

# NOTEBOOK

2017 Edition



INTERNATIONAL DEFENCE COMPANIES



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2017 Edition

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## INTERNATIONAL DEFENCE COMPANIES

Manuscript completed on 4 august 2017

**French Defence Procurement Agency (DGA)**

Strategy Directorate/Industrials Affairs and Economic Intelligence Department

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# FOREWORD

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Paris, October 20th 2017

On behalf of the French Defence Procurement Agency (DGA), the Industrial Affairs and Economic Intelligence Department presents the 2017 edition of its "Notebook on International Defence Companies".

This publication contains key data for 60 international defence companies selected for their representativeness and their relevance. In 2017, national and international industrial activity has led us to include for the first time ArianeGroup (formerly Airbus Safran Launchers), ASC Pty and United Technologies Corporation (UTC).

The financial data, business areas and strategic orientations for each company have been taken from publicly available information. This notebook should not be considered as representing in any way the position of the DGA or the Foundation for Strategic Research (FRS) which helped to produce it.

We hope you enjoy reading it.

**Bertrand LE MEUR**

Director for Industrials Affairs and Economic Intelligence  
DGA

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### SCOPE

The 2017 edition of the Notebook on International Defence Companies covers a selection of 60 companies. A specific section, “Key Data,” presents the following key consolidated financial indicators for each company, where such information is available (“N/A” signifies that the data is not available):

- Revenue (euros)
- Variation in sales (as a percentage; calculated using data in local currency)
- Defence business (% of total)
- Export business (% of total)
- Operating profit/loss (euros)
- Operating margin (euros)
- Net profit/loss (euros)
- Order book at the end of the fiscal year (euros)
- Employees (thousands)

To ensure consistency, consolidated financial statements were the preferred source of information. Emphasis was given to the most recent indicators covered by an accounting restatement.

Currency conversions are based on annual averages (source: fxtop), except for the “Order book” indicator, where the applied exchange rates were those valid on the date of closure of the financial year. Average annual exchange rates are summarised in the table below. Note that, as systematic conversion of financial results into euros does not necessarily reflect the annual variations in business activity, the “Percentage variation in sales” was calculated on the basis of data in local currency.

### SOURCES

For groups which are publicly listed or which publish an annual statement of consolidated accounts, the following sources were used:

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

For groups which are not listed or which do not publish an annual statement of consolidated accounts, the following sources were used:

- Press releases
- Company presentations
- Public presentations and statements by management
- Parliamentary reports
- ORBIS, Diane, LexisNexis data bases
- Trade press

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

- ArianeGroup (formerly Airbus Safran Launchers)
- Atlas Elektronik (TKMS)
- Aviation Industry Corporation of China (AVIC)
- Elettronica
- General Atomics
- Iveco Defence Vehicles
- KMW + Nexter Defense Systems (KNDS)
- MBDA
- Navantia
- Polska Grupa Zbrojeniowa (PGZ)
- Renault Trucks Defense (Volvo Group/RTD)
- Thales Alenia Space (TAS)
- ThyssenKrupp Marine Systems (TKMS)
- Turkish Aerospace Industries (TAI)

## OWNERSHIP

The "Ownership structure" section has been completed using data from the following sources:

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

## GRAPHS

Graphs represent sales broken down by business area and by geographical region. For non-French companies, business areas have been translated into French. However, for branches or brands that are better known by their English names, we have decided to leave them in English.

## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

The "Main programmes, cooperations and export partnerships" section presents the main programmes that feature in the companies' different external communication documentation (not including upstream study programmes). Cooperation links for each programme are also listed, without further details. They can be of various types: co-prime contractorship, codevelopment and coproduction agreement, subcontracting agreement (for tier 1 equipment suppliers considered as "strategic partners"), marketing agreement, JV or partnerships with foreign companies as part of offset agreements.

Due to the very general nature of the notebook, this section makes no claim to be exhaustive.

## EURO EXCHANGE RATES\*

COUNTRY	CURRENCY	1 EURO =				
		2013	2014	2015	2016	2017
Brazil	Real	2,869	3,121	3,700	3,856	3,443
Canada	Canadian Dollar	1,368	1,466	1,419	1,466	1,448
China	Chinese Yuan Renminbi	8,165	8,186	6,973	7,445	7,495
South Korea	Won	1 453,912	1 398,142	1 256,544	1 284,181	1 236,330
U.S.	US Dollar	1,328	1,329	1,110	1,107	1,083
India	Indian Rupee**	77,93	81,041	71,196	74,372	71,176
Israel	Shekel	4,795	4,745	4,312	4,249	3,964
Japan	Yen	129,663	140,306	134,314	120,197	121,780
Norway	Norwegian Krone	7,807	8,354	8,950	9,291	9,179
Poland	Zloty	4,198	4,184	4,184	4,363	4,269
United Kingdom	British Pound	0,849	0,806	0,726	0,819	0,861
Russia	Ruble	42,337	50,952	68,072	74,145	62,806
Singapore	Singapore Dollar	1,662	1,682	1,526	1,528	1,529
Sweden	Swedish Krona	8,652	9,099	9,354	9,469	9,597
Switzerland	Swiss Franc	1,231	1,215	1,068	1,090	1,077
Turkey	Turkish Lira	2,534	2,906	3,026	3,343	3,939

\* The exchange rate used here is based on an annual average (source: fxtop).

\*\* In the Indian numbering system, a comma separates every two digits (to the left of the last three). To make large numbers easier to read, India uses the "crore" as a unit of measurement. In this system, 1 crore equals 10,000,000.





## BUSINESS AREAS

Platform manufacturer and systems integrator

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

## GOVERNANCE

Chairman of the Board	Denis Ranque
Chief Executive Officer (CEO)	Tom Enders
Chief Financial Officer (CFO)	Harald Wilhelm

## KEY FIGURES (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	57 567	60 713	64 450	66 581
Δ (%)	1,92%	5,46%	6,16%	3,31%
Defence (%)	20%	18%	18%	17%
Export (%) (excl. Europe)	64%	66%	69%	68%
Operating profit/loss	2 570	3 991	4 062	2 558
Operating Margin	4,46%	6,57%	6,30%	3,84%
Net profit/loss	1 483	2 350	2 698	1 000
Order book	680 560	857 519	1 005 864	1 060 447
Employees	138 404	138 622	136 574	133 782

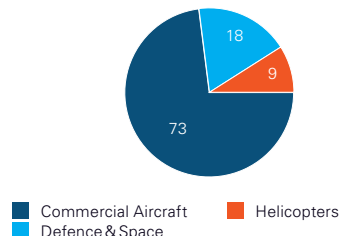
## OWNERSHIP STRUCTURE

Symbol	AIR
Listed on	NYSE Euronext
Market Cap (M€)	54 995

Major Shareholders (as of 30.06.2017)

SOGEPA (French State)	11,10%
GZBV (German State)	11,10%
SEPI (Spanish State)	4,20%
Europacific Growth Fund	3,02%

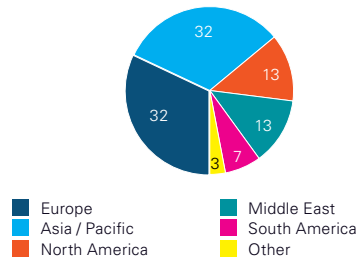
## REVENUE BY BUSINESS LINE (%)



## MAIN JOINT VENTURES AND ASSOCIATES

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

## REVENUE BY REGION (%)



## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Orbital ATK	BAE Systems	Thales	Leonardo	Safran	Dassault Aviation	TAI	Rheinmetall Defence	Indra Sistemas	Gemalto	IAI
<b>Military aircraft and Unmanned aircraft systems</b>											
A400M military transport aircraft		●		●		●					
C295 and AC295 transport aircraft	●	●									
A330 MRTT (multi-role tanker transport aircraft)		●									
Eurofighter/Typhoon fighter aircraft		●	●								
HARFANG MALE UAS and leasing Heron TP MALE UAS											●
Skyghost ER mini UAS											
ATLANTE tactical UAS								●			
KZO tactical UAS							●				
European MALE RPAS Definition study			●		●						
<b>Military helicopters</b>											
AS565 MBe multi-role medium helicopter (4t)		●		●							
H215M twin-engine helicopter (9t)		●		●							
H225M twin-engine multi-role helicopter (11t)		●		●							
NH90 twin-engine multi-role helicopter (11t)		●	●	●							
Tiger combat helicopter		●		●							
Future HIL light joint helicopter		●									
<b>Space</b>											
CSO optical earth observation satellite		●									
CERES space-born military intelligence system		●									
Helios 2 military surveillance satellite		●									
Syracuse 4 military communication satellite		●									
<b>Cybersecurity</b>											
Stormshield data security											●
Cyber threat intelligence											

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Sales at historic peak of €66.6bn in 2016 (+3.3%) and a record order book of €1,060bn (+5.5%).
- ▶ 17% of group sales from defence business, a lower proportion than in 2016, due to faster growth in civil activities, Airbus Defence & Space restructuring and difficulties on A400M programme (€2.2bn charges in 2016).
- ▶ Merger between the group structure and its largest division, Airbus Commercial Aircraft, and name change from Airbus Group SE to Airbus SE (completed in July 2017), culmination of vast internal reorganisation launched following strategic review in 2014.
- ▶ In November 2016, announcement of plan to reduce workforce by maximum 1,164 positions, mainly affecting support and integrated functions, as well as the technology department (CTO) organisation.
- ▶ Several divestments during first half 2017: defence electronics business, purchased in February 2017 by U.S. investment fund KKR (with Airbus provisionally retaining a 25.1% stake); 49% stake in Atlas Elektronik, sold to its partner Thyssenkrupp AG (TKMS naval arm) in April 2017; and Plant Holdings Inc. (Airbus DS Communications business) purchased by Motorola Solutions (operation closed at end of 2017).
- ▶ In space launchers, ArianeGroup (formerly Airbus Safran Launchers), jointly owned with Safran, fully operational since June 2016.

### Home market (Germany, Spain, France, United Kingdom)

- ▶ On A400M programme, definitive engine certified soon and due to enter production by end of 2017, but difficult negotiations with customer states to reduce penalties imposed on the group for late aircraft deliveries.
- ▶ In military helicopter segment, during last quarter of 2016, first flight of NH90 Sea Lion (22 units to be delivered to Germany Navy from 2019 to 2022) and delivery of five NH90s to Spanish Army and first H215; French decision in March 2017 to adopt H160 as basis for future HIL Light Joint Helicopter programme.
- ▶ In combat aircraft maintenance, two major contract awards (C1 and C3) from NATO Eurofighter & Tornade Management Agency (NETMA) for Eurofighter Typhoon fleet.

