	●									
E-2C Hawkeye airborne early warning and control aircraft maintenance			●	●						
C-130H transport aircraft maintenance		●								
KC-767 tanker and transport aircraft maintenance						●				
Military helicopters										
MCH-101 transport helicopter*			●						●	
OH-1 light observation helicopter	●									
CH-47 JA transport helicopter*						●				
Submarines										
Soryu-class submarine	●						●			
Taigei-class future submarine	●									
Propulsion system										
T55 turbofan engine (CH-47 JA)*								●		

*Sub-licensed production

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Kawasaki Heavy Industries (KHI) revenues reached JPY 1,488bn (€12bn) during fiscal year 2020-21, down 9.3% year-on-year in local currency. The group was heavily impacted by the Covid-19 crisis and recorded a net loss of JPY 19bn (€156m), partly due to falling revenues in the Aerospace Systems branch (-29.1% year-on-year) amid declining orders from aircraft manufacturers as well as difficulties encountered by Boeing on the 787 Dreamliner programme, for which KHI is a subcontractor (supply of aerostructures).
- ▶ Most of KHI's military activities are concentrated in the Aerospace Systems (military aircraft and helicopters) and Ship & Offshore Structure (submarines) divisions. In the coming years, KHI intends to benefit from a stable level of orders from the Japanese Ministry of Defence. KHI will mainly be in charge, in alternation with Mitsubishi Heavy Industries (MHI), of the construction of the future Taigei-class conventional attack submarines, which will replace the Soryu class.
- ▶ As part of the group's Vision 2030 strategic plan, KHI restructured its operations during fiscal year 2020-21. In April 2021, the activities of the Energy System & Plant Engineering and Ship & Offshore Structure divisions were merged within a new entity called Energy Solution & Marine Engineering. This new organisation should enable the group to accelerate its activities in the hydrogen propulsion segment. Meanwhile, KHI also planned to divest the Rolling Stock and Motorcycle & Engine businesses in October 2021, making them two independent companies.

Home market

- ▶ KHI generated 47% of its revenues in its domestic market in 2020-21. The group is a key supplier to the Japan Self-Defense Forces as prime contractor for the C-2 transport aircraft and P-1 maritime patrol aircraft programmes, and as co-builder, alongside MHI, of the Soryu-class (12 units built alternately by MHI and KHI between 2009 and 2021) and Taigei-class conventional attack submarines.
- ▶ In March 2021, the last of the 12 Soryu-class conventional attack submarines, named Toryu and supplied by KHI, was commissioned at the Kobe yard. The 11th and 12th units of the programme, supplied by MHI and KHI respectively, are equipped with batteries using lithium-ion technology, which should increase their diving range.
- ▶ KHI also plans to deliver five P-1 maritime patrol aircraft to the Japan Maritime Self-Defence Force (JMSDF) during 2021.

Export markets

- ▶ KHI generated 53% of its revenues from exports in 2020-21, mainly in the civil sector. In defence, KHI intends to win new markets by offering the Soryu conventional attack submarine, the P-1 maritime patrol aircraft and the C-2 transport aircraft to foreign armed forces, although without success for the moment.
- ▶ In 2020, Lockheed Martin's C-130J Super Hercules was selected by New Zealand for its Future Air Mobility Capability (FAMC) programme to replace the C-130H Hercules transport aircraft fleet. The C-130J was up against the Airbus A400M, Embraer's KC-390 (now called the C-390 Millennium), Leonardo and Northrop Grumman's C-27J, as well as KHI's C-2.
- ▶ KHI's P-1 maritime patrol aircraft was also excluded from the competition for the future maritime patrol aircraft of the French-German MAWS (Maritime Airborne Warfare System) programme, which is intended to replace the French Navy's ATL 2 and the German Navy's P-3 C Orion maritime patrol aircraft.

Technology and Innovation

- ▶ The group's R&D expenditure amounted to JPY 45bn (€363m) in 2020-21, representing 3% of turnover.



KMW + NEXTER DEFENSE SYSTEMS (KNDS)

Land armaments group resulting from the 50-50 merger between Germany's KMW and France's Nexter in 2015. Ranked 43rd-largest defence company in the world.

BUSINESS AREAS

System architect-integrator

- ▶ Armoured tracked and wheeled vehicles
- ▶ Artillery and weapon systems
- ▶ Ammunition
- ▶ Defence and security robotics
- ▶ Embedded electronics
- ▶ Simulation and training solutions

GOVERNANCE

Chairman	Philippe Petitcolin
CEO of KNDS	Frank Haun
CEO of Nexter	Nicolas Chamussy
CEO of KMW	Ralf Ketzel

KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017	2018	2019	2020
Revenue	2 648	2 245	2 539	2 409
Δ (%)	0,91%	-15,22%	13,10%	-5,12%
Defence (%)	100%	100%	100%	100%
Export (%)	N/A	N/A	N/A	N/A
Operating profit/loss	303	285	N/A	283
Operating margin	11,43%	12,72%	N/A	11,74%
Net income	212	205	N/A	183
Order book	9 200	7 800	9 633	10 600
Employees	7 329	7 545	7 873	8 270

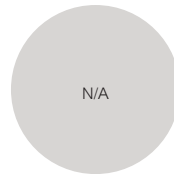
OWNERSHIP STRUCTURE

Symbol	
Listed on	Unlisted group
Market Cap	

Major shareholders (as of 17.11.2021)

Wegmann & Co. GmbH	50%
Giat Industries S.A.	50%

REVENUE BY BUSINESS SEGMENT (%)



MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
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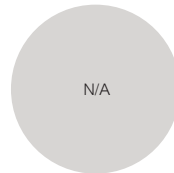
NEXTER

CTA International	50%	France
TNS-MARS	37,5%	France
Mecar	100%	Belgium
Simmel Difesa	100%	Italy

KMW

Projekt System & Management	50%	Germany
ARTEC	36%	Germany

REVENUE BY REGION (%)



KMW + NEXTER DEFENSE SYSTEMS (KNDS)

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Arquus	Thales	Safran	Texelis	BAE Systems	Rheinmetall Defence	Eldis Partcube	Tatra	MAN
Armoured vehicles									
Joint programmes									
Main Ground Combat System (MGCS) future French-German main battle tank						●			
VBCI 8x8 infantry fighting vehicle	●								
Jaguar 6x6 armoured reconnaissance and combat vehicle	●	●	●						
Griffon 6x6 multi-role armoured vehicle	●	●	●						
Serval 4x4 light multi-role armoured vehicle				●					
Titus ®* 6x6 multi-role armoured vehicle							●	●	
Leopard 2 main battle tank						●			
Boxer 8x8 infantry fighting vehicle (ARTEC GmbH consortium)						●			●
Dingo 2 4x4 family of armoured vehicles									
Artillery and weapon systems									
CIFS (Common Indirect Fire System) future French-German artillery system									
Caesar 155 mm self-propelled howitzer	●							●	
40 CTAS 40 mm case-telescoped autocannon (40 CTA International joint venture)					●				
PzH 2000 155 mm self-propelled howitzer						●			
FLW 100, 200 and 500 remote controlled weapon stations									
Ammunition									
Bonus Mk II 155 mm artillery shell					●				
Tank (76, 90, 105, 120 mm) and medium caliber (20, 25, 30, 40 mm) ammunition and ground artillery (105, 155 mm)									
Naval artillery ammunition (20, 40, 76, 100, 127 mm)									
KATANA 155 mm guided ammunition									

*Rights reserved

STRATEGIC HIGHLIGHTS

Business trends

- ▶ KNDS revenues reached €2.4bn in 2020, down around 5% year-on-year. Despite a one-quarter drop in new order intake (€3.3bn, compared to €4.4bn in 2019) due to the impact of the global health crisis on the budgets of the group's customers, KNDS' order book reached a solid €10.6bn at the end of 2020.
- ▶ At the end of 2020, the group created a single board of directors, replacing the supervisory board and the management board. Philippe Petitcolin (former CEO of Safran) and Frank Haun (former President of KMW) were respectively appointed Chairman and CEO of KNDS.

Home markets (France, Germany)

- ▶ The development towards the future Main Ground Combat System (MGCS), a French-German programme for a new tank system, made further advances with the launch of the System Architecture Design Study Phase 1 (SADS1) in May 2020. The governments of both countries as well as the participating companies (Nexter on the French side and KMW and Rheinmetall Defence on the German side) are in ongoing negotiations about the programme's further development. Meanwhile, the French-German Common Indirect Fire System (CIFS) artillery project led by KNDS, which was to be completed in 2040, will enter service at best by 2045.
- ▶ Nexter, Arquus and Thales are jointly in charge of the Scorpion programme for the supply of wheeled armoured vehicles to the French Army. A total of 1,872 VBMR Griffon and 300 EBRC Jaguar vehicles are to be delivered by 2030, half of which by 2025. Despite the health crisis, no delivery delays were recorded in 2020.
- ▶ At the end of 2020, the French Government's defence procurement agency (DGA) chose the RAPIDFire artillery system, developed by Nexter and Thales, for the future ships of the French Navy. Currently in the development phase, the first unit of the RAPIDFire should be delivered in 2022.
- ▶ In February 2021, KMW signed a contract with Germany's Federal Office of Bundeswehr Equipment (BAAINBw) and the Israeli government for the integration of the Trophy protection system (supplied by Rafael) on the German Army's Leopard 2 battle tanks. In June 2021, the BAAINBw also awarded a €1bn+ contract to Projekt System & Management (a joint venture between KMW and Rheinmetall Defence) to upgrade 154 PUMA infantry fighting vehicles of the German Army. The contract also includes a €820m option for the modernisation of the remaining 143 Pumas.
- ▶ In June 2021, the French Army's MRO division SIMMT (Structure intégrée du maintien en condition opérationnelle des matériels terrestres) awarded Nexter the contract for in-service support for the French Army's Leclerc tanks (€1bn contract over 10 years).

Export markets

- ▶ Nexter is participating alongside Thales and Arquus in the CaMo (Capacité Motorisée) programme to supply the Belgian Army with 60 EBRC Jaguar and 382 VBMR Griffon from 2025. This €1.6bn contract (of which €1.1bn for Nexter) includes training, education and maintenance services.
- ▶ At the end of 2020, the Dutch Defence Materiel Organisation (DMO) awarded KMW a €300m contract for the mid-life modernisation of 322 Fennek armoured reconnaissance vehicles over the 2021-2027 period.
- ▶ In September 2021, Nexter signed a €257m contract with the Czech Republic for the supply of 52 Caesar 155mm truck-mounted artillery systems. Under the terms of the agreement, 40% of the contract will be carried out by Czech manufacturers. Tatra Trucks will supply the chassis and Tatra Defence the armoured cabs. 48 of the 52 systems will also be assembled locally by Excalibur Army.

Technology and Innovation

- ▶ In May 2021, KMW signed a strategic cooperation agreement with Estonian company Milrem Robotics, of which it acquired a 24.9% capital stake. The two groups plan to develop innovative solutions for future military operations and to create a European centre of excellence for military robotics in Estonia.



KONGSBERG

Technology group with civil and military activities, 50% owned by the Norwegian State.
Specialist for RWS and missile systems (NSM, JSM) and 72nd-largest defence contractor.

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Remote weapon stations
- ▶ Missile and air defence systems
- ▶ Combat systems for surface ships and submarines
- ▶ C4ISR and communication systems
- ▶ Systems and equipment for commercial ships
- ▶ Aircraft and space systems (aerostructures, propulsion systems)

GOVERNANCE

Chairman	E. Reiten
Chief Executive Officer	G. Håøy
President Kongsberg Defence & Aerospace	E. Lie

OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	KOG
Listed on	Oslo Stock Exchange
Market Cap (NOK m)	50 127

Major shareholders (as of 17.11.2021)

Norwegian State	50,00%
Folketrygdfondet	7,11%
Erik Christian Must	2,42%
MP Pensjon PK	2,15%

MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Kongsberg Satellite Services	50%	Norway
Patria	49,9%	Finland
Kta Naval Systems	50%	Norway
Kongsberg Aviation Maintenance Services (ex-AIM Norway)	50,1%	Norway

KEY FIGURES (Fiscal year ended : December 31st)

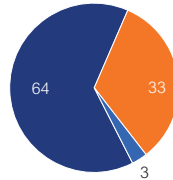
€ millions	2017	2018	2019**	2020
Revenue	1 554	1 439	2 360	2 389
Δ (%) [NOK]*	-8,55%	-4,71%	68,36%	10,18%
Defence (%)	44%	N/A	31%	33%
Export (%)	81%	N/A	81%	80%
Operating profit/loss	63	73	104	178
Operating margin	4,04%	5,08%	4,43%	7,44%
Net income***	59	N/A	71	270
Order book	1 588	1 679	3 279	3 433
Employees	6 830	6 842	10 793	10 689

*Variation based on revenue in local currency
See €/NOK, p.7

**Figures restated

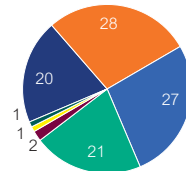
***Net income attributable to shareholders

REVENUE BY BUSINESS SEGMENT (%)



■ Kongsberg Maritim
■ Kongsberg Defence & Aerospace
■ Other

REVENUE BY REGION (%)



■ Norway
■ Europe (excl. Norway)
■ North America
■ Asia
■ Australia
■ Africa
■ South America

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Thales	PCZ	Raytheon Technologies*	Northrop Grumman	BAE Systems	Rheinmetall Defence	Marvin Group	Lockheed Martin	Leonardo	Patria	Nammo	TKMS
Defence systems												
PROTECTOR family of remote weapon stations (RWS, MCT, Lite)	●		●	●	●					●		
Missile systems												
Penguin anti-ship missile												●
Naval Strike Missile (NSM)	●	●										●
Joint Strike Missile (JSM)		●		●			●					
Air defence systems												
National Advanced Surface-to-Air Missile System (NASAMS)		●						●				
Coastal Defence System (CDS)												
Naval systems												
MCM C2 tactical system												
MSI-90U Mk2 submarine combat management system												●
PROTEUS naval training solutions												
HUGIN Autonomous Underwater Vehicles (AUVs)												
C4ISR and communications systems												
Kongsberg Tactical Communication System (K-TaCS)		●										
NATO Alliance Ground Surveillance (AGS) System Master Archival/Retrieval Facility information (SMARF)			●									
Military aircraft												
F-35 Lightning II fighter aircraft (fuselage parts, main landing gear, JSM carriage)			●		●	●						
MRO (aircraft, helicopters)							●	●	●			

*Merger of Raytheon and UTC

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Kongsberg revenues reached 25.6bn NOK (€2.4bn) in 2020, up 10.2% year-on-year in local currency. Sales by Kongsberg Maritime, the group's main branch which is strongly focused on the civil market, rose only 7.4%, while Kongsberg Defence & Aerospace, which includes the group's military activities, recorded a 17.4% increase during the year, mostly driven by increased deliveries of NSM/JSM missiles and NASAMS air defence systems. Kongsberg Defence & Aerospace, which has 3,189 employees, generated revenues of 8.5bn NOK (€793m) in 2020, accounting for 33.2% of the group's total turnover.
- ▶ In May 2021, Kongsberg signed an agreement with Danske Bank, the group's fifth-largest shareholder, to buy back 200m NOK (€19.6m) worth of its own shares in a deal that is expected to be completed by February 2022. The group will complete a share buy-back of an equivalent amount with Norway's government by June 2022 in order to keep the Norwegian state's share in the group constant at 50.004%.

Home market

- ▶ The group generated 20% of its turnover (5.0bn NOK, or €469m) in its domestic market in 2020, of which 1.7bn NOK (€162m) from defence activities (20.5% of total defence revenues).
- ▶ In September 2020, Kongsberg and Norwegian shipbuilding company UMOE Mandal joined forces to compete for the modernisation programme of the Royal Norwegian Navy's six Skjold-class stealth corvettes (built by UMOE Mandal and for which Kongsberg supplied the combat system, among other things) over the 2020-2024 period, under a contract worth around 500m NOK (€47m).
- ▶ In July 2021, Kongsberg was selected to supply the ORCCA combat system (developed in partnership with TKMS) for the six Type-212CD submarines that are being built by TKMS (four for Norway and two for Germany), as well as the NSM missiles for the navies of both countries. The total value of the contract is 8.2bn NOK (€804m).

Export markets

- ▶ Kongsberg generated 79.5% of its defence sales from exports in 2020. Its main export market is North America (54.3% of defence revenues), ahead of Europe excluding Norway (12.5%).
- ▶ In November 2020, Kongsberg and Raytheon Technologies signed a €410m contract with Hungary for the supply of the NASAMS air defence system. Hungary will become the 12th country to use the system.
- ▶ In March 2021, the group signed a €172m contract with Lockheed Martin for the supply of components (panels, leading edges, main landing gear) for the F-35 Joint Strike Fighter programme's production batches 15-17, i.e. over 500 aircraft. The contract runs until 2025.
- ▶ In May 2021, the U.S. Army awarded a \$500m (€416m) contract to Kongsberg to continue deliveries of PROTECTOR remotely controlled weapon stations under a framework agreement signed in 2018 (CROWS programme). The weapon stations are intended for both land and sea applications, but in particular for future unmanned ground vehicles (Robotic Combat Vehicle and Small Multipurpose Equipment Transport programmes).

Technology and Innovation

- ▶ Kongsberg Defence & Aerospace's R&D expenditure reached 96m NOK (€9.0m) in 2020.
- ▶ In February 2021, Kongsberg Maritime unveiled a new version of its HUGIN family of Autonomous Underwater Vehicle (AUV). Called HUGIN Endurance, it has an operational autonomy of 15 days.



KOREA AEROSPACE INDUSTRIES

Aerospace and defence group with civil and military activities, mainly operating in aviation (T-50 training aircraft, future KF-21 Boramae fighter aircraft). 57th-largest defence contractor.

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Commercial and military aircraft
- ▶ Military helicopters
- ▶ Unmanned aerial systems
- ▶ Aerostructures
- ▶ Commercial and military aircraft maintenance and modernisation services
- ▶ Space
- ▶ Training

GOVERNANCE

Chief Executive Officer

Ahn Hyun-ho

Chief Financial Officer

Kim Jung-ho

OWNERSHIP STRUCTURE (17.11.2021)

Symbol	A047810
Listed on	Korea Exchange
Market Cap (KRW bn)	2 953

Major shareholders (as of 17.11.2021)

South Korean State	26,40%
National Pension Service of Korea	7,17%
Hana Financial Investment Co., Ltd. (Private Equity)	4,85%
BlackRock Fund Advisors	1,80%

MAIN JOINT VENTURES AND ASSOCIATES

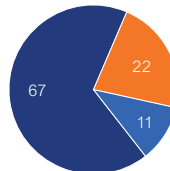
Name	%	Country
KAI-EC	51%	South Korea
KAEMS	66,4%	South Korea

KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017	2018	2019	2020
Revenue	1 623	2 145	2 383	2 100
Δ (%) [KRW]*	-29,67%	34,44%	11,63%	-9,16%
Defence (%)	38%	38%	N/A	N/A
Export (%)	61%	59%	54%	33%
Operating profit/loss	-164	113	211	104
Operating margin	-10,08%	5,25%	8,86%	4,94%
Net income	-184	43	129	54
Order book	N/A	14 477	13 037	13 743
Employees	3 905	4 594	4 936	5 027

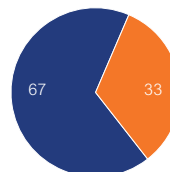
*Variation based on revenue in local currency
See €KRW, p.7

REVENUE BY BUSINESS SEGMENT (%)



■ Domestic business ■ Export of finished aircraft
■ Aerostructure

REVENUE BY REGION (%)



■ South Korea ■ Export markets

KOREA AEROSPACE INDUSTRIES

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Airbus	Lockheed Martin	Hanwha Aerospace	PT Dirgantara Indonesia	Boeing	Hanwha Systems	Thales Alenia Space	AAI Corp.*	TAI
Military aircraft									
KT-1 trainer aircraft									●
T-50 trainer aircraft	●	●							
TA-50 trainer aircraft									
KA-1 and FA-50 light fighter aircraft									
KF-21 Boramae future fighter aircraft**	●	●	●						
Military helicopters									
KUH Surion twin-engine transport helicopter	●	●							
Single-engine future Light Attack Helicopter (LAH)	●	●							
Unmanned aerial vehicle									
Night Intruder 600VT (NI-600 VT) future UAV									
Aerostructures									
F-15 fighter aircraft (fuselage, wings) and AH-64 attack helicopter (fuselage)					●		●		
F-16 fighter aircraft (fuselage)	●								
Maintenance and modernisation services									
ROKA's UH-60, Lynx and HH-47 helicopter and P-3CK, E-737 AEW&C and C-130H military aircraft maintenance and modernisation									
USAF's F-16 fighter aircraft maintenance									
Space									
Future observation radar satellites (425 Project)						●	●		
KSLV-II launcher		●							
Training solutions									
T-50, TA-50 and FA-50 aircraft simulators									

*Textron group **Formerly KF-X programme

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Korea Aerospace Industries (KAI) posted revenues of 2,825 bn KRW (€2.1bn) in 2020, down 9.2% year-on-year in local currency. The group's activity was weighed down by the global health crisis and a resulting drop in production rates at Airbus and Boeing, KAI's main customers for aerostructures.
- ▶ The group, which is already positioned in the medium and large-sized satellite segment, in January 2021 signed a partnership agreement with the Korea Advanced Institute of Science and Technology (KAIST), a prestigious Korean research university, for joint research and development of small satellites (minisatellites and microsatellites).
- ▶ In March 2021, KAI also signed a cooperation agreement with Israel Aerospace Industries (IAI) for the joint development and supply of unmanned Loitering Munitions systems for the Republic of Korea Army.
- ▶ KAI also plans to develop a military transport aircraft in collaboration with foreign manufacturers. The group aims to form a partnership with Europe's Airbus, Ukraine's Antonov, as well as Brazilian aerospace manufacturer Embraer. A budget of around \$2.7bn (€2.25bn) should be allocated to this project.

Home market

- ▶ As South Korea's sole aircraft manufacturer, the group is involved in the main programmes of the Republic of Korea Air Force (ROKAF). KAI is in particular in charge of developing the future South Korean fighter aircraft, the KF-21 Boramae (formerly KF-X programme), as well as the future Light Armed Helicopter (LAH).
- ▶ In December 2020, KAI selected British aerospace manufacturing company Cobham to provide the air-to-air refuelling systems for the FA-50 light combat aircraft.
- ▶ In April 2021, KAI presented the first prototype of the KF-21 Boramae fighter aircraft. The flight test phase is scheduled for 2022 and series production of the aircraft is expected to begin in 2026, with the goal of delivering 40 KF-21 Boramae aircraft to the ROKAF by 2028.
- ▶ KAI is also continuing to develop the LAH and LCH (Light Civil Helicopter), which share 60% of their components. Airbus Helicopters is the main partner and is co-developing and co-constructing the aircraft with KAI in exchange for 50% of the value of the LCH programme and 20% of the LAH programme. The Republic of Korea Army plans to acquire 210 LAHs from 2023.

Export markets

- ▶ KAI generated 33% of its revenues from exports in 2020.
- ▶ In July 2021, KAI signed a \$240m (€200m) contract with Indonesia for the supply of six additional T-50i trainers, bringing the Indonesian Air Force's T-50i fleet to 20 aircraft. In August 2021, the Royal Thai Air Force also ordered two additional T-50TH trainers for \$78m (€65m), bringing its T-50TH fleet to 14 aircraft.
- ▶ KAI's FA-50 Fighting Eagle light combat aircraft is competing against Hindustan Aeronautics Limited's (HAL) LCA-Tejas fighter in the Royal Malaysian Air Force's tender for a new light combat and trainer aircraft that will replace its MiG-29 fighter fleet.

Technology and Innovation

- ▶ At the South Korean MADEX exhibition in June 2021, KAI unveiled the prototype of the NI600VT (Night Intruder 600VT), a Vertical Takeoff and Landing (VTOL) UAV which will be used for surveillance and reconnaissance operations.



L3HARRIS TECHNOLOGIES

Aerospace and defence company operating in aviation electronics, ISR systems and communication systems. 6th-largest U.S. defence group and 9th-largest worldwide.

BUSINESS AREAS

Systems integrator/equipment supplier

- ▶ ISR systems
- ▶ Electronic warfare systems
- ▶ Communication systems
- ▶ Avionics
- ▶ Air traffic control
- ▶ Space (payloads)
- ▶ Training

GOVERNANCE

Chairman

Chief Executive Officer

Chief Financial Officer

W. M. Brown

C. E. Kubasik

J. Malave

KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2019 (L3 Technologies)	2019** (Harris Corporation)	2019***	2020
Revenue	8 674	5 961	15 783	15 932
Δ (%) [\$]*	7,01%	10,26%	N/A	2,92%
Defence (%)	81%	77%	N/A	78%
Export (%)	23%	22%	N/A	20%
Operating profit/ loss	948	975	2 713	2 872
Operating margin	10,93%	16,36%	17,19%	18,03%
Net income****	851	832	N/A	982
Order book	8 475	5 097	17 939	17 661
Employees	31 000	18 200	50 000	48 000

* Variation based on revenue in local currency
See €/\$, p.7

**Fiscal year ended : June 28th

***Financial statements consolidated after merger

****Net income attributable to shareholders

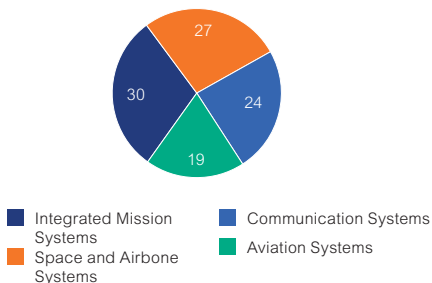
OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	LHX
Listed on	NYSE
Market Cap (\$m)	43 170

Major shareholders (as of 17.11.2021)

The Vanguard Group, Inc.	8,11%
SSGa Funds Management, Inc.	4,29%
Capital Research & Management Co. (International Investors)	4,13%
Janus Capital Management LLC	3,54%

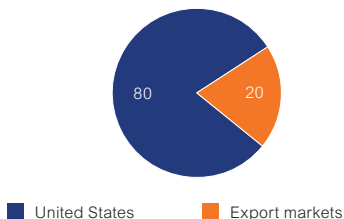
REVENUE BY BUSINESS SEGMENT (%)



MAIN JOINT VENTURES AND ASSOCIATES
















Name	%	Country
IBL	33%	United States
Aviation Communication & Surveillance Systems (ACSS)	70%	United States
AYESAS	40%	Turkey
Global Military Aircraft Systems (GMAS)	49%	United States

REVENUE BY REGION (%)



L3HARRIS TECHNOLOGIES

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Airbus	Boeing	General Dynamics	Lockheed Martin	BAE Systems	Textron	Immarsat	HHI
ISR systems								
 SPYDR and SPYDR II light tactical aircraft					●			
 Airborne Pursuit and Exploitation (APEX) small unmanned tactical aircraft system								
 MX-15 electro-optical and infrared sensors	●							
 Submarine Universal Modular Mast (UMM)			●					●
 AN/SPS-48G surveillance radar								
Electronic warfare systems								
 Electronic warfare system of the EC-37B Compass Call aircraft			●		●			
 ALQ-214 IDECM F/A-18 countermeasure system		●						
 Advanced Integrated Defensive Electronic Warfare Suite (AIDEWS)				●				
Communications systems								
 Tactical SATCOM terminals (Panther, Hawkeye, Cheetah)							●	
 Enhanced Night Vision Goggle - Binocular (ENVG-B)								
 Falcon family of tactical radios								
Avionics								
 F/A-18 and F-35 avionics		●		●				
 USAF's C-130H and C-130J Avionics Modernization Programme (AMP)				●				
Space								
 Xenon ion propulsion system (702SP satellites)		●						
 Navigation payloads for GPS III satellites				●				

STRATEGIC HIGHLIGHTS

Business trends

- ▶ L3Harris Technologies revenues amounted to \$18.2bn (€15.9bn) in 2020, up 2.9% year-on-year in local currency. Growth was mostly driven by the sale of aviation electronics for the F-35 Lightning II fighter aircraft as well as the completion of classified intelligence programmes.
- ▶ L3Harris Technologies has sold several activities in recent months for a total value of over \$2.5bn (€2.1bn): holographic targeting systems (EOTech) to American HoloOptics and airport security and industrial automation to U.S.-based Leidos in 2020; military simulation and training to Canada's CAE and military transmissions and engines to Germany's Renk in 2021, etc.
- ▶ L3Harris Technologies also signed three partnerships in the spring of 2021: with Germany's Rheinmetall Defence for the supply of electronic systems for the Lynx armoured fighting vehicle (as part of the U.S. Army's Optionally Manned Fighting Vehicle (OMFV) programme), and with U.S. companies Bye Aerospace and Air Tractor to develop, respectively, an ISR mission aircraft with 100% electric propulsion and the AT-802U Sky Warden, an aircraft designed for airborne ISR and other missions in extreme combat environments.

Home market

- ▶ The U.S. market is crucial to L3Harris Technologies' business (78% of revenues in 2020). The U.S. Department of Defense alone accounted for approximately 57% of the group's revenues during 2020.
- ▶ In February 2021, L3Harris Technologies signed a \$137m (€113m) contract with Lockheed Martin to produce payloads for four GPS III F navigation satellites. The group has been a partner of Lockheed Martin on this programme since 2018.
- ▶ In February 2021, L3Harris Technologies also received \$121m (€100m) from the U.S. Missile Defense Agency to produce, by July 2023, a series of prototype satellite sensors capable of tracking ballistic and hypersonic missiles as part of the HBTSS (Hypersonic and Ballistic Tracking Space Sensor) programme. The group is competing with Northrop Grumman on this programme.
- ▶ In March 2021, Lockheed Martin awarded L3Harris Technologies a contract to supply its new Viper Shield countermeasures system for the F-16 Fighting Falcon Block 70/72 (the latest version of the aircraft) multi-role fighter aircraft of the U.S. and foreign armed forces.