### Export markets

- ▶ In June 2017, Germany and Norway join Netherlands and Luxembourg to acquire a fleet of A330 MRTTs; C295 twin turboprop selected by Bangladesh, Canada and Kazakhstan, while A400M selected by Indonesia (January 2017, five aircraft).
- ▶ Between May 2016 and June 2017, further successes for H225 helicopter in Kuwait, Singapore and Japan, for H135 and H145 in UK (UKMFTS programme) and for H145M in Serbia, H215M in Chile and EC725 in Thailand.

### Technology and Innovation

- ▶ €3bn in R&D spending in 2016, down 14%, due to reduced R&D activities on A350 XWB programme.
- ▶ In September 2016, two-year definition study contract award, with Dassault Aviation and Leonardo, for European MALE UAV (first flight of prototype in 2023).

## BUSINESS AREAS

Platform manufacturer and systems integrator, launch service provider

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

## GOVERNANCE

Chairman and CEO

Alain Charmeau

## OWNERSHIP STRUCTURE

Symbol

Listed on

Non Listed Company

Market Cap

Major Shareholders (as of 30.06.2017) %

Airbus	50%
Safran	50%

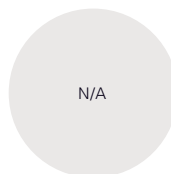
## MAIN JOINT VENTURES AND ASSOCIATES

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

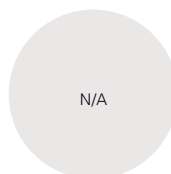
## KEY FIGURES (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	-	-	-	~3 000
Δ (%)	-	-	-	-
Defence (%)	-	-	-	N/A
Export (%)	-	-	-	N/A
Operating profit/loss	-	-	-	N/A
Operating Margin	-	-	-	N/A
Net profit/loss	-	-	-	N/A
Order book	-	-	-	N/A
Employees	-	-	-	~9 000

## REVENUE BY BUSINESS LINE (%)



## REVENUE BY REGION (%)



# ARIANEGROUP (FORMERLY AIRBUS SAFRAN LAUNCHERS)

## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Airbus	Safran	Thales	Naval Group*	Avio	RUAG	MT Aerospace**	SABCA	Air Liquide
<b>Commercial launch services</b>									
Ariane 6 new-generation launcher	●	●	●			●	●	●	●
Ariane 5 launcher	●	●	●			●	●	●	●
Launch services (Ariane 5, Vega, Soyouz)									
<b>Strategic ballistic missile</b>									
M51	●	●	●	●					
<b>Propulsion systems</b>									
Vulcain 2 rocket engine (Ariane 5)		●							
Vinci rocket engine (Ariane 5ME)		●							
Bipropellant thrusters (4N, 10N, 22N, 200N, 400N)									
Chemical monopropellant hydrazine thrusters (1N, 20N, 400N)									
Electric orbital propulsion systems (RIT 2X, RIT 10 EVO and RIT µX)									
Combustion chamber									
Propulsion subsystems									
Metallic container									
<b>Pyrotechnics (for launchers and satellites)</b>									
Vulcain Turbine pump starter		●							
Vinci Igniter		●							
Zefiro-9 Vega Igniter					●				

\* formerly DCNS \*\* OHB

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Creation of Airbus Safran Launchers (ASL) joint-venture, jointly owned by Airbus and Safran, finalised on 30th June 2016, followed by European Commission approval for acquisition of Arianespace by ASL (by buying out 35% held by CNES) on 20th July 2016.
- ▶ Name changed to ArianeGroup on 1st July 2017, culmination of European launcher sector restructuring.
- ▶ Group comprising 11 subsidiaries and main affiliates (APP, Arianespace, Cilas, Eurockot, Eurocryospace, Europropulsion, Nuclétudes, Pyroalliance, Regulus, Sodern and Starsem), with 9,000 employees, mostly in France and Germany.
- ▶ Start of construction of new hangar (N80) at Les Mureaux for production and assembly of first stage of Ariane 6 (entry into service in 2019).
- ▶ To reduce costs of European launcher, emphasis on industrial optimisation, e.g. use of new production technologies at all sites (3D printing, friction stir welding, launcher assembly in horizontal position).
- ▶ Fourth launch of the year and 80th consecutive success for Ariane 5 on 29th June 2017 (two telecommunications satellites placed into geostationary transfer orbit).

### Home market

- ▶ Concerning nuclear deterrent, successful validation of M51 strategic ballistic missile launched from Le Triomphant submarine on 1st July 2016, clearing the way for M51.2 State acceptance and commissioning.
- ▶ Following in-depth review (Maturity Gate 5), addenda to the contract awarded in August 2015 were signed with ESA in November 2016, releasing the totality of the €2.4bn planned for development, industrialisation and operation of the Ariane 6 launcher (in Ariane 62 and 64 variants; first flight in 2020).
- ▶ Start of construction of combustion chamber of first flight model of VINCI engine at Ottobrunn in June 2017.
- ▶ In fusion remote-handling/robotics, framework contract signed with two partners from VINCI group (Cegelec CEM of France and Nuvia Ltd. of UK) for design, testing, manufacturing, delivery, commissioning and acceptance of Cask and Plug Remote Handling System (CPRHS), a system of remotely operated mobile containers (€100m over seven years).
- ▶ SECOIA World War 1 chemical munitions destruction facility (located on Mailly military site in the Aube department), entered qualification phase in 2017.

### Technology and Innovation

- ▶ Awarded first tranche of development contract for future LOx-methane Precursor Reusable Oxygen METHane cost Effective Engine (Prometheus) by ESA at 2017 Paris Air Show, with the goal of dividing Vulcain 2 engine production costs by 10 (focus on 3D printing technologies, predictive maintenance, digital control and reshaping of traditional Ariane engine industrial supply chain).
- ▶ Partnership established with ONERA (French national aerospace research center) in April 2017 concerning R&T activities in launch systems for civil and military applications (creation of steering committee and working groups for various research topics).

**BUSINESS AREAS**

Platform manufacturer and systems integrator

- ▶ Submarines
- ▶ Surface ships
- ▶ Maintenance

**GOVERNANCE**

Chairman	Bruce Carter
Interim Chief Executive Officer	Stuart Whitley
Chief Financial Officer	Ashley Menadue

**OWNERSHIP STRUCTURE**

Symbol	
Listed on	Non Listed Company
Market Cap	

Major Shareholders (as of 30.06.2017)

Australian State	100%
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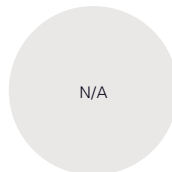
**MAIN JOINT VENTURES AND ASSOCIATES**

Name	%	Country
AWD Alliance	N/A	Australia

**KEY FIGURES** (Fiscal year ended: 30.06.2016) \*

€ millions	2012-13	2013-14	2014-15	2015-16
Revenue	665	616	697	538
$\Delta$ (%) / [AUD]**	-16,52%	-7,29%	13,01%	-22,74%
Defence (%)	100%	100%	100%	100%
Export (%)	0%	0%	0%	0%
Operating profit/loss	7	-6	19	23
Operating Margin	0,99%	-0,95%	2,74%	4,32%
Net profit/loss	7	-3	15	18
Order book	N/A	N/A	N/A	N/A
Employees	~2 400	~2 600	~2 600	~2 600

\* 2015 Figures restated.

\*\* Variation based on the revenue in local currency.  
See € / AUD exchange rates p.7**REVENUE BY BUSINESS LINE (%)****REVENUE BY REGION (%)**

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Saab Kockums	General Dynamics	Raytheon	Lockheed Martin	Navantia
Submarines					
Collins-class submarines	●	●	●		
Surface ships					
Hobart-class guided missile destroyers		●	●		●



## STRATEGIC HIGHLIGHTS

## Business trends

- ▶ 2015-2016 sales down 23%, at AUD801m (€538m).
- ▶ Following strategic review in 2015 and federal government announcement in October 2016, group divided since mid-2017 into three separate entities, specialising in shipbuilding (surface ships), submarine sustainment and critical infrastructure (infrastructure ownership transferred to Australian Naval Infrastructure Pty. Ltd. in March 2017).
- ▶ Launch of adaptation and extension work at naval shipyards in Osborne, with construction of a surface ship assembly site (investment of AUD535m, or €360m) and modernisation of the submarine maintenance centre (inaugurated in July 2017), and in Henderson (AUD100m, or €70m, investment plan between 2017 and 2020).
- ▶ With activities on Hobart-class destroyer programme winding down, progressive reduction of workforce at Osborne shipyard announced in May 2016 (-640 jobs in 2016-2017).

## Home market

- ▶ Key player in Australian naval sector, primary beneficiary of Navy modernisation programme (either directly or via technology transfer negotiated with foreign suppliers), such as SEA 1000 submarines, SEA 5000 frigates and SEA 1180 OPVs, and a strategic partner for any foreign naval group seeking to penetrate the market.
- ▶ "Naval Shipbuilding Plan" presented by government in May 2017, including AUD90bn (€62.7bn) in equipment spending (56% on submarines, 39% on frigates and 6% on OPVs) and AUD1bn (€696m) on naval shipyard infrastructure modernisation.
- ▶ Following selection of Naval Group bid in SEA 1000 competition (April 2016, with Lockheed Martin Australia for combat systems), signature of global security agreement and intergovernmental agreement at end of 2016 for development, construction, maintenance and upgrading of 12 future RAN submarines (technology transfer agreements involving construction of ships at new shipyard in Adelaide managed by Naval Group Australia and close to ASC, whose role still to be determined).
- ▶ Delivery of lead ship in Hobart-class guided missile destroyer programme on 15th June 2017 (two other ships in construction), based on design of F100 frigates built by Navantia (Spain) and equipped with U.S. Aegis combat system.
- ▶ Partnership agreement signed with Austal in June 2017 to constitute a single local solution for foreign supplier selected to execute SEA 5000 future frigate programme (BAE Systems, Navantia or Fincantieri) and, for the same reason, partnership established with Forgacs Marine & Defence Pty. Ltd. in April 2017 for the SEA 1180 OPV programme (bids submitted by Damen and Lürssen).
- ▶ Continuation of maintenance activities on six Collins-class submarines at Osborne naval shipyard, with start of major maintenance on HMAS Farncomb in January 2016.

## Technology and Innovation

- ▶ S&T programme focused on metal 3D printing, new materials and advanced machining technologies (in partnership with the Commonwealth Scientific and Industrial Research Organisation-CSIRO and the Institute of Photonics and Advanced Sensors-IPAS).



## BUSINESS AREAS

Systems integrator/equipment supplier

- ▶ Sonar and acoustic systems
- ▶ Ammunition
- ▶ Unmanned vehicles (surface and underwater)
- ▶ Maritime security systems
- ▶ Naval weapons
- ▶ Mine warfare systems

## GOVERNANCE

Chairman	Dr P. Feldhaus
Chief Executive Officer	Dr J. Bodo Koch
Chief Financial Officer	A. Kocherscheidt

## OWNERSHIP STRUCTURE

Symbol	
Listed on	Non Listed Company
Market Cap (€ millions)	

Major Shareholders (as of 30.06.2017)

ThyssenKrupp AG	100%
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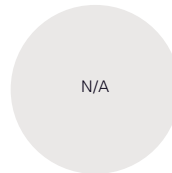
## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Advanced Lithium Systems Europe S.A.	49%	Greece
Cybicom Atlas Defence PTY	40%	South Africa
Signalis Holding GmbH	40%	Germany
ET Marinesysteme GmbH	50%	Germany
Atlas Elektronik LLC	49%	UAE

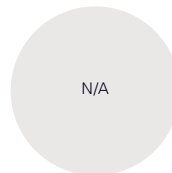
## KEY FIGURES (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	441	409	407	N/A
$\Delta$ (%)	0,68%	-7,24%	-0,49%	N/A
Defence (%)	N/A	N/A	N/A	N/A
Export (%)	54%	51%	52%	N/A
Operating profit/loss	31	11	12	N/A
Operating Margin	6,84%	2,61%	2,97%	N/A
Net profit/loss	16	-3	-2	N/A
Order book	1 112	1 223	N/A	N/A
Employees	2 079	2 140	2 136	N/A

## REVENUE BY BUSINESS LINE (%)



## REVENUE BY REGION (%)



## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Lockheed Martin	Systems Sunlight	Magellan Aerospace	Leonardo	Reliance	Thales
<b>Surface combatant systems</b>						
Transportable Acoustic Range (TAR)						
Atlas Integrated Mission System (AIMS)						
ANCS / ANCS-SC combat systems						
<b>Submarine systems</b>						
Sonar Data Recording System (SDRS)						
ISUS 100 combat system						
CIRCE self noise monitoring system					●	
Mobile Acoustic Range System (MARS)						
ODIN underwater warfare simulation						
<b>Mine warfare systems</b>						
Unmanned Mine Countermeasures (MCM) System ARCIMS						
<b>Naval weapons</b>						
Heavyweight torpedo SeaHake mod4						●
Anti-torpedo torpedo (ATT) SeaSpider			●			
Torpedo batteries (Lithium)		●				
<b>Unmanned vehicles</b>						
SeaFox mine disposal vehicle	●					
SeaOtter MkII AUV systems						
SEICAM communication systems						
<b>Services and product support</b>						
Combat system of the German class F124 frigates						●

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Decline in sales between 2013 and 2015 (-7.7%); €407m last year.
- ▶ Airbus sold stake (49%) in January 2017, acquired by historical partner ThyssenKrupp Marine Systems (TKMS) in April 2017. The latter thus has 100% ownership of this electronics specialist.
- ▶ Renewal of product line with launch of ISUS 100 (submarine combat systems, replacing ISUS 90), new SeaHake Mod4 ER heavyweight torpedo for coastal defence and Scout Mk II side-scanning sonar (developed by U.S. subsidiary Atlas North America).

### Home market

- ▶ German market historically represents almost one-third of sales. Good growth prospects thanks to orders in naval sector (surface ships and submarines).
- ▶ As part of Type 332 mine hunter fleet upgrade programme, new contract in December 2016 covering three ships (integration of IMCMS counter-measures system, Sea Fox unmanned underwater vehicle and capability to control Seehund remotely operated vehicle) and construction of a training and test facility (operational in 2020).

### Export markets

- ▶ Well-established international presence (mainly in UK, U.S., South Africa and Australia).
- ▶ British subsidiary Atlas Elektronik UK (AEUK) well placed on British market for unmanned surface vehicles (USV) and present on export markets thanks to sales of its CERBERUS towed sonar system and its ARCIMS unmanned mine counter-measures solution in 2016 and 2017 (customer in Middle East, product tested by Belgian Navy in June 2017).
- ▶ Following announcement in February 2017 of a strategic partnership between Norway and Germany to jointly acquire Type 212NG submarines (two for Germany, four for its partner), creation one month later of a Norway-based joint venture between Kongsberg, TKMS and Atlas Elektronik, specialised in combat systems.
- ▶ Dynamic partnership strategy in Canada, with signature of an MoU with Magellan Aerospace in June 2016 covering joint development of rocket motor and warhead sections for SeaSpider light anti-torpedo torpedo (partnership involving Atlas Elektronik Canada subsidiary and German Naval Weapons Business Unit) and with Krake Sonar Systems in June 2017 as part of Canadian Navy's future Remote Mine Disposal System (RMDS) programme.
- ▶ Partnership with ST Electronics (subsidiary of ST Engineering) in Singapore to develop combat system for two future Type 218SG submarines ordered in 2013 (order for two additional units announced in May 2017).

### Technology and Innovation

- ▶ Atlas Elektronik UK selected by British MoD in March 2016, along with BAE Systems, Selex ES (Leonardo) and QinetiQ, under a long-term partnering agreement in electronic warfare and cyber research (AEUK in charge of Lot 3 - definition of sensor networks and signature measurements).



## BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Commercial and military aircraft
- ▶ Transport and energy
- ▶ Electronic and electric equipment
- ▶ Special equipment and materials
- ▶ Engineering, consulting and financial services
- ▶ IT & Software
- ▶ Logistics services

## GOVERNANCE

Chairman	Lin Zuoming
President	Tan Ruisong
Chief Financial Officer	Gu Huizhong

## OWNERSHIP STRUCTURE

Symbol	
Listed on	Non Listed Company
Market Cap (M CNY)	

Major Shareholders (as of 30.06.2017)

SASAC (Chinese State)	100%
-----------------------	------

## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
AviChina Industry & Technology Co., Ltd	54,61%	China
Snecma-SAIC JV	50%	China
Cessna-AVIC Aircraft (Zhuhai) Co., Ltd	N/A	China
Xi'an AVIC Hamilton Sundstrand Aviation Electric Co., Ltd (AUAE)	50%	China
Commercial Aircraft Corporation of China, Ltd (COMAC)	N/A	China

## KEY FIGURES (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	~42 868	~48 132	~54 522	~50 407
Δ (%) (CNY)*	16,67%	12,57%	-3,50%	-2,52%
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 profit/loss	~1 715	~1 710	~2 481	~2 271
Order book	N/A	N/A	N/A	N/A
Employees	N/A	535 942	542 236	N/A

\* Variation based on the revenue in local currency.  
See €/CNY exchange rates p.7

## REVENUE BY BUSINESS LINE (%)



## REVENUE BY REGION (%)



# AVIATION INDUSTRY CORPORATION OF CHINA (AVIC)

## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	UAC/Sukhoi	Airbus	NPO Saturn	Antonov	Ivchenko-Progress	Klimov	Yakovlev	Lockheed Martin	Rolls-Royce	Safran	PAC
<b>Fighter aircraft and trainer</b>											
Chengdu J-20 and J-31 fighter aircraft											
Shenyang J-15 fighter aircraft	●										
Chengdu J-10 fighter aircraft		●									
JF-17/FC-1 fighter aircraft						●					●
Xian JH-7A fighter aircraft								●			
Shenyang J-11 fighter aircraft	●	●									
Hongdu L-15 advanced trainer				●		●					
<b>Transport and AWACS aircraft</b>											
Shaanxi Y-8 transport aircraft / AEWC			●				●				
AEWC Shaanxi Y-9 transport aircraft / AEWC			●								
Y-20 transport aircraft											
<b>Propulsion systems</b>											
WS-9 (JH-7) aircraft engine								●			
WS-10 (J-10, J-11, J-15) aircraft engine		●									
WS-15 (J-20) aircraft engine											
WS-20 (Y-20) aircraft engine											
WZ16 / Ardiden 3C (Z-15) helicopter engine										●	
<b>Helicopters</b>											
Harbin Z-9 and Z-15 utility helicopter	●										
<b>Unmanned aircraft systems</b>											
Wing-Loong MALE UAS and Nimble-Loong tactical UAS											

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Sales down for second year running (-3.5% in 2015, -2% in 2016), to CNY370.4bn (€50,4bn) in last financial year, leaving group a little further from target of CNY1,000bn (€136bn) in sales by 2020.
- ▶ In keeping with government directives on rationalisation of aerospace and defence sector, agreement signed with State-owned Assets Supervision and Administration Commission (SASAC) on measures to improve competitiveness, plus a commitment to integrate private companies into supply chain (and potentially open up capital of AVIC Helicopters).
- ▶ To limit dependence on foreign suppliers in (military and civil) engines, group was actively involved in creation of specialised company, Aero Engine Corporation of China (AECC), in August 2016 (and inauguration of a new R&D centre in December).
- ▶ CNY2.4bn (€326m) bond issue planned for May 2018 to support development of specialised avionics subsidiary (China Avionics Systems).
- ▶ Has announced its ambition to become third-ranked player on world civil aerospace market behind Airbus and Boeing, mainly through partnerships with Western engine makers and equipment suppliers.

### Home market

- ▶ Leader of Chinese aerospace sector. Directly or indirectly involved in all military aircraft programmes through its subsidiaries CAIC, Harbin, Shenyang Aircraft and Chengdu.
- ▶ Pivotal group, in "monopolistic" position, and key partner for foreign suppliers seeking to penetrate Chinese aerospace market.
- ▶ End of 2016 and first half of 2017 marked by decisive progress on several flagship aircraft programmes: presentation of Z-11WB (armed version of Z-11 civil helicopter), and Wing Loong II (reconnaissance and attack) and Xianglong (HALE) UAVs, first flight of AG600 amphibious aircraft and entry into service of MA60 maritime patrol aircraft with Coast Guard.
- ▶ Following an agreement signed with Antonov (Ukraine) in August 2016, go-ahead to restart production of An-225 strategic transport aircraft for China (entry into service in 2019) with AVIC as prime contractor.