Export markets

- ▶ 22% of the group's revenues came from exports in 2020. Australia, Canada and the UK are among the group's main export markets.
- ▶ In April 2021, L3Harris Technologies signed a contract with an unspecified Asian country to supply Falcon III handheld radios and SATCOM terminals for approximately \$50m (€42m).
- ▶ In July 2021, Babcock International awarded L3Harris Technologies a subcontract for the maintenance of 50,000 radios for the UK Ministry of Defence over a five-year period.

Technology and Innovation

- ▶ Self-funded R&D expenditure amounted to \$684m (€599m) in 2020, representing 3.8% of group turnover.
- ▶ In March 2021, DARPA selected L3Harris Technologies to design a future autonomous unmanned surface ship (USV) capable of carrying out long-term missions (surveillance, electronic warfare or coastal warfare) as part of phase 1 of the two-phase No Manning Required Ship (NOMARS) programme. The group is partnering on this programme with Vard Marine (a Fincantieri subsidiary), which will provide its expertise in naval architecture.



LEIDOS

Among the leading providers of digital systems and services in the United States. Major supplier to the DoD, major partner of DARPA and 19th-largest defence contractor.

BUSINESS AREAS

Digital services supplier and systems integrator

- ▶ Cybersecurity
- ▶ Data Science and Data Engineering
- ▶ Digital transformation
- ▶ IT systems maintenance, operation and modernisation services
- ▶ Maintenance and logistic support services

GOVERNANCE

Chairman & CEO	Roger Krone
President, Defense group	Gerry Fasano
Chief Financial Officer	Chris Cage

KEY FIGURES (Fiscal year ended : January 1st)

€ millions	2017	2018	2019	2020
Revenue	9 000	8 632	9 905	10 768
Δ (%) [\$]*	44,40%	0,24%	8,83%	10,84%
Defence (%)**	49%	48%	49%	52%
Export (%)	9%	9%	8%	8%
Operating profit/loss	495	634	814	874
Operating margin	5,50%	7,35%	8,22%	8,12%
Net income***	324	492	596	550
Order book	14 575	18 194	21 451	26 008
Employees	≈ 31 000	≈ 32 000	≈ 34 000	≈ 39 000

*Variation based on revenue in local currency

See €/\$, p.7

**Changes in scope in 2019, 2018 and 2017 figures restated

***Net income attributable to shareholders

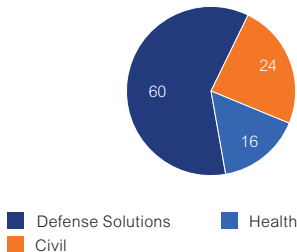
OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	LDOS
Listed on	NYSE
Market Cap (\$m)	13 172

Major shareholders (as of 17.11.2021)

The Vanguard Group, Inc.	10,20%
JPMorgan Investment Management, Inc.	7,33%
Wellington Management Co. LLP	6,46%
Leidos Retirement Plan	4,95%

REVENUE BY BUSINESS SEGMENT (%)

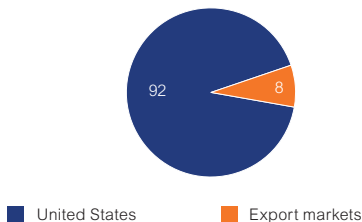


MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Cardno Tec-Leidos	N/A	United States
Hanford Mission Integration Solutions	53,0%	United States
Mission Support Alliance (MSA)*	88,0%	United States
Integrated ICBM Support Services (i2S2)	N/A	United States

*Cooperation between Leidos and Centerra Group in the MSA joint venture to end in 2021

REVENUE BY REGION (%)



MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Paramount Group USA	Vertex Aerospace	Vigor Technologies	IBM	Verizon	SAC	TVS Supply Chain Solutions	Kuehne + Nagel	Agility	Prolinx
IT Systems operation, maintenance and modernisation services										
GSM-O II programme (DoD's communication and network modernisation)										
US Navy's NGEN-R SMIT programme			●	●	●					
NASA End-User Services & Technologies programme										
Cybersecurity										
Proven, Analytic-Centric Kill Chain Implementation and Transformation (PACKIT) cyber defense solution										
Logisitic support services										
Logistics Commodities and Services Transformation programme (MoD)							●	●	●	●
ISS Cargo Mission Contract (engineering and logistic support services)										
Airborne platforms										
Leidos Special Mission Aircraft programme										
Bronco II future multi-role aircraft	●	●								
Anti-submarine warfare										
ADC MK5 anti-torpedo contermasures system										
Transformational Reliable Acoustic Path System (TRAPS) sonar system										
Unmanned system										
Seahawk Unmanned Surface Vessels (USV)		●								
Training										
Common Driver Trainer (CDT) virtual training system										

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Leidos posted sales of \$12.3bn (€10.8bn) in 2020, up 10.8% year-on-year in local currency. Growth was partly driven by the integration of the Dynetics business (\$937m, or €821m) during the financial year, the acquisition of which was completed in January 2020. However, the group's business was impacted by the global Covid crisis during the year. Leidos recorded an estimated loss of \$51m (€44.7m) in revenue due to the downward revision of several contracts.
- ▶ In 2020, Leidos generated \$6.4bn (€5.6bn) from defence-related activities, accounting for 52% of its total revenues.
- ▶ After completing the acquisitions of Dynetics for approximately \$1.65bn (€1.5bn) and the airport security and industrial automation business of L3Harris Technologies for \$1bn (€880m) in 2020, Leidos in January 2021 completed the acquisition of IT services provider 1901 Group (a company with around 400 employees that operates in the fields of cloud computing, cybersecurity and infrastructure modernisation) for \$215m (€188m). In May 2021, Leidos also acquired Gibbs & Cox, a surface ship design specialist, for around \$380m (€317m).

Home market

- ▶ Leidos is the U.S. government's leading provider of digital and telecom services according to Washington Technology's 2021 rankings, ahead of Raytheon Technologies and Lockheed Martin.
- ▶ Leidos is responsible for the optimisation, operation and maintenance of several U.S. Navy IT networks as part of the Next Generation Enterprise Network Re-compete (NGEN-R) Service Management, Integration and Transport (SMIT) programme, which the group won in February 2020 (five-year contract with a potential value of \$7.7bn (€6.7bn), with options for three additional years).
- ▶ In September 2020, Leidos was among the partners selected by L3Harris Technologies (along with CAE USA, CymSTAR and Dell Technologies) to upgrade the U.S. Air Force's flight simulators as part of the Simulators Common Architecture Requirements and Standards (SCARS) programme. Improvements are mainly expected in the area of cyber security. Approximately 2,400 simulators across 300 sites are involved.
- ▶ In February 2021, Leidos, Amentum and Apex created a joint venture, Integrated ICBM Support Services (I2S2), to participate in the ICBM Integrated Services Contract 2.0 programme for engineering and IT support for the U.S. Air Force's future intercontinental ballistic missile programme.
- ▶ In June 2021, the U.S. Air Force awarded a \$950m (€792m) contract to Leidos to provide support services (equipment integration, spare parts supply, etc.) over 13 years.

Export markets

- ▶ Leidos generated 8% of its revenue from exports in 2020. In defence, Australia and the UK are the group's main international customers.
- ▶ In April 2020, Leidos Australia entered into a partnership with Israel's Aeronautics (a subsidiary of Rafael) as part of the LAND 129 Phase 3 programme to replace the Australian Army's 18 Shadow 200 UAVs. Leidos Australia is one of four remaining competitors alongside Insitu Pacific, Raytheon Australia and Textron Systems Australia.

Technology and Innovation

- ▶ In April 2021, Leidos delivered the Seahawk unmanned surface ship to the U.S. Navy. The ship was designed under a contract worth approximately \$35.5m (€31.4m) which was awarded to Leidos by the Office of Naval Research in December 2017. Leidos, Paramount Group USA and Vertex Aerospace are also continuing the development of the Bronco II multi-role light aircraft.



LEONARDO

Group with civil and military activities. Leading Italian defence contractor and 13th-largest worldwide. Operates in the U.S. through Leonardo DRS and Leonardo US Aircraft.

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Aeronautics (aircraft and UAV)
- ▶ Helicopters
- ▶ Defence systems
- ▶ Defence electronics
- ▶ Space

GOVERNANCE

Chairman	L. Carta
Chief Executive Officer	A. Profumo
Manufacturing and Program Management Optimization Director	F. Barsotti

OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	LDO
Listed on	Borsa Italiana
Market Cap (€m)	3 766

Major shareholders (as of 17.11.2021)

Italian State	30,20%
Silchester International Investors LLP	2,60%
The Vanguard Group, Inc.	1,79%
Schroder Investment Management Ltd.	1,47%

MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Orizzonte Sistemi Navali	49%	Italy
NHIndustries	32%	France
Electronica	31,3%	Italy
Avio	29,6%	Italy
MBDA	25%	France
Eurofighter Jagdflugzeug	21%	Germany
Telespazio Spa	67%	Italy
Thales Alenia Space	33%	France

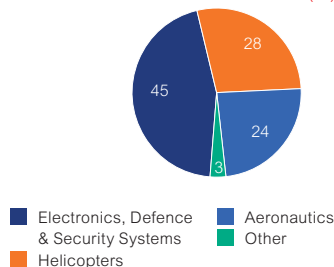
KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017*	2018	2019	2020
Revenue	11 734	12 240	13 784	13 410
Δ (%)	-2,23%	4,31%	12,61%	-2,71%
Defence (%)	N/A	N/A	N/A	N/A
Export (%)	84%	85%	84%	83%
Operating profit/loss	844	715	1 153	517
Operating margin	7,19%	5,84%	8,36%	3,86%
Net income**	277	509	821	241
Order book	33 507	36 118	36 513	35 516
Employees	45 134	46 462	49 530	49 882

*Figures restated

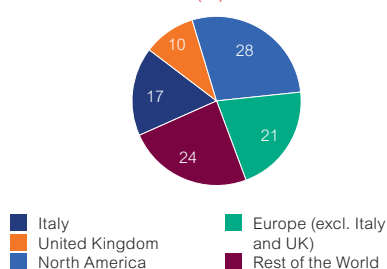
**Net income attributable to shareholders

REVENUE BY BUSINESS SEGMENT (%)



*Excluding revenue from Space Systems division (Telespazio and Thales Alenia Space)

REVENUE BY REGION (%)



MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	PGZ	Boeing	Airbus	Naval Group	Dassault Aviation	Saab	General Dynamics	BAE Systems	Northrop	Grumman*	Lockheed Martin	Electronica	GKN
Military aircraft and UAS													
Tempest future fighter aircraft (sensors, electronics, avionics)							●				●		
F-35 Lightning II fighter aircraft (wings, assembly** and MRO)									●				
Eurofighter Typhoon fighter aircraft			●				●				●		
M-345 and M346/T-100 advanced trainer aircraft		●											
C-27J Spartan and MC-27J Praetorian tactical transport aircraft		●						●					
nEUROn UCAV demonstrator (smart integrated weapon bay, internal EO/IR sensors, electrical system, etc.)					●								
Falco Xplorer MALE UAV													
European MALE RPAS			●		●								
Military helicopters													
AW159 twin-engine multirole helicopter (6t)						●	●						
AW139M/MH-139 twin-engine multirole helicopter (6t)		●											
AW249 future twin-engine attack helicopter (8t)	●												
NH90 twin-engine multirole helicopter (11t)			●								●	●	
AW101/MCH-101 three-engine transport helicopter (16t)													
Weapon and artillery systems													
127/64 LW Vulcano naval gun													
Black Shark heavyweight torpedo and MU90 lightweight torpedo				●									
Defence electronics													
Raven ES-05 AESA radar (JAS 39 Gripen E/F)						●							
Kronos family of land and naval radar systems													

*Innovation Systems division, formerly Orbital ATK **Produced for the Royal Netherlands Air Force and the Italian Air Force

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Leonardo revenues fell 2.7% to €13.4b in 2020, as activity contracted in the group's two main branches, Defence Electronics & Security (-2.6% year-on-year) and Helicopters (-1.3%), which were respectively impacted by production delays caused by the Covid-19 crisis and by the drop in demand on the civil aviation market.
- ▶ In April 2021, Leonardo acquired a 25.1% capital stake in German electronics manufacturer Hensoldt from U.S. investment fund KKR. Upon completion of the deal, Leonardo will become Hensoldt's main shareholder, alongside the German state-owned investment and development bank KfW (also 25.1%) and ahead of KKR (around 18%).
- ▶ In March 2021, Leonardo announced plans for a partial IPO of around 22% of its U.S. subsidiary Leonardo DRS on the New York Stock Exchange. The process has since been put on hold to wait for more favourable market conditions. The proceeds from the IPO, which were estimated at \$702m (€594m), would have enabled the group to reduce its debt and finance possible acquisitions.

Home market

- ▶ Leonardo is one of the main suppliers to the Italian Armed Forces. It is involved in the design and production of military aircraft and helicopters for Italy and is a partner of Fincantieri in many naval defence programmes, in particular through their joint subsidiary Orizzonte Sistemi Navali. In 2020, the group generated 17% of its turnover on its domestic market.
- ▶ In December 2020, Leonardo delivered the first two M-345 military training aircraft to the Italian Air Force. A total of 45 aircraft of this type are to be delivered by Leonardo to replace the MB-339s that have been in service since the early 1980s.
- ▶ In February 2021, Leonardo signed a €150m contract with Fincantieri for the supply of protection and surveillance systems (including the combat management system) for the two U212NFS (Near Future Submarine) ordered by OCCAR for the Italian Navy. A total of four such submarines could be ordered. The first two units are scheduled to be delivered between 2027 and 2029.

Export markets

- ▶ The group generated 83% of its revenues from exports in 2020, mainly to the United States and the United Kingdom (38% of turnover), through its subsidiaries Leonardo DRS and Leonardo US Aircraft on the one hand and Leonardo UK on the other.
- ▶ In November 2020, the U.S. Department of Defense awarded Leonardo Helicopters a \$171m (€150m) contract for the supply of 36 additional TH-73A training helicopters, bringing the total number of aircraft ordered for the U.S. Navy to 68. A first unit was delivered in June 2021. In total, the U.S. Navy could order 130 aircraft with deliveries up to 2024.
- ▶ In March 2021, the Northrop Grumman/Leonardo consortium was shortlisted to participate in the Royal Australian Navy's SEA 129 Phase 5 programme for the acquisition of a maritime unmanned aerial system (MUAS) for ISR&T missions. The two groups' proposal includes the AWHero MUAS platform and subsystems. The tender for this programme is expected to be published in early 2022.
- ▶ In July 2021, Pakistan selected Leonardo and South Africa's Paramount Group to convert three Lineage 1000 regional airliners (Embraer) into maritime patrol aircraft under the name Sea Sultan.

Technology and Innovation

- ▶ The group's total R&D expenditure amounted to €1.65bn in 2020, representing 12.3% of total revenues.
- ▶ At the Euronaval show in October 2020, Leonardo unveiled the new Lionfish family of small-calibre remotely controlled turrets for naval defence. These turrets can be equipped with 12.7 mm or 20 mm calibre guns.



LOCKHEED MARTIN

World's leading defence contractor, prime contractor for the F-35 fighter aircraft and largest supplier to the U.S. Department of Defense.

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Aeronautics (aircraft, helicopters, unmanned aircraft systems)
- ▶ Missile and air defence systems
- ▶ Naval systems (surface ships, combat systems)
- ▶ Defence electronics and cybersecurity
- ▶ Space (satellites, launchers)

GOVERNANCE

Chairman and CEO James D. Taiclet

Vice President Aeronautics Gregory M. Ulmer

Chief Financial Officer John W. Mollard

KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017**	2018	2019	2020
Revenue	44 212	45 522	53 404	57 266
Δ (%) [\$]*	5,65%	7,61%	11,25%	9,34%
Defence (%)	88%	88%	90%	91%
Export (%)	29%	28%	28%	25%
Operating profit/loss	5 968	6 210	7 629	7 569
Operating margin	13,50%	13,64%	14,29%	13,22%
Net income	1 737	4 273	5 563	5 983
Order book	87 984	113 946	128 211	119 911
Employees	100 000	105 000	110 000	114 000

*Variation based on revenue in local currency
See €/\$, p.7

**Figures restated

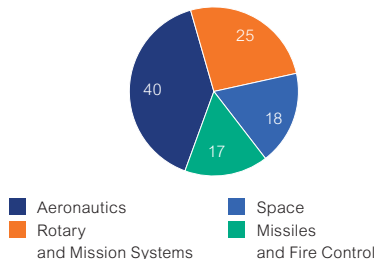
OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	LMT
Listed on	NYSE
Market Cap (\$m)	93 869

Major shareholders (as of 17.11.2021)

SSgA Funds Management, Inc.	14,60%
The Vanguard Group, Inc.	7,35%
Capital Research & Management Co. (World Investors)	4,99%
Wellington Management Co. LLP	3,51%

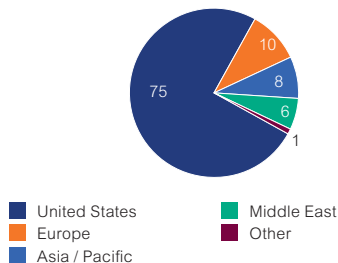
REVENUE BY BUSINESS SEGMENT (%)



MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
AWE	51%	United Kingdom
MEADS International	58%	United States
United Launch Alliance	50%	United States
Tata Lockheed Martin Aerostructures	50%	India
Raytheon-Lockheed Martin Javelin JV	50%	United States
TLVS	40%	Germany

REVENUE BY REGION (%)



LOCKHEED MARTIN

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Gibbs & Cox	TASL	Boeing	Raytheon Technologies*	BAE Systems	Northrop Grumman	GE Aviation	Rolls-Royce	Rheinmetall	Leonardo	Fincantieri	MHI
Military aircraft												
F-35 Lightning II fighter aircraft			●	●	●		●		●			●
F-16 Fighting Falcon fighter aircraft	●		●			●						
C-130J Super Hercules tactical airlifter							●					
CH-53K King Stallion three-engine heavy-lift transport helicopter			●			●						
Black Hawk (UH-60/S-70A) and Sea Hawk (SH-60/S-70B) twin-engine multirole helicopters						●		●				
VH-92A twin-engine transport helicopter						●						
Missile and air defence systems												
Hellfire and Javelin anti-tank missiles			●		●							
Joint Air-to-Surface Standoff Missile (JASSM)					●							
Trident II (D5) Submarine-Launched Ballistic Missile (SLBM)												
PAC-3 and PAC-3 MSE interceptors			●									
THAAD missile defence system			●	●								
Surface ships												
Freedom-class Littoral Combat Ship (LCS) light frigate	●							●				●
Multi-Mission Surface Combatant (MMSC) frigate**	●							●				●
Canadian Surface Combatant (CSC) frigate***				●		●	●					
Combat and mission systems												
AEGIS combat system												●
Space												
Vulcan Centaur launcher			●		●							

*Merger of Raytheon and UTC **Based on Freedom-class LCS frigates ***Based on BAE Systems' Type 26 frigates

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Lockheed Martin revenues rose 9.3% to \$65.4bn (€57.3bn) in 2020, driven by solid growth in the Missiles & Fire Control (+11.1%) and Aeronautics (+10.9%) divisions. The group generated around 91% of its business in defence during the year.
- ▶ In December 2020, Lockheed Martin announced plans to acquire U.S. rocket engine manufacturer Aerojet Rocketdyne (sales of \$2.1bn, or €1.8bn, in 2020) for a net consideration of \$4.4bn (€3.9bn). While the purchase was approved by Aerojet Rocketdyne shareholders in March 2021, completion of the deal is subject to approval by U.S. regulators.

Home market

- ▶ Lockheed Martin is highly dependent on the U.S. market (75% of its revenue in 2020). The U.S. Department of Defense, its largest customer, accounted for 64% of its sales, excluding FMS procedures.
- ▶ In February 2021, the U.S. Navy ordered a third and final batch of five VH-92A helicopters to replace the Marine Corps' Marine One U.S. presidential transport fleet. This \$479m (€397m) deal, with deliveries by December 2023, brings the total number of helicopters ordered to 23.
- ▶ In March 2021, the Lockheed Martin/Aerojet Rocketdyne and Northrop Grumman/Raytheon Technologies consortia each received \$1.6bn (€1.3bn) from the U.S. Missile Defense Agency to develop their proposals for the Next Generation Interceptor (NGI) ballistic missile protection programme. The winner of this programme will be chosen in 2029.
- ▶ In March 2021, Lockheed Martin signed a \$1.12bn (€928m) contract with the U.S. Army to produce Lot 16 of Guided Multiple Launch Rocket System (GMLRS) rockets and associated equipment for the U.S. Army, the U.S. Marine Corps and international customers by September 2023.
- ▶ In June 2021, the U.S. Navy awarded Lockheed Martin a \$736m (\$610m) contract for the production of nine CH-53K King Stallion heavy-lift helicopters for the U.S. Marine Corps, to be delivered from 2024. This new order brings the total number of units ordered to 33.

Export markets

- ▶ The group generated just over 25% of its revenues from exports in 2020. A large share of its international sales are made through FMS procedures.
- ▶ In February 2021, the Israeli Ministry of Defence selected the Sikorsky CH-53K King Stallion for its programme to acquire around 20 heavy-lift helicopters to replace the CH-53 Sea Stallion. Sikorsky's helicopter won out over Boeing's CH-47F Chinook.
- ▶ In June 2021, the Swiss government selected Lockheed Martin's F-35 Lightning II fighter as part of its Air2030 programme to replace the Swiss Air Force's aging fleet of F-5 Tiger and F/A-18 Hornet jet fighters. 36 F-35A aircraft are expected to be ordered at a total cost of 5.07bn CHF (€4.64bn). In December 2021, Lockheed Martin's F-35 jet also won the bid for the Finnish HX fighter programme for the acquisition of 64 fighter aircraft.
- ▶ In September 2021, Lockheed Martin's MMSC littoral combat ship lost the tender for the Hellenic Navy Future Frigates (HF2) programme for the acquisition of four ships. The Greek ministry of defense signed an agreement with France's Naval Group for the purchase of Belharra-class frigates (export version of the FDI).

Technology and Innovation

- ▶ Self-financed R&D expenditure amounted to \$1.3bn (€1.1bn) in 2020, representing 2.0% of total revenues.
- ▶ In March 2021, the U.S. Navy awarded a \$1.54bn (€1.28bn) R&D contract to Lockheed Martin as part of the Intermediate Range Conventional Prompt Strike programme for the development of hypersonic strike missiles that can strike anywhere in the world within 1 hour.



MBDA

European leader in missile systems (MdCN cruise missile, Brimstone air-to-ground missile, Meteor air-to-air missile, etc.).

BUSINESS AREAS

Missile manufacturer

- ▶ Air dominance
- ▶ Battlefield engagement
- ▶ Ground based air defence
- ▶ Maritime superiority

GOVERNANCE

Chairman and CEO Éric Béranger

Executive Group
 Director Programmes
 & CEO of MBDA France Stéphane Reb

Chief Financial Officer Peter Bols

OWNERSHIP STRUCTURE

Symbol	
Listed on	Unlisted group
Market Cap	

Major shareholders (as of 17.11.2021)

Airbus	37,5%
BAE Systems	37,5%
Leonardo	25%

MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Eurosam	66,6%	France
TAURUS Systems	66,6%	Germany
Roxel	50%	France
PARSYS	50%	Germany
L&T MBDA Missile Systems	49%	India
Inmize	40%	Spain
RAM-System	50%	Germany

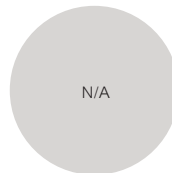
KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017*	2018	2019	2020
Revenue	2 982	3 164	3 703	3 592
Δ (%)	0,91%	6,10%	17,04%	-3,00%
Defence (%)	100%	100%	100%	100%
Export (%)	N/R	N/R	N/R	N/R
Operating profit/loss	201	239	268	279
Operating margin	6,74%	7,55%	7,24%	7,77%
Net income**	346	244	189	122
Order book	16 800	17 400	17 500	16 600
Employees	10 700	11 300	11 500	11 850

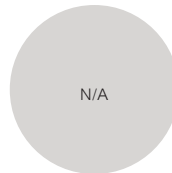
*Figures restated

**Total comprehensive income

REVENUE BY BUSINESS SEGMENT (%)



REVENUE BY REGION (%)



MAIN PROGRAMMES, COOPERATIONS
AND EXPORT PARTNERSHIPS

	Thales	Safran	Roxel	Avio	Leonardo	Diehl Defence	Hensoldt	Saab	Indra Sistemas
Long-range and deep strike									
SCALP EG / STORM SHADOW air-launched cruise missiles	●	●			●				
TAURUS air-launched cruise missile						●	●		
MDCN naval cruise missile	●	●	●		●				
EXOCET AM / MM / SM anti-ship missiles and mobile coastal defence systems	●	●	●						
MARTE / MARTE ER / TESEO Italian anti-ship missiles			●	●	●				
Tactical strike									
ANL/Sea Venom lightweight anti-ship missile	●	●	●		●				
SPEAR family of air-to-ground missiles (SPEAR 3 and Brimstone)			●						
Battlefield engagement									
MMP / MHT anti-tank missiles	●	●	●						
PARS 3 anti-tank missile					●				
ENFORCER anti-tank missile									
Maritime protection and Armed Forces protection									
Sea Ceptor / Land Ceptor / CAMM / CAMM-ER air defence systems	●		●	●					
ASTER and SAMP/T NG air defence systems	●		●	●	●				
VL MICA / VL MICA NG air defence systems	●	●	●						
MISTRAL (MANPADS / SIMBAD / SIMBAD-RC) air defence systems	●	●	●						
Air dominance									
METEOR beyond-visual-range air-to-air missile	●		●		●			●	●
MICA / MICA-NG (EM, IR) medium-range air-to-air missiles	●	●	●			●			
ASRAAM short-range air-to-air missile	●		●		●				
DDM-NG missile warning system									

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Despite the impact of the global health crisis, MBDA held up well in 2020, reporting only a moderate 3% decline in revenues (to €3.6bn) for the year.
- ▶ On the employment side, the health crisis had no negative impact in France and recruitment is continuing. MBDA plans to recruit more than 600 people on permanent contracts in France in 2021 (compared with around 500 in 2020). Meanwhile, MBDA Germany announced it would be cutting a quarter of its workforce (i.e. 250 jobs) after the German government shelved the TLVS programme (new anti-missile air defence system) that was to replace the MEADS programme.
- ▶ MBDA continued expanding its activities in its production centres in France's Centre Region. During the summer of 2021, the company launched the construction of a new facility for the storage of inert subassemblies and for certain maintenance and reconditioning activities for existing systems.

Home markets (France, Germany, United Kingdom, Italy)

- ▶ At the end of 2020, France's Ministry of Armed Forces launched the MHT (Missile Haut de Trame) programme, which is primarily intended to upgrade the TIGRE Standard 3 helicopters with an air-to-ground strike capability. In early 2021, the Ministry of Armed Forces also awarded MBDA a contract for the supply of several MICA NG missiles for the French Rafale.
- ▶ In the UK, the Ministry of Defence (MoD) in late 2020 awarded MBDA UK a production contract for the SPEAR 3 air-to-ground missile for the UK's F35B and Eurofighter aircraft. The MoD awarded other major contracts in 2021, including the supply of Sea Ceptor air defence systems as part of the refurbishment of T45 destroyers as well as for the new T21 frigates.
- ▶ In March 2021, the European Organisation for Joint Armament Cooperation (OCCAR) awarded the Eurosam consortium (MBDA and Thales) the contract for the development of the SAMP/T NG, a French-Italian new-generation medium-range missile defence system.

Export markets

- ▶ At the beginning of 2021, Greece awarded MBDA the contract for the armament of its 18 future Rafales (6 new and 12 second-hand). MBDA will supply Scalp EG cruise missiles, AM39 Exocet anti-ship missiles, Meteor long-range air-to-air missiles as well as MICA EM/IR and NG anti-aircraft missiles. MBDA will also arm the three additional defence and intervention frigates as well as six Rafales ordered by Greece in September 2021.
- ▶ In April 2021, MBDA signed a contract with Lockheed Martin Canada to supply the Sea Ceptor air defence system for the Royal Canadian Navy's 15 future Canadian Surface Combatant (CSC) ships.
- ▶ In 2021, MBDA also won two new contracts, one from the Egyptian Navy for the MICA NG VL air defence system that will equip its future Meko frigates, and another from the Brazilian Navy for Sea Ceptor defence systems for its new Tamandaré-class frigates.

Technology and Innovation

- ▶ MBDA is involved in major future European programmes, including FCAS, MGCS, European MALE RPAS, MAWS, EDF (European Defence Fund), etc.
- ▶ MBDA is pursuing the FCASW (Future Cruise Anti Ship Weapon) programme in a French-British cooperation.
- ▶ In July 2021, France and the United Kingdom renewed their commitment to MBDA with a four-year contract for the CW ITP programme, a French-British partnership for the development of innovative technologies for generation-after-next missile systems. The contract covers the integration of new techniques and technologies (as well as their maturation) in preparation of future missile systems.



MEGGITT

British supplier of components and sub-systems, currently considering takeover bids by U.S. companies. 78th-largest defence contractor worldwide.