### Export markets

- ▶ Group is vector for China's defence equipment export ambitions, aimed at ultimately penetrating combat aircraft market (FC-31 Gyrfalcon 4th generation fighter, Chengdu FC-20, future J-20 and J-31 5th generation fighters).
- ▶ Several national programmes entered production and started export deliveries (of dedicated versions) in 2017, e.g. FTC-2000 trainer (targeted mainly at customers in Africa), Z-19E attack helicopter, short-range IR-guided PL-10E air-to-air missile and Cloud Shadow MALE remotely piloted aircraft.
- ▶ To reinforce presence in Southeast Asia (component production, maintenance services), open to acquisitions and equity stakes in local companies, particularly in Philippines

### Technology and Innovation

- ▶ Reinforced Sino-Russian cooperation in aerospace sector, illustrated by launch of joint programmes in long-haul aircraft (June 2016), heavy-lift helicopter (agreement with Rostec due to be finalised by end-2017) and engines (partnership with Russian R&D institute CIAM signed in early 2017).



**BUSINESS AREAS**

Engineering support services company

- ▶ Engineering support services, production and integration of equipment (naval and land)
- ▶ Military aviation equipment support, Naval MRO and services
- ▶ Airbase support & Estate management, Naval base management
- ▶ Training

**GOVERNANCE**

Chairman  
Chief Executive Officer  
Chief Financial Officer

Mike Turner  
Archie Bethel  
Franco Martinelli

**OWNERSHIP STRUCTURE**

Symbol	BAB
Listed on	LSE
Market Cap (ME)	4 318

Major Shareholders (as of 30.06.2017)

Invesco Asset Management Ltd	9,05%
Capital Research and Management Co.	6,62%
Woodford Investment Management LLP	4,39%
Government Pension Fund of Norway	1,86%

**MAIN JOINT VENTURES AND ASSOCIATES**

Name	%	Country
Holdfast Training Services Ltd	74%	United Kingdom
ALC (Superholdco) Ltd	50%	United Kingdom
AirTanker Services Ltd	22%	United Kingdom
Ascent Flight Training (Holdings) Limited	50%	United Kingdom
Helidax S.A.S.	50%	France

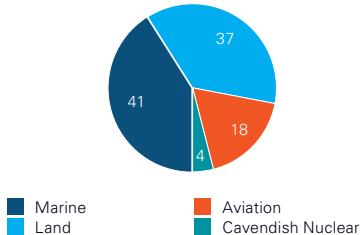
**KEY FIGURES** (Fiscal year ended: 31.03.2017)\*

€ millions	2014	2015	2016	2017
Revenue	4 120	5 467	5 074	5 549
Δ (%) / [E]**	9,63%	20,34%	4,04%	9,35%
Defence (%)	59%	48%	48%	48%
Export (%)	19%	24%	20%	25%
Operating profit/loss	289	482	472	508
Operating Margin	7,02%	8,81%	9,31%	9,16%
Net profit/loss	233	364	355	316
Order book	13 886	27 499	25 267	22 208
Employees	28 385	34 886	35 050	35 750

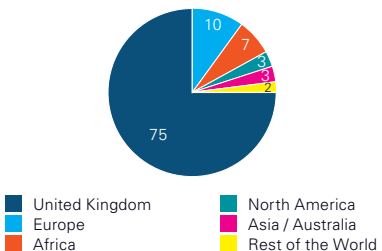
\* 2016 Figures restated.

\*\* Variation based on the revenue in local currency. See €/£ exchange rates p.7.

**REVENUE BY BUSINESS LINE (%)**



**REVENUE BY REGION (%)**





## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	BAE Systems	Thales	Rolls-Royce	Lockheed Martin	Arney	Lex Vehicle Leasing	Vard (Fincentium)	Bovis Lend Lease	Weir	Airbus
<b>Engineering and systems</b>										
Queen Elizabeth and Prince of Wales aircraft carriers (lower block 1, upper blocks and final ship assembly)	●	●								
Weapon Handling and Launch System (WHLS) (Queen Elizabeth-class, Astute-class)	●	●								
Tier 1 in the engineering of the Future Successor ballistic missile submarines	●		●							
Samuel Beckett-class offshore patrol vessels						●				
<b>MRO and support services</b>										
New-Zealand naval fleet TLS										
Tucano in-service support										
Hawk integrated operational support	●									
ALC-C vehicle capability fleet management					●					
Submarine Engineered Support Contract (SESC) RN Fleet			●							
Victoria In-Service Submarine Contract (VISSC)								●		
<b>Naval base management</b>										
Maritime support delivery framework contract (HM Naval Base Devonport and HM Naval Base Clyde)	●									
<b>Outsourcing contracts</b>										
UK Military Flying Training System (MFTS) Programme			●							●
Phoenix Project (fleet management service for the MoD's white fleet ; 14,500 vehicles)					●					
Single Living Accommodation Modernisation (SLAM II) Project (delivery of 7000 military accommodations)							●			

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Sales up 9.4%, to £4.5bn (€5.6bn), in 2017; outlook good, thanks to new multi-year contracts with Royal Navy and export customers.
- ▶ Following a decade of external growth (more than 14 acquisitions in maintenance, support and services), reorganisation into four divisions as of mid-2017 (Marine, Land, Aviation and Cavendish Nuclear).
- ▶ Overall, 48% of group sales in defence, but 83% in Marine division.
- ▶ Helicopter maintenance activities consolidated following acquisition of Heli Aviation (Germany) in April 2016, and better visibility in Australia and France (local entities Australian Helicopters, Bond Helicopters and Inaer Helicopter France now operating under Babcock brand).

### Home market

- ▶ 75% of sales on home market in 2017 (vs. 80% in 2016); Ministry of Defence (MoD) still largest customer.
- ▶ 2016-2017 marked by continuation of Successor nuclear deterrent submarine programme (in partnership with BAE Systems and Rolls-Royce), with first metal cut for lead submarine HMS Dreadnought (October 2016), start of sea trials of HMS Queen Elizabeth aircraft carrier (June 2017) and completion of assembly of second carrier, HMS Prince of Wales (June 2016).
- ▶ Selected in April 2017 as Marine Systems Support Partner (MSSP) for Queen Elizabeth-class aircraft carriers and Type 45 destroyers (technical authority for platform and propulsion system for a period of seven years under £360m (€318m) contract).
- ▶ FSTA programme achieved full operational capability in October 2016 following delivery of final A330-200 Voyager (35-year Private Finance Initiative contract to supply and manage a fleet of 14 aircraft; AirTanker consortium led by Airbus).
- ▶ In March 2015, completed acquisition of land business from Defence Support Group (DSG), in charge of maintenance and in-service support of British Army vehicles, weapons and communication systems.

### Export markets

- ▶ Export sales up but not more than 25% of sales in 2017, mostly from the Aviation division (53% of sales from exports; 13 customer countries).
- ▶ In Australia and New Zealand, following a number of service contract awards in the naval and aeronautical sectors, decision to open a new regional support centre in Adelaide and increase manpower levels over the period 2017-2018 (total of 725 people employed locally to date).
- ▶ Following FOMEDEC contract award to supply Pilatus PC-21 trainers, simulators and associated installations to the French Air Force (11-year, €533m contract) in January 2017, partnership signed with Dassault Aviation.
- ▶ In March 2017, keel laying for fourth PV90 offshore patrol vessel ordered by Irish Ministry of Defence for delivery in 2018.
- ▶ Joint venture with Oman Drydock Company, operational since November 2016, will ultimately be responsible for modernising infrastructure of Duqm port complex.



**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	Sir Roger Carr
Chief Executive Officer	C.Woodburn
Chief Financial Officer	Peter Lynas

**OWNERSHIP STRUCTURE**

Symbol	BA
Listed on	LSE
Market Cap (M€)	18 456

Major Shareholders (as of 30.06.2017)

Capital Research & Management Co.	9,20
Invesco Asset Management Ltd	4,69
Vanguard Group Inc.	2,24
Templeton Global Advisors Ltd	2,02

**MAIN JOINT VENTURES AND ASSOCIATES**

Name	%	Country
Eurofighter Jagdflugzeug GmbH	33%	Germany
MBDA	37,5%	France
Patria Hägglunds Oy	50%	Finland
BAeHAL Software Ltd	40%	India
CTA International S.A.S.	50%	France

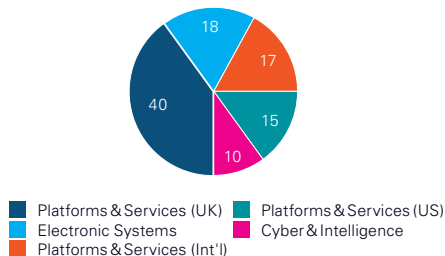
**KEY FIGURES** (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue*	19 856	19 141	23 127	21 709
Δ (%)/[E]**	1,04%	-8,50%	8,79%	5,97%
Defence (%)	94%	93%	92%	91%
Export (%)*	79%	78%	77%	78%
Operating profit/loss*	818	1 510	1 918	2 016
Operating Margin	4,12%	7,89%	8,29%	9,29%
Net profit/loss	207	933	1 299	1 145
Order book	51 217	51 996	50 140	57 225
Employees	84 600	83 400	82 500	83 100

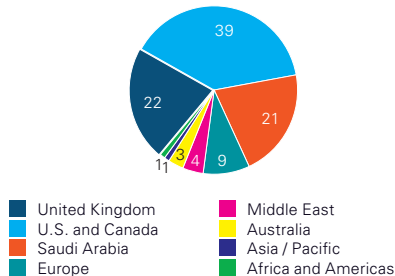
\* Revenue excluding the group's share of revenue of equity accounted investments.

\*\* Variation based on the revenue in local currency. See €/£ exchange rates p.7.

**REVENUE BY BUSINESS LINE (%)**



**REVENUE BY REGION (%)**



## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Airbus	Leonardo	Lockheed Martin	Northrop Grumman	General Dynamics	Thales	Babcock International	Raytheon	Rolls-Royce	Dassault Aviation	CinetIQ	Nexter*
<b>Military aircraft</b>												
Eurofighter/Typhoon fighter aircraft	●	●										
F-35 programme (Level 1 partner)		●	●									
Hawk AJT trainer aircraft			●					●				
Taranis UCAS demonstrator								●		●		
FCAS demonstrator									●			
<b>Land platform and systems</b>												
Bradley fighting vehicle				●								
CV90 infantry fighting vehicle					●							
M777 lightweight towed 155mm Howitzer												
Excalibur advanced precision guided 155mm artillery shell							●					
40mm cased telescoped armament system (40CTAS)												●
<b>Naval platform and systems</b>												
Queen Elizabeth-class aircraft carriers					●	●		●		●		
Astute-class attack submarine				●	●			●				
Type 26 frigate		●			●			●		●		
Future Successor ballistic missile submarines							●	●				
Type 45 destroyer	●	●			●			●				
River-class patrol vessel												
<b>Cyber &amp; Intelligence</b>												
GEOINT-ISR	●											

\* KNDS

## STRATEGIC HIGHLIGHTS

## Business trends

- ▶ Increase in sales for second year running, +6% in 2016 (+9% in 2015), to £17.8bn (£21.7bn), thanks to Cyber & Intelligence (+14%) and Electronic Systems (+13%) and, to a lesser degree, Platforms & Services UK (+4%, but this business generated 40% of sales in 2016).
- ▶ Continued modernisation of Barrow-in-Furness shipyards, as Successor ballistic missile submarine programme advances, and rationalisation of UK sites specialising in new construction of surface ships (linked to completion of the two aircraft carriers).
- ▶ Focus on training and apprenticeship with opening of Academy for Skills & Knowledge (ASK) dedicated to military aircraft engineering and manufacturing skills in Samlesbury, Lancashire (December 2016) and creation of specialist training facility for apprentices involved in submarine construction at Barrow-in-Furness, Cumbria (February 2017).
- ▶ In U.S., adaptation work also started at San Diego shipyard, as well as at production facilities for armoured vehicles at West Manchester, Pennsylvania; for IMX munitions at Kingsport, Tennessee; and for laser-guided rockets in New Hampshire.

## Home market

- ▶ UK Ministry of Defence (MoD) leading customer (25% of sales in 2016), ahead of U.S. Department of Defense (24%) and Saudi Ministry of Defence (21%).
- ▶ In surface ship sector, major step forward for Type 26 frigate programme with order for first three ships (out of planned total of eight) and start of construction of lead ship (HMS Glasgow) in July 2017, six months after order awarded for two River-class patrol vessels (three vessels already ordered); lead ship christened in March 2017 and launch of definition studies for new Type 31-class general-purpose frigate.
- ▶ Submarine business supported by MoD orders for Astute-class attack submarine programme (fourth unit launched and sixth boat ordered in April 2017) and future Successor ballistic missile submarines (start of construction of lead boat HMS Dreadnought in October 2016).
- ▶ On F-35, delivery of 250th electronic warfare suite (September 2016) and good prospects for MRO&U (Maintenance, Repair, Overhaul and Upgrade) activities with selection of UK and Australia (November 2016) as regional support centres for avionics and components.
- ▶ On Challenger 2 LEP programme (upgrade of 227 main battle tanks), Team Challenger 2 consortium (BAE Systems Land UK, GD UK and Canada, Leonardo, Safran, Moog, QinetiQ) selected by MoD for Assessment phase at end of 2016.

## Export markets

- ▶ Alongside largest markets in U.S. and Saudi Arabia, exports essentially to rest of Middle East (3.9% of group sales), Europe (3.6%, not including Eurofighter) and Australia (3%).
- ▶ Bids for Australian SEA 5000 and Land 400 programmes preselected in 2016.
- ▶ In U.S., decision in February 2017 with partner Northrop Grumman not to submit bid (based on Hawk AJTS) for T-X trainer programme.

## Technology and Innovation

- ▶ 12% increase in R&D funding, to £1.4bn (~ €1.7bn) in 2016.



## BUSINESS AREAS

Platform manufacturer and systems integrator

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

## GOVERNANCE

Chairman and CEO

D. A. Muilenburg

Chief Financial Officer

G. Smith

## OWNERSHIP STRUCTURE

Symbol	BA
Listed on	NYSE
Market Cap (M\$)	141 564

Major Shareholders (as of 30.06.2017)

Capital World Investors	6,94%
Vanguard Group Inc.	6,60%
Evercore Trust Company	5,66%
T. Rowe Price Associates Inc.	4,74%

## MAIN JOINT VENTURES AND ASSOCIATES

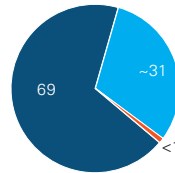
Name	%	Country
Hellfire Systems LLC	50%	U.S.
United Space Alliance	50%	U.S.
United Launch Alliance	50%	U.S.
Sea Launch Co. LLC	3%	Switzerland
Ural Boeing Manufacturing	50%	Russia

## KEY FIGURES (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	65 223	68 319	86 627	85 437
Δ (%) / (\$)*	6,03%	4,78%	5,90%	-1,60%
Defence (%)	38%	32%	31%	31%
Export (%)	57%	58%	59%	59%
Operating profit/loss	4 941	5 625	6 708	5 271
Operating Margin	7,58%	8,23%	7,74%	6,17%
Net profit/loss	3 452	4 099	4 665	4 422
Order book	305 966	404 461	437 765	420 894
Employees	168 400	165 500	161 400	150 500

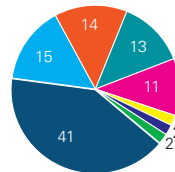
\* Variation based on the revenue in local currency.  
See €//\$ exchange rates p. 7.

## REVENUE BY BUSINESS LINE (%)



■ Commercial Airplanes ■ Boeing Capital Corp.  
■ Defense, Space & Security

## REVENUE BY REGION (%)



■ U.S. ■ China  
■ Europe ■ Canada  
■ Middle East ■ Africa  
■ Asia / Pacific ■ Latin America, Caribbean

## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	MHI	Lockheed Martin	Northrop Grumman	Textron	KAI	Raytheon	IAI	Leonardo	HAL	BAE Systems
<b>Fighter aircraft and military helicopter</b>										
F-15 Strike Eagle fighter aircraft	●									
F/A-18E/F Super Hornet and EA-18G Growler		●						●		
AH-64 Apache military helicopter				●			●			
<b>Transport and surveillance aircraft</b>										
P-8A Poseidon multi-mission maritime aircraft		●			●			●		
V-22 Osprey vertical lift aircraft			●						●	
C-17 transport aircraft		●								
CH-47 D/F Chinook helicopter							●			
KC-46A Pegasus tanker										
<b>Unmanned aircraft systems</b>										
PhantomEye HALE UAS demonstrator										
ScanEagle tactical UAS										
<b>Weapon systems and guided missiles</b>										
GBU-39B small diameter bomb							●			
Joint Direct Attack Munition (JDAM)							●			
AGM-114 Hellfire anti-tank guided missile	●									
<b>Missile defence</b>										
Arrow 2 and Arrow 3 interceptor						●				
<b>Satellites and launchers</b>										
Delta III and Delta IV launch vehicles	●									
Block IIF GPS satellite										

## STRATEGIC HIGHLIGHTS

## Business trends

- ▶ Sales down -1.61%, to \$94.6bn (€85.4bn), reflecting slowdown in commercial aircraft (-1.4%), military aircraft (-7%) and space (-9%).
- ▶ Defense, Space & Security (DS&S) in difficulty for third year in a row (-3% in 2016), with 178 aircraft delivered, vs. 186 in 2015.
- ▶ Further restructuring (-8,000 jobs in Commercial Airplanes in 2016), with in-depth reorganisation of DS&S in 2017 (transfer of activities and site closures, 500 jobs cut over five years).
- ▶ Third major business unit, Boeing Global Services, became operational in July 2017; covers all the group's Service & Support activities (20,000 employees).
- ▶ In autonomous systems, acquisition of Liquid Robotics (best known for Wave Glider autonomous unmanned surface vehicle for real-time collection and communication of ocean data) at end-2016 and investment in SparkCognition (artificial intelligence) via Boeing HorizonX venture arm in June 2017.

## Home market

- ▶ Home market generated 41% of sales in 2016; DS&S highly dependent on government orders (~ 23% of group sales).
- ▶ On KC-46A in-flight refuelling aircraft programme, first three low-rate initial production (LRIP) batches (34 aircraft) ordered by US Air Force (USAF) between end-2016 and early 2017 for a total of \$4.9bn (€4.7bn; first 18 aircraft operational by end-2018).
- ▶ In military helicopters, first multi-year contract, in March 2017, for 268 "E" model Apaches (AH-64E) for U.S. Army (244) and international customers (24) for \$3.4bn (€3.1bn), and joint proposal with Leonardo based on the AVV-139 to replace the USAF Huey fleet (UH-1N).
- ▶ In combat aircraft, improvements to USAF F-15 Eagles through electronic warfare upgrade contract (Eagle Passive/Active Warning Survivability System) awarded in November 2016 and extension of F/A-18 Hornet and Super Hornet upgrade contract in May 2017.
- ▶ Successful first flight of second aircraft produced as part of USAF T-X trainer programme bid (in partnership with Saab, Sweden) in April 2017.

## Export markets

- ▶ Medium-term goal of 30% of defence sales from exports, thanks to offerings in helicopters (CH-47F and AH-64E), strategic platforms (P-8A Poseidon, future KC-46A, KC-767 and 737 AEW&C) and combat aircraft (F/A-18E/F).
- ▶ Further successes for P-8A Poseidon in Australia (four additional aircraft) and UK (two aircraft) in April 2017, and prospects in India, New Zealand and Norway.
- ▶ Creation of Boeing Defence India in February 2017, illustrating group's ambitions in this country (maritime patrol aircraft, helicopters, services & support).
- ▶ State Department go-ahead in November 2016 for sale of 40 F/A-18 E/F Super Hornets to Kuwait and 72 F-15 Advanced Eagles to Qatar.

## Technology and Innovation

- ▶ Strong increase (+33%) in R&D spending in 2016, to \$4.6bn (€4.2bn).