BUSINESS AREAS

Equipment and sub-systems supplier

- ▶ Aircraft wheel and braking systems
- ▶ Control sub-systems and sensors
- ▶ Polymers and composite structures
- ▶ Avionics
- ▶ Defence sub-systems
- ▶ Fuel systems
- ▶ Thermal systems

GOVERNANCE

Chairman

Sir Nigel Rudd

Chief Executive Officer

Tony Wood

Chief Financial Officer

Louisa Burdett

OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	MGGT
Listed on	LSE
Market Cap (£m)	5 810

Major shareholders* (as of 17.11.2021)

Société Générale Gestion SA	6,95%
Harris Associates LP	5,05%
Barclays Bank Plc (Private Banking)	4,58%
Aberdeen Asset Investments Ltd.	3,28%

*Ongoing takeover by U.S.-based company Parker-Hannifin

MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Parkway-HS	70%	United States
Parkway-Hamilton Sundstrand Mexico*	N/A	Mexico

*Owned via Parkway-HS, LLC

KEY FIGURES (Fiscal year ended : December 31st)

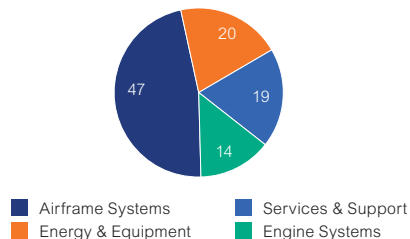
€ millions	2017**	2018	2019	2020
Revenue	2 274	2 351	2 592	1 892
Δ (%) [£]*	0,10%	4,34%	9,40%	-26,01%
Defence (%)	34%	35%	36%	46%
Export (%)	90%	92%	92%	92%
Operating profit/loss	311	290	371	-334
Operating margin	13,68%	12,33%	14,29%	-17,65%
Net income	334	202	254	-353
Order intake	2 344	2 500	2 901	1 721
Employees	11 226	11 739	12 599	9 280

*Variation based on revenue in local currency

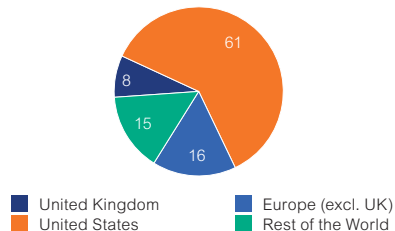
See €/£, p.7

**Figures restated

REVENUE BY BUSINESS SEGMENT (%)



REVENUE BY REGION (%)



MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	BAE Systems	Airbus	Lockheed Martin	Boeing	Leonardo	General Dynamics	Dassault Aviation	Textron	Raytheon Technologies*	Northrop Grumman	GE Aviation
Braking systems											
Carbon brakes	●	●	●	●	●	●	●	●			
Steel brakes	●	●	●	●	●	●	●	●		●	
Brake control systems	●	●	●	●	●	●	●	●		●	
Composite structures											
Ice protection systems		●	●	●	●		●				
Fuel systems											
Fuel tanks	●	●	●	●	●		●			●	
Electrical power systems											
Power conversion systems		●		●							
Thermal systems											
Heat exchangers	●				●			●		●	
Control sub-systems and sensors											
Fluide and pression sensors		●	●	●	●		●	●	●		
Fire detection systems	●	●	●	●	●	●	●	●		●	
Avionics											
Flight displays			●	●	●		●				
Defence sub-systems											
AGTS-36 aerial gunny target system, GT-400 glide target and countermeasure systems			●	●				●			
Ammunition handling systems	●		●	●		●	●				

*Merger of Raytheon and UTC

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Meggitt revenues reached £1.68bn (€1.89bn) in 2020, down 22% year-on-year. The group's business was heavily impacted by the global health crisis, which caused a sharp drop in equipment orders from aircraft manufacturers, which themselves were forced to reduce deliveries in the context of falling global air traffic. Faced with these difficulties, Meggitt reduced its workforce by around 15% in 2020.
- ▶ The group's military activities were not affected by the health crisis, and even recorded organic growth of 4%. As a consequence, the share of the defence business in Meggitt's total turnover increased to 46% in 2020 (compared to 36% in 2019).
- ▶ In July 2020, Meggitt completed the sale of Meggitt Training Systems (a subsidiary dedicated to training systems) to U.S. investment fund Pine Island Capital Partners for \$146m (€128m). The company will be renamed InVeris Training Solutions.
- ▶ In August 2021, U.S.-based firm Parker-Hannifin (a specialist in motion control technologies and equipment, in particular for the aerospace industry) announced it had reached an agreement to acquire Meggitt for £6.3bn (€7.3bn). As part of the deal, Parker-Hannifin committed to the UK government that it would keep Meggitt's technology, factories and headquarters in the UK, and that the majority of the board of directors will be British nationals. A few weeks later, U.S. aerospace component supplier TransDigm offered to buy Meggitt for £7bn (€8.1bn). Meggitt consequently announced that it would consider this new offer despite the prior agreement reached with Parker-Hannifin.

Home market

- ▶ Meggitt only generated 8% of its sales in its domestic market in 2020, a share that has remained stable in recent years.
- ▶ The group is involved in several British and European defence programmes. Among others, Meggitt supplies various equipment items (wheels, carbon brakes, landing gear, etc.) for the Eurofighter Typhoon combat aircraft. In November 2020, the group won a £4.2m (€4.7m) contract from BAE Systems to supply the nose radome technology that will protect the future ECRS Mk 2 radar (co-developed by BAE Systems and Leonardo) on the Royal Air Force's Eurofighter Typhoons.

Export markets

- ▶ The U.S. remain Meggitt's largest market, accounting for 61% of the group's sales in 2020. In defence, 74% of sales were made in the U.S. (compared to 18% for Europe).
- ▶ In the United States, Meggitt is involved in various programmes, including the F-35 (Lockheed Martin) and F/A-18 Super Hornet (Northrop Grumman) combat aircraft, the V-22 Osprey tilt-rotor helicopters (Bell-Boeing), as well as the Abrams tanks by General Dynamics Land Systems (GDLS).
- ▶ In December 2020, Meggitt signed a \$27.4m (€24m) contract with the Naval Air Systems Command to supply 32 cooling systems for the U.S. Navy's P-8A Poseidon maritime patrol aircraft.
- ▶ Meggitt is also involved in South Korea's future fighter aircraft programme, the KF-21 Boramae (formerly known as the KF-X programme), for which Korea Aerospace Industries (KAI) is the prime contractor. The British equipment manufacturer is supplying braking control systems, display systems, carbon brakes and wheels.

Technology and Innovation

- ▶ The group's R&D expenditure amounted to £97.9m (€110m) in 2020, representing 5.8% of turnover.



MTU AERO ENGINES

Aircraft engine manufacturer specialised in the production of aeronautical propulsion parts and sub-systems. Also a major player in aeronautical maintenance.

BUSINESS AREAS

Engine manufacturer and equipment supplier

- ▶ Aircraft propulsion systems and subsystems
- ▶ Equipment and components
- ▶ Engine MRO and gas turbines

GOVERNANCE

Chairman of the Supervisory Board	Klaus Eberhardt
Chairman and CEO	Reiner Winkler
Chief Program Officer	Michael Schreyögg

KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017*	2018	2019	2020
Revenue	3 897	4 567	4 628	3 977
Δ (%)	-17,66%	17,19%	1,34%	-14,07%
Defence (%)	11%	9%	10%	12%
Export (%)	88%	89%	89%	85%
Operating profit/loss	521	620	706	262
Operating margin	13,37%	13,58%	15,25%	6,59%
Net income**	355	447	478	139
Order book	14 893	17 573	19 820	18 608
Employees	8 846	9 731	10 660	10 313

*Figures restated

**Net income attributable to shareholders

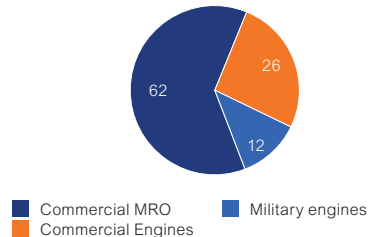
OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	MTX
Listed on	XETRA
Market Cap (€m)	10 376

Major shareholders (as of 17.11.2021)

Capital Research & Management Co. (World Investors)	6,69%
Citadel Advisors LLC	3,04%
Comgest SA	2,99%
Allianz Global Investors GmbH	2,95%

REVENUE BY BUSINESS SEGMENT (%)*

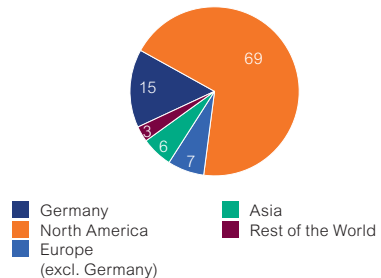


*Revenue distribution based on total sales excluding eliminations

MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
EUMET	50%	Germany
EUROJET Turbo	33%	Germany
EPI Europrop International	28%	Germany
MTU Turbomeca	33,33%	Germany
Rolls-Royce		
MTU Turbomeca	25%	Germany
Rolls-Royce ITP		
Turbo Union	39,98%	Germany

REVENUE BY REGION (%)



MTU AERO ENGINES

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Safran	ITP Aero*	Rolls-Royce	Avio Aero**	GE Aviation	Magellian Aerospace	Praet & Whitney***	Japanese Aero Engines	GKN Aerospace
Fighter aircraft engines									
NEFE (Next European Fighter Engine, FCAS programme)	●								
F414 (F/A-18E/F, EA-18G, JAS-39E/F)				●	●			●	
EJ200 (Eurofighter Typhoon)		●	●	●					
F110 (F-15, F-16)	●			●	●			●	
Transport aircraft engines									
TP400-D6 (A400M)	●	●	●						
V2500 (C-390)						●	●		
PW2000 (C-17)				●		●		●	
Helicopter turbines									
T408 (CH-53K)					●				
MTR390-E/2C (Tigre)	●	●	●						
Gas turbines									
LM2500 series		●			●				
LM5000 and LM6000					●				
ASE series									
TF series									
MRO and spare parts									
Larzac 04 engine (Alpha Jet)	●		●						
CF6-50C2 engine (KC-10)	●			●	●			●	
Tyne Mk 21/22 engine (C-160, Br 1150 Atlantic)	●		●						
T64 turbine (CH-53G)					●				

*Rolls-Royce group **GE Aviation group ***Raytheon Technologies group (merger of Raytheon and UTC)

STRATEGIC HIGHLIGHTS

Business trends

- ▶ MTU Aero Engines revenues fell significantly in 2020 (-14.1% year-on-year). The Engine Division was particularly hard hit, with a 23.1% drop in sales over the year, mostly due to dropping demand for civil engines and industrial gas turbines in the context of the global health crisis.
- ▶ The military business, which has been struggling in recent years, held up much better during the year (+5.2%). However, the share of military activities in the group's total revenues has fallen by almost 6 percentage points over the past decade (17.8% in 2010 compared to 11.9% in 2020).
- ▶ Amid the difficult market context, MTU Aero Engines announced a reduction in its workforce of 10-15% by the end of 2021. The cuts, which will affect both its German and international sites, will mainly involve a hiring freeze and early retirements.

Home market

- ▶ MTU Aero Engines generated 14.7% of its sales in Germany in 2020, a share that has been declining in recent years (-3.3 percentage points compared to 2010).
- ▶ In February 2020, the French and German governments awarded Airbus, Dassault Aviation, MBDA, MTU Aero Engines, Safran and Thales the initial contract for the Future Combat Air System (FCAS) demonstrator. The contract covers a first phase (Phase 1A) of 18 months that marks the beginning of the development of the future NGF (New Generation Fighter) aircraft.
- ▶ Following an agreement signed in December 2019, MTU Aero Engines and Safran Aircraft Engines in April 2021 created a 50-50 joint venture called EUMET (European Military Engine Team). Based in Munich and headed by a Safran-appointed managing director, the joint venture is responsible for the development, production and after-sales support of the Next European Fighter Engine (NEFE) for the future NGF European fighter aircraft. In April 2021, ITP Aero (Rolls-Royce's Spanish subsidiary) joined the programme as a major partner. Under the agreement, the industrial lead for the development of the NEFE engine will be shared equally between France, Germany and Spain.

Export markets

- ▶ MTU Aero Engines' export sales fell by 18.1% to €3.4bn in 2020, representing 85.3% of the group's total revenues.
- ▶ MTU launched the construction of two international maintenance centres during the year: in China in December 2020 via its joint venture MTU Maintenance Zuhai (scheduled to open in 2024), and in Serbia in July 2021 (scheduled to open at the end of 2022). However, both centres should mainly be dedicated to the maintenance of civil engines.
- ▶ In October 2020, MTU Maintenance Canada signed a one-year contract, with options for an additional four years, to provide maintenance, repair and overhaul services for GE Aviation's F108 engines powering the U.S. Air Force's KC-135 Stratotanker aerial refueling aircraft.
- ▶ In January 2021, MTU Maintenance signed a five-year contract with Pakistani airline AirSial for the maintenance and repair of six V2500 engines, and other related services.

Technology and Innovation

- ▶ MTU Aero Engines' total R&D expenditure amounted to €186m in 2020, down 13.1% from the previous year, of which 82% was self-financed. Total R&D spending represented 4.7% of the group's revenue, a share that has remained stable in recent years.



NAMMO

Aerospace and defence group equally controlled by the Norwegian State (50%) and Finnish defence company Patria (50%). Mainly operates in the ammunition segment.

BUSINESS AREAS

Ammunition provider, systems integrator/
equipment supplier

- ▶ Ammunition (all calibre)
- ▶ Weapon systems (shoulder fired systems, warheads and fuzes)
- ▶ Explosives and pyrotechnics (hand grenades, initiation systems)
- ▶ Propulsion systems (solid rocket motors for tactical missiles, booster rockets, hybrid rockets)
- ▶ Demilitarisation services (conventional ammunition)

GOVERNANCE

Chairman

D. Schjerven

Chief Executive Officer

M. Brandtzæg

Head of Operations

K. Kringsjå

OWNERSHIP STRUCTURE

Symbol

Listed on

Unlisted group

Market Cap

Major shareholders (as of 17.11.2021)

Norwegian State	50%
Patria	50%

MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
SN Technologies	50%	Switzerland
Komm-In	8%	Norway
Sintef Raufoss Manufacturing	14%	Norway
Raufoss Industripark Holding	2%	Norway

KEY FIGURES (Fiscal year ended : December 31st)

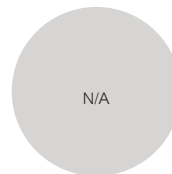
€ millions	2017	2018	2019	2020
Revenue	478	513	515	563
Δ (%) [NOK]*	7,99%	10,26%	3,11%	18,98%
Defence (%)	≈80%	≈80%	≈80%	≈80%
Export (%) **	82%	80%	77%	76%
Operating profit/loss	39	38	36	53
Operating margin	8,23%	7,36%	6,94%	9,34%
Net income***	22	25	19	39
Order book	472	584	755	876
Employees	2 217	2 409	2 377	2 523

*Variation based on revenue in local currency
See €/NOK, p.7

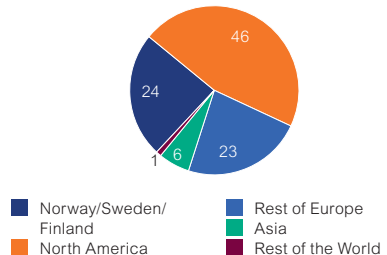
**Total revenue excluding Norway/Sweden/Finland

***Net income attributable to shareholders

REVENUE BY BUSINESS SEGMENT (%)



REVENUE BY REGION (%)



MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Saab	PCZ	Boeing	General Dynamics	Raytheon Technologies*	ArianeGroup	Avio	Bertin Technologies**	Thales	Diehl Defence	Kongsberg	MBDA
Ammunition												
Small caliber ammunition (4.6 mm - 12.7 mm)												
Medium caliber ammunition (12.7 mm - 57 mm)			●									
Large caliber ammunition (120 mm - 155 mm)			●	●	●							
Mortar rounds (60 mm, 81 mm and 120 mm)												
Weapon systems												
Warheads (M282) and fuzes (D652, Jupiter, Mercury, Venus)												
Shoulder-fired systems (M72 LAW, BDM, SMAW and SMAW-T)	●			●								
Explosives and pyrotechnics												
Hand grenades (fragmentation and smoke grenades)												
Hystrix grenade launch system												
Initiation systems												
Propulsion systems												
Solid propellant rocket motors for missiles (AMRAAM/SLAMRAAM, ESSM, IDAS, IRIS-T/IRIS-T SL, Penguin, Sidewinder)				●				●	●	●		
Auxiliary boost rocket motors (Exocet MM40, NSM)										●	●	
Booster separation motor and acceleration booster (Ariane 5 launcher)					●							
Hybrid rocket motors	●					●						
Altair air-launch system (demonstrator)							●					
Demilitarization services												
Demilitarization and thermal treatment												●

*Merger of Raytheon and UTC **CNIM group

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Nammo revenues jumped 19.0% to 6.0bn NOK (€563m) in 2020. The group's order book also increased significantly (+23.2% compared to 2019). Nammo generates around 80% of its sales in the defence sector, a share that has remained stable in recent years.
- ▶ To strengthen its position on the U.S. market, Nammo in late 2019 started consolidating its production activities (previously spread over five U.S. states) into a single entity, named Nammo Defense Systems and based in Mesa (AZ). In late 2020, the company also acquired the remaining 45% shares of U.S.-based MAC LLC (a manufacturer of lightweight ammunition and related cartridge cases) it did not already own, making it a wholly-owned subsidiary.

Finland, Norway, Sweden

- ▶ Created from the merger of three Nordic defence companies, Nammo continues to have a strong presence in its domestic markets (Norway, Sweden, Finland), where it generated 24% of its sales in 2020.
- ▶ Nammo is producing 25 mm APEX ammunition for the Norwegian Air Force's F-35 Lightning II fighter aircraft (Lockheed Martin) under an agreement with the Norwegian Defence Materiel Agency (NDMA). The group's ambition is to supply these munitions to other Armies using the F-35.
- ▶ In April 2020, Nammo signed a contract worth 670m SEK (€64m) with FMV, the Swedish Defence Materiel Administration, for the supply of small calibre ammunition. The contract is part of a framework agreement signed between Nammo and FMV in 2017. Deliveries are scheduled over the 2020-2022 period.
- ▶ In December 2020, Nammo and the Finnish government signed a new strategic partnership agreement for the supply of ammunition to the Finnish Defence Forces over several years. As part of this agreement, Nammo will earn approximately €20m per year from the sale of ammunition to the Finnish Defence Forces.

Export markets

- ▶ Nammo generated more than three quarters of its sales from exports in 2019. North America, which accounted for 43% of its sales during that year, remains the group's largest international market.
- ▶ In October 2020, the European Space Agency successfully carried out a static fire test of the future P120C booster that will power the Ariane 6 heavy-lift rocket and the smaller Vega-C launch vehicle at the Kourou Space Centre (French Guiana), and for which Nammo supplied the igniter. The Ariane 6 launch system is expected to enter service from 2022.
- ▶ In March 2021, the U.S. Department of Defense and the Norwegian Ministry of Defense teamed up with Nammo as an industrial partner for the development of an advanced solid fuel ramjet that could be used in supersonic and hypersonic weaponry (project THOR-ER, Tactical High-speed Offensive Ramjet for Extended Range).

Technology and Innovation

- ▶ Nammo aims to spend 10% of its annual revenues on R&D activities, which include long-range ammunition, medium-calibre ammunition (30 and 40 mm) and ammunition for the F-35 Lightning II.
- ▶ In the space field, Nammo is focusing on hybrid rocket engines. The group is involved in the programmes of several space agencies (European, Norwegian, Canadian, Israeli, Japanese, etc.) and in particular in the segment of small-lift launch vehicles (Vega-E of the European Space Agency, North Star of the Norwegian Space Agency) and small air-launch systems (Altair project of the European Space Agency).

NAVAL GROUP

Leading French and European military shipbuilding company with a solid export activity in first-rate frigates and submarines. Ranked 33rd-largest defence contractor worldwide.

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Surface ships
- ▶ Submarines (conventionally and nuclear-powered)
- ▶ Underwater weapons
- ▶ Combat systems, navigation systems, naval integration of unmanned systems
- ▶ Maintenance, modernisation and associated services for naval bases
- ▶ Civil nuclear energy

GOVERNANCE

Chairman and CEO

P.-É. Pommellet

General Secretary

Géraldine Le Maire

Executive VP Programs

O. de la Bourdonnaye

OWNERSHIP STRUCTURE

Symbol

Listed on

Unlisted group

Market Cap

Major shareholders (as of 17.11.2021)

French State	62,25%
Thales	35,00%
FCPE Actions Naval Group	1,73%

MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Kership	45%	France
Itaguaí Construções Navais (ICN)	41%	Brazil
Boustead DCNS Naval (BDNC)	40%	Malaysia
Technicatome	20,32%	France
Les Chantiers de l'Atlantique	11,7%	France
DCNS Zamil	55%	Saudi Arabia
Naviris	50%	Italy

KEY FIGURES (Fiscal year ended : December 31st)

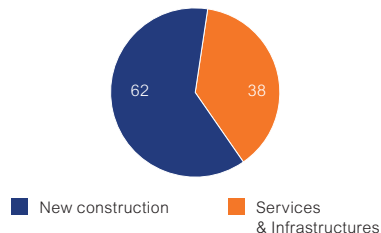
€ millions	2017*	2018	2019	2020
Revenue	3 194	3 608	3 712	3323
Δ (%)	0,09%	12,96%	2,88%	-10,48%
Defence (%)	≈ 95%	≈ 95%	≈ 95%	≈ 95%
Export (%)	36%	30%	29%	30%
Operating profit/loss**	98	266	282	76
Operating margin	3,07%	7,37%	7,60%	2,29%
Net income***	93	178	188	62
Order book	13 773	13 830	15 062	15 200
Employees	14 515	14 860	14 561	15 464

*Figures restated

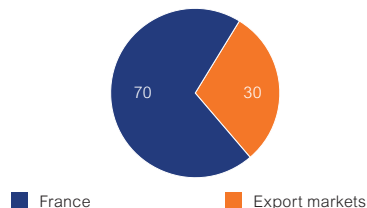
**Earnings Before Interest and Taxes and Amortization (EBITA)

***Net income attributable to shareholders

REVENUE BY BUSINESS SEGMENT (%)



REVENUE BY REGION (%)



NAVAL GROUP

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Thales	TechnicAtome	Fincantieri	Chantiers de l'Atlantique*	Leonardo	Mazagon Dock Limited	Odebrecht	Alexandria Shipyards	Boustead Naval Shipyard	Atlas Elektronik**	Pinou
Submarines											
SNLE 3G future 3rd-generation nuclear ballistic missile submarine (SSBN)	●	●									
Le Triomphant-class ballistic missile nuclear-powered submarine (SSBN)	●	●									
Suffren-class nuclear-powered attack submarine (SSN) (Barracuda programme)		●									
Scorpene-class conventionally-powered attack submarine (SSK)	●				●	●		●			
Surface ships											
Mistral-class amphibious helicopter carrier				●							
FREMM ASW/FREMM AAW multi-purpose frigates	●		●		●						
OPV, patrol vessels and corvettes (Gowind, OPV 90, OPV 58, MPV80, B2M)	●						●	●			●
FDI/Belharra-class frigates	●										
BRF replenishment vessel (FLOTLOG programme)***	●			●							
PA-Ng future new generation aircraft carrier		●		●							
Underwater weapons											
F21 heavyweight torpedo	●										●
MU90 lightweight torpedo	●				●						
Systems and equipment											
SUBTICS, SETIS and POLARIS combat management systems	●					●	●	●	●		●
Sylver vertical launching system			●								
MRO and services											
Horizon-class air defence frigates modernisation			●								
Rubis-class and Suffren-class submarines modernisation	●	●									

*Formerly STX France **TKMS, ThyssenKrupp group ***Based on Italian Navy's Vulcano-class LSS

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Naval Group revenues fell more than 10% to €3.3bn in 2020, as the global Covid crisis caused the shutdown of several shipyards and the slowdown of certain activities during March and April in particular.
- ▶ In September 2021, Australia canceled a contract for the supply of 12 Attack-class submarines signed with France in 2016 (a contract worth an estimated €56bn). Instead, the government announced it would acquire eight nuclear-powered submarines from the United States and the United Kingdom as part of a new trilateral military alliance between the two countries and Australia, known as Aukus. Naval Group did not expect any immediate job losses as a result of the lost contract.

Home market

- ▶ Naval Group generated 70% of its revenue in its domestic market in 2020. The group is the prime contractor for the French Navy's main construction and modernisation programmes, including the Suffren-class nuclear-powered attack submarine, FREMM multi-purpose frigates, FDI frigates, the future new generation aircraft carrier (PA-Ng), the future 3rd-generation nuclear-powered ballistic missile submarine (SNLE 3G), etc.
- ▶ In November 2020, Naval Group delivered the first of six Suffren-class nuclear-powered attack submarines that will progressively replace the French Navy's current Rubis-class submarines.
- ▶ In March 2021, the French Minister of the Armed Forces awarded the preliminary design contract (estimated at €200m) for the new generation aircraft carrier (PA-Ng) which is to replace the Charles de Gaulle aircraft carrier by 2038. In order to manage the project, Naval Group and Chantiers de l'Atlantique created a joint venture called MO Porte-Avions, 65% owned by Naval Group and 35% owned by Chantiers de l'Atlantique. Naval Group will be the overall architect of the nuclear aircraft carrier and transverse systems. Chantiers de l'Atlantique will be in charge of the architecture of the propulsion system, its production and integration.
- ▶ In March 2021, the French Minister of the Armed Forces also launched the SNLE 3G programme for four third-generation nuclear ballistic missile submarines (SSBN), which will replace the Triomphant-class SSBNs from 2035.
- ▶ In July 2021, Naval Group and the French Navy's Fleet Support Service signed a contract over more than three years for the operational maintenance of the French Navy's Rubis and Suffren-class SSNs.

Export markets

- ▶ In February 2021, Naviris (a joint venture between Naval Group and Fincantieri) and Spain's Navantia signed a cooperation agreement on the European Patrol Corvette (EPC) programme for the future European corvette, which will replace the Italian Navy's Commandante and Cassiopea-class offshore patrol vessels as well as the French Navy's Flotéal-class surveillance frigates.
- ▶ At the end of September 2021, Greece ordered three Belharra-class frigates (export version of the FDI) for an estimated contract value of €3bn. Greece is also considering ordering either an additional Belharra-class frigate or three Gowind-class corvettes. The contract should be signed by the end of the year.
- ▶ Naval Group is also participating in the tender for the supply of four submarines to replace the Royal Netherlands Navy's Walrus-class submarines (contract worth approximately €2.5bn), as well as the Indian P-75I project for the construction of six conventional submarines.

Technology and Innovation

- ▶ Naval Group's self-financed R&D expenditure amounted to €79m in 2020, representing 2.4% of turnover.
- ▶ At the Euronaval 2020 exhibition, Naval Group unveiled the SMX31E, a new multi-mission submarine concept with improved efficiency and stealth. In October 2021, Naval Group revealed that over the past six years it has been developing an autonomous underwater vehicle (AUV) of more than 10 metres that can carry weapons.



NAVAL VESSELS LÜRSSEN GROUP (FORMERLY LÜRSSEN DEFENCE)

Independent group that bundles the military shipbuilding activities of Lürssen's former Defence division. Key supplier of warships and patrol boats to the German Navy.

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Military shipbuilding (offshore patrol vessels, frigates, corvettes, mine-hunting vessels, etc.)
- ▶ Repair, refit and modernisation
- ▶ Training services
- ▶ Maritime infrastructures

GOVERNANCE

OWNERSHIP STRUCTURE

Symbol

Listed on

Market Cap

Unlisted group

Major shareholders (as of 17.11.2021)

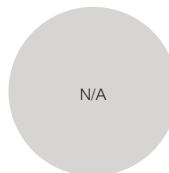
Lürssen family

100%

KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017	2018	2019	2020
Revenue	N/A	N/A	N/A	N/A
Δ (%)	N/A	N/A	N/A	N/A
Defence (%)	N/A	N/A	N/A	N/A
Export (%)	N/A	N/A	N/A	N/A
Operating profit/loss	N/A	N/A	N/A	N/A
Operating margin	N/A	N/A	N/A	N/A
Net income	N/A	N/A	N/A	N/A
Order book	N/A	N/A	N/A	N/A
Employees	N/A	N/A	N/A	N/A

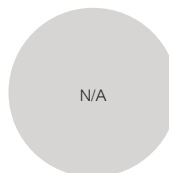
REVENUE BY BUSINESS SEGMENT (%)



MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
AMSEG	N/A	Australia
Muara Maritime Services	N/A	Brunei

REVENUE BY REGION (%)



NAVAL VESSELS LÜRSSEN GROUP (FORMERLY LÜRSSEN DEFENCE)

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Saab	Thales	Cvmtec	TKMS	L3Harris Technologies*	German Naval Yards Kiel	Meyer Werft	Rheinmetall	Darussalam Assets	Abeking & Rasmussen	MTG Dolphin	Damen	ASC
Naval vessels													
F126 future multi-purpose frigate (formerly MKS 180)	●											●	
424 AGI-class future surveillance and reconnaissance vessels													
Type 707 future replenishment tanker							●						
OPV 80/85/90 offshore patrol vessels										●			
Arafura-class offshore patrol vessel (SEA 1180 programme)**	●		●		●								●
F125 Baden-Württemberg-class frigate				●				●					
K130 Braunschweig-class corvette***				●		●	●						●
MJ 332 Frankenthal-class mine-hunting vessel							●		●				
MHV 54 Alanya-class mine-hunting vessel****									●				
FIB 125 Mustaed-class patrol boat													
OPB 41 patrol boat (ex-CSB 40)													
Repair, refit and modernisation													
Full service support for the entire Royal Brunei Navy's fleet								●					

*Merger of L3 Technologies and Harris Corporation

**Based on OPV-80-class offshore patrol vessel

***Based on TKMS' MEKO 100 frigate

****Based on Turkey's MJ 332 Frankenthal-class

STRATEGIC HIGHLIGHTS

Business trends

- ▶ In October 2021, Lürssen announced the separating of its civil and military activities into two independent entities. Naval Vessels Lürssen Group (NVL Group) now combines all defence activities (formerly included in the Lürssen Defence division), while the construction of luxury yachts continues under the Lürssen brand.
- ▶ As part of its creation, NVL Group took over the shipbuilding and maintenance/upgrading activities of naval vessels at four shipyards in Germany: Peene-Werft (Wolgast) and Blohm+Voss (Hamburg) for new construction, and Neue Jadewerft (Wilhelmshaven) and Norderwerft (Hamburg) for services. Operations in Australia, Bulgaria and Brunei are also affected.
- ▶ Along with the group's creation, Lürssen announced a restructuring plan for NVL Group's Blohm+Voss shipyard, which was acquired in 2016 and employs around 600 people. The plan should result in the elimination of around 100 positions and a refocusing on naval vessel construction. On the other hand, maintenance and repair activities for merchant and cruise ships, which have been unprofitable and affected by the global health crisis, will be discontinued.