**BUSINESS AREAS**

Systems integrator/equipment supplier

- ▶ Communication and connectivity equipment and solutions
- ▶ Mission systems (safety and survival systems, aerial refuelling systems)
- ▶ Outsourced aviation services
- ▶ Solutions for communication (land, sea, air, space)

**GOVERNANCE**

Chairman	Michael Wareing
Chief Executive Officer	David Lockwood
Chief Financial Officer	David Mellors

**OWNERSHIP STRUCTURE**

Symbol	COB
Listed on	LSE
Market Cap (M£)	3 247

Major Shareholders (as of 30.06.2017)

Threadneedle Asset Management Ltd	4,59%
Newton Investment Management Ltd	3,97%
Artemis Investment Management LLP	3,50%
Government Pension Fund of Norway	2,24%

**MAIN JOINT VENTURES AND ASSOCIATES**

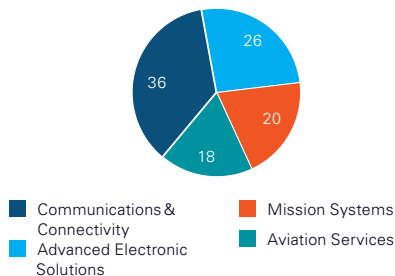
Name	%	Country
Aviation Defence Service S.A.	45%	France
Northrop Grumman Cobham Intercoms LLC	50%	U.S.
Philtec Co. Ltd	30%	South Korea
AirTanker Services Ltd	5%	United Kingdom
AirTanker Holdings Ltd	13,5%	United Kingdom

**KEY FIGURES** (Fiscal year ended: 31.12.2016)

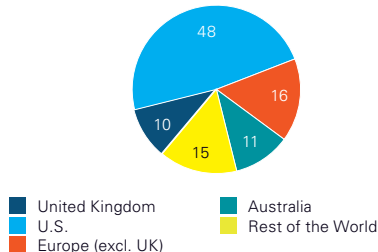
€ millions	2013	2014	2015	2016
Revenue	2 107	2 297	2 854	2 372
Δ (%)/[€]*	2,30%	3,46%	11,90%	-6,18%
Defence (%)	65%	61%	62%	59%
Export (%)	87%	88%	89%	90%
Operating profit/loss	187	71	17	-951
Operating Margin	8,87%	3,11%	0,58%	-40,08%
Net profit/loss	135	36	-52	-970
Order book	2 723	3 222	3 375	4 014
Employees	10 090	10 941	11 505	10 692

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

**REVENUE BY BUSINESS LINE (%)**



**REVENUE BY REGION (%)**



MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Northrop Grumman	Boeing	Lockheed Martin	Embraer	Airbus	Thales	Textron	Rockwell Collins	BAE Systems	Leonardo
<b>Avionics equipment</b>										
JetLAN advanced airborne computers		●	●		●					
ELT VHF/UHF antenna		●	●		●					
SATCOM terminals	●		●							
Tactical communication and surveillance systems	●					●		●		
Navigation systems										
Aircraft audio and radio management systems					●		●			●
<b>Advanced electronic solutions</b>										
RF and microwave modules	●	●	●		●				●	●
Sensor solutions: RWR, antennas, radar, missile, navigation										
SPS Series Precision Positioners	●	●	●	●					●	●
Transmitters and receivers for electronic warfare										
AESA antennas and radar subsystems	●	●								
<b>Mission systems</b>										
Aviation services (MRO, modification, flight inspection services, training)	●	●								
Refuelling systems (pods, aircrafts fuel tanks, hose and drogue systems)	●	●	●	●	●					
Explosive ordnance disposal (EOD) robot (Telexmax, tEODor, OSCAR, NBCmax)										
Weapons carriage and release equipment, pylons		●	●	●	●	●			●	●
<b>Cybersecurity</b>										
TeraVM solution										

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ After three consecutive years of growth, 2016 was disappointing (down 6.2%, to £1.94bn, or €2.37bn), with sales down across the board, following the end of production on U.S. defence programmes and a slowdown in orders for inflight refuelling systems and SATCOM equipment.
- ▶ Financial difficulties amplified by delays on the KC-46A tanker programme, resulting in £150m (€183m) of additional charges.
- ▶ An historical specialist in inflight refuelling systems (in which it is a world leader), the company is an equipment supplier and systems integrator that completed over 60 acquisitions (including around 50 in the United States) before refocusing on its core businesses from 2015 onwards (subsidiaries sold off) and renewing corporate governance in 2017.
- ▶ 2015-2017 period marked by renewal of the SATCOM system product range, entry into the cyber security market (TeraVM solution from its subsidiary Cobham Wireless) and creation of Cobham Helicopter Academy to reinforce its training activities (followed by the signature in March 2017 of a partnership with helicopter MRO specialist Helisota).

### Home market

- ▶ Sales on the UK market now below 10%, compared with 48.5% in the U.S.
- ▶ Major partner of the Ministry of Defence (MoD) since it was selected as service provider for training of Royal Air Force and Royal Navy personnel.
- ▶ Strategic equipment supplier on Typhoon and F-35 programmes, and a member of the Air Tanker Ltd consortium which manages the A330 MRTT (Voyager) tanker fleet.
- ▶ As part of UK Military Flying Training System (UKMFTS) programme, awarded a contract from Beechcraft Defense in October 2016 to supply the Digital Control Management System (DCOMS) for 10 Beechcraft T-6C training aircraft.

### Export markets

- ▶ Highly dependent on U.S. defence market, supplying multiple systems and components for the F-35 and KC-46A aircraft, SM-6 and AMRAAM missiles, V-22 tiltrotor (refuelling system selected by Bell-Boeing in October 2016) and Aegis air defence system.
- ▶ Beyond the U.S. market, export strategy also aimed at Asian and Middle East markets (particularly missile subsystems, laser-guided munitions and service offerings in maintenance and training).

### Technology and Innovation

- ▶ 2016 R&D budget of £251m (€306m), i.e. 12.9% of sales.
- ▶ Research activities focused on new-generation inflight refuelling systems, anti-jam GPS system, frequency synthesisers and components for the space sector.
- ▶ In the radar system sector, strategic partnership signed in March 2016 with Korea's RFHIC Corp. covering integration of the latter's Gallium Nitride (GaN) technology into future-generation Cobham RF products.

## BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Executive jets
- ▶ Fighter aircraft
- ▶ Unmanned aircraft systems
- ▶ Maritime patrol aircraft
- ▶ Pyrotechnics and space activities

## GOVERNANCE

Chairman and CEO

Eric Trappier

Chief Operating Officer

Loik Segalen

## KEY FIGURES (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	4 593	3 680	4 176	3 653
Δ (%)	16,54%	-19,87%	13,46%	-12,52%
Defence (%)	31%	27%	40%	35%
Export (%)	71%	77%	83%	84%
Operating profit/loss	498	353	361	286
Operating Margin	10,85%	9,58%	8,65%	7,82%
Net profit/loss	459	283	142	379
Order book	7 379	8 217	14 175	20 323
Employees	11 614	11 745	12 177	11 942

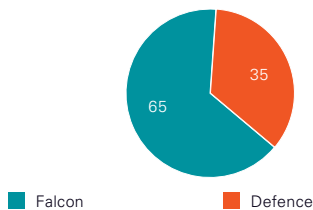
## OWNERSHIP STRUCTURE

Symbol	AM
Listed on	NYSE Euronext
Market Cap (M€)	10 623

Major Shareholders (as of 30.06.2017)

GIMD	62,2%
Airbus	9,9%
Dassault Aviation	0,5%

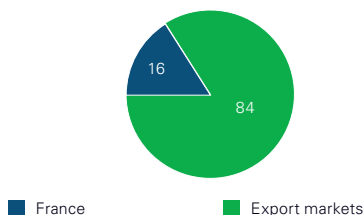
## REVENUE BY BUSINESS LINE (%)



## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Thales	25%	France
ODAS	6%	France
SECBAT	36%	France
GIE Rafale International	60%	France
Dassault Reliance Ltd	49%	India

## REVENUE BY REGION (%)



## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Thales	Safran	BAE Systems	Airbus	HAL	RUAG	Leonardo	Saab AB	Naval Group*	HAL
<b>Fighter aircraft</b>										
Rafale	●	●								
Mirage 2000, Mirage 2000-5 Mk2	●	●								●
<b>Maritime patrol aircraft</b>										
Falcon 50M										
Falcon 200 MRA										
Falcon 900 MPA										
Atlantique 2 modernization	●									●
<b>Unmanned aircraft systems</b>										
NEURON UCAS demonstrator			●	●	●	●	●			
European MALE RPAS definition study			●			●				
FCAS demonstrator		●								

\* formerly DCNS

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Sales down 12.5% in 2016, to €3.6bn, but order book soared to €20.3bn (target to increase sales in 2017; planned deliveries of 45 Falcon and nine Rafale, including eight for Egypt).
- ▶ Defence sales down 25.5% in 2016, to €1.2bn (now 35% of total) while corporate jet sales failed to progress for the third year in a row.
- ▶ Launched corporate transformation plan in October 2016, comprising industrial reorganisation (specialisation of sites according to strategic activities), changes in programme management (organised around two programme divisions, Rafale and Falcon), launch of a digital transformation strategy (strategic partnership with Dassault Systèmes) and optimisation of procurement policy (priority to long-term strategic relations with suppliers and subcontractors).
- ▶ Preparation for Rafale production ramp-up in 2018 (three aircraft per month) with a view to ensuring deliveries to the French forces and export customers (continuing work to adapt Mérignac and Argenteuil facilities in 2017).

### Home market

- ▶ 2016 marked by delivery of six Rafale to the French State (bringing total deliveries to 148 aircraft) and two Navy Rafale retrofitted to the F3 standard
- ▶ Continuation of development work on Rafale F3-R standard (qualification expected in 2018); launch of development of new F4 standard (which will follow F3-R as of 2023) in March 2017.
- ▶ Mirage 2000D mid-life upgrade contract awarded by DGA on 20th July 2016 (55 aircraft), ensuring they can remain in service to complement Rafale beyond 2030.
- ▶ Continued upgrade work on Atlantique 2 maritime patrol aircraft combat system (system integration tests and flight tests) and delivery of fourth and final Falcon 50 SURMAR in May 2016.
- ▶ Prime contractor for Neuron combat drone demonstrator programme (cooperation between France, Italy, Spain, Sweden, Greece and Switzerland). New phase of complementary tests started mid-2017 for stealth demonstrations (testing ordered by France and performed at DGA's Bruz test centre).
- ▶ Partnership signed with Babcock France, following selection of tender in early 2017 for FOMEDEC contract to supply Pilatus PC-21 trainers, simulators and associated equipment for French Air Force (11 year contract worth €533m).

### Export markets

- ▶ Highly export-oriented (84% of total sales). On defence side, exports now greater than French sales (€719m vs. €525m).
- ▶ Successful penetration of export markets with Rafale combat aircraft, in India (36 aircraft; contract signed in September 2016), Egypt (24 aircraft; six delivered) and Qatar (24 aircraft).
- ▶ In accordance with "Make in India" initiative and offset obligations, creation of Dassault Reliance Ltd (DRAL) joint-venture in February 2017, jointly owned with Reliance (51%).

### Technology and Innovation

- ▶ Two-year definition study contract awarded in September 2016, with Airbus and Leonardo, for a European MALE UAV (first flight of prototype in 2023).
- ▶ At Franco-British summit in Amiens in March 2016, decision to launch new phase of FCAS DP programme (co-prime with BAE Systems) at end of 2017, with full-scale development of Unmanned Combat Air System (UCAS) operational demonstrator.