Home market

- ▶ NVL Group is part of the ARGE F125 consortium, led by TKMS, which is supplying the F125 Baden-Württemberg-class frigates to the German Navy. The first three frigates were commissioned between 2019 and 2021 and the last unit is scheduled for delivery by the end of 2021. The group is also participating alongside TKMS and German Naval Yards Kiel in the construction of the German Navy's five new K130 Braunschweig-class corvettes. The five ships are currently under construction and are scheduled for delivery between 2023 and 2025.
- ▶ In January 2020, the German Ministry of Defence selected the consortium led by Dutch defence and shipbuilding group Damen and comprising the Blohm+Voss shipyard (NVL Group) and Thales Nederland, for the supply of four F126 (ex-MKS 180) multi-mission frigates to the German Navy (€4.6bn contract). The four ships are to be delivered by 2031 (with the lead ship to be delivered in 2027).
- ▶ In June 2021, NVL Group signed a €2.1bn contract with the German Navy for the supply of three 424 AGI (Auxiliary, General Intelligence) surveillance and reconnaissance vessels, to be delivered from 2027. These ships will replace the German Navy's three Type 423 Oste-class ships which have been in service for over 30 years.
- ▶ In July 2021, the group was also chosen to supply the German Navy with two Type 707 refuelling tankers (cargo capacity of 12,000 m³ of fuel) to replace the two Type 704 Rhön units in service since the late 1970s. The vessels, built in partnership with Meyer Werft, are to be delivered from 2024.

Export markets

- ▶ In January 2021, Luerssen Australia (a subsidiary of NVL Group) and Civmec, an Australian construction and shipbuilding company, began construction of the fourth Arafura-class offshore patrol vessel ordered by the Australian Navy as part of the SEA 1180 programme for the supply of 12 vessels. The first two vessels are being built by ASC in Australia.
- ▶ In November 2020, NVL Group was awarded the contract for the supply of two OPV-80-class or OPV-90-class offshore patrol vessels to Bulgaria, for €503m (of which a first instalment of €85m in 2021). The vessels will be built by the Bulgarian MTG Dolphin shipyard in Varna and delivered in 2025 and 2026.
- ▶ In November 2020, the German government approved the supply of 10 interceptor patrol boats to Egypt for €130m. NVL Group will deliver a first batch of four vessels at the end of 2020, and in February 2021 a second batch of three patrol boats (including two OPB-41 vessels) that were initially intended for Saudi Arabia but whose delivery has been blocked following Germany's ban on arms exports to Saudi Arabia at the end of 2018.



NAVANTIA

Spain's leading defence contractor, 100% state-owned. Mainly operates in shipbuilding (civil and military). 76th-largest defence contractor worldwide.

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Military shipbuilding (Landing Helicopter Dock (LHD) ships, frigates, corvettes, patrol vessels, submarines)
- ▶ Commercial shipbuilding
- ▶ Systems and equipment
- ▶ Propulsion systems
- ▶ MRO and modernisation services
- ▶ Marine energies

GOVERNANCE

Chairman and CEO*	R. Domínguez García-Baquero
Head of Operations	G. Mateo-Guerrero Alcázar
Chief Financial Officer	J. Bagüés Oliver

*In April 2021, R. Domínguez García-Baquero succeeded Belén Gualda González as Chairman and CEO.

OWNERSHIP STRUCTURE

Symbol	
Listed on	Unlisted group
Market Cap	

Major shareholders (as of 17.11.2021)

Spanish State (via SEPI)	100%
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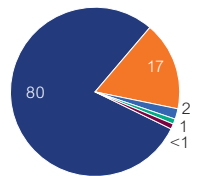
MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
SAES Capital	51%	Spain
Sociber	50%	Chile
SAMI Navantia Naval Industries	49%	Saudi Arabia
Inmize Capital	20%	Spain
Surveillance Maritime	10%	Spain

KEY FIGURES (Fiscal year ended : December 31st)

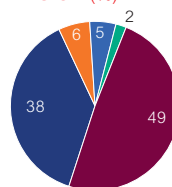
€ millions	2017	2018	2019	2020
Revenue	851	1 083	1 213	1 089
Δ (%)	19,86%	27,26%	12,00%	-10,22%
Defence (%)	N/A	N/A	N/A	N/A
Export (%)	33%	38%	61%	62%
Operating profit/loss	-367	-221	-124	-156
Operating margin	-43,13%	-20,41%	-10,22%	-14,33%
Net income	-297	-226	-146	-145
Order book	1 680	4 671	8 257	7 816
Employees	5 172	4 953	3 865	3 869

REVENUE BY BUSINESS SEGMENT (%)



- Shipbuilding
- MRO & Modernisation
- Propulsion & Energy
- Systems
- Other

REVENUE BY REGION (%)



- Spain
- Americas
- EU (excl. Spain)
- Europe (excl. EU)
- Rest of the World

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	SAMI*	MTUF**	Seoef	Lockheed Martin	General Dynamics	Indra Sistemas	BAE Systems	Avio Aero***	ASC	Raytheon Technologies****	Elbit Systems	GE Aviation	XPAL
Submarines													
S-80 Plus-class conventionally-powered attack submarine			●	●	●		●						
LHD and surface ships													
Juan Carlos I/Canberra-class LHD			●		●	●						●	
Alfa 3000 and Alfa 4000/Alfa 4000 MM frigates													
F110 Bonifaz-class multimission frigate	●		●		●			●					
F100 Álvaro de Bazán-class multimission frigate			●		●			●			●		
Hobart-class air warfare destroyer			●	●		●		●	●		●		
Avante-class family of corvettes	●	●											
BAM Meteor-class multipurpose offshore patrol vessel	●				●								
Auxiliary ships													
Cantabria/Supply-class auxiliary oiler replenishment													
LCM-1E-class amphibious landing craft													
Systems and equipment													
SCOMBA naval combat management system (Juan Carlos I LHD, F-100-class frigates, BAM-class patrol vessels)			●										
DORNA fire control system			●										
Propulsion systems													
MTU series 396, 956, 1163 and 4000 marine engines (sublicensed production)	●												
Weapon systems													
Tizona 30 mm turret (VCR 8x8)											●		●

*Saudi Arabian Military Industries **MTU Friedrichshafen, Rolls-Royce group ***GE Aviation group ****Merger of Raytheon and UTC

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Navantia revenues fell by 10.2% to €1.1bn in 2020, mostly due to declining activity in the MRO & Modernisation and Systems divisions. Despite a restructuring plan initiated in July 2017 and a significant reduction in headcount, Navantia also continued to record operating losses of €156m in 2020 (a loss ratio of -14.3%), in particular due to an estimated cost overrun of between €1.5bn and €1.8bn on the Spanish Navy's S-80 Plus-class submarine programme.
- ▶ The group's order book increased from €1.7bn in 2017 to €7.8bn in 2020, driven by the F110-class (Bonifaz) frigate programme for the Spanish Navy and the Al Jubail-class corvette programme (based on Navantia's Avante 2200) for the Royal Saudi Navy.
- ▶ While Navantia generates the majority of its sales in the defence sector, the company has been pursuing a diversification strategy to grow its footprint in the civilian sector, in particular in the field of marine renewable energy (offshore wind turbines, etc.).
- ▶ In April 2021, Ricardo Domínguez García-Baquero became the new Chairman and CEO of Navantia, replacing Belén Gualda González who was appointed President of SEPI, the Spanish state holding company that owns the group.

Home market

- ▶ Despite a marked drop in its domestic revenues in 2020 (-13.0% to €410m), the group remains heavily dependent on orders from the Spanish Navy, with two programmes running until the end of the 2020s (S-80 Plus-class submarines and F110-class frigates).
- ▶ In August 2021, Navantia started combat system trials for the first of the four S-80 Plus-class submarines, named Isaac Peral. Delivery of the vessel is now scheduled for 2023.
- ▶ In July 2021, Navantia was awarded two MRO contracts by the Spanish Navy: a contract of €25m per year for engine maintenance until 2023, and a two-year contract of €23m per year for maintenance of the vessels. The contracts include options to be extended for two additional years.

Export markets

- ▶ The group's export revenues also decreased in 2020 (-8.6%). Nevertheless, export sales represented 62% of the group's revenue in 2020 (+29 percentage points compared to 2017), following recent contracts signed with Saudi Arabia and Australia.
- ▶ Navantia has in fact won several contracts in Australia in recent years for the supply of two Canberra-class landing helicopter docks, 12 LCM-1E-class amphibious landing craft, three Hobart-class destroyers (derived from the Spanish F100-class frigates) as well as two Supply-class auxiliary oiler replenishment ships (AOR), making the group a strategic supplier to the Royal Australian Navy. The first of the two AORs, named Supply, entered service in April 2021 and the second, named Stalwart, was delivered in June 2021.
- ▶ In January 2021, the group was selected by the U.S. Department of Defense for the maintenance and repair of the Arleigh Burke-class destroyers and other U.S. Navy ships deployed at Naval Station Rota in Southern Spain. The contract, which runs until 2028, will be worth up to €822m.
- ▶ During the year, Navantia launched the third and fourth of five Al Jubail-class corvettes ordered by Saudi Arabia in July 2018: Hail in March and Jazan in July. The ships are expected to enter service in 2022-2023.

Technology and Innovation

- ▶ At FEINDEF 2019, Navantia, EXPAL and Elbit Systems presented the Tizona 30mm unmanned turret. Developed under a cooperation agreement that was signed at the end of 2018, the Tizona will equip the Spanish Army's 8x8 Dragón armoured vehicles which are supplied by Santa Bárbara Sistemas (General Dynamics).



NORTHROP GRUMMAN

Aerospace and defence company with a diversified defence portfolio (mainly aviation and space). Fourth-largest defence contractor worldwide.

BUSINESS AREAS

Platform manufacturer, systems integrator/
equipment supplier

- ▶ Military aircraft and unmanned aircraft systems
- ▶ Defence electronics and C4ISR systems
- ▶ Missile and weapon systems
- ▶ Space (equipment, payloads)
- ▶ Cybersecurity
- ▶ Modernisation and logistic services

GOVERNANCE

Chairman and CEO	K. J. Warden
President Aeronautics Systems	Thomas H. Jones
Chief Financial Officer	Dave Keffer

KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017**	2018	2019	2020
Revenue	23 012	25 483	30 215	32 223
Δ (%) [\$]*	5,25%	15,73%	12,45%	8,74%
Defence (%)	84%	84%	85%	86%
Export (%)	13%	15%	15%	14%
Operating profit/loss	2 848	3 201	3 544	3 560
Operating margin	12,38%	12,56%	11,73%	11,05%
Net income	2 539	2 734	2 007	2 792
Order book	35 554	46 725	57 738	65 989
Employees	70 000	85 000	90 000	97 000

*Variation based on revenue in local currency
See €/\$, p.7

**Figures restated

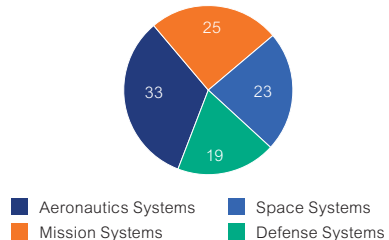
OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	NOC
Listed on	NYSE
Market Cap (\$m)	56 217

Major shareholders (as of 17.11.2021)

Capital Research & Management Co.	19,90%
SSgA Funds Management, Inc.	9,65%
Capital Research & Management Co. (International Investors)	8,53%
The Vanguard Group, Inc.	7,18%

REVENUE BY BUSINESS SEGMENT (%)*

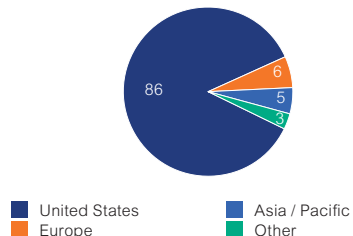


*As of January 1st, 2020, new organisational structure established

MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Longbow	50%	United States
EuroHawk	50%	Germany

REVENUE BY REGION (%)



NORTHROP GRUMMAN

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Boeing	GE Aviation	Rolls-Royce	Lockheed Martin	Raytheon Technologies*	Bell Helicopter**	L3Harris Technologies***	Pratt & Whitney****	Collins Aerospace****	Honeywell	BAE Systems	MBDA
Military aircraft												
B-21 Raider future strategic bomber								●	●		●	
B-2 Spirit strategic bomber	●	●		●								
E-2C/D Hawkeye surveillance aircraft			●	●	●	●		●			●	
E-8C Joint Surveillance Target Attack Radar Systems (JSTARS) surveillance aircraft	●							●				
F-35 Lightning II (fuselage, radar, etc.)				●							●	
F/A-18E/F Super Hornet (fuselage) and EA-18G Growler (electronic warfare suite)	●											
Unmanned aircraft systems (UAS)												
RQ-4 Global Hawk HALE UAS			●	●	●							
MQ-4C Triton HALE UAS			●	●	●						●	
MQ-8 Fire Scout VTOL UAS		●	●	●	●	●	●	●	●			
C4ISR systems												
Integrated Air and Missile Defense Battle Command System (IBCS) command and control (C2) system	●			●								●
Battlefield Airborne Communications Node (BACN) system				●	●		●					
Missile and weapon systems												
Ground Based Strategic Deterrent (GBSD) future intercontinental ballistic missile system												
AGM-88E AARGM and AARGM-ER air-launched tactical missile systems												●
Bushmaster cannons (M242, Mk44, M230)											●	
Space												
Advanced Extremely High Frequency (AEHF) payloads				●								

*Merger of Raytheon and UTC **Textron group ***Merger of L3 Technologies and Harris Corporation ****Raytheon Technologies group

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Northrop Grumman revenues increased 8.7% to \$36.8bn (€32.2bn) in 2020. Growth was mainly driven by the Space Systems branch (+17.7%), which is involved in many programmes (Next-Gen OPIR satellite, hypersonic missile, future GBSD intercontinental ballistic missile system, as well as NASA's Artemis lunar mission programmes).
- ▶ Following the acquisition of Orbital ATK in 2018, Northrop Grumman reorganised its four segments as of January 1, 2020 to better integrate Orbital ATK's activities into its corporate structure.
- ▶ After losing out in Phase 2 of the U.S. Space Force's National Security Space Launch (NSSL) programme, Northrop Grumman in September 2020 announced it would end its Omega heavy-lift launch vehicle project. The group will continue to market the Antares expendable launch system, the Minotaur family of launch systems, as well as the Pegasus XL air-launch-to-orbit rockets.
- ▶ In January 2021, Northrop Grumman sold its federal IT and mission support services business to Peraton, a subsidiary of U.S. private equity firm Veritas Capital, for \$3.4bn (€3.0bn).

Home market

- ▶ The U.S. remain Northrop Grumman's main market, accounting for 86% of its revenues in 2020 (including FMS procedures). The group is one of the main national players in the surveillance aircraft (E-2C/D Hawkeye) and military UAV (MQ-4C Triton) segments.
- ▶ In September 2020, the U.S. Air Force awarded Northrop Grumman a \$13.3bn (€11.6bn) contract to begin development of the future GBSD (Ground Based Strategic Deterrent) intercontinental ballistic missile. The cost of this programme is estimated at \$63bn (€55bn) over 20 years.
- ▶ In March 2021, the Lockheed Martin/Aerojet Rocketdyne and Northrop Grumman/Raytheon Technologies consortia each received \$1.6bn (€1.3bn) from the U.S. Missile Defense Agency to develop their proposals for the Next Generation Interceptor (NGI) ballistic missile protection programme. The contractor for this programme will be chosen in 2029.
- ▶ In June 2021, the U.S. Air Force announced that Northrop Grumman had completed production of two prototypes of the future B-21 Raider strategic bomber as part of the Long-Range Strike Bomber (LRS-B) programme. The first flight of the aircraft should take place in 2022.
- ▶ Northrop Grumman made two space launches in June 2021: one launch of three intelligence satellites for the National Reconnaissance Office using a Minotaur I rocket, and another launch of a low orbit space surveillance demonstration satellite for the U.S. Space Force using a Pegasus XL air-launch-to-orbit rocket.

Export markets

- ▶ Northrop Grumman has been strengthening its international presence in recent years. The group generated 14% of its revenues from exports in 2020, a share that has increased by 6 percentage points since 2011.
- ▶ In January 2021, the French government signed a letter of Offer and Acceptance (LOA) with the U.S. government for the acquisition of two E-2D Advanced Hawkeye surveillance aircraft. The contract could be signed in 2022, with delivery in 2028.
- ▶ In March 2021, the Northrop Grumman/Leonardo consortium was selected to participate in the Royal Australian Navy's SEA 129 Phase 5 programme for the acquisition of Maritime Unmanned Aircraft Systems (MUAS) for ISR missions. The tender for this programme, for which the two groups are offering their AWHero, is expected to be published in early 2022.

Technology and Innovation

- ▶ The group's self-funded R&D expenditure amounted to \$1.1bn (€940m) in 2020, representing 2.9% of revenue.



OHb

Leading German and third-largest European space technology company. Responsible for the SAR-Lupe/SARah satellite systems and supplier to the Ariane 6 programme.

BUSINESS AREAS

Platform manufacturer, systems integrator/
equipment supplier

- ▶ Space systems (development and production of satellites and payloads)
- ▶ Production of structures, components and propulsion systems

GOVERNANCE

Chairman of the Supervisory Board	Robert Wethmar
Chief Executive Officer	Marco R. Fuchs
Chief Financial Officer	Kurt Melching

OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	OHb
Listed on	XETRA
Market Cap (€m)	680

Major shareholders (as of 17.11.2021)

Marco Romed Fuchs*	34,6%
VOLPAIA Beteiligungs-GmbH*	21,4%
Christa Fuchs*	8,03%
Mayrhofer Romana Fuchs*	7,89%

*Fuchs family

MAIN JOINT VENTURES AND ASSOCIATES

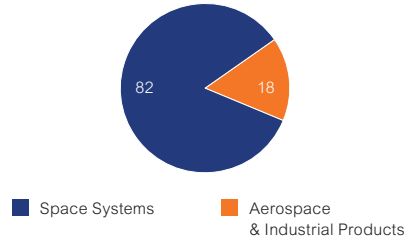
Name	%	Country
MT Aerospace Holding	70%	Germany
Arianespace Participation	5,8%	France
COSMOS Space Systems	66,7%	Germany
Rocket Factory Augsburg	53%	Germany
Antares Scarl	24%	Italy

KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017	2018	2019	2020
Revenue	860	1 000	1 030	901
Δ (%)	18,13%	16,28%	3,00%	-12,52%
Defence (%)	N/A	N/A	N/A	N/A
Export (%)	64%	66%	62%	62%
Operating profit/loss	44	48	49	42
Operating margin	5,12%	4,80%	4,76%	4,66%
Net income*	23	25	26	21
Order book	2 439	2 399	1 840	2 632
Employees	2 420	2 769	2 933	3 029

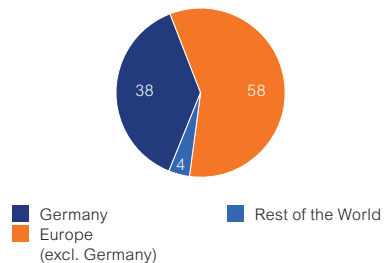
*Net income attributable to shareholders

REVENUE BY BUSINESS SEGMENT (%)*



*Revenue distribution based on total sales excluding eliminations

REVENUE BY REGION (%)*



*Distribution based on sales by geographical areas. The difference between sales by geographical areas and revenue reached €21.1m in 2020.

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Airbus	Tesat Spacecom*	Airio	ArianeGroup	Arianespace**	Collins Aerospace***	Surrey Satellite Technology*	Thales Alenia Space	RUAG	Stemme	Leonardo	Boeing
Space launch												
RFA One small-lift launch vehicle project												
Satellites												
SARah satellite-based reconnaissance system	●											
SAR-Lupe satellite-based reconnaissance system	●	●					●	●				
European Data Relay System (EDRS-C)	●	●	●	●								
Electra communications satellite	●				●							
Heinrich Hertz communications satellite (H2Sat)		●		●								
NAOS (National Advanced Optical System) military reconnaissance satellite				●								
Sentinel Earth observation satellites	●						●					
PRISMA Earth observation satellite				●							●	
Galileo European global navigation satellite system	●			●		●	●					
Structures, components, propulsion systems												
Structures, parts and components for launchers (Ariane 5 and Ariane 6)			●	●								
Propulsion systems (cold-gas, electrical, monopropellant and bipropellant systems)			●								●	
Antennas and mechatronics (ALMA programme)							●					
Components for aircrafts (A400M)	●											
Aerial systems												
OMCoSS multimission communication and surveillance system								●				
Aerial Reconnaissance Data System (ARDS)	●											

*Subsidiary of Airbus **Subsidiary of ArianeGroup ***Raytheon Technologies group (merger of Raytheon and UTC)

STRATEGIC HIGHLIGHTS

Business trends

- ▶ OHB revenues fell 12.5% to €901m in 2020, mainly due to pandemic-related delays in the Ariane 5 and Ariane 6 programmes. The group's two branches both recorded a decline in activity during the year: -21.5% (on an unconsolidated basis) for the Aerospace + Industrial Products division, and -10.3% for Space Systems.
- ▶ OHB is a key supplier to the European Space Agency (ESA), its largest customer, and to Germany, which aims to develop national competencies in the strategic space sector. OHB is active in the sector through its two main subsidiaries, OHB System AG and MT Aerospace AG.
- ▶ The group is responsible for several satellite programmes for the German Space Agency and the German armed forces (SAR-Lupe / SARah, Heinrich Hertz, EnMAP, etc.). OHB also supplies the satellites for the European Galileo positioning system as well as 23% of the structures and components of the Ariane 6 space launcher (out of Germany's 26% share in the programme).
- ▶ In July 2021, OHB subsidiary MT Aerospace AG and Boeing signed a partnership agreement to jointly design and produce commercial satellites, as well as parts of NASA's future Space Launch System (SLS), which will be built by Boeing and was co-designed with United Launch Alliance, Northrop Grumman and Aerojet Rocketdyne, among others.

Home market

- ▶ OHB generated 38% of its revenues in Germany in 2020, a share that has been stable in recent years.
- ▶ In September 2020, OHB-backed start-up Rocket Factory Augsburg (RFA) signed an agreement with Norway's Andøya Space to secure a launch site on the country's island of Andøya, from where it will provide end-to-end launch services for small satellites starting in 2022. At the same time, RFA concluded a partnership with the French space agency CNES to implement a launch site for the RFA ONE launch system on the Kourou launch complex in French Guiana.
- ▶ In November 2020, the Federal Office of Bundeswehr Equipment, Information Technology and In-Service Support (BAAINBw) awarded OHB a contract for the modernisation of the mobile ground stations of the German armed forces' satellite communication system (SATCOMBw).

Export markets

- ▶ OHB's export sales amounted to €506m in 2020, down 16.5% year-on-year, and are almost exclusively related to space programmes. The share of export sales has exceeded 60% since 2014.
- ▶ In October 2020, the European Space Agency announced a delay of several months in the Ariane 6 launch vehicle programme, in which OHB is involved. With this delay, the first Ariane 6 flight is planned for the second quarter of 2022.
- ▶ In June 2021, ArianeGroup awarded OHB subsidiary MT Aerospace AG a contract to develop a prototype carbon-fiber reinforced polymer (CFRP) logistics module, called Icarus, for the upper stage of the Ariane 6 launch vehicle within three years. Ariane 6 rockets equipped with this CFRP module will be able to carry an additional two tonnes of payload.

Technology and Innovation

- ▶ OHB's total R&D expenditure reached €19.5m (2.1% of revenues) in 2019. Nearly two thirds of the group's R&D expenditure relates to the Space Systems segment.
- ▶ In July 2021, the European Commission selected OHB subsidiary OHB System AG to lead a space surveillance and early warning system project called ODIN'S EYE (Multinational Development Initiative for a Space-based Missile Early-Warning Architecture). The project, which is funded by the European Defence Industrial Development Program (EDIDP), brings together 34 operators from 12 countries of the European Union.



PATRIA

Aerospace and defence company majority-owned by the Finnish State (50.1%), mainly involved in the production of wheeled armoured vehicles and weapons systems.

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Armoured wheeled vehicles
- ▶ Weapon systems (remote controlled weapon stations, mortar systems)
- ▶ C4iSTAR systems (ELINT systems, network management systems)
- ▶ Aerostructures
- ▶ Training, MRO and logistics support

GOVERNANCE

Chairman	Panu Routila
Chief Executive Officer	Esa Rautalinko
Chief Financial Officer	Ville Jaakonsalo

OWNERSHIP STRUCTURE

Symbol	
Listed on	Unlisted group
Market Cap	

Major shareholders (as of 17.11.2021)

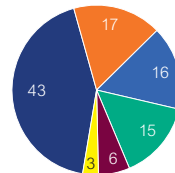
Finnish State	50,1%
Kongsberg Defence & Aerospace	49,9%

KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017	2018	2019	2020
Revenue	467	476	508	534
Δ (%)	-4,63%	1,90%	6,60%	5,24%
Defence (%)	94%	92%	92%	93%
Export (%)	33%	27%	26%	25%
Operating profit/loss	35	36	8	40
Operating margin	7,41%	7,54%	1,54%	7,55%
Net income*	22	25	-0	27
Order book	692	687	649	1 508
Employees	2 762	2 816	3 055	2 939

*Net income attributable to shareholders

REVENUE BY BUSINESS SEGMENT (%)



- Millog*
- Aviation
- Systems
- ISP**
- Land
- Aerostructures

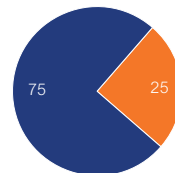
*Subsidiary company specialised in maintenance of platforms and equipment for the Finnish Defence Forces, 61.8% owned by Patria and 38.2% by the Finnish Insta Group

**International Support Partnerships (maintenance of equipment, platforms and military aircraft engines for international customers)

MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Defence Partnership Latvia	70%	Latvia
Millog	61,8%	Finland
Senop	61,8%	Finland
Milworks	60%	Estonia
Nammo	50%	Norway
Kongsberg Aviation Maintenance Services (formerly AIM Norway)	49,9%	Norway

REVENUE BY REGION (%)



- Finland
- Rest of the World

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Saab	Airbus	RUAG	Gorenje	Rohit	PCZ	Konstrukta Defence	Djuro Djakovic	Denel	Diehl Defence	Kongsberg	BAE Systems	LMT Systems	Leonardo	NHI
Armoured wheeled vehicles															
6x6 future modular armoured vehicle															
8x8 AMVXP and AMV modular armoured vehicles	●			●	●	●	●	●	●	●				●	
Weapon systems															
NEMO turreted remote-controlled 120 mm mortar system										●					
Advanced MOrtar System (AMOS) turreted 120 mm mortar system											●				
C4ISTAR															
Sonac DTS anti-submarine warfare sonar	●														
Compact Airborne Networking Data Link (CANDL)															
Aerostructures															
Composite components (A400M, 2000 AEW&C, NH90)	●	●													●
Training, MRO and logistics support															
Military pilot training															
MRO for aircraft (F/A-18C/D, Hawk Mk51/51A/66, C-295M) and helicopters (NH90, HKP16 Black Hawk, AW169)		●	●							●	●			●	●
Aircraft engines MRO (F100, F404, Adour, RTM322)															
Military vehicles MRO (XA 6x6 Pasi, AMV 8x8, CV90, Bv 206)											●				
Automatic weapons MRO												●			
Hamina-class fast attack craft MRO	●														

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Patria revenues increased 5.2% to €534m in 2020, mainly driven by aircraft modernisation services for the Finnish and Swedish air forces. Defence activities accounted for 93% of the company's sales in 2020. In addition to its activities in armoured vehicles, turrets, pilot training and MRO services, Patria also operates in the ammunition segment via Nammo, in which it holds a 50% stake alongside the Norwegian state.
- ▶ Patria's order book doubled over the year (from €649m at the end of 2019 to €1.5bn at the end of 2020) following the renewal, in December 2020, of a multi-year strategic partnership between its subsidiary Millog and the Finnish Ministry of Defence for maintenance, expertise and logistics services for the Finnish Defence Forces between 2021 and 2028. The contract is worth between €1.4bn and €1.6bn over the period.

Home market

- ▶ With three quarters of its sales generated in Finland in 2020, Patria remains highly dependent on its domestic market. The group in particular provides training for aircraft pilots, maintenance for G 115E training aircraft, as well as mid-life upgrade services for the Finnish Defence Forces' Hamina-class fast attack craft.
- ▶ During 2020-2021, the Finnish Ministry of Defence awarded Senop, a Patria subsidiary, two contracts worth a combined €27m for the supply of night vision devices (image intensifiers, observation and surveillance systems, laser aiming devices) to the Finnish Defence Forces, with deliveries by October 2022.
- ▶ In June 2021, Millog signed a €33m subcontract with BAE Systems Hägglunds (Swedish subsidiary of BAE Systems) for the mid-life modernisation of around 100 CV9030 armoured combat vehicles for the Finnish Defence Forces over the 2022-2026 period.
- ▶ In August 2021, Patria signed a contract with the Finnish and Latvian Defence Ministers for the production of the first 200 units of its new 6x6 armoured vehicle, which was jointly developed by the two countries. Deliveries will take place between 2021 and 2029. The programme may be opened to other countries, such as Estonia, if Finland and Latvia agree.

Export markets

- ▶ The group's export markets mainly include European countries (Norway, Sweden, Estonia, Latvia and Poland), the United Arab Emirates and South Africa.
- ▶ In April 2021, the Norwegian Defence Materiel Agency (NDMA) awarded Patria a contract to supply Sonac ACS Acoustic Minesweeping Systems for anti-submarine warfare and maritime mine counter measures to the Royal Norwegian Navy.
- ▶ In August 2021, Patria signed a Memorandum of Understanding with Slovak engineering company CSM to partner on a Slovak Army tender for the acquisition of 76 8x8 armoured infantry fighting vehicles, for which the group is offering its AMVXP. Patria is competing on this programme with General Dynamics subsidiary Steyr (Pandur II) and Poland's PGZ (Rosomak).

Technology and Innovation

- ▶ The group's self-financed R&D expenditure amounted to €10m in 2020, representing 1.9% of revenues.
- ▶ In July 2021, Patria joined two consortia involved in R&D projects financed by the European Defence Industrial Development Programme (EDIDP). The first consortium, FAMOUS (European Future Highly Mobile Augmented Armoured Systems), led by Patria and including 18 other European defence companies (among which Diehl Defence, Indra Sistemas, John Cockerill, KMW, Nexter), will focus on developing next generation armoured platforms. The second, a three-country (Estonia, Finland and Sweden) consortium led by Saab, was selected to develop a new maritime surveillance system.



POLSKA GRUPA ZBROJENIOWA (PGZ)

Holding company comprising more than 50 Polish companies operating in all fields of the defence industry.

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Tracked and wheeled armoured vehicles
- ▶ Weapon and artillery systems
- ▶ Missile systems
- ▶ Aircraft systems (attack helicopters, UAS, MRO, modernisation)
- ▶ Defence electronics
- ▶ Military shipbuilding and naval MRO
- ▶ Energy and offshore (platform modules and metallic structures)

GOVERNANCE

President of the Supervisory Board
 Vice-President of the Management Board
 Vice-Chairman

Wojciech Dabrowski
 Sebastian Chwalek
 Bogdan Borkowski

OWNERSHIP STRUCTURE

Symbol	Unlisted group
Listed on	
Market Cap	

Major shareholders (au 05.08.2021)

Polish Department of the Treasury	44,26%
Polski Holding Obronny sp. z o.o	28,84%
Agencja Rozwoju Przemyslu S.A.	26,90%

MAIN JOINT VENTURES AND ASSOCIATES

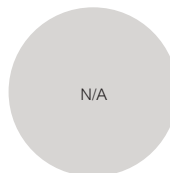
Name	%	Country
Cenzin	72,7%	Poland
Mesko	88,9%	Poland
Huta Stalowa Wola	83,22%	Poland
Zakłady Mechaniczne Bumar - Labedy	93,69%	Poland

KEY FIGURES (Fiscal year ended : December 31st)

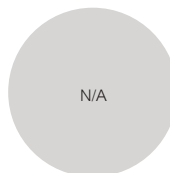
€ millions	2017	2018	2019	2020
Revenue	995	1 170	1 298	1 377
Δ (%) [PLN]*	13,40%	14,78%	11,12%	6,94%
Defence (%)	N/A	N/A	N/A	N/A
Export (%)	12%	14%	12%	13%
Operating profit/loss	N/A	N/A	N/A	N/A
Operating margin	N/A	N/A	N/A	N/A
Net income	-24	-27	9	-142
Order book	N/A	N/A	N/A	N/A
Employees	≈ 17 500	≈ 17 500	≈ 18 000	N/A

*Variation based on revenue in local currency
 See €/PLN, p.7

REVENUE BY BUSINESS SEGMENT (%)



REVENUE BY REGION (%)



POLSKA GRUPA ZBROJENIOWA (PGZ)

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Patra	Rheinmetall Defence	Hanwha Defence*	Raytheon Defence**	Lockheed Technologies**	Northrop Martin	Remontowa Grumman	WB Shipbuilding	Kongsberg Electronics	Rafael	Saab
Armoured vehicles											
Borsuk future infantry fighting vehicle							●				
KTO Rosomak 8x8 armoured wheeled vehicle	●						●				
KTO Rosomak 6x6 armoured wheeled vehicle		●									
Armoured vehicle MRO and modernisation (Leopard 2A4/2A5, T-72, BWP-1 Puma, Tumak-4)		●									
Weapon and artillery systems, missiles											
Krab 155 mm self-propelled tracked howitzer		●	●				●				
Rak 120 mm self-propelled mortar system							●				
Wisla air defence system (based on the Patriot system) (including PAC-3 MSE interceptors)				●	●	●					
Naval Strike Missile (NSM)								●			
Man-portable air-defense system Grom-M/Piorun											
Spike-LR anti-tank missile (under licence)									●	●	
Aeronautics											
PGZ-19R tactical UAV (Orlik programme)											
Aircraft and turbofan engine MRO and modernisation (Su-22, MiG-29, F-100, F-16)			●	●							●
Defence electronics											
TRS-15 3D surveillance radar											
Naval shipbuilding											
Coastal defence frigate (Miecznik programme)						●					
Kormoran II-class mine warfare vessel											

*Hanwha group **Raytheon Technologies group (merger of Raytheon and UTC)

STRATEGIC HIGHLIGHTS

Business trends

- ▶ PGZ revenues increased 6.9% to 5.9bn PLN (€1.4bn) in 2019. By 2030, PGZ aims to achieve sales of around 12bn PLN (€2.8bn).
- ▶ Huta Stalowa Wola, a subsidiary of PGZ, entered two partnerships in 2020-2021: one with Czech vehicle manufacturer Tatra for the design and production (in Poland as part of a technology transfer) of a 4×4 armoured vehicle that will be offered to the Polish Armed Forces in future programmes; and another with Rheinmetall Defence to produce, under licence and for a period of 20 years, the L44 120 mm calibre gun that equips the Leopard 2 main battle tank.
- ▶ PGZ has also teamed up with Israeli defence company Rafael for the tenders of the Ottokar-Brzoz program (equipment of PGZ's BWP-1 and KTO Rosomak armoured vehicles with Rafael's Spike NLOS long-range missiles, which will be co-produced by PGZ subsidiary MESKO if selected by the Polish Army) and the Pustelnik programme (supply of an anti-tank defence system, for which Rafael's Spike SR short-range missiles would be co-produced by PGZ).

Home market

- ▶ The group remains highly dependent on its domestic market (87% of revenues in 2019). It is the main beneficiary of the vast modernisation plan of the Polish Armed Forces and is a key partner for foreign players wishing to enter the Polish defence market.
- ▶ In December 2020, PGZ subsidiary Rosomak signed a contract worth 70m PLN (€15m) to supply Poland's Land Forces with eight command vehicles, based on the chassis of the KTO Rosomak 8x8 wheeled armoured vehicle. The vehicles will be delivered in 2021 and 2022.
- ▶ As part of the REGINA programme, the Polish Land Forces ordered two additional Krab self-propelled tracked howitzers from Huta Stalowa Wola in December 2020. The contract, which also includes the supply of a command vehicle and logistics vehicles, is worth a total of 100m PLN (€22m).
- ▶ In July 2021, the Polish Ministry of Defence awarded PGZ a contract for the production of three coastal defence frigates to be delivered by 2034 (Miecznik programme). PGZ will work in partnership with Remontowa Shipbuilding on this programme, which will cost approximately 8bn PLN (€1.9bn). The group won the bid against Babcock International, Navantia and TKMS.
- ▶ In August 2021, PGZ subsidiary Bumar-Labedy and Rheinmetall Defence delivered two Leopard 2PL tanks (an upgraded version of the Leopard 2 A4) to the Polish Land Forces, bringing the total number of upgraded units since May 2020 to 18. Major upgrades on the Leopard 2PL include new types of ammunition, improved ballistic protection and new optoelectronic systems (thermal camera, sighting system, etc.). A further six tanks are expected to be delivered by the end of 2021.

Export markets

- ▶ South America, the Middle East and South East Asia are target markets for the group's exports.
- ▶ PGZ is currently restructuring its Nauta Remontowa shipyard and has halted the construction of the Swedish Navy's future signals intelligence gathering ship, HMS Artemis, which was launched in spring 2019. The group is working as a subcontractor to Saab on this programme.

Technology and Innovation

- ▶ In September 2020, PGZ tested a prototype of its future Borsuk tracked infantry fighting vehicle at the Drawsko Pomorskie training ground. The vehicle is equipped with a remotely-operated ZSSW-30 turret, developed in partnership with Poland's WB Electronics. Deliveries to the Polish Land Forces are scheduled to begin in 2023.



QINETIQ

Technology company mainly operating in the field of defence and security (engineering services, aeronautics systems, etc.). 66th-largest defence contractor worldwide.

BUSINESS AREAS

Engineering support services and systems integrator

- ▶ Aerospace (aerostructures, propulsion systems)
- ▶ Engineering services and naval systems development/integration
- ▶ Site and test centre management
- ▶ C4ISR
- ▶ Robotics
- ▶ Cybersecurity

GOVERNANCE

Chairman	Neil Johnson
Chief Executive Officer	Steve Wadey
Chief Financial Officer	David Smith

OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	QQ.
Listed on	London Stock Exchange
Market Cap (£m)	1 515

Major shareholders (as of 17.11.2021)

Schroder Investment Management Ltd.	9,35%
GLG Partners LP	5,12%
BlackRock Investment Management (UK) Ltd.	4,47%
Man Group Investments Ltd.	4,15%

MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
BQ Solutions	49%	Qatar
Houbara Defence & Security	49%	United Arab Emirates
QinetiQ Dar Massader	49%	Saudi Arabia
Redu Space Services	48%	Belgium

KEY FIGURES (Fiscal year ended : March 31st)

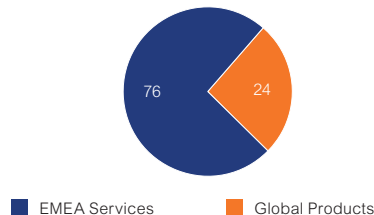
€ millions	2017-18	2018-19	2019-20	2020-21
Revenue	943	1 033	1 226	1 431
Δ (%) [£]*	6,37%	9,38%	17,76%	19,14%
Defence (%)	N/A	N/A	N/A	N/A
Export (%)	27%	30%	31%	33%
Operating profit/loss	160	130	134	126
Operating margin	16,93%	12,60%	10,96%	8,79%
Net income**	156	129	121	139
Order book	2 292	3 652	3 504	3 456
Employees	6 065	6 061	6 787	6 890

*Variation based on revenue in local currency

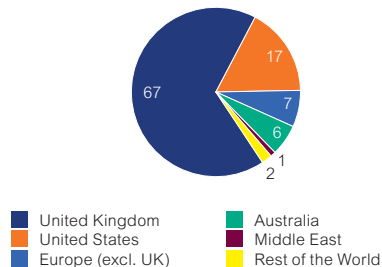
See €:£, p.7

**Net income attributable to shareholders

REVENUE BY BUSINESS SEGMENT (%)



REVENUE BY REGION (%)



MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	BAE Systems	General Atomics	Thales	Lockheed Martin	L3Harris Technologies*	Sierra Nevada Corp.	UMS SKELDAR**	Leonardo	RUAG	SES
Military aircraft										
Tempest future fighter aircraft	●									
Skeldar V-200 surveillance UAS (Canadian Armed Forces' programme)				●		●	●			
Avionics (Royal Air Force's Typhoon and F-35 fighter aircraft)	●		●							
Naval platforms and systems										
Type 26 frigate (Global Combat Ship programme)	●									
Queen Elizabeth-class aircraft carrier (electronic systems)	●									
Naval systems integration (C4ISR and combat systems)	●		●	●						
Electromagnetic Aircraft Launch System (EMALS)	●									
Advanced Arresting Gear (AAG)	●									
Services										
Aviation services (engineering, test centre, training)										
Naval Combat Systems Engineering Course	●		●							
Aerial (Banshee, Rattler), land and naval target systems										
C4ISR										
OBSIDIAN counter drone system										
Modular Electronic Warfare System (MEWS)				●						
Space systems										
International Berthing and Docking Mechanism (IBDM) for the ISS					●			●		
Communications satellite systems and ground-based equipment management									●	
Robotics										
Reconnaissance and counter-IED operation robots (Dragon Runner, MAARS, Spartacus, TALON)										

*Merger of L3 Technologies and Harris Corporation **Joint venture between Saab and UMS AERO

STRATEGIC HIGHLIGHTS

Business trends

- ▶ QinetiQ revenues grew 19.1% to £1.28bn (€1.43bn) during fiscal year 2020/21, driven by the Global Products division. The group, which mostly operates in defence and security, generated over 73% of its revenue from the UK and U.S. governments. QinetiQ's ambition is to increase its revenues by 70% within five years, in particular by expanding its export activity.
- ▶ In July 2020, QinetiQ acquired Naimuri, a British company that specialises in software development and data analytics for the British intelligence services, for £28m (€31m). In December 2020, it also purchased the remaining 15% capital stake of Inzpire Group for £3.9m (€4.4m), two years after it acquired 85% of the company's shares. Meanwhile, the group disposed of three non-core businesses during the year: Boldon James, Commerce Decisions and OptaSense, for a combined consideration of £54m (€60m).
- ▶ In May 2021, QinetiQ signed a strategic partnership with French company Texelis to develop and produce an electric hub drive system for armoured vehicles (Hub Drive technology).

Home market

- ▶ The UK government is the group's largest customer. QinetiQ is a partner of BAE Systems on various programmes, including the Queen Elizabeth-class aircraft carriers and the Royal Navy's Type 26 frigates, as well as on the Royal Air Force's proposed Tempest fighter aircraft.
- ▶ In October 2020, the Royal Air Force awarded QinetiQ a £5m (€5.6m) contract to develop software to accurately track, control and debrief exercises of the UK's strike carriers. QinetiQ and its subsidiary Inzpire will help build the infrastructure that allows F-35s and their pilots from the Royal Air Force, Royal Navy and U.S. Marine Corps to effectively train together with the Queen Elizabeth-class aircraft carriers starting from May 2021.
- ▶ In December 2020, the U.S. Air Force in Europe (USAFE) signed a £27m (€30m) five-year contract with QinetiQ to use Royal Air Force air bases for training missions for its F-15E and F-35 fighter pilots.
- ▶ In January 2021, QinetiQ secured a £127m (€142m) five-year contract with the UK's Ministry of Defence to provide engineering services for the Eurofighter Typhoon fighter aircraft, in particular to develop a new radar, under the Engineering Delivery Partner (EDP) programme.

Export markets

- ▶ QinetiQ generated 33% of its revenues from exports during fiscal year 2020/21, a share that the group aims to increase to 50%.
- ▶ In November 2020, QinetiQ and Pratt & Miller (a subsidiary of U.S.-based Oshkosh Defense) delivered the first prototype of a hybrid-electric unmanned ground combat vehicle (UGCV) to the U.S. Army as part of an order made in January 2020 under the Robotic Combat Vehicle – Light (RCV-L) programme. The two partners are also to supply four 3-tonne EMaVs (Expeditionary Modular Autonomous Vehicles) for a test phase by the end of 2021.
- ▶ In December 2020, QinetiQ inaugurated a drone flight test facility in Queensland, Australia, as part of a 14.5m AUD (€8.8m) contract signed in June 2020. Boeing Australia could be the first company to use the centre.

Technology and Innovation

- ▶ QinetiQ's total R&D expenditure amounted to £300m (€336m) during 2020/21, representing 23.5% of revenue. Self-funded R&D expenditure represented 1.4% of revenues.
- ▶ The consortium led by Oshkosh Defense and comprising Hanwha Defense USA, Plasan, QinetiQ and Rafael, is one of the consortia that was selected in July 2021 by the U.S. Army to participate in the design phase of the Optionally Manned Fighting Vehicle (OMFV) programme to replace the Bradley Armoured Infantry Vehicle.



RAFAEL ADVANCED DEFENSE SYSTEMS

Defence technology company mainly operating in the field of missiles and air defence systems (Iron Dome, Barak-8, Spike). 44th-largest defence company worldwide.

BUSINESS AREAS

Systems integrator/equipment supplier

- ▶ Missile systems, air and naval defence systems
- ▶ Unmanned systems
- ▶ C4ISR systems
- ▶ Land and naval weapon and artillery systems
- ▶ Defence electronics (countermeasure and protection systems)
- ▶ Space (microsatellites, propulsion systems, structures)
- ▶ Cybersecurity

GOVERNANCE

Chairman Uzi Landau
 Chief Executive Officer Yoav Har-Even

OWNERSHIP STRUCTURE

Symbol
 Listed on Unlisted group
 Market Cap

Major shareholders (as of 17.11.2021)

Israeli State | 100%

MAIN JOINT VENTURES AND ASSOCIATES

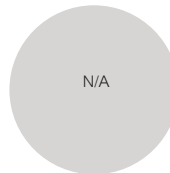
Name	%	Country
Shilat Optronics	50%	Israel
Opgal Optronic Industries	49,9%	Israel
GESPI Defense Systems	40%	Brazil
EuroSpike	20%	Germany
Kalyani Rafael Advanced Systems (KRAS)	49%	India
Varley Rafael Australia (VRA)	N/A	Australia
Astra Rafael Comsys	N/A	India
Raytheon RAFAEL Area Protection Systems	N/A	United States

KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017	2018	2019	2020
Revenue	1 998	2 195	2 431	2 405
Δ (%) [\$]*	11,23%	14,79%	5,05%	0,84%
Defence (%)	≈ 100%	≈ 100%	≈ 100%	≈ 100%
Export (%)	46%	45%	N/A	N/A
Operating profit/loss	N/A	N/A	N/A	N/A
Operating margin	N/A	N/A	N/A	N/A
Net income	110	113	99	82
Order book	5 755	5 921	6 387	5 800
Employees	≈ 7 500	≈ 7500	≈ 8 000	≈ 8 000

* Variation based on revenue in U.S. dollars
 See €/\$, p.7

REVENUE BY BUSINESS SEGMENT (%)



REVENUE BY REGION (%)



RAFAEL ADVANCED DEFENSE SYSTEMS

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	IAI	Lockheed Martin	BAE Systems	Northrop Grumman	Raytheon Technologies*	Diehl Defence	Rheinmetall	Astra Microwave Defence	Kalvini Products	General Dynamics	PGZ	Leonardo
Missile and defence systems												
David's Sling air defence system and Stunner and SkyCeptor interceptors					●							
Iron Dome short-range air defence system	●				●							
Tamir and SkyHunter interceptors (Iron Dome)					●							
SPYDER family of air defence systems	●											
Barak-1 and Barak-8 naval air defence systems	●							●				
C-Dome naval defence system												
Spike family of missiles (Spike ER/LR and ER2/LR2 anti-tank missiles, Spike NLOS multi-purpose missile system)					●	●						
SPICE family of guided bombs (250/1000/2000)		●			●							
Trophy Active Protection System (APS)	●								●			●
Drone Dome Counter Unmanned Aircraft Systems (C-UAS)												
C4ISR systems												
TopLite electro-optical system												●
Litening advanced targeting pod				●								
Unmanned system												
Protector USV		●	●									
Weapon and artillery systems												
SAMSON family of remote controlled weapon stations										●		
Communication systems												
BNET software defined radios								●				

*Merger of Raytheon and UTC

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Rafael Advanced Defense Systems (Rafael) reported sales of \$2.75bn (€2.41bn) in 2020, a slight year-on-year increase in US dollar terms (+0.84%).
- ▶ The group, which mostly operates in defence, was barely affected by the global health crisis of 2020, and also sits on a solid order book of \$7.12bn (€5.8bn), representing 2.6 years of sales.

Home market

- ▶ Rafael is a key partner of the Israeli Army. Alongside Elbit Systems and Israel Aerospace Industries, the group is one of the three main Israeli defence companies.
- ▶ Rafael is the supplier of the David's Sling and Iron Dome air defence systems, co-developed with U.S. defence company Raytheon Technologies.

Export markets

- ▶ Rafael's main export markets include the United States, India, Australia and Europe, mainly through cooperation agreements with local players.
- ▶ In October 2020, the Czech Republic announced the acquisition of four SPYDER air defence systems.
- ▶ In December 2020, Rafael won a \$200m (€175m) contract with an undisclosed Asian country to provide SPICE air-to-ground weapon systems, SPIKE missiles, as well as BNET software defined radios.
- ▶ After a first delivery made in September 2020, Rafael in January 2021 delivered the second of two Iron Dome air defence systems (a system co-developed by Rafael and Raytheon Technologies) ordered by the U.S. in 2019. In August 2020, Rafael and Raytheon Missile and Defense Systems (a division of Raytheon Technologies) formed a joint venture called Raytheon RAFAEL Area Protection Systems to manufacture the Iron Dome system in the United States. Rafael has also teamed up with Leonardo DRS (Leonardo's U.S. subsidiary) for the co-production, in Israel and the United States, of the TROPHY active protection system that will equip the U.S. Army's future Abrams main battle tanks.
- ▶ In June 2021, the Trophy system was also selected by the United Kingdom to equip the British Army's planned Challenger 3 main battle tanks, for which Rheinmetall BAE Systems Land (RBSL, a joint venture between Rheinmetall and BAE Systems) is the prime contractor, and whose first units should be delivered from 2027.
- ▶ Rafael is also positioned in several tenders in Poland. The group is participating in the tender for the Ottokar-Brzozza tank-destroyer programme alongside PGZ, for which it offers to equip PGZ's BWP-1 and KTO Rosomak armoured vehicles with Spike NLOS long-range missiles. If selected by the Polish Land Forces, the Spike NLOS missiles will be co-produced by MESKO, a PGZ subsidiary, as will the Spike SR short-range missiles under the Polish Pustelnik programme (supply of an anti-tank weapon for Poland's Territorial Defense Forces) in which Rafael is also positioned. The Israeli company is also offering the SkyCeptor interceptor for Poland's Narew air defence system programme.

Technology and Innovation

- ▶ In 2020, the group's R&D expenditure remained stable at 9.3% of total revenues.
- ▶ In March 2021, Rafael completed the development of the I-Derby ER air-to-air missile with a range of more than 100 kilometres. In June 2021, the company showcased the new SeaBreaker anti-ship missile. With a range of 300 kilometres, the SeaBreaker can identify targets autonomously through AI-powered sensors.



RAYTHEON TECHNOLOGIES

Aerospace and defence company created by the merger between Raytheon and UTC on 3 April 2020. Currently the world's second-largest defence contractor.

BUSINESS AREAS

Missile manufacturer, systems integrator/
equipment supplier and engine manufacturer

- ▶ Weapon systems (missiles and shells)
- ▶ Integrated defence systems (radar systems, air defence systems)
- ▶ C5ISR systems
- ▶ Commercial and military aircraft propulsion systems
- ▶ Commercial and military aerostructures and aircraft equipment
- ▶ Space systems

GOVERNANCE

Chairman & CEO	Gregory J. Hayes
President of Raytheon Missiles & Defense	Wesley D. Kremer
Chief Financial Officer	Neil G. Mitchell

OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	RTX
Listed on	NYSE
Market Cap (\$bn)	133

Major shareholders (as of 17.11.2021)

SSgA Funds Management, Inc.	9,53%
The Vanguard Group, Inc.	7,54%
Wellington Management Co. LLP	4,13%
Capital Research & Management Co.	3,88%

MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Collins Elbit Vision Systems	50%	United States
NetFires	50%	United States
Raytheon-Lockheed Martin Javelin JV	50%	United States
Range Generation Next	50%	United States
TRS AMDC2	50%	France

KEY FIGURES (Fiscal year ended : December 31st)

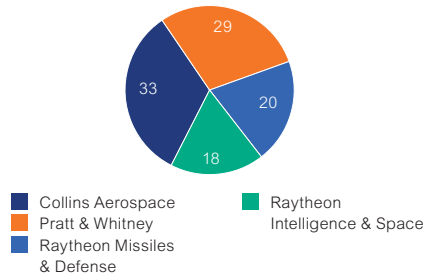
€ millions	2019 (Raytheon)	2019 (UTC)	2020** (Raytheon Technologies)
Revenue	26 050	68 791	49 551
Δ (%) [\$]*	7,83%	15,86%	N/A
Defence (%)	95%	17%	61%
Export (%)	29%	61%	39%
Operating profit/ loss	4 263	8 005	-1 654
Operating margin	16,36%	11,64%	-3,34%
Net income***	2 984	4 944	-3 081
Order book	43 412	118 166	122 346
Employees	70 000	243 200	181 000

*Variation based on revenue in local currency
See €/\$, p.7

**12 months data of former UTC activities and 9 months data (April to December) of former Raytheon activities

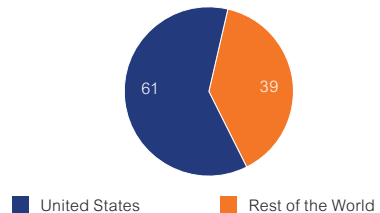
***Net income attributable to shareholders

REVENUE BY BUSINESS SEGMENT (%)*



*Revenue distribution based on total sales excluding eliminations


















REVENUE BY REGION (%)*



*Revenue distribution based on total sales excluding eliminations

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

 Raytheon
 UTC

	Rafael	Narmmo	L3Harris Technologies*	Northrop Grumman	BAE Systems	General Dynamics	Lockheed Martin	Kongsberg	Diehl Defence	Thales	MHI	GKN
Weapon systems												
 Long Range Stand Off Weapon future nuclear ballistic missile												
 Tomahawk cruise missile												
 AIM-9 Sidewinder family of air-to-air missiles		●						●			●	
 AIM-120 AMRAAM air-to-air missile		●	●	●	●							
 NSM/JSM anti-ship missiles		●						●				
 FMG-148 Javelin anti-tank missile						●						
 BGM-71 TOW anti-tank missile									●			
 Excalibur M982 advanced precision guided artillery shell		●		●								
Integrated defence systems												
 AN/SPY-6 (AEGIS) AESA naval radar			●			●						
 AN/TPY-2 (THAAD) early warning radar						●						
 Patriot air defence system (integrator)						●					●	
 David's Sling long-range air defence system and Stunner interceptor	●											
Military aircraft propulsion systems												
 F135 turbofan engine (F-35)												●
 F100 turbofan engine (F-15, F-16, X-47B)												●
 PT6A turboprop engine (EMB 314, T-6, PC-21, HeronTP)												
Aircraft systems												
 Landing gears (F-15, F-16, F-35, C-17, AH-64)												
 Propeller systems** (A400M, C-130)												

*Merger of L3 Technologies and Harris Corporation **Produced by its French Ratier-Figeac subsidiary

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Raytheon Technologies revenues reached \$56.6bn (€49.6bn) in 2020, 61% of which from defence activities. This makes the group the world's second-largest defence company by revenues, behind Lockheed Martin, and the third-largest aerospace company (civil and military), behind Boeing and Airbus.
- ▶ The group is organised around four branches. Two of them are derived from Raytheon and generate more than 95% of their sales in the defence sector: Raytheon Missiles & Defense (sales of \$11.7bn, or €10.2bn, specialised in missiles and air defence systems) and Raytheon Intelligence & Space (sales of \$10.8bn, or €9.5bn, specialised in cybersecurity, C5ISR and electronic warfare suites). On the other hand, the two branches that emerged from UTC only generate around 35% of their sales in defence: Collins Aerospace (sales of \$19.3bn, or €16.9bn, specialised in aerospace components such as landing gear, wheels, carbon brakes, propeller systems, ejection seats, helmet-mounted displays, etc.) and Pratt & Whitney (sales of \$16.8bn, or €14.7bn, specialised in aircraft engines).
- ▶ In February 2021, Raytheon Intelligence & Space entered into a partnership with Bombardier to develop a new data collection and analysis aircraft, called ISTAR. The aircraft will be based on the Bombardier's Global 6500 business jet and Raytheon Technologies will provide various sensors and an AESA radar.

Home market

- ▶ Raytheon Technologies generated 61% of its revenue from the U.S. market in 2020. The group is a preferred partner of the U.S. Department of Defense, along with Lockheed Martin and Boeing.
- ▶ In March 2021, the Northrop Grumman/Raytheon Technologies and Lockheed Martin/Aerojet Rocketdyne consortia each received \$1.6bn (€1.3bn) in funding from the U.S. Missile Defense Agency to develop their proposals for the Next Generation Interceptor ballistic missile protection programme. The winner of this programme will be chosen in 2029.
- ▶ During the same month, the U.S. Air Force Life Cycle Management Center awarded a \$518m (€428m) contract to Raytheon Missiles & Defense for the production of Lot 34 of the AIM-120 AMRAAM air-to-air missiles by the end of 2023. Just under half of the missiles will be destined for the United States and the rest for 10 allied countries under FMS programmes.
- ▶ In July 2021, Raytheon Intelligence & Space received a \$172m (€142m) contract from the U.S. Navy to begin production of its new Next Generation Jammer Mid-Band (NGJ-MB) electronic warfare suite, following successful flight tests on an EA-18G Growler electronic warfare aircraft (Boeing).

Export markets

- ▶ Export sales accounted for 39% of total revenues in 2020 and mostly concerned civil activities. In the military sector, the group is benefiting from international demand for Patriot air defence systems and F135 engines for the F-35 Lightning II fighter aircraft.
- ▶ In September 2020, Raytheon Missiles & Defense delivered the first unit of the Patriot air defence system to Romania, making the country the 17th user of the system. In 2022, Romania will receive additional Patriot units of the newest version developed by the group.
- ▶ In December 2020, Kongsberg and Raytheon Technologies signed a €410m contract with Hungary to supply the NASAMS air defence system. Hungary is the 12th country to purchase the system.
- ▶ In March 2021, Raytheon Australia signed an \$85m (€70m) contract with the Australian Department of Defence for the five-year maintenance of its NASAMS missile defence system, which is expected to enter service with the Australian Defence Force in 2023.

Technology and Innovation

- ▶ Raytheon Technologies' self-financed R&D expenditure amounted to \$2.6bn (€2.3bn) in 2020.



RHEINMETALL DEFENCE

Defence division of the Rheinmetall AG conglomerate. Germany's leading defence group, one of Europe's leading players in land systems, and 29th-largest defence contractor.