## BUSINESS AREAS

Systems integrator/equipment supplier

Defence subsidiary of Diehl Group

- ▶ Missile systems and air defence systems
- ▶ Ammunition
- ▶ Surveillance and reconnaissance systems
- ▶ Support services and training

## GOVERNANCE\*

Chairman	Dr Klaus Maier
Chief Executive Officer	Dr Thomas Diehl
Chief Financial Officer	Wolfgang Weggen

\* Diehl Group

## KEY FIGURES (Fiscal year ended: 31.12.2016)\*

€ millions	2013	2014	2015	2016
Revenue	2 905	3 039	3 108	3 410
Δ (%)	2,65%	4,63%	2,28%	9,72%
Defence (%)	18%	16%	13%	13%
Export (%)	52%	53%	54%	56%
Operating profit/loss	104	134	79**	136
Operating Margin	3,59%	4,41%	2,53%	3,99%
Net profit/loss	48	80	37	105
Order book	3 000	N/A	N/A	N/A
Employees	14 520	16 297	15 889	16 385

\* Diehl Group Key Figures.

\*\* Figure restated.

## OWNERSHIP STRUCTURE\*

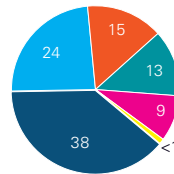
Symbol	
Listed on	Non Listed Company
Market Cap (M€)	

Major Shareholders (as of 30.06.2017)

Diehl Family	100%
--------------	------

\* Diehl Group

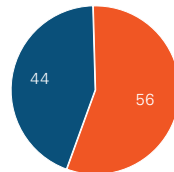
## REVENUE BY BUSINESS LINE (%)



## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
EuroSpike GmbH	40%	Germany
JUNGHANS Microtec GmbH	55%	Germany
Diehl Raytheon Missile Systeme GmbH	50%	Germany
PARSYS GmbH	50%	Germany
RAM Systems GmbH	50%	Germany

## REVENUE BY REGION (%)



# DIEHL DEFENCE (FORMERLY DIEHL BGT DEFENCE)

## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Raytheon	MBDA	Roketsan	Rheinmetall Defence	Schiebel	TKMS*	Leonardo	Saab AB	Rafael	Elbit Systems	Kongsberg
<b>Missile systems and air defence systems</b>											
Sidewinder (AIM-9) air-to-air guided missile	●										
IRIS-T missile		●					●				
IDAS submarine missile			●		●						●
RBS15 Mk3 heavy anti-ship missile							●				
PARS 3 LR long-range anti-tank rocket system		●									
Spike light-weight multirole guided missile	●		●						●		
RAM Block 2 guided missile (infrared seeker)	●	●									
<b>Ammunition</b>											
PELE ammunition family (20mm and 27mm)			●								
76mm naval ammunition											
40mm infantry ammunition											
VULCANO guided ammunition family (155mm and 127mm)						●					
<b>Surveillance and reconnaissance</b>											
SIMONE passive monitoring system											
Integration of the CAMCOPTER S-100 (German Navy's Corvette K130, Army's command and control systems)					●						
<b>Protection systems</b>											
Integration of the J-MUSIC DIRCM system (Bundeswehr's military aircraft A400M)										●	
Mini-MUSIC DIRCM system										●	

\* ThyssenKrupp Group



## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ 7% increase in sales for Defence division of Diehl group in 2016, to €435m, after several consecutive years of decline, thanks to sales of RBS15 missile, German-U.S. Rolling Airframe Missile and Sidewinder family.
- ▶ On 1st February 2017, decision to combine in a single entity (Diehl Defence GmbH & Co. KG) defence activities previously attached to Diehl Defence Holding GmbH and Diehl BGT Defence GmbH & Co. KG.
- ▶ In drone defence segment, cooperation agreement with German firms ESG and Rohde & Schwarz in June 2017 to jointly offer GUARDION system, including Diehl Defence's High-Power Electro-Magnetics (HPEM) system.

### Home market

- ▶ High, though slightly reduced, dependence on orders from domestic customer (69% of Diehl Defence sales in 2016, vs. 72% in 2015), a situation likely to stabilise as Bundeswehr renews and modernises equipment.
- ▶ Continued deliveries of SPIKE anti-tank missiles produced by Eurospike (Diehl/Rafael JV) for PUMA infantry fighting vehicles and PARS 3 LR air-to-surface missiles (co-produced with MBDA Deutschland).
- ▶ In early June 2016, BAAINBW approval for use of RBS15 Mk3 missiles (co-produced with Saab of Sweden) in land attack configuration from K-130 corvettes.
- ▶ After government authorities' selection of MEADS air defence system in June 2015 (German version of which includes radar-guided IRIS-T SL missile), followed by submittal of proposal by MBDA in September 2016, contract award pushed back to 2018.
- ▶ September 2016: revival of partnership established with Schiebel of Austria in 2008 (at that time for flight tests from K-130 frigates), in order to offer Camcopter S-100 UAV on German market.

### Export markets

- ▶ Diehl Defence exports reached €134m in 2016 (+16%), mainly targeting Europe, Asia and U.S.
- ▶ Consolidation of partnership with Saab (Sweden), in connection with FMV's launch of new-generation anti-ship missile programme in March 2017 (for Gripen E combat aircraft and Visby-class corvettes), with award of development and production contract for upgraded RBS 15 missile (2017-2026; €349m).
- ▶ Cooperation agreement signed in September 2016 with Wojskowe Zakłady Uzbrojenia (WZU), a subsidiary of PGZ (Poland), covering integration of IRIS-T SLS missile into SA-8 Gecko short-range air defence system, currently being upgraded.
- ▶ In Czech Republic, air defence system bid submitted in November 2016 (in competition with Lockheed Martin, MBDA, Kongsberg and Rafael).

### Technology and Innovation

- ▶ R&D spending at group level down for the third year in a row, to €246m in 2016.
- ▶ Air-to-surface variant of IRIS-T AAM missile tested from F-16 by Royal Norwegian Air Force in September 2016.

**BUSINESS AREAS**

Platform manufacturer and systems integrator

- ▶ Naval shipbuilding
- ▶ Plant construction (Floating Power Plant, onshore, nuclear and petrochemical)
- ▶ Energy (wind power generation)

**GOVERNANCE**

Chairman and CEO

Sung Leep Jung

Chief Financial Officer

Youl jung Kim

**KEY FIGURES** (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015*	2016
Revenue	10 118	11 054	12 291	9 982
$\Delta$ (%)/[W]**	4,64%	5,06%	6,84%	-16,99%
Defence (%)	3%	3%	9%	N/A
Export (%)	4%	N/A	N/A	N/A
Operating profit/loss	-535	-531	-1 691	-1 192
Operating Margin	-5,29%	-4,81%	-13,76%	-11,94%
Net profit/loss	-470	-617	-1 758	-2 712
Order book (USD)	32 887	43 469	39 239	32 283
Employees	39 300	39 650	39 235	40 000

\*2015 Figures restated.

\*\* Variation based on the revenue in local currency. See €/krW exchange rates p.7.

**OWNERSHIP STRUCTURE**

Symbol	KRX : 042660
Listed on	Korea Exchange
Market Cap (Mds KRW)	cotée *

Major Shareholders (as of 31.12.2016)

Korea Development Bank	79,05%
Financial Services Commission	3,55%
Employee Stock Ownership Association	1,03%

\* Temporarily suspended.

**REVENUE BY BUSINESS LINE (%)****MAIN JOINT VENTURES AND ASSOCIATES**

Name	%	Country
DSEC	70,07%	South Korea
DW Mangalia Heavy Industries S.A.	51%	Romania
Shinhan Heavy Industry Co. Ltd	89,22%	South Korea
DSME Trenton	51%	Canada

**REVENUE BY REGION (%)**

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Lockheed Martin	General Electric	Hanwha	Atlas Elektronik*	BAE Systems	TKMS*	BMT Defence Services	Rolls-Royce	LIG Nex1	Thales	Safran
<b>Surface ships</b>											
Gwanggaeto the Great-class (KDX-I) destroyers		●	●		●					●	●
Chungmugong Yi Sun-sin-class (KDX-II) destroyers	●	●			●			●	●	●	
Sejong the Great-class (KDX-III) destroyers	●	●					●				
Incheon-class frigates		●	●		●			●	●	●	
Ulsan and Ulsan Mod-class frigates		●						●		●	
Pohang-class corvettes			●					●		●	
Tide-class tankers						●					
DW 3000H-class frigates		●						●		●	
Multi-mission combat ship	●										
<b>Submarines</b>											
Cheonghaejin-class submarine rescue ship											
Son Won-II-class submarines (derived from the HDW class 214)				●	●	●		●	●	●	
Chang Bogo-class submarines (derived from the HDW class 209)				●		●		●	●		
KSS-III Korean attack submarine programme			●						●		●

\* ThyssenKrupp Group

## STRATEGIC HIGHLIGHTS

## Business trends

- ▶ Sharp fall in sales over past two years, -3% in 2015 and particularly -17% in 2016 (to KRW12,819bn, or €9.9bn, same level as in 2009), due to sluggish demand in cargo ship and offshore sectors, both hit by fall in oil prices.
- ▶ Most of group's business is in civil sector; defence activities limited to military naval sector.
- ▶ After government authorities dismissed idea of an alliance with Samsung Heavy Industries and Hyundai Heavy Industries, Korea Development Bank launched a wide-ranging restructuring programme (30% headcount reduction and 20% reduction in production capacities by 2018-2019, salary cuts, sale of head office) with planned creation in 2017 of a new subsidiary comprising defence activities (listed on stock market).
- ▶ Having increased its stake to 79% (operation concluded in January 2017), Korea Development Bank is also taking action to restore group's financial health, injecting a total of KRW2,800bn (€2.3bn) alongside Export-Import Bank of Korea (Eximbank).
- ▶ In June 2017, in order to accelerate and finance its reorganisation, group announced KRW793bn (€641m) stock issue and sale of KRW1,280bn (€1bn) in convertible bonds, to be acquired by Eximbank.