BUSINESS AREAS

Platform manufacturer, systems integrator/
equipment supplier

- ▶ Military vehicles (armoured tracked and wheeled vehicles, military trucks, etc.)
- ▶ Cannons, turrets and weapon systems
- ▶ Ammunition
- ▶ Air defence systems
- ▶ Defence electronics and C4ISR systems
- ▶ Simulation and training solutions

GOVERNANCE

Chairman & CEO Armin Papperger
Chief Financial Officer Helmut P. Merch

OWNERSHIP STRUCTURE

Symbol
Listed on Unlisted division
Market Cap

Major shareholders (as of 17.11.2021)

Rheinmetall | 100%

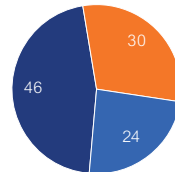
MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
ARTEC	64%	Germany
Rheinmetall BAE Systems Land	55%	United Kingdom
Rheinmetall MAN Military Vehicles	51%	Germany
Projekt System & Management	50%	Germany
Supashock	49%	Australia
EuroSpike	40%	Germany

KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017	2018	2019	2020
Revenue	3 036	3 221	3 522	3 723
Δ (%)	3,05%	6,09%	9,34%	5,71%
Defence (%)	100%	100%	100%	100%
Export (%)	71%	65%	59%	51%
Operating profit/loss	174	254	343	414
Operating margin	5,73%	7,89%	9,74%	11,12%
Net income	N/A	N/A	N/A	N/A
Order book	6 416	8 577	10 399	12 942
Employees	10 251	10 948	12 100	12 344

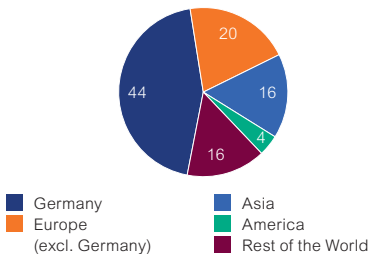
REVENUE BY BUSINESS SEGMENT (%)*



■ Vehicle Systems ■ Electronic Solutions
 ■ Weapon & Ammunition

*Revenue distribution based on total sales excluding eliminations

REVENUE BY REGION (%)



■ Germany ■ Asia
 ■ Europe (excl. Germany) ■ America
 ■ Rest of the World

RHEINMETALL DEFENCE

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	KMW*	Nexter*	MAN	Supashock	Raytheon Technologies**	General Dynamics	Supacat***	BAE Systems	UAC	Eurofighter	Airbus	NHIndustries	Denel
Military vehicles													
Main Ground Combat System (MGCS) future french-german main battle tank	●	●											
Lynx armoured infantry fighting vehicle				●	●								
Puma armoured infantry fighting vehicle	●												
8x8 Boxer armoured infantry fighting vehicle	●		●			●	●						
6x6 Fuchs / Fox armoured personnel carrier			●										
4x4 AMPV light armoured vehicle	●												
HX and SX high mobility logistic vehicles			●	●									
Guns and turret systems													
L52 155 mm gun (PzH 2000 self-propelled howitzer)	●												
L44 and L55 120 mm guns (Leopard 2 and M1 Abrams tanks)	●				●								
LANCE and LANCE RC turret systems													
Ammunition													
Large-caliber artillery projectiles (120 mm and 155 mm) and medium-caliber ammunition (20 mm, 25 mm, 27 mm and 30 mm)													●
Air defence systems													
Oerlikon Skyshield / MANTIS air defence system													
Simulation and training solutions													
Flight simulators (MiG-29K, Typhoon, A400M, NH90, Tigre, etc.)									●	●	●	●	
Future soldier systems													
Gladius / Argus soldier systems													

*KNDS group **Merger of Raytheon and UTC ***SC Group

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Rheinmetall Defence revenues grew 5.7% to €3.7bn in 2020. Growth was mainly driven by the Weapon and Ammunition division (+17.5%), which was supported by an increase in export sales and the supply of medical protective equipment.
- ▶ In November 2020, the division signed a strategic partnership with Czechoslovak Group (parent company of Czech truck manufacturer Tatra) for the development and production of tactical military vehicles in the Czech Republic under a technology transfer agreement.
- ▶ In April 2021, the group's U.S. subsidiary American Rheinmetall Vehicles entered a partnership with L3Harris Technologies to jointly develop a next-generation fighting vehicle based on Rheinmetall's Lynx, with a view to competing for the U.S. Army's Optionally Manned Fighting Vehicle (OMFV) programme. L3Harris Technologies will provide electronic systems.

Home market

- ▶ Germany is an important market for Rheinmetall Defence, accounting for 51% of sales in 2020 (up from 41% in 2019). The planned increase in Germany's military expenditure (from €44.9bn in 2020 to more than €48bn in 2023) could provide new opportunities for the branch.
- ▶ In January 2021, Rheinmetall MAN Military Vehicles signed a €154m contract with the Federal Office of Bundeswehr Equipment, Information Technology and In-Service Support (BAAINBw) for the supply of 401 HX high mobility military trucks (292 5-tonne trucks and 109 15-tonne trucks), with deliveries by the end of 2021.
- ▶ In March 2021, Diehl Defence, Hensoldt and Rheinmetall Defence formed the ARGE NNbS consortium to submit a tender for the Bundeswehr's planned short-range and very short-range air defence system (LVS NNbS programme). The programme is expected to replace the planned TLVS missile defence system, which is considered too costly and is being abandoned by the German government.
- ▶ In June 2021, Projekt System & Management (a joint venture equally-owned by Rheinmetall Defence and KMW) signed a €1.04bn contract (half of which for Rheinmetall Defence) with the German Army to upgrade 154 Puma armoured infantry fighting vehicles to S1 standard. The upgraded vehicles will be compatible with the VJTF 2023 version of Rheinmetall's Future Soldier - Expanded System (IdZ-ES) infantry system for collaborative combat missions.

Export markets

- ▶ Rheinmetall Defence has a strong international presence (49% of sales in 2020). The branch aims to further strengthen its international presence, particularly in Eastern Europe, the Middle East, North Africa, Asia and Australia.
- ▶ As part of the British Army's Mechanised Infantry Vehicle (MIV) programme, Rheinmetall BAE Systems Land in November 2020 signed a £860m (€966m) contract with the UK's Ministry of Defence to supply 260 Boxer armoured infantry fighting vehicles in their Command and Special Carrier variants.
- ▶ In May 2021, Rheinmetall Defence signed a €770m contract with the British Army to upgrade 148 Challenger 2 main battle tanks to the Challenger 3 standard by 2027 (Life Extension Project, LEP). The tanks will be upgraded with Rheinmetall's latest-generation 120mm smoothbore gun and a completely new turret structure, among others.

Technology and Innovation

- ▶ Total R&D expenditure increased 24.1% to €180m in 2020, representing 4.8% of the division's revenues.
- ▶ In November 2020, Rheinmetall Defence unveiled a new version of its Mission Master Autonomous - Unmanned Ground Vehicle (A-UGV) designed for armed reconnaissance.



ROLLS-ROYCE

Aerospace and marine propulsion manufacturer, one of the world's top three producers of engines for civil and military aircraft, and the world's 25th-largest defence company

BUSINESS AREAS

Engine manufacturer

- ▶ Aeronautics propulsion systems
- ▶ Naval propulsion systems (gas turbines, nuclear reactors, diesel engines)
- ▶ Distributed generation systems
- ▶ MRO services

GOVERNANCE

Chairman	Ian Davis
Chief Executive Officer	Warren East
President, Defence	Tom Bell

OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	RR
Listed on	LSE
Market Cap (£m)	11 992

Major shareholders (as of 17.11.2021)

Causeway Capital Management LLC	6,95%
Harris Associates LP	4,99%
The Vanguard Group, Inc.	3,07%
Massachusetts Financial Services Co.	2,92%

MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
AirTanker Holdings*	23%	UK
EUROJET Turbo	46%	Germany
Europrop International	44%	Germany
LHTEC	50%	United States
MTU Turbomeca	33,3%	Germany
Rolls-Royce ITP		
TAEC Ucak Motor Sanayi	49%	Turkey

*Ongoing sale to UK investment fund Equitix Investment Management

KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017****	2018	2019	2020
Revenue*	15 588	17 025	17 597	13 217
Δ (%) [£]**	-0,81%	10,21%	2,54%	-23,86%
Defence (%)	24%	23%	24%	32%
Export (%)	88%	90%	89%	90%
Operating profit/loss*	349	696	920	-2 216
Operating margin*	2,24%	4,09%	5,23%	-16,77%
Net income***	49	336	344	-4 492
Order book	62 007	70 503	71 563	59 733
Employees	50 000	54 500	51 700	48 200

*Excluding investments and equity affiliates

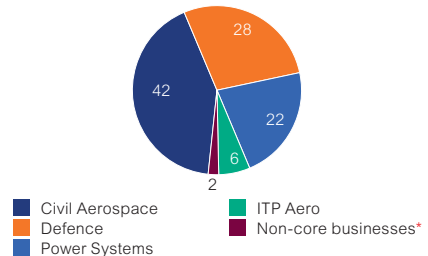
**Variation based on revenue in local currency

See €E, p.7

***Net income attributable to shareholders

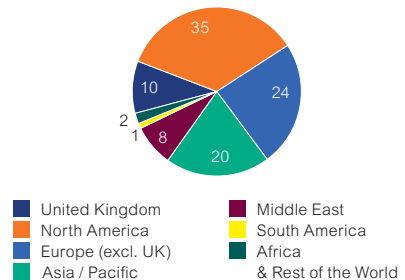
****Figures restated

REVENUE BY BUSINESS SEGMENT (%)



*Mainly Commercial Marine and North America civil nuclear activities businesses

REVENUE BY REGION (%)*



*Revenue distribution based on total sales excluding eliminations

ROLLS-ROYCE

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Safran	MTU Aero Engines	Avio Aero*	Praet & Whitney**	Honeywell	Standard Aero	Jiangsu A-Star	Reaction Engines	BAE Systems	TAI	HAL
Aircraft engines											
EJ200 turbojet engine (Eurofighter)		●	●								
LiftSystem for F-35B Lightning II fighter aircraft				●							
Adour turbojet engine (Jaguar, Hawk / T45)	●							●		●	
TP400-D6 turboprop engine (A400M)	●	●									
T56 and AE2100 turboprop engines (C-130)					●						
AE3007 turbojet engine (Embraer ERJ / Legacy)					●						
Trent 700 turbojet engine (A330 MRTT)											
Engines for the Tempest future fighter aircraft								●			
Hypersonic propulsion systems project							●	●			
Helicopter engines											
MTR390-E turboshaft engine (Tiger)	●	●									
CTS800 turboshaft engine (Lynx / Super Lynx, AW159 Wildcat)				●					●		
AE1107 turboshaft engine (V-22 Osprey)					●						
M250 turboshaft engine (OH-58, AH-6, MQ-8 Fire Scout)					●	●					
UAS propulsion system											
AE3007 turbojet engine (RQ-4 Global Hawk, MQ-4C Triton)											
Naval and submarine propulsion systems											
MT30 gas turbine (Queen Elizabeth-class aircraft carriers, T26-class frigates, Hunter-class frigates, Daegu-class frigates)								●			
PWR2 (Vanguard SSBN, Astute SSN) and PWR3 (Dreadnought SSBN) nuclear reactors								●			
MTU Series 4000 / 8000 diesel engines											

*General Electric group **Raytheon Technologies group (merger of Raytheon and UTC)

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Excluding investments and equity affiliates, Rolls-Royce revenues reached £11.8bn (€13.2bn) in 2020, down almost 24% year-on-year in local currency. With the exception of the Defence division, all divisions recorded a drop in activity during the year, mainly due to the global health crisis and problems encountered by Boeing, one of the group's main customers. Against this backdrop, Rolls-Royce recorded a net loss of £4.0bn (€4.5bn) in 2020, representing more than a third of its turnover.
- ▶ In response to the difficulties it encountered, Rolls-Royce took various measures in 2020: a £2bn bond issue, a £2bn capital increase and a £1bn two-year credit facility, for a total of £5bn (€5.5bn). The group also cut 3,500 positions between 2019 and 2020.
- ▶ After completing the sale of some of its civil nuclear activities in 2020, Rolls-Royce announced plans to sell its Spanish subsidiary ITP Aero. In September 2021, the group also announced that it had reached an agreement with British investment fund Equitix Investment Management to sell its 23.1% stake in the AirTanker Holdings consortium. Rolls-Royce also plans to divest its Norwegian subsidiary Bergen Engines AS.

Home market

- ▶ Rolls-Royce generated only 10% of its revenues in its domestic market in 2020. The group is the leader in the naval engines and turbines segment in the United Kingdom, and also has a monopoly position in submarine nuclear propulsion. Among others, the group will supply the reactors for the four Dreadnought-class SSBNs built by BAE Systems.
- ▶ In May 2021, Rolls-Royce signed a contract with the British Ministry of Defence for the maintenance of the MT-30 turbines of the Queen Elizabeth-class aircraft carriers and the WR-21 turbines of the Royal Navy's Type 45 destroyers until 2026.
- ▶ The group is involved, alongside BAE Systems (prime contractor), MBDA UK and Thales UK, in the Tempest programme for the UK's future fighter aircraft. In July 2021, the design and evaluation phase of the programme was officially launched with the award of a £250m (€289m) contract to BAE Systems by the UK Ministry of Defence.

Export markets

- ▶ With 32% of sales made in the U.S. during 2020, the U.S. remain the group's largest market. Rolls-Royce is a major supplier of propulsion systems for military aircraft and ships to the U.S. Department of Defense.
- ▶ In December 2020, the Republic of Korea Navy (ROKN) selected Rolls-Royce to equip the Ulsan-class FFX-III frigates, produced by Hyundai Heavy Industries (HHI), with the MT30 turbine. This turbine already equips the FFX-II frigates of the Daegu class, produced by Daewoo Shipbuilding & Marine Engineering (DSME).
- ▶ In September 2021, Rolls-Royce was selected by the United States to supply more than 600 engines for the U.S. Air Force's B-52 bomber fleet renovation programme, which was previously powered by Pratt & Whitney (Raytheon Technologies Group). The engines will be produced at the Rolls-Royce site in Indianapolis, Indiana. Boeing will be responsible for integrating the new engines. The total value of the contract could reach \$2.6bn (€2.2bn).
- ▶ The group is also partnering with Bell (Textron Group) to supply the propulsion system for the V-280 Valor helicopter, which is competing with Boeing and Lockheed Martin's SB-1 Defiant (powered by GE Aviation) for the U.S. Army's Future Long-Range Assault Aircraft programme.

Technology and Innovation

- ▶ The group's self-financed R&D expenditure amounted to £906m (€1.0bn), or 7.7% of revenues, in 2020.



RUAG + RUAG INTERNATIONAL

RUAG MRO Holding AG (RUAG) and RUAG International Holding AG (RUAG International), result from the demerger of RUAG Group in January 2020.

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Aircraft and land systems and services for the Swiss Armed Forces (RUAG)
- ▶ Commercial and military aircraft systems for international clients, small-calibre ammunition, aerostructures, launcher and satellite structures and components (RUAG International)

GOVERNANCE

Chairman of RUAG	Nicolas Perrin
Chairman of RUAG International	Remo Lütolf

OWNERSHIP STRUCTURE*

Symbol	
Listed on	Unlisted groups
Market Cap	

Major shareholders (as of 17.11.2021)

Federal Authorities of the Swiss Confederation	100%
--	------

*Both entities are owned by the Swiss state. However, RUAG International is expected to be listed on the stock exchange in 2023.

MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Nitrochemie Wimmis*	45%	Switzerland
Nitrochemie Aschau*	45%	Germany
RUAG Aviation Malaysia**	65%	Malaysia
RUAG Simulation Company**	49%	UAE
Arianespace Participation**	3,5%	France

*Subsidiaries of RUAG

**Subsidiaries of RUAG International

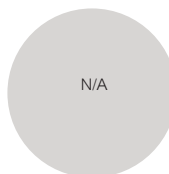
KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2018	2019	2020 (RUAG)	2020 (RUAG International)
Revenue	1 730	1 801	637	1 103
Δ (%) [CHF]*	2,20%	0,25%	N/A	N/A
Defence (%)	44%	43%	83%	28%
Export (%)	63%	63%	10%	81%
Operating profit/loss	92	-6	28	-209
Operating margin	5,31%	-0,35%	4,40%	-18,97%
Net income**	63	-22	29	-204
Order book	1 592	1 506	436	1 082
Employees	9 127	9 091	2 643	6 299

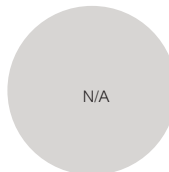
*Variation based on revenue in local currency
See €/CHF, p.7

**Net income attributable to shareholders

REVENUE BY BUSINESS SEGMENT (%)
















REVENUE BY REGION (%)



RUAG + RUAG INTERNATIONAL

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	KMW*	BAE Systems	General Dynamics	Boeing	Saab	Elbit Systems	Drassault Aviation	General Atomics	United Launch Alliance**	AirGroup	Avio	Thales
Aeronautics (RUAG)												
 MRO and modernisation of military aircraft (Swiss Army)												
Land systems (RUAG)												
 COBRA 120 mm mortar system			●									
 SidePRO, RoofPRO and MinePRO passive side protection solutions												
 ARANEA tactical communications system												
 MRO and modernisation of land platforms (Swiss Army)	●	●	●									
Aeronautics (RUAG International)												
 Aerostructures (F/A-18, JAS 39 Gripen, F-5 Tiger, PC-21)				●	●							
 Hermes 900 StarLiner/HFE UAS						●						
 nEUROn UCAV demonstrator (wind tunnel tests and weapons interface unit)							●					
 OPATS laser-based automatic landing system for UAS								●				
 MRO and modernisation of military aircraft (foreign Armies)												
Space systems (RUAG International)												
 Launcher fairings (Ariane 5 and 6, Vega, Atlas V-500, Vulcan Centaur)								●	●	●		
 Launcher guidance systems (S19 and GCS families)												
Land systems (RUAG International)												
 CERBERE programme (upgrade of the instrumentation for the French Army's live combat training centres)												●

*KNDS group **Boeing / Lockheed Martin

STRATEGIC HIGHLIGHTS

Business trends

- ▶ In January 2020, the former RUAG Group completed the split of its activities into two legally independent entities: RUAG MRO Holding AG (RUAG) and RUAG International Holding AG (RUAG International).
- ▶ RUAG's core business is the supply and integration of systems for the Swiss Armed Forces' air and land platforms and the provision of maintenance and upgrading services. RUAG International comprises the other activities, organised in four branches: Ammotec (munitions), Space, Aerostructures and MCO International. RUAG International is to be listed on the stock exchange from 2023 onwards and the Ammotec and MCO International branches are to be divested.
- ▶ RUAG generated revenues of CHF 682m (€637m) in 2020, 83% of which in defence, and an operating margin of 4.4%. RUAG International revenues reached CHF 1.18bn (€ 1.1bn) in 2020, 28% of which in defence. However, the group posted an operating loss of 19.0% of sales, due to costs related to the restructuring of its activities, an accounting loss following the sale of Dornier to General Atomics (effective in March 2021) as well as provisions related to the global health crisis.

Home market

- ▶ The Switzerland Federal Department of Defence, Civil Protection and Sport (DDPS) is RUAG's largest customer, accounting for 76% of its sales in 2020. It also accounted for 13% of RUAG International's sales.
- ▶ Since February 2021, RUAG has been responsible for the production and integration of 32 COBRA 120mm mortar systems on the Piranha V 8x8 wheeled armoured vehicle (General Dynamics). The first such vehicle is scheduled to enter service with the Swiss Army in 2024.
- ▶ Following Switzerland's selection of Raytheon Technologies' Patriot air defence system in June 2021, RUAG entered into a partnership with the U.S. company in October 2021 for the provision of maintenance services, the production of simulators, as well as the adaptation of vehicles and trailers for the transport of the system.

Export markets

- ▶ RUAG International's business is mainly export-oriented (81% of revenues in 2020). In the defence sector, the group provides maintenance services for military aircraft and training solutions for foreign armed forces (France, Germany, Italy, etc.). In contrast, only 10% of RUAG's 2020 revenues were generated from exports.
- ▶ In October 2020, the French Directorate General of Armaments (DGA) awarded the SERKET tender to the consortium consisting of RUAG Defence France and Agueris (French subsidiary of Belgian mechanical engineering group John Cockerill). The contract covers the development and production of cabin simulators for the armoured vehicles of the Scorpion programme (Jaguar and Griffon combat vehicles and renovated Leclerc tanks).
- ▶ In November 2020, RUAG Defence France (a subsidiary of RUAG International) and Thales jointly delivered a first capacity of the CERBERE instrumented simulation system to the French Army (via the DGA). The CERBERE system is to be fully deployed in 2023.
- ▶ In March 2021, RUAG International was selected by the German Army to provide 55 interoperable communication solutions based on Tactical Access Node (TAN) devices, as part of the Multinational Interoperabler Funkanschaltpunkt (MIFAP) programme.

Technology and Innovation

- ▶ RUAG's self-financed R&D expenditure amounted to CHF 14m (€13m, or 2.1% of sales) in 2020, compared with CHF 27m (€25m, or 2.3% of sales) for RUAG International.



SAAB

Group mainly operating in the military sector (Gripen fighter aircraft, A26 submarine).
Leading supplier to the Swedish Armed Forces and 40th-largest defence contractor.

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Military aircraft
- ▶ Naval platforms and systems
- ▶ Weapon and missile systems
- ▶ Defence electronics
- ▶ C4ISR and early warning systems
- ▶ Information security and system integration
- ▶ Simulation solutions

GOVERNANCE

Chairman	M. Wallenberg
Chief Executive Officer	M. Johansson
Head of Aeronautics division	J. Hjelm

OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	SAAB B
Listed on	Nasdaq OMX Stockholm
Market Cap (SEK m)	33 143

Major shareholders (as of 17.11.2021)

Investor AB (Investment Company)	28,90%
Wallenberg Investments AB	8,87%
AllianceBernstein LP	4,64%
Första AP-fonden	3,25%

MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
TAURUS Systems	33%	Germany
Akaer Participações	39,9%	Brazil
UMS Skeldar	47%	Switzerland
SN Technologies	50%	Switzerland

KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017**	2018	2019	2020
Revenue	3 287	3 232	3 346	3 266
Δ (%) [SEK]*	10,60%	4,71%	6,87%	-0,01%
Defence (%)	84%	85%	85%	88%
Export (%)	58%	59%	63%	64%
Operating profit/loss	234	221	277	121
Operating margin	7,11%	6,83%	8,29%	3,71%
Net income***	153	128	187	99
Order book	10 911	9 964	8 930	9 948
Employees	16 427	17 096	17 420	18 073

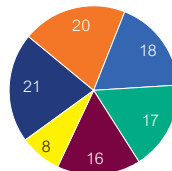
*Variation based on revenue in local currency

See €/SEK, p.7

**Figures restated

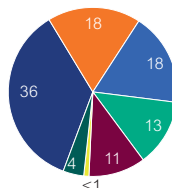
***Net income attributable to shareholders

REVENUE BY BUSINESS SEGMENT (%)*



*Revenue distribution based on total sales excluding eliminations

REVENUE BY REGION (%)



MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	RJAG	Thales	MBDA	Embraer	BAE Systems	Dassault Aviation	Leonardo	AEL Sistemas*	Bombardier	UMS Aero Group	Diehl Defence	Boeing
Military aircraft												
JAS 39 Gripen E/F fighter aircraft		●	●	●			●	●				
T-7A Red Hawk future trainer aircraft (aft fuselage)												●
2000 Erieye AEW&C surveillance aircraft				●								
GlobalEye surveillance aircraft (radar) and Swordfish Maritime Patrol Aircraft (MPA) (embedded system)								●				
Skeldar V-200 VTOL UAV									●			
nEUROn UCAV demonstrator (landing gear doors, main fuselage, avionics, etc.)					●							
Missile and weapon systems												
AT4 and Carl-Gustaf M4 man-portable shoulder-fired systems												
Light Anti-tank Weapon missile system												
RBS 70 NG very short-range ground-based air defence system												
RBS 15 Mk3 anti-ship missile system												●
IRIS-T short-range air-to-air missile												●
METEOR long-range air-to-air missile			●									
TAURUS KEPD 350 cruise missile			●									
Defence and security solutions												
Giraffe and Sea Giraffe family of radars (AMB, 1X, 4A, 8A)												
Submarine												
Future A26-class attack submarine												
Defence electronics												
BOL advanced countermeasure dispenser					●							
Integrated Defensive Aids System (IDAS)	●											

*Elbit Systems group

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Saab revenues were relatively flat at 35.4bn SEK (€3.3bn) in 2020. However, the group's Industrial Products and Services branch, which is mainly focused on civil aviation and works as a subcontractor for Airbus and Boeing (aerostructures, aviation electronics, etc.), recorded a 10.8% drop in sales (on an unconsolidated basis) during the year.
- ▶ In 2020, the group generated 88% of its revenues in defence. With the exception of the Industrial Products and Services branch, the defence business accounts for more than 80% of revenues at each of Saab's branches, and even 100% for the Aeronautics and Kockums branches.

Home market

- ▶ Saab generated 36% of its revenues in the Swedish market in 2020. The group is the preferred partner of the Swedish Defence Materiel Administration (FMV), particularly for combat aircraft and naval defence, and is involved in all of the country's military programmes. Saab is to deliver 60 JAS 39 Gripen E aircraft ordered by Sweden in 2014.
- ▶ In December 2020, FMV awarded Saab a five-year contract worth 2.1bn SEK (€209m) for the supply of ground based air defence systems. The order includes Giraffe 4A multifunctional radars and upgrades of the Swedish Armed Forces' existing Giraffe AMB surface radars.
- ▶ In January 2021, Saab signed two contracts with FMV: one for the product definition phase for the mid-life upgrades (MLU) of five Visby-class corvettes, and another for the product definition phase for the next-generation Visby Generation 2 corvettes. The combined value of the two contracts is 190m SEK (€18.9m).
- ▶ In August 2021, FMV awarded a 5.2bn SEK (€517m) contract to Saab to continue the development and production of the two future A26-type attack submarines (also known as Blekinge-class) ordered in 2015. Deliveries are scheduled for 2027 and 2028.

Export markets

- ▶ Saab's export sales amounted to 22.8bn SEK (€2.1bn) in 2020, accounting for 64% of total sales.
- ▶ In October 2020, the Brazilian Air Force officially presented the Brazilian version of the JAS 39 Gripen, named F-39 Gripen, one month after the aircraft's maiden flight.
- ▶ In December 2020, Saab signed a contract with the French Armament General Directorate (DGA) to upgrade the French Air and Space Force's mobile command and control systems, including the Giraffe AMB radars that have been in service with the French Armed Forces since 2001, as part of the French aerospace operations command and control system (SCCOA) programme.
- ▶ In January 2021, the United Arab Emirates awarded Saab a \$1.02bn (€887m) contract to supply two additional GlobalEye surveillance aircraft by 2025. The GlobalEye is a Bombardier Global 6000 long-range business jet equipped with a suite of sensors using Saab's Erieye ER (Extended Range) radar and mission system. The country had already ordered three units of this aircraft in 2015, the last of which was delivered in February 2021.
- ▶ In April and July 2021, Saab delivered the first two rear airframe sections for the U.S. Air Force's future T-7A Red Hawk trainer aircraft to Boeing.

Technology and Innovation

- ▶ Saab's total R&D expenditure amounted to 7.4bn SEK (€686m) in 2020, representing 21% of revenues. Self-financed expenditure represented 6.9% of group revenues.
- ▶ At the DSEI exhibition in London in September 2021, Saab showcased the CB90 NG, a new version of the CB90-class fast military assault craft. The CB90 NG features a new combat management system, new sensors for surveillance, and improved ballistic protection.

SAFRAN

Leading global aerospace engine and equipment manufacturer (civil and military aircraft and helicopters) and 26th-largest defence company in the world.

BUSINESS AREAS

Engine manufacturer, systems integrator/
equipment supplier

- ▶ Aircraft and helicopter engines, satellite and missile propulsion systems
- ▶ Aircraft systems and equipment
- ▶ Optronics, avionics, navigation systems, defence electronics and critical softwares
- ▶ Unmanned aircraft systems (UAS)
- ▶ Security systems

GOVERNANCE

Chairman	Ross McInnes
Chief Executive Officer	Olivier Andriès
Chief Financial Officer	Bernard Delpit
President, Safran Electronics & Defense	Martin Sion

OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	SAF
Listed on	Euronext Paris
Market Cap (€m)	50 930

Major shareholders (as of 17.11.2021)

French State	11,20%
Sagem SA Employee Stock Ownership Plan	7,25%
TCI Fund Management Ltd.	4,98%
Capital Research & Management Co. (World Investors)	4,40%

MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
ArianeGroup	50%	France
Roxel	50%	France
Lynred (formerly Sofradir)	50%	France
CFM International	50%	France
EuroProp International	32,2%	Germany
Initium Aerospace	50%	United States

KEY FIGURES (Fiscal year ended : December 31st)*

€ millions	2017**	2018	2019	2020
Revenue	15 953	21 050	24 640	16 498
Δ (%)	1,09%	31,95%	17,05%	-33,04%
Defence (%)***	≈ 20%	≈ 17%	≈ 16%	≈ 25%
Export (%)	83%	84%	80%	77%
Operating profit/loss	2 102	2 908	3 833	1 220
Operating margin	13,18%	13,81%	15,56%	7,39%
Net income****	2 393	1 981	2 665	844
Order book	68 583	N/A	N/A	N/A
Employees	58 324	92 639	95 443	78 900

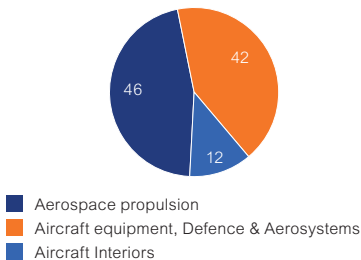
*Figures adjusted

**Figures restated

***Estimated

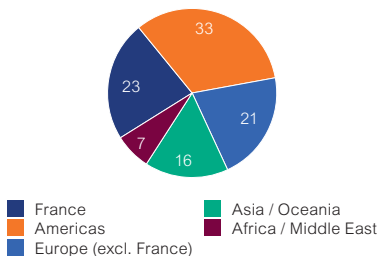
****Net income attributable to shareholders

REVENUE BY BUSINESS SEGMENT (%)*



*Figures adjusted

REVENUE BY REGION (%)*



*Figures adjusted

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	ITP Aero	AVIC	Rolls-Royce	MBDA	Diehl Defence	Ecaeris	Thales	MTU Aero Engines	Hensoldt	Madses	Nexter*	HAL
Aircraft engines												
M88 afterburning turbofan engine (Rafale)												
TP400 turboprop engine (A400M)	●		●				●					
RTM322 engine family (NH90, EH 101, AH Mk.1)												
Ardiden turboshaft family (Druhv, LCH, LUH, Ka-62, AC352)		●										●
Ardiden 3TP future turboprop engine	●											
MTR390-2C (Tiger HAP, ARH, UHT) and MTR390-E (Tiger HAD) turboshaft engines	●		●				●					
Arrano 1A turboshaft engine (H160M)												
Next European Fighter Engine (NEFE, NGF/FCAS programme)							●					
Space propulsion systems												
Plasma propulsion (PPS 1350-G, PPS 1350-E, PPS 5000, TMA)												
Missile propulsion systems												
TR 60-30 (Apache, STORM SHADOW / SCALP EG) and TR 50 (McCN / SCALP Naval) turbojet engines												
Navigation systems and optonics												
Geonyx™ inertial navigation system												●
Euroflir 610 future gyrostabilized electro-optical system								●	●			
Missile systems and weapon systems												
Missile seekers (MICA IR, Mistral, MMP)			●									
HUSSAR future air-to-ground missile				●								
MHT / MAST-F future air-to-ground tactical missile			●			●						
Unmanned aircraft system												
Patroller tactical unmanned air vehicle						●						

*KNDS group

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Safran adjusted revenues reached €16.5bn in 2020, down 33% year-on-year. As a supplier to the world's leading aircraft manufacturers, the group's business was strongly impacted by the coronavirus crisis. Safran generated around 25% of its business in defence over the year, up 9 percentage points from 2019, as defence activities have been relatively more resilient since the beginning of the health crisis.
- ▶ In 2020, Safran achieved savings of more than €2bn and remained profitable thanks to various measures: headcount reduction (-17% year-on-year), lower capital expenditure commitments (-67%), reduced R&D expenditure (-35%), closure of four plants, production transfers, restructuring plans, etc.
- ▶ In January 2021, Olivier Andriès was selected to succeed to Philippe Petitcolin in the position of CEO of Safran.

Home market

- ▶ As a major supplier of defence equipment, Safran has received several orders as part of various French defence programmes, including 12 Rafales for the French Air Force, 7 Dassault Falcon 2000 LXS Albatros aircraft for the French Navy, 42 EBRC Jaguar vehicles for the French Army, and 10 NH 90 helicopters for the French special forces.
- ▶ At the end of 2020, the French Ministry of Armed Forces launched the development programme for the MHT/MAST-F future tactical air-to-surface missile (for which MBDA France is prime contractor and Safran supplies the guidance system), which will equip the French Army's third-generation Tiger attack helicopters from 2028.
- ▶ Following an agreement signed in December 2019, MTU Aero Engines and Safran Aircraft Engines created a 50-50 joint venture called EUMET (European Military Engine Team) in April 2021. Based in Munich and headed by a Safran-appointed managing director, the joint venture is responsible for the development, production and after-sales support of the Next European Fighter Engine (NEFE) for the future European New Generation Fighter (NGF). In April 2021, ITP Aero (Rolls-Royce's Spanish subsidiary) also joined the programme as a major partner. Under to the agreement, the industrial load for developing the NEFE engine will be shared equally between France, Germany and Spain.
- ▶ In August 2021, the French Ministry of Armed Forces awarded Safran the "Boléro" contract for the maintenance of the M88 engines on its Rafale aircraft until the end of 2030. The contract covers technical support, the supply of new or repaired parts and modules, as well as the maintenance of state support resources.
- ▶ In October 2021, Safran announced that it had successfully completed a series of flight tests on the Patroller long-endurance tactical UAV, whose delivery, initially scheduled for 2020, had been postponed following an in-flight accident at the end of 2019. 14 units are expected to be ordered by the French Army in 2022.

Export markets

- ▶ Safran generated 77% of its revenue from exports in 2020. As an equipment supplier, the group has won several orders as part of international arms contracts, including 31 NH90 NFH Sea Tiger helicopters for Germany and 66 Rafale aircraft (including 24 second-hand aircraft) for Greece, Egypt and Croatia.
- ▶ Safran won several export contracts in 2021, including for the supply of eight Paseo XLR long-range naval optronic systems for the Brazilian Navy's four future Tamandaré-class frigates, and for the renewal of the maintenance contract for the 30 Makila engines on the Malaysian Air Force's H225M helicopters.
- ▶ In May 2021, the group also signed an agreement with Bell (Textron Group) to supply the landing gear for the V-280 Valor helicopter, which is currently competing with the SB-1 Defiant from Boeing and Lockheed Martin as part of the U.S. Army's Future Long-Range Assault Aircraft (FLRAA) programme.

Technology and Innovation

- ▶ The group's self-financed R&D expenditure amounted to €864m in 2020, representing 5.2% of sales.

TECHNICATOME

A major player in naval nuclear propulsion, resulting from the March 2017 sale of Areva's majority stake in Areva TA to a consortium led by APE, a French government agency.

BUSINESS AREAS

Compact nuclear reactors designer

- ▶ Naval nuclear propulsion
- ▶ Support engineering for defence infrastructure
- ▶ Design and production engineering
- ▶ Reactors simulation and modelling physical phenomena
- ▶ MRO and services
- ▶ Civil nuclear energy

GOVERNANCE

Chairman & CEO	Loïc Rocard
Deputy CEO & Chief Operating Officer	Olivier Huet
Director of Defence Reactors	Bernard Gauducheau

OWNERSHIP STRUCTURE

Symbol	
Listed on	Unlisted group
Market Cap	

Major shareholders (as of 17.11.2021)

French State Holdings Agency (APE)	50,32%
Naval Group	20,32%
CEA	20,32%
EDF	9,03%

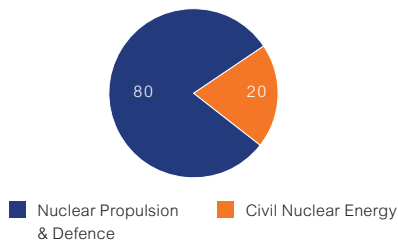
MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Arcys	51%	France

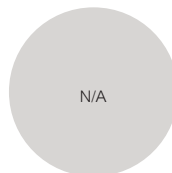
KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017	2018	2019	2020
Revenue	372	398	420	400
Δ (%)	11,71%	6,99%	5,53%	-4,76%
Defence (%)	N/A	≈ 80%	≈ 75%	≈ 80%
Export (%)	N/A	N/A	N/A	N/A
Operating profit/loss	48	57	72	76
Operating margin	12,90%	14,32%	17,14%	19,00%
Net income	44	41	51	57
Order book	N/A	≈ 1 000	≈ 1 000	≈ 1 000
Employees	≈ 1 540	≈ 1 610	≈ 1 700	≈ 1 700

REVENUE BY BUSINESS SEGMENT (%)



REVENUE BY REGION (%)



MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	CEA	Naval Group	Thales	Sefran	MBDA	Chantiers de l'Atlantique	ArianeGroup	EDF
Naval nuclear propulsion								
Barracuda programme (Suffren-class nuclear-powered attack submarines)	●	●	●	●	●			
RES programme (shore-based nuclear test reactor for French naval propulsion and its related facilities construction and operation)	●							
SNLE 3G future ballistic missile nuclear-powered submarine	●	●	●				●	
PA-Ng future new generation aircraft carrier	●	●	●		●	●		
MRO and services								
Operational maintenance for steam supply systems on nuclear-powered vessels		●						
Support engineering for defence infrastructure								
Assistance with the infrastructure transformation of Toulon and Brest naval bases								
Operational maintenance of the infrastructure of Brest and Île Longue naval bases								
Assistance with the engineering and operation of Laser MegaJoule	●							
Civil Nuclear Energy								
Small Modular Reactor (SMR, NUWARD project)	●	●						●
Jules Horowitz research Reactor (JHR)	●							

STRATEGIC HIGHLIGHTS

Business trends

- ▶ TechnicAtome revenues declined 4.8% to €400m in 2020, of which approximately 80% from defence activities. The group reached a profitability level of 14% and had an order book of around €1bn at the end of the year, representing roughly 2.5 years of sales.
- ▶ TechnicAtome is a major player in nuclear marine propulsion (submarines for the French Navy, Charles de Gaulle aircraft carrier and planned new-generation PA-Ng aircraft carriers). It is also involved in major civil nuclear power projects, including the design of a Small Modular Reactor (SMR).
- ▶ With a workload that includes the construction of 10 to 15 new nuclear boilers over 30 years, TechnicAtome has created a New Programmes department to manage, among others, the coordination between teams working on its major military projects as well as supplier partnerships.
- ▶ The group also plans to recruit 150 to 170 new employees (mainly engineers and technicians) in 2021 to support the growth of its business.

Home market

- ▶ TechnicAtome is involved in the Barracuda programme for the construction of six new-generation nuclear attack submarines (SSN) by 2030. The group is in charge of the design and production of the nuclear boiler rooms, their support system and their fuel. TechnicAtome is also involved in project management assistance for the infrastructures of the Toulon and Brest naval bases. The group will in particular conceive the programme to adapt the ports' basins.
- ▶ In late 2020, the French Directorate General of Armaments (DGA) took delivery of the first new-generation SSN (Suffren-class) before transferring it to the French Navy after completion of overall qualification tests. The SSN's commissioning is planned for 2021, upon the completion of military performance tests. In July 2021, Naval Group and the French Fleet Support Service signed a three-year contract for the operational maintenance of the French Navy's Rubis-class and Suffren-class SSNs. The group will rely on TechnicAtome for MRO services on the nuclear boilers.
- ▶ In January 2021, TechnicAtome began inspection and upgrading work on more than 200 items of equipment on the nuclear boiler room of the SSBN Le Terrible as part of its first scheduled downtime for maintenance and repair. Arcys (a joint venture 51%-owned by TechnicAtome and 49%-owned by Framatome) is involved in the maintenance of the control and command system and power electronics.
- ▶ In March 2021, the French Ministry of Armed Forces awarded the preliminary design contract (estimated at €200m) for the new-generation PA-Ng aircraft carrier. The programme involves Naval Group (overall architect), Chantiers de l'Atlantique (responsible for construction) and TechnicAtome (design and construction of the nuclear boilers, related support system, and fuel).
- ▶ In March 2021, the Ministry of Armed Forces also launched the programme for the construction of four third-generation nuclear-powered ballistic missile submarines (SSBN 3G) to replace the fleet of Le Triomphant-class SSBNs from 2035. Naval Group is the prime contractor for the overall construction of the submarines, in partnership with TechnicAtome, which will build the nuclear boilers. A first contract, covering the development studies among others, should be awarded in 2021.

Technology and Innovation

- ▶ The Nuward project, a new small modular reactor (SMR) design that was jointly developed by the French Alternative Energies and Atomic Energy Commission (CEA), EDF, Naval Group and TechnicAtome, could provide solid growth opportunities in both the civilian and military sectors to TechnicAtome. The project plans for series production of the new SMR design from 2030.



TELEDYNE

Civil and military equipment manufacturer. Supplier of modules and components for the defence sector. Acquired its domestic peer FLIR Systems in May 2021.

BUSINESS AREAS

Systems integrator and components supplier

- ▶ Aircraft systems and components
- ▶ Sub-systems and components for missile, defence and combat systems
- ▶ Naval Systems
- ▶ Space

GOVERNANCE

Chairman	R. Mehrabian
Chief Executive Officer	A. Pichelli
President, Aerospace & Defense Electronics	G. C. Bobb III

KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017	2018	2019	2020
Revenue	2 304	2 457	2 825	2 702
Δ (%) [\$]*	21,11%	11,44%	9,02%	-2,45%
Defence (%)	N/A	N/A	N/A	N/A
Export (%)	29%	30%	31%	33%
Operating profit/loss	285	353	439	420
Operating margin	12,36%	14,36%	15,54%	15,56%
Net income	201	283	359	352
Order book	1 043	1 370	1 513	1 386
Employees	10 340	10 850	11 790	10 670

*Variation based on revenue in local currency
See €/\$. p.7

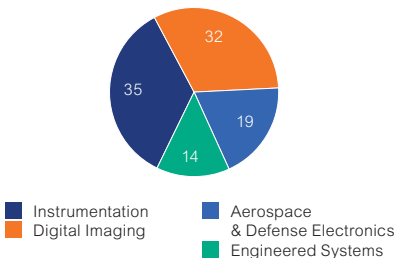
OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	TDY
Listed on	NYSE
Market Cap (\$m)	20 979

Major shareholders (as of 17.11.2021)

T. Rowe Price Associates, Inc. (Investment Management)	13,00%
The Vanguard Group, Inc.	10,40%
SSGa Funds Management, Inc.	4,57%
Janus Capital Management LLC	3,67%

REVENUE BY BUSINESS SEGMENT (%)

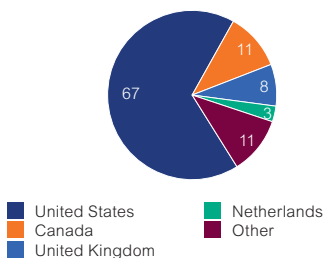


MAIN JOINT VENTURES AND ASSOCIATES*

Name	%	Country
*No information available		

*No information available

REVENUE BY REGION (%)



MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Elbit Systems	Raytheon Technologies*	L3Harris Technologies**	Lockheed Martin	Martin-Baker	United Launch Alliance***	Northrop Grumman	Aerjet Rocketdyne	Thales Alenia Space	Boeing
Aircraft systems and components										
Sub-systems and components of the Joint Helmet Mounted Cueing System (JHMCS) (F-16, F/A-18, F-15)	●	●								
Fiber optic quad transceiver products for the F-35 fighter aircraft			●							
Ejection seat sequencers for fighter aircraft (F15, F16, F/A-18, F22, F-35)		●			●					
Sub-systems and components for missile, defence and combat systems										
Surface-to-Surface Missile Module (SSMM) (LCS frigates)		●								
Cooling Equipment Units (CEU) of the AN/TPY-2 early warning radar system		●								
Zombie realistic-threat ballistic target missiles		●								
Traveling Wave Tubes (TWT) of the AEGIS combat system				●						
Naval systems										
Slocum-class autonomous underwater gliders (LBS-G programme)										
Gavia and SeaRaptor AUVs										
MK11 Shallow Water Combat Submersible (SWCS) future manned combat submersible vehicle										
Space										
Launch Vehicle Stage Adaptor (LVSA) of the Space Launch System (SLS)						●	●	●		●
Image detectors for the Sentinel future observation satellites (Copernicus programme)								●		
Payloads										

*Merger of Raytheon and UTC

**Merger of L3 Technologies and Harris Corporation

***Joint venture between Boeing and Lockheed Martin

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Teledyne revenues decreased 2.5% to \$3.1bn (€2.7bn) in 2020. Only the Engineered Systems branch posted increasing revenues (+10.9%), with the other three branches (Instrumentation, Digital Imaging, and Aerospace & Defense Electronics) recording declines over the year.
- ▶ The Aerospace & Defense Electronics branch, which accounted for 19% of the group's revenues in 2020, mainly operates in the defence market. The group's other defence activities are divided among the other three branches.
- ▶ Following the failed takeover of French company Photonis, Teledyne in May 2021 acquired U.S.-based technology company FLIR Systems for \$8.2bn (€6.8bn). FLIR Systems, which specialises in security and thermal imaging cameras and sensors, had revenues of \$1.9bn (€1.7bn) in 2020, 40% of which from defence. It has around 4,000 employees, is the 88th-largest defence company in the world and offers systems for surveillance, border and maritime patrol, threat detection, search and rescue, and other areas (airborne systems, UAVs, land systems, radars, thermal imaging, CBRNE detectors, etc.).
- ▶ In June 2021, the company's Teledyne CARIS subsidiary entered a technical cooperation agreement with the Nippon Foundation and the UK Hydrographic Office (UKHO) to produce a map of the seafloor by 2030 (Seabed 2030 project).

Home market

- ▶ The group generated 67% of its sales on the U.S. market in 2020 (including FMS procedures), a share that has been declining over the last three years (-4 percentage points since 2017). Sales to the U.S. government, Teledyne's largest customer, accounted for just over a quarter of the group's total revenues.
- ▶ Teledyne is involved in several major aviation programmes. Among others, it supplies components and subsystems for the Joint Helmet Mounted Cueing System (JHMCS) helmet-mounted display for pilots of F-15, F-16 and F/A-18 fighter jets, as a subcontractor to Elbit Systems and Collins Aerospace (Raytheon Technologies). Teledyne is also involved in the F-35 programme, as a subcontractor to L3Harris Technologies, which is responsible for the aviation electronics and communication systems of the fighter aircraft.
- ▶ In November 2020, the group's subsidiary Teledyne Brown Engineering signed a \$85m (€71m) contract with NASA to supply two Launch Vehicle Stage Adapters (LVSAs) for the Space Launch System (SLS) expendable launch vehicle designed for the Artemis II (scheduled for 2023) and Artemis III (scheduled for 2024) manned lunar missions.
- ▶ In January 2021, Teledyne Brown Engineering also won a contract worth \$18m (€15m) from Northrop Grumman to supply four Surface-to-Surface Missile Modules (SSMMs) for the U.S. Navy's LCS frigates.
- ▶ In July 2021, the U.S. Navy awarded a \$27m (€23m) contract to Teledyne Brown Engineering for the production of an unspecified number of Slocum G3 Glider autonomous underwater vehicles over five years as part of the Littoral Battlespace Sensing-Glider (LBS-G) programme.

Export markets

- ▶ Teledyne generated 33% of its revenues from exports in 2020. Canada, the United Kingdom and the Netherlands are the group's main foreign markets. Most of its revenues in these markets come from the civil sector.
- ▶ In May 2021, the group's Teledyne Marine subsidiary signed a contract with Norwegian company Argeo for the supply of two SeaRaptor 6000 Autonomous Underwater Vehicles (AUV), with deliveries scheduled in 2022.

Technology and Innovation

- ▶ The group's areas of innovation in defence mainly include missile systems, naval systems and semi-conductors.



TEXTRON

Civil and military industrial conglomerate mainly operating in military aeronautics (V-22 Osprey tiltrotor aircraft, UH-1Y and AH-1Z helicopters). 35th-largest defence contractor worldwide.

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Commercial and military helicopters
- ▶ Military aircraft and business jets
- ▶ Unmanned systems (UAS, USV, RCV)
- ▶ Weapon systems
- ▶ Training solutions
- ▶ Industrial sector (E-Z-GO, Greenlee, Jacobsen, Kautex)
- ▶ Finance sector

GOVERNANCE

Chairman & CEO

Scott C. Donnelly

President & CEO,

Ron Draper

Textron Aviation

President & CEO, Bell

Mitch Snyder

KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017	2018	2019	2020
Revenue	12 565	11 831	12 170	10 202
Δ (%) [\$]*	2,97%	-1,59%	-2,45%	-14,52%
Defence (%)	22%	24%	24%	30%
Export (%)	38%	38%	34%	32%
Operating profit/loss**	1 035	1 073	1 134	658
Operating margin	8,24%	9,07%	9,32%	6,45%
Net income	272	1 035	728	271
Order book	5 992	7 945	8 751	7 743
Employees	≈37 000	≈35 000	≈35 000	≈33 000

*Variation based on revenue in local currency

See €/\$, p.7

**Segment profit

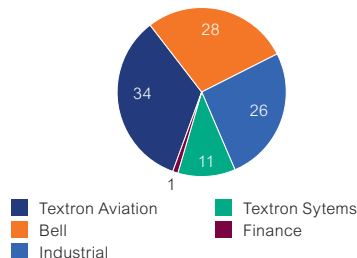
OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	TXT
Listed on	NYSE
Market Cap (\$m)	16 693

Major shareholders (as of 17.11.2021)

T. Rowe Price Associates, Inc. (Investment Management)	15,60%
The Vanguard Group, Inc.	10,30%
Invesco Advisers, Inc.	4,85%
SSgA Funds Management, Inc.	4,47%

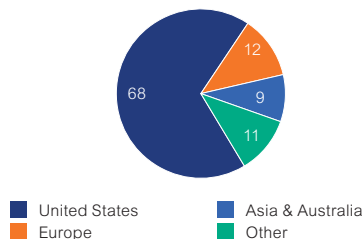
REVENUE BY BUSINESS SEGMENT (%)



MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Textron Airland	50,0%	United States
Bell-Boeing	50,0%	United States
Cessna-AVIC Aircraft (Zhuhai)	N/A	China
Cessna-AVIC Aircraft (Shijiazhuang)	N/A	China
TFS/Tri-Star	80,0%	Taiwan

REVENUE BY REGION (%)



TEXTRON

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Boeing	Lockheed Martin	Raytheon Technologies*	L3Harris Technologies**	AirLand Enterprises	Rolls-Royce	FLIR Systems	Northrop Grumman	Spirit Aero System	GE Aviation	Pilatus
Bell Helicopter (Helicopters)											
V-22 Osprey tiltrotor aircraft	●						●				
UH-1Y Venom utility helicopter							●		●		
AH-1Z Viper attack helicopter		●	●				●		●		
V-280 Valor future utility helicopter		●						●	●		
Bell 360 Invictus Future Attack Reconnaissance Aircraft (FARA)			●	●					●		
Textron Aviation (Cessna, Beechcraft, Scorpion)											
T-6C Texan II trainer aircraft											●
AT-6 Wolverine light attack aircraft		●	●	●							●
King Air 350 intelligence, surveillance and reconnaissance aircraft			●								
Special mission-configured Citation Latitude aircraft (ISR, flight inspection)											
Scorpion light attack/intelligence, surveillance and reconnaissance aircraft				●							
Textron Systems (Air, naval and land systems)											
Shadow Block III tactical UAS											
Aerosonde HQ Small Unmanned Aircraft System (SUAS)											
Common Unmanned Surface Vehicle (CUSV)											
Ship-to-Shore Connector (SSC)			●		●						
Ripsaw M5 Robotic Combat Vehicle (RCV)						●					
Textron Systems (Weapon systems and training solutions)											
U.S. Air Force's Adversary Air Services (ADAIR) training programme											
6.8 MM Rifle and 6.8 MM Automatic Rifle											

*Merger of Raytheon and UTC **Merger of L3 Technologies and Harris Corporation

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Textron revenues fell 14.5% to \$11.7bn (€10.2bn) in 2020. The group's business was strongly impacted by the global health crisis, which particularly affected two of its main divisions, Textron Aviation (reduced aircraft deliveries and demand for maintenance services) and Industrial (factory shutdowns and lower sales of specialised vehicles).
- ▶ Due to the negative impact of the health crisis on its civil activities, the group launched a restructuring plan during the second quarter of 2020. The plan provides for the reduction of around 2,700 positions (8% of the total workforce), mainly in the Textron Aviation and Industrial branches.
- ▶ Defence activities accounted for 30% of sales in 2020, a 6 percentage points increase from the previous year.

Home market

- ▶ Textron generated 68% of its revenues in its domestic market in 2020. The group is a key partner of the U.S. Army, in particular thanks to its monopoly in tiltrotor military aircraft (V-22 Osprey produced in partnership with Boeing).
- ▶ In November 2020, the U.S. Navy and the U.S. Marine Corps extended the contract with ATAC (a Textron subsidiary that is part of the Textron Systems segment) to provide training services for fighter pilots under the Fighter Jet Services (FJS) programme. ATAC will provide up to 8,500 hours of training per year for approximately five years, for a contract worth up to \$441m (€386m). The training will be provided by ATAC's fleet of Mirage F1, F-21 Kfir and Mk-58 Hawker Hunter fighter aircraft and is expected to begin in spring 2021.
- ▶ In March 2021, Textron Systems was awarded a contract worth up to \$607m (€506m) by the U.S. Army to upgrade existing Shadow Block II UAVs to the Block III configuration.
- ▶ Bell, a Textron subsidiary, is one of the last two players in the running, along with Sikorsky (Lockheed Martin), for the U.S. Army's Future Long Range Assault Aircraft (FLRAA) programme. Bell is offering the V-280 Valor and Sikorsky the SB-1 Defiant in partnership with Boeing. The final decision is expected in the third quarter of 2022. Bell and Sikorsky are also competing on the U.S. Army's Future Assault and Reconnaissance Aircraft (FARA) programme, for which Bell is offering the Bell 360 Invictus helicopter design (based on the Bell 525 Relentless design) and Sikorsky the Raider X (derived from the S-97 Raider). The final decision is expected by 2023 at the latest.
- ▶ Textron Systems is also offering the Aerosonde HQ Small UAV for the U.S. Army's Future Tactical Unmanned Aerial System (FTUAS) programme, for which a contract is expected to be awarded in 2025. Moreover, Textron Systems is competing against Sig Sauer and General Dynamics to supply the U.S. Army's future assault rifles for the Next Generation Squad Weapon (NGSW) programme. A decision is expected by the end of 2021.

Export markets

- ▶ Textron generated 32% of its revenues from exports in 2020, mainly in Europe and Asia-Pacific.
- ▶ In September 2020, the group's Textron Aviation Defense subsidiary won a \$162m (€142m) contract with the Thai Air Force to supply 12 T-6C Texan II training aircraft. At the end of 2020, Tunisia also confirmed the purchase of eight T-6C Texan II trainers in a contract estimated at \$234m (€209m).
- ▶ In July 2021, Bell launched the construction of the first UH-1Y Venom twin-engine utility helicopter for export. It is the first of eight UH-1Y Venom helicopters to be supplied to the Czech Republic under a \$272m (€241m) contract signed with the U.S. Navy in 2020, which also includes the supply of four AH-1Z Viper attack helicopters.

Technology and Innovation

- ▶ The group's self-financed R&D expenditure amounted to \$549m (€481m) in 2020.

THALES

Aerospace and defence group specialising in complex electronic systems, ranked 16th-largest defence company worldwide.

BUSINESS AREAS

- Systems integrator/equipment supplier
 - ▶ Aerospace equipment and systems
 - ▶ Sensors, systems and communications
 - ▶ Weapon systems and ammunition
 - ▶ Training and simulation
 - ▶ Space (see also Thales Alenia Space)
 - ▶ Cybersecurity

GOVERNANCE

Chairman and CEO	Patrice Caine
General Secretary	Isabelle Simon
Executive VP, Defence Mission Systems	Philippe Duhamel

OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	HO
Listed on	NYSE Euronext
Market Cap (€m)	17 262

Major shareholders (as of 17.11.2021)

French State	25,7%
Dassault Aviation SA	24,6%
T. Rowe Price International Ltd.	2,30%
Employees	2,18%

MAIN JOINT VENTURES AND ASSOCIATES

Nom	%	Country
Naval Group	35%	France
Thales Alenia Space	67%	France
Telespazio	33%	Italy
Eletronica	33%	Italy
Diehl Aerospace	49%	Germany
Lynred (formerly Sofradir)	50%	France
TRS AMDC2	50%	France
AirTanker Holdings	13%	UK
Athea*	50%	France

*Joint venture between Thales and Atos established in May 2021

KEY FIGURES (Fiscal year ended : December 31st)

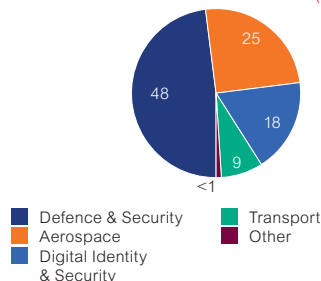
€ millions	2017*	2018*	2019	2020
Revenue	15 228	15 855	18 401	16 989
Δ (%)	2,30%	4,12%	16,06%	-7,67%
Defence (%)**	50%	49%	45%	48%
Export (%)	76%	75%	76%	75%
Operating profit/loss	1 365	1 685	2 008	1 352
Operating margin	8,96%	10,63%	10,91%	7,96%
Net income***	840	1 178	1 405	937
Order book	32 064	32 329	33 839	34 430
Employees	64 860	66 135	82 605	80 702

*Figures restated

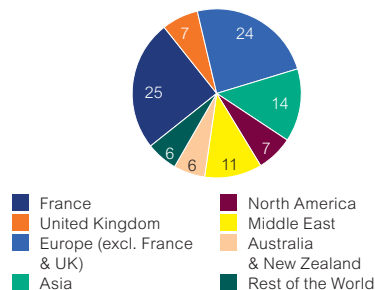
**Defence & Security division only

***Net income attributable to shareholders

REVENUE BY BUSINESS SEGMENT (%)



REVENUE BY REGION (%)



MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Elbit Systems	MBDA	Dassault Aviation	Raytheon Technologies*	Indra Sistemas	Hensoldt	Naval Group	Nexter**	Boeing	Airbus
Combat systems and embedded electronics										
SPECTRA electronic warfare suite		●	●							
RBE-2 AESA radar			●							
Targeting Long-range Identification Optronic System (TALIOS)			●							
TopOwl and Scorpion helmet mounted displays										
Defence electronics of the NGF (FCAS programme)				●	●					
Man Machine Teaming advanced study programme			●							
Mission and surveillance systems										
CONTACT and SYNAPS software defined radios										
Watchkeeper WK450 ISTAR UAV	●									
ARCHANGE programme (payload sensor development)			●							
Radar and sonar systems										
Ground Master and Ground Fire radar systems				●						
Sea Fire radar							●			
Missile, weapons systems, ammunition										
RAPIDFire and RAPIDFire Naval air defence systems								●		
Missile guidance systems (Aster, MICA)		●								
SAMP/T surface-to-air missile defence system		●								
Military vehicles										
4X4 Bushmaster armoured vehicle										
4X4 Hawkei light tactical vehicle								●		
Cybersecurity										
Stormshield Data Security										●

*Merger of Raytheon and UTC **KND5 group

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Thales revenues reached €17bn in 2020, down 7.7% year-on-year due to the impact of the health crisis. The Aerospace branch in particular recorded a drop of almost a quarter in revenues in the context of falling demand in the civil aviation market (aviation electronics, multimedia systems and cabin connectivity) and delayed calls for tender in the space sector. Sales in the Defence & Security branch (48% of total revenues) declined by 2.2% over the year.
- ▶ The group achieved savings of around €850m in 2020, following the implementation of an adjustment plan in response to the global health crisis. Additionally, Thales' order book reached a record €34.4bn at the end of 2020.
- ▶ In May 2021, Thales and Atos created a joint company, Athea, to offer sovereign solutions in big data and artificial intelligence for the defence, intelligence and internal security sectors. In June 2021, the group also signed an agreement to acquire the navigation aid activities of U.S. company Moog. In August 2021, Thales furthermore announced the sale of its Ground Transportation Systems business (rail signalling) to Japan's Hitachi Rail. The transaction, valued at €1.66bn, is expected to be completed in early 2023.

Home market

- ▶ Thales, which generates about a quarter of its sales in France, is a key partner of Dassault Aviation (Rafale fighter aircraft, ARCHANGE programme, etc.) and Naval Group (FDI and FREMM frigates, etc.).
- ▶ Thales, Arqus and Nexter (KNDS) are jointly in charge of the Scorpion programme for the supply of wheeled armoured vehicles to the French Army. A total of 1,872 VBMR Griffon multi-role armoured vehicles and 300 EBRC Jaguar armoured reconnaissance and combat vehicles are to be delivered by 2030, half of which by 2025. Despite the health crisis, no delivery delays were recorded in 2020.
- ▶ The group received several orders from the French Armed Forces over 2020-2021: completion of the second part of the ground segment of the Syracuse IV military satellites, supply of 3,000 O-NYX night-vision binoculars, Scorpion helmet-mounted sight and display systems and lateral displays for the Rafale aircraft, etc.
- ▶ In May 2021, after several months of negotiations, an agreement was finalised between Germany, Spain and France for the launch of Demonstrator phase 1B of the €3.5bn FCAS programme. The workload and governance of the programme are shared equally between the three states. Thales will act as a partner in the Combat Cloud pillar alongside Airbus D&S GmbH (leader) and Indra Sistemas, and in the Sensors pillar alongside Indra Sistemas (leader) and the FCMS consortium (Hensoldt, Rohde & Schwarz, Diehl and ESG).

Export markets

- ▶ Thales, which generated 75% of its revenues from exports in 2020, is pursuing a "multi-domestic" growth strategy based on physical presence in foreign markets and systems with a high share of local content.
- ▶ Thales is participating alongside Nexter and Arqus in the CaMo (Capacité Motorisée) programme for the supply of 60 EBRC Jaguar and 382 VBMR Griffon to the Belgian Army from 2025. This €1.6bn contract includes training, education and maintenance services.
- ▶ At the end of 2020, Indra Sistemas and Thales signed a partnership agreement to jointly offer a new generation of tactical communications systems to the Spanish Armed Forces. These systems will be based on Thales' SYNAPS family of high-speed tactical software-defined radios.
- ▶ Thales won several defence export contracts in 2021: supply of multi-mission radars for the Belgian and Dutch navies, handheld radio systems for the U.S. Army, fire detection systems for the British Army, anti-submarine warfare sonars for four navies, etc.

Technology and Innovation

- ▶ The group's self-financed R&D expenditure amounted to €1bn in 2020, down 6.6% year-on-year.



THALES ALENIA SPACE

French-Italian aerospace manufacturing company majority-owned by Thales. A global leader in satellites, space infrastructure and space navigation systems.

BUSINESS AREAS

Platform manufacturer, systems integrator/
equipment supplier

- ▶ Satellite platforms (satellite buses)
- ▶ Ground control segment
- ▶ Electronics, propulsion systems, recovery systems
- ▶ Payloads
- ▶ Manned space systems
- ▶ Space transport

GOVERNANCE

Chief Executive Officer

Hervé Derrey

Chief Financial Officer

Éric Manzon

KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017	2018	2019	2020
Revenue	≈ 2 600	≈ 2 500	≈ 2 150	≈ 1 850
Δ (%)	≈ 8%	≈ -3,8%	≈ -14%	≈ -14%
Defence (%)	N/A	N/A	N/A	N/A
Export (%)	N/A	N/A	N/A	N/A
Operating profit/loss	N/A	N/A	N/A	N/A
Operating margin	N/A	N/A	N/A	N/A
Net income	N/A	N/A	N/A	N/A
Order book	N/A	N/A	N/A	N/A
Employees	≈ 7 980	≈ 8 000	≈ 7 700	≈ 7 700

OWNERSHIP STRUCTURE

Symbol

Listed on

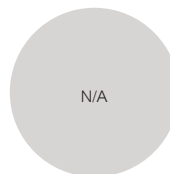
Unlisted group

Market Cap

Major shareholders (as of 17.11.2021)

Thales	66,66%
Leonardo	33,33%

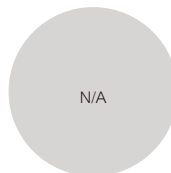
REVENUE BY BUSINESS SEGMENT (%)



MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Pyxalis	15,53%	France
AirStar Aerospace	8,61%	France
Altec	63,75%	Italy
RASCOMSTAR	12,36%	Mauritius
Universum Space Technologies	40%	Russia
LeoStella	50%	United States
NorthStar Earth and Space	12,5%	Canada

REVENUE BY REGION (%)



MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Airbus	Safran	Visiona TE	Indra Sistemas	Leonardo	Thales	OHB Group	Northrop	AirStar	Grumman*	Groupes CNIM	Cenac	ATR**
Satellite platforms (satellite buses)													
Spacebus NEO (Syracuse 4) platform	●	●			●								
Proteus (Göktürk 1) and ELiTeBus (Iridium-NEXT) low- and medium-Earth orbits platforms					●		●						
Stratobus project								●		●			
Payloads													
Sensor electronics units (SAR-Lupe)													
Communications satellite													
Tiba-1 communications satellite	●												
Syracuse 4A et 4B military communications satellites	●												
Spainsat New Generation (NG) communications satellites	●												
SICRAL 3 secure satellite communications system					●								
Manned space systems													
Cygnus Pressurized Cargo Module (PCM)							●						
Earth observation satellite systems													
Cosmo-SkyMed Second Generation (2G) Earth observation satellite system					●	●							
CSO Earth observation satellite programme	●												
Satellite navigation systems													
GALILEO global navigation satellite system							●						
European Geostationary Navigation Overlay Service (EGNOS)				●	●	●	●						
Equipment for Dual frequency Galileo, GPS and EGNOS (EDG ² E) project					●								●
Propulsion system													
Xenon Propulsion System engine module		●											

*Innovation Systems division, formerly Orbital ATK**Joint venture between Airbus and Leonardo

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Thales Alenia Space posted revenues of around €1.9bn in 2020, down 14% year-on-year. In addition to strong competition in the sector and sluggish orders for geostationary telecommunications satellites, the business was impacted by the postponement of calls for tender due to the global health crisis.
- ▶ Despite several commercial successes in the fields of earth observation and space exploration, Thales Alenia Space's order intake decreased in 2020 (-5% at constant scope and exchange rates).
- ▶ The outlook for 2021 is better, thanks to major contracts won during the first quarter. Among others, Thales Alenia Space was chosen by Canada's Telesat in February 2021 to supply the 298 satellites of its new Lightspeed constellation under a \$3bn (€2.5bn) contract.
- ▶ In 2021, Thales Alenia Space inaugurated a satellite integration hall in Tres Cantos (Community of Madrid, Spain) which will house the Spainsat NG communications module, and announced plans for a new production site for the Stratobus autonomous stratospheric airship in Istres (southern France).

Home market

- ▶ Thales Alenia Space is a key partner of the French defence procurement agency (DGA) and is involved in the French Ministry of Armed Force's main space programmes (Syracuse 4, CSO, etc.).
- ▶ At the beginning of 2020, the DGA awarded the company a conceptual research contract to study the military applications of the Stratobus airship. According to Thales Alenia Space, the work carried out will demonstrate the technical viability of the project and a first flight demonstration is planned for the end of 2023.

Export markets

- ▶ Thales Alenia Space is part of the Space Alliance, alongside Italy's Telespazio. The group also relies on two main joint ventures: LeoStella (co-owned by Spaceflight, a U.S. launch services and mission management provider), which is involved in the design and manufacture of small satellites, and Altec (63.75% owned by Thales Alenia Space Italy and 36.25% owned by the Italian Space Agency), which specialises in space infrastructure engineering services.
- ▶ At the end of 2020, the Spainsat NG programme, which involves the construction of two satellites to ensure the continuity of the Spanish Ministry of Defence's secure communication service, successfully passed the Preliminary Design Review (PDR) of the payload and the complete satellite.
- ▶ At the end of 2020, the Space Alliance signed a contract with the Italian Ministry of Defence and the Italian Space Agency for the supply of two satellites for the COSMO-SkyMed second-generation satellite constellation dedicated to Earth observation for civil and military purposes. The contract for the construction of the two satellites, which will be handled by Thales Alenia Space, is valued at €230m.
- ▶ In March 2021, Thales Alenia Space signed a €772m contract with the European Commission to supply six satellites for the next generation of the Galileo system. The first satellites will be put into orbit by the end of 2024.
- ▶ In June 2021, Thales Alenia Space and Telespazio were awarded a contract to develop the SICRAL 3 telecommunications system and its ground segment. This system is intended to ensure the continuity of military satellite telecommunications services for the Italian Defence.

Technology and Innovation

- ▶ In April 2021, Thales Alenia Space and Microsoft announced their collaboration in the field of satellite cloud technologies to develop high-speed artificial intelligence and machine learning for satellite imagery.



THYSSENKRUPP MARINE SYSTEMS (TKMS)

Naval branch of the mainly civilian industrial conglomerate ThyssenKrupp. World's largest exporter of submarines, and parent company of Atlas Elektronik.

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Surface ships
- ▶ Submarines
- ▶ Ammunition
- ▶ Unmanned Surface Vehicles (USVs),
- ▶ Unmanned Underwater Vehicles (UUVs)
- ▶ Combat systems, mine warfare systems
- ▶ Sonar and acoustic systems
- ▶ Equipement and MRO services

GOVERNANCE

Chief Executive Officer

Dr. Rolf Wirtz

Chief Financial Officer

Paul Glaser

Head of Operations

Dr. Alexander Orellano

OWNERSHIP STRUCTURE

Symbol

Listed on

Unlisted division

Market Cap

Major shareholders (as of 17.11.2021)

ThyssenKrupp

100%

MAIN JOINT VENTURES AND ASSOCIATES

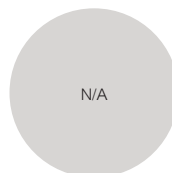
Name	%	Country
Águas Azuis Construção Naval	75%	Brazil
Kta Naval Systems	50%	Norway
MTG Marinetechnik	49%	Germany
Atlas Elektronik - UAE	49%	UAE
Blohm + Voss German Naval Technology	40%	Qatar
Cybicom Atlas Defence	40%	South Africa

KEY FIGURES (Fiscal year ended : September 30th)

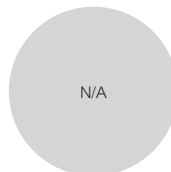
€ millions	2016-17	2017-18	2018-19	2019-20
Revenue	≈ 1 600	1 389	1 800	1 750
Δ (%)	-5,88%	-18,29%	29,59%	-2,78%
Defence (%)	N/A	N/A	N/A	N/A
Export (%)	N/A	42%	71%	82%
Operating profit/loss*	N/A	-128	1	18
Operating margin	N/A	-9,22%	0,06%	1,03%
Net income	N/A	N/A	N/A	N/A
Order intake	N/A	5 493	5 887	6 029
Employees	≈ 3 500	5 818	6 013	6 321

*Operating profit/loss adjusted (EBIT)

REVENUE BY BUSINESS SEGMENT (%)



REVENUE BY REGION (%)



THYSSENKRUPP MARINE SYSTEMS (TKMS)

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Roketsan	Embraer	Fincantieri	Diehl Defence	Naval Vessels Lürssen*	HHI**	ST Engineering	Kongsberg	Golçuk Shipyards	SMW Gdynia***	GNVK****	Nammo	DSME
Conventionally-powered attack submarines													
Joint programmes													
TKMS													
Atlas Elektronik													
Type 212CD/NFS submarine		●					●						
Invincible-class submarine						●							
Dolphin-class submarine													
Type 214 submarine						●		●					●
Type 212A/NFS submarine		●											
Type 209/1400mod submarine								●					●
Surface ships													
MEKO frigates, corvettes and OPVs								●	●	●			
F125 Baden-Württemberg-class frigate						●							
Tamandaré-class future corvette (CCT programme)		●											
K130 Braunschweig-class corvette (6 to 10)						●				●			
Naval systems, equipment and ammunition													
IDAS missile system	●			●			●						●
ORCCA submarine combat system							●						
ANCS/ANCS-SC ship combat system													
Active Towed Array Sonar (ACTAS) and Active Pulse Analysis System (APAS)													
SeaHake Mod4 heavyweight torpedo													
Unmanned vehicles													
ARCIMS minesweeper USV													
SeaFox mine disposal ROV													

*Formerly Lürssen Defence **Hyundai Heavy Industries ***PGZ group ****German Naval Yards Kiel (Privinvest group)

STRATEGIC HIGHLIGHTS

Business trends

- ▶ The naval branch of German conglomerate ThyssenKrupp, ThyssenKrupp Marine Systems (TKMS) generated revenues of €1.75bn and had over 6,300 employees during fiscal year 2019-2020. TKMS, which was formerly part of the Industrial Solutions division, has been operating as a separate division since 1 October 2018. In 2019-2020, TKMS accounted for 4.8% of the steel group's total turnover and 6.0% of its workforce.
- ▶ TKMS has historically been involved in the design and production of submarines and the design of surface vessels (construction being subcontracted). Since the integration of Atlas Elektronik in 2017, TKMS is also active in the design and production of naval equipment and systems.
- ▶ In the spring of 2020, TKMS and Fincantieri entered into talks over a possible combination of the two groups' military shipbuilding activities in the form of a 50-50 joint venture. The latter would have combined revenues of around €3.4bn.

Home market

- ▶ TKMS remains dependent on orders from the German Navy, notably via the F125 frigate programme (contract for four units for €2bn) and the 212CD submarine programme (two units to be produced).
- ▶ In March 2021, the German and Norwegian navies ordered six type 212CD submarines from TKMS for approximately €5.5bn (two and four units respectively). Construction work should start in 2023 with a first delivery to Norway planned for 2029, while Germany should receive its two submarines in 2032 and 2034.
- ▶ The third F125 frigate, named Sachsen-Anhalt, entered service with the German Navy in May 2021. The last one, named Rheinland-Pfalz, is expected to enter service by the end of 2021.
- ▶ In July 2021, Atlas Elektronik (a wholly-owned subsidiary of TKMS) was selected by the German Navy to upgrade the combat system of five Frankenthal-class minehunters between 2022 and 2025. The contract is valued at €44m.

Export markets

- ▶ TKMS is currently positioned on several tenders, in particular in the Netherlands (replacement of four Walrus-class submarines, in competition with Damen/Saab and Naval Group) and in India (P75i programme for six submarines, in competition with Naval Group, Navantia, DSME and USC).
- ▶ In February 2021, the Italian Navy signed a €1.35bn contract with OCCAR for the supply of two type 212NFS submarines (+2 optional), an upgraded version of the TKMS type 212A. The submarines will be built under a technology transfer agreement with Fincantieri and are expected to be delivered in 2027 and 2029. TKMS will produce some components, such as the bow sections and the fuel cells.
- ▶ In July 2021, TKMS handed delivered the last two of the four Sa'ar 6 corvettes ordered in 2015 by the Israeli Navy as part of a contract worth around €430m, after delivering the first unit in November 2020 and the second in May 2021. The branch carried out the design of the vessels and subcontracted the production to GNYK (a subsidiary of Prinvest).
- ▶ In July 2021, TKMS delivered the last of the four Type 209/1400mod submarines, named S44, which were ordered by Egypt in 2011 (first two) and in 2015 (last two).

Technology and Innovation

- ▶ At SubCon2019, Kta Naval Systems, a joint venture between TKMS and Kongsberg, unveiled a new combat system for conventional submarines, called ORCCA. The system will be installed on the six Type 212CD submarines ordered by Germany and Norway from TKMS.



TURKISH AEROSPACE

Aerospace and defence company with civil and military activities. Major aeronautics and space supplier to the Turkish Armed Forces, and 68th-largest defence contractor.

BUSINESS AREAS

Platform manufacturer and systems integrator/
equipment supplier

- ▶ Military aircraft (fighter aircraft, trainer aircraft, helicopters)
- ▶ Unmanned systems (MALE UAVs, target drone systems)
- ▶ Aerostructures
- ▶ Earth observation and communications satellites
- ▶ Modernisation and maintenance services

GOVERNANCE

Chairman	Rafet Bozdogan
Chief Executive Officer	Temel Kotil
Chief Financial Officer	Saadet Korkem

OWNERSHIP STRUCTURE

Symbol	
Listed on	Unlisted group
Market Cap	

Major shareholders (as of 17.11.2021)

Turkish Armed Forces Foundation (TSKGV)	54,49%
Undersecretariat for Defence Industries	45,45%
Turkish Aeronautical Association (THK)	0,06%

MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Turkish Engine Industries	50,5%	Turkey
Airbus Military	5,6%	Turkey
TR-Motor	35%	Turkey
CTech	49%	Turkey
TAAC	50%	Turkey
GSATCOM	50%	Turkey

KEY FIGURES (Fiscal year ended : december 31st)

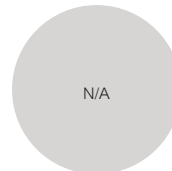
€ millions	2017	2018	2019	2020
Revenue	1 258	1 411	2 024	1 317
Δ (%) [\$]*	12,86%	17,16%	36,07%	-33,66%
Defence (%)	77%	63%	82%	84%
Export (%)	N/A	N/A	N/A	N/A
Operating profit/loss	N/A	N/A	N/A	N/A
Operating margin	N/A	N/A	N/A	N/A
Net income	N/A	N/A	N/A	N/A
Order book	N/A	N/A	N/A	N/A
Employees	≈ 6 000	N/A	≈ 9 000	N/A

*Variation based on revenue in U.S. dollars
See €/\$, p.7

REVENUE BY BUSINESS SEGMENT (%)



REVENUE BY REGION (%)



TURKISH AEROSPACE

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Airbus	TEI	Lockheed Martin	Northrop Grumman	BAE Systems	Aselsan	Havelsan	Roketsan	Leonardo	Thales Alenia Space	Telespazio	KAI
Fighter and trainer aircraft												
TF-X future fighter aircraft				●	●	●						
Hürjet future advanced trainer and light attack aircraft												
Hürkus-A/B trainer aircraft and Hürkus-C light attack aircraft					●							
Helicopters												
T929 ATAK 2 future heavy attack helicopter												
T625 Gökbey future utility helicopter	●				●							
T70 future utility helicopter	●	●			●							
T129 ATAK attack helicopter	●				●			●				
Unmanned systems												
Aksungur combat MALE UAV	●				●		●					
Anka surveillance and reconnaissance MALE UAV	●				●		●					
Aerostructures												
A400M programme (forward center fuselage, paratrooper doors, tailcone, fins, spoilers)	●											
F-35A fighter aircraft (center fuselage)*			●	●								
Cougar Mk I programme (fuselage, tail, canopy)	●											
KUH-1 Surion helicopter (forward fuselage)												●
Satellites												
Türksat 6A future communications satellite					●							
Göktürk family of Earth observation satellites					●		●		●	●		

*Turkish industrial participation in the production of the F-35 fighter aircraft will cease in 2022 following Turkey's exclusion from the programme.

STRATEGIC HIGHLIGHTS

Business trends

- ▶ Turkish Aerospace revenues reached around \$1.5bn (€1.3bn) in 2020, 84% of which from defence.
- ▶ The group has been building on technology skills acquired through programmes under U.S. and European licences. Turkish Aerospace now offers two nationally designed aircraft: the Hürkus basic trainer and ground attack aircraft and the T625 Gökbey light transport/utility helicopter. The group is also the prime contractor for Turkey's future fighter aircraft programme, the TF-X.
- ▶ In August 2021, Turkish Aerospace entered into a partnership with Pakistan's National Engineering and Scientific Commission (NESCOM) for the production, under technology transfer, of components for the Anka surveillance and reconnaissance military UAV in Pakistan.

Home market

- ▶ Turkish Aerospace is a major supplier to the Turkish Armed Forces in the aviation and space fields.
- ▶ The group is currently developing the TF-X fighter aircraft, for which a first prototype is expected in 2023. The first test flight is expected in 2025, with a prototype equipped with GE Aviation's F110 turboprop engine. However, by 2029 Turkey plans to equip the TF-X with engines designed locally by TR Motor and Havelsan.
- ▶ In December 2020, Turkish Aerospace began series production of the Aksungur combat UAV following several successful test flight in September 2020.
- ▶ In December 2020, the group delivered the first ATR 72-600 TMPA maritime patrol aircraft, a converted ATR 72-600 passenger aircraft (Leonardo), to the Turkish Navy as part of the Meltem III project. The aircraft is equipped with the Thales AMASCOS mission system as well as various capabilities for anti-submarine warfare and search and rescue missions.
- ▶ In June 2021, Turkish Aerospace ordered 14 turbines from the Ukrainian Motor Sich Group for its future T929 ATAK 2 heavy attack helicopter, to be delivered between September 2022 and 2025. The helicopter could make its first flight in 2023.

Export markets

- ▶ In terms of exports, Turkish Aerospace is mostly present in Asia. The group also supplies aerostructures to U.S. and European aircraft manufacturers.
- ▶ Under a memorandum of understanding signed in December 2018, the Philippine Air Force in May 2021 ordered six T129 ATAK multi-role attack helicopters from Turkish Aerospace in a contract worth \$269m (€223m), with deliveries scheduled until 2023. The contract was subject to U.S. government approval for the export sale of the T800-4A turboshaft engine under ITAR regulations. A contract for the sale of 30 units to Pakistan is still pending approval from U.S. authorities.
- ▶ In December 2020, Tunisia's Ministry of Defence awarded a contract worth \$80m (€70m) to Turkish Aerospace for the supply of three Anka-S UAVs and three ground control stations, as well as the training of 52 Tunisian Air Force operators at its Ankara site.
- ▶ Discussions are underway with several countries (Russia, Bangladesh, Indonesia, Kazakhstan, Malaysia, Pakistan, etc.) for their integration, as a partner and/or customer, in the Turkish TF-X programme.

Technology and Innovation

- ▶ In addition to the TF-X fighter aircraft and the T929 ATAK 2 heavy attack helicopter, Turkish Aerospace plans to develop two other aircraft platforms: an advanced training and light attack aircraft called Hürjet, and a 10-tonne utility helicopter for search and rescue missions.



UNITED AIRCRAFT CORPORATION (UAC)

Conglomerate grouping the main Russian aircraft manufacturers. Subsidiary of state-owned defence holding conglomerate Rostec. Operates in military aviation.

BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Fighter aircraft (Mikoyan, Soukhoi)
- ▶ Trainer aircraft (Yakovlev)
- ▶ Strategic bombers (Tupolev)
- ▶ Transport and special purpose aircraft (Antonov, Beriev, IliouChina)
- ▶ Unmanned combat aerial vehicles (Mikoyan, Soukhoi)

GOVERNANCE

Chief Executive Officer	Yury Slyusar
Chief Financial Officer	Alexey Demidov
Deputy General Director	Sergey Korotkov
Innovations	

KEY FIGURES (Fiscal year ended : December 31st)

€ millions	2017	2018	2019****	2020
Revenue	6 852	5 559	4 839	5 221
Δ (%) [RUB]*	8,36%	-8,90%	-14,82%	23,19%
Defence (%)**	71%	N/A	N/A	N/A
Export (%)**	30%	N/A	N/A	N/A
Operating profit/loss	334	49	-370	-1 357
Operating margin	4,87%	0,88%	-7,66%	-25,99%
Net income***	-21	-388	-800	-1 845
Order book	N/A	N/A	N/A	N/A
Employees	≈ 102 000	N/A	N/A	N/A

*Variation based on revenue in local currency

See €RUB, p.7

**Based on the number of delivered units

***Net income attributable to shareholders

****Figures restated

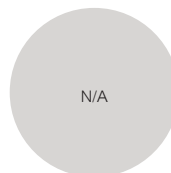
OWNERSHIP STRUCTURE (as of 17.11.2021)

Symbol	UNAC
Listed on	MOEX
Market Cap (RUB bn)	374

Major shareholders (as of 17.11.2021)

Rostec	92%
--------	-----

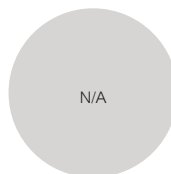
REVENUE BY BUSINESS SEGMENT (%)



MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Indo-Russian Aviation	31%	India
Aerospace Technology Systems Corporation (ATSC)	25%	Malaysia

REVENUE BY REGION (%)



UNITED AIRCRAFT CORPORATION (UAC)

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	HAL	NADI*	Phazotron**	Tikhomirov***	UEC Salum****	Aviadvigatel****	Klimov****	Kouznetsov****	Saljut****
Fighter aircraft									
Su-75 Checkmate future light fighter aircraft									
Su-57 (PAK FA) multi-role fighter aircraft			●	●					
MiG-35 multi-role fighter aircraft						●			
Su-35 (Su-27M) fighter aircraft			●	●					
Su-34 fighter-bomber				●					
MiG-31 multi-role fighter aircraft					●				
Su-33 (Su-27K) fighter aircraft				●					
Su-30SM2 multi-role fighter aircraft			●	●					
Su-30MK multi-role fighter aircraft	●	●	●		●				
Trainer aircraft									
Future Yak-152									
Yak-130								●	
Strategic bombers									
PAK DA future long-range bomber								●	
Tu-160M2								●	
Tu-95MSM								●	
Transport and special purpose aircraft									
Il-112V future light transport aircraft						●			
Il-76MD-90A and Il-78M-90A transport/tanker aircraft					●				
Unmanned combat aerial vehicle (UCAV)									
S-70 Okhotnik-B future UCAV					●				

*National Aerospace and Defence Industries **Subsidiary of Rostec ***Subsidiary of Almaz-Antey
 ****UEC (United Engine Corporation) group, subsidiary of Rostec

STRATEGIC HIGHLIGHTS

Business trends

- ▶ UAC, which includes Russian aircraft manufacturers Mikoyan, Sukhoi, Yakovlev, Tupolev, Beriev, Ilyushin, Aviastar and Irkut, recorded a 23.2% increase in revenues in 2020, to RUB 432bn (€5.2bn). The conglomerate nevertheless recorded a net loss of RUB 153bn (€1.8bn) amid financial difficulties.
- ▶ During 2020, the Russian state-owned conglomerate Rostec (Kalashnikov, Russian Helicopters, UEC, UralVagonZavod, etc.) completed the absorption of UAC, which was announced at the end of 2018. Rostec now holds around 92% of UAC's capital.

Home market

- ▶ UAC remains highly dependent on its domestic market. In 2020, the group delivered Su-34 and Su-35S combat aircraft, Yak-130 training aircraft and the first two of several Su-57 fifth-generation combat aircraft ordered in July 2019 (76 units to be delivered by 2028) to the Russian Air Force. UAC also delivered MiG-31 combat aircraft upgraded to the MiG-31BM standard.
- ▶ The group signed several contracts with the Russian Air Force during the second half of 2020, for a cumulative amount of more than RUB 300bn (€3.6bn), in particular for 30 Su-35S fighters, 24 Su-34M modernised fighter-bombers, 21 Su-30SM2 multi-role combat aircraft, 25 Yak-130 advanced training aircraft and Il-76MD-90A transport aircraft.
- ▶ In November 2020, the first Tupolev Tu-160 strategic bomber upgraded to Tu-160M2 standard completed a test flight with the new Kuznetsov NK-32-02 turbojet engines. Meanwhile, UAC has been assembling 10 new aircraft to this standard since January 2019. The first newly produced aircraft is expected to make its maiden flight in late 2021.
- ▶ In January 2021, UAC announced it had begun developing a future 6th-generation stealth interceptor aircraft, the MiG-41 (PAK DP programme). The aircraft should replace the MiG-31 currently in service with the Russian Air Force in the early 2030s and be capable of intercepting hypersonic missiles.
- ▶ In August 2021, UAC signed a contract with the Russian Air Force to upgrade an unspecified number of MiG-31BM fighters to the MiG-31K standard, to enable them to carry the Kh-47M2 Kinjal aeroballistic missile.
- ▶ In September 2021, UAC delivered the first unit of the Il-76MD-90A transport aircraft to the Russian Air Force.

Export markets

- ▶ In the export market, UAC mainly operates in Africa (Algeria, Egypt) and Asia (China, India, Vietnam).
- ▶ In November 2020, UAC delivered an undisclosed number of Su-30SM fighters (probably four) to the Kazakh Air Force as part of a contract for the supply of eight aircraft signed in 2018.
- ▶ During the year, UAC started production of the 14 Su-34ME fighter-bombers ordered by Algeria in 2019 (undisclosed contract value). Six aircraft are expected to be delivered by the end of 2021 and the remaining eight by 2023.
- ▶ Bangladesh is reportedly considering buying spare parts for its MiG-29S fighter fleet as well as eight MiG-35 fighters for \$500m (€420m), funded by India.

Technology and Innovation

- ▶ At the MAKS 2021 air show, UAC unveiled the Su-75 Checkmate, a future 5th-generation light fighter that will fly at Mach 2. Its maiden flight is scheduled for 2023, with deliveries from 2026.
- ▶ In July 2021, UAC announced the development of a two-seat version of its 5th-generation Su-57 fighter capable of controlling four S-70 Okhotnik-B combat UAVs with which it would fly in formation. UAC is currently producing three S-70 prototypes and aims to begin serial deliveries from 2024.

PROJECT TEAM (Xerfi Spécific)

Marine Cassou (Xerfi Spécific Manager)

Eline Maurel (Research Director)

Jérémy Robiolle (Xerfi Spécific Development Director)

STEERING COMMITTEE DGA/S2IE

Michel Midon and Valérie Latrémouille

LAYOUT & GRAPHICS

Xerfi Spécific

DGA institutional website www.defense.gouv.fr/dga

State public procurement portal www.achats.defense.gouv.fr

The armaments portal www.ixarm.com

French defence procurement agency (DGA)

Industrial Affairs and Economic Intelligence Department

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