## Home market

- ▶ Company plays key role in South Korean defence technological and industrial base, as vector for national ambitions in military naval sector. Strongly dependent on domestic market.
- ▶ Defence activity supported by national orders under RoKN fleet modernisation programme, including FFX frigates, KDX-III destroyers and KSS-II (German Type 214 technology transfer) and KSS-III (first indigenous design) submarine programmes.
- ▶ In submarine sector, start of construction of first KSS-III in November 2015 (keel-laying ceremony in May 2016), followed in July 2016 by second unit (two units ordered in 2012 out of a planned total of nine) and delivery of sixth KSS-II unit to the Navy in July 2017 (8th unit currently under construction).
- ▶ In surface ship sector, first FFX-II Daegu frigate to be delivered at end of 2017.

## Export markets

- ▶ Exports increasing thanks to know-how acquired through technology and competence transfer agreements negotiated as part of national equipment contracts, particularly with TKMS (Germany) in submarine sector.
- ▶ Several successes in Indonesia with sale of three Chang Bogo-class submarines at end of 2011 (start of construction of lead boat in March 2016, followed by second unit in October 2016) and submarine maintenance contract (Cakra, Type 209/1300) awarded in July 2017 (in partnership with PT PAL).
- ▶ First half of 2017 marked by delivery of first of four tankers ordered by British Royal Navy in 2012 (MARS programme) and launch of first multi-role frigate for Thailand (contract awarded in August 2013).
- ▶ In April 2016, signature of teaming agreement with Lockheed Martin to export multi-mission corvettes

## Technology and Innovation

- ▶ Internally funded R&D represented 0.4% of sales in 2016 (KRW52.4bn, ~ €41m).



## BUSINESS AREAS

Systems integrator/equipment supplier

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

## GOVERNANCE

Chairman

M. Federmann

Chief Executive Officer

B. Machlis

Chief Financial Officer

J. Gaspar

## KEY FIGURES (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	2 203	2 227	2 801	2 945
Δ (%) / (\$)*	1,27%	1,13%	5,05%	4,91%
Defence (%)	97%	97%	97%	97%
Export (%)	76%	78%	80%	78%
Operating profit/loss	180	186	242	270
Operating Margin	8,17%	8,35%	8,64%	9,17%
Net profit/loss	144	135	186	216
Order book	4 222	5 160	6 029	6 554
Employees	11 674	11 851	12 134	12 470

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

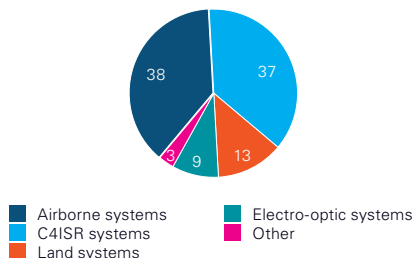
## OWNERSHIP STRUCTURE

Symbol	ESLT et ESLT.A
Listed on	NASDAQ et TASE
Market Cap (M\$)	5 608

Major Shareholders (as of 31.03.2017)

Federmann Enterprises Ltd	45,80%
Migdal Insurance & Financial Holdings Ltd	4,60%
Phoenix Investments and Finance Ltd	3,30%
Fidelity Management & Research Co.	2,90%

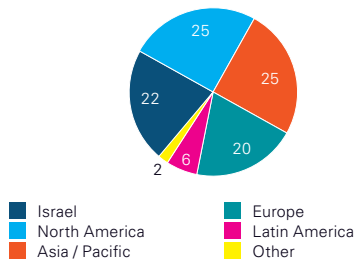
## REVENUE BY BUSINESS LINE (%)



## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
UAV tactical systems Ltd	51%	United Kingdom
AEL Sistemas S.A.	75%	Brazil
HALBIT Avionics Pvt Ltd	26%	India
Opgal-Optronic Industries Ltd	50%	Israel
Vision Systems International, LLC	50%	USA

## REVENUE BY REGION (%)



## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Lockheed Martin	Embraer	Thales	Diehl Defence	Boeing	MBDA	Rockwell Collins	BAE Systems	Harris Corp	Bharat Forge	Electronica	HAL
<b>Military aircraft systems</b>												
Avionic systems (F-16I, MiG-21, Jaguar)	●				●							●
Modernization projects (C-130, AL-X, IAR-99)	●	●										
Precision guidance systems (Whizzard, JDAM, Viper Strike, Lone Star)					●	●						
Joint helmet mounted system (F-16, F/A-18)							●					
F-35 Helmet Mounted Display System (HMDS)							●					
<b>Unmanned aircraft systems</b>												
Hermes (90, 450, 900) UAS		●	●									
Skylark (I, I LEX, II, III) UAS												●
<b>C4ISR</b>												
WIN battle management system							●	●				
TADIRAN tactical radio and communication systems												
Laser and IR illuminators (Ivory-Z, POS, DTV, TISAS)												
CoMPASS and SPECTRO XR electro-optic payloads												
<b>EW and SIGINT</b>												
MUSIC DIRCM system		●		●								●
Passive airborne warning system (for Gripen)												
TIMNEX 2 submarine ESM/ELINT system												
<b>Land systems and artillery systems</b>												
ATHOS / ATMOS 155mm artillery truck mounted gun Howitzer										●		
UT-30 unmanned turret (Patria AMV)												

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Sales up 4.9%, to \$3.3bn (€2.95bn), thanks to further growth of C4ISR business (+23%), compensating for poor results in Land Systems (-38%, after record year in 2015).
- ▶ In top tier of Israeli defence companies, alongside IAI, with ambition to become national Defence Technological and Industrial Base (DTIB) leader through highly dynamic external growth strategy (more than 18 acquisitions in 10 years).
- ▶ Currently renewing portfolio of solutions (SkyStriker loitering munition, Skylark 3 tactical mini-UAV, Spectro XR electro-optical payload, Light SPEAR self-protection system for unmanned aircraft, SkEy WAPS airborne surveillance solution), now extended to cybersecurity (CYBERBIT Ltd. subsidiary), unmanned surface vessels (Seagull USV) and civil transport (new dedicated subsidiary created in July 2016).

### Home market

- ▶ Home market accounted for only 22% of group sales in 2016.
- ▶ In systems for land forces, contract in April 2017 to develop and produce new artillery system (based on ATMOS 155mm towed howitzer) for Israel Defence Forces (several hundred units ordered).
- ▶ In March 2017, decision to extend and modernise Arad site following award of five-year contract to supply and maintain radio systems for Israel Defence Forces.
- ▶ Around 10 ELSAT-2100 satellite-on-the-move (SOTM) communication systems ordered by Israeli Ministry of Defence in May 2017 to equip certain military vehicles over next two years.
- ▶ Possible new order in 2017 for Hermes 900 UAVs to reinforce Air Force ISR capacities.

### Export markets

- ▶ 78% of sales from exports in 2016, mainly in North America (25%) and Asia-Pacific (25%) and, to a lesser extent, Europe (20%).
- ▶ New regulations introduced by Israeli authorities in June 2017 to allow Israeli companies to team up on certain export markets (particularly UAVs) instead of competing with each other.
- ▶ Consolidation of Asia-Pacific activities (+51% in two years), illustrated by increasing stake in Alpha-ELSEC JV jointly held with ADTL (from 26% to 49%) in July 2017, new contracts (Spectro XR electro-optical payloads, Condor 2 ISTAR solution, Mi-17 helicopter maintenance) and penetration of cyber market via CYBERBIT subsidiary (e.g. in South Korea and Japan).
- ▶ U.S. subsidiary still well placed among U.S. Army suppliers, thanks to several Icontract awards between end-2016 and June 2017 (mortar weapon systems, mortar fire control systems, operator interface and integrated data processing capabilities).
- ▶ In Brazil, as part of armoured vehicle fleet modernisation, local subsidiary ARES awarded contract in January 2017 to supply 12.7/7.62mm REMAX remote-controlled weapon stations for Guarani 6x6 armoured vehicles.
- ▶ In training and support sector, major €599m contract award in February 2016 to Affinity Flying Services Ltd. JV owned jointly with KBR, as part of British UKFMTS programme.

### Technology and Innovation

- ▶ R&D investments totalled \$291.75m (€263.57m) in 2016, i.e. 8.9% of sales.



## BUSINESS AREAS

Systems integrator/equipment supplier

- ▶ Electronic attack & Self protection
- ▶ Electro optical infra red
- ▶ ISR
- ▶ Cyber EW & Intelligence
- ▶ Support services and maintenance

## GOVERNANCE

Chairman and CEO

Enzo Benigni

Chief Financial Officer

Roberto Turco

## KEY FIGURES (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	202	221	231	219
Δ (%)	-5,64%	9,41%	4,64%	-5,19%
Defence (%)	100%	100%	100%	100%
Export (%)	81%	N/A	N/A	N/A
Operating profit/loss	30	34	34	N/A
Operating Margin	14,87%	15,43%	14,74%	N/A
Net profit/loss	18	19	23	18
Order book	N/A	N/A	842	N/A
Employees	746	708	790	N/A

## OWNERSHIP STRUCTURE

Symbol

Listed on

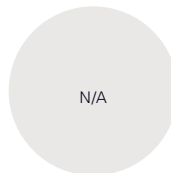
Non Listed Company

Market Cap (M€)

Major Shareholders (as of 30.06.2017)

Benigni Family	35,34%
Thales	33,33%
Leonardo	31,33%

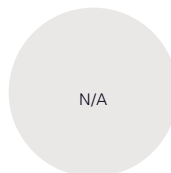
## REVENUE BY BUSINESS LINE (%)



## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
SOLYNX Corporation	24,11%	U.S.
Consorzio SIGEN	50%	Italy
Consorzio Cals Italia	7,14%	Italy
CY4 Gate S.r.l	75,5%	Italy
Consorzio per la Ricerca sui Semiconduttori Composti	4,14%	Italy

## REVENUE BY REGION (%)





## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Elbit Systems	Thales	Airbus	EuroDASS	Leonardo	Expert System	Lockheed Martin	MBDA
<b>Military aircraft systems</b>								
ELT/553 family self-protection jammers (AMX, Tornado)								
Integrated multimission electronic warfare system (Mirage 2000)		●						●
ESM and ELINT ALR/733 (V4 systems (NH-90, EH101, EMB145, ATR-42)								
SIAP electronic suite (A129, CH-47C)					●			
ELT/572 DIRCM (C-27J, A129, KC-130J)	●						●	
ELT/160 radar warning receivers (A129, NH90)								
DASS (Eurofighter, C-27J)			●	●				
<b>Naval systems</b>								
Seal ESM system (Baynunuh-class corvettes)								
Nettuno 4100 ECM system (Horizon-class frigates, Cavour aircraft carrier )								
ELT/333 ECM system (Cigala Fulgosi-class corvettes)								
<b>Land systems</b>								
ELT/888 (V)3 ELINT system (ER90 and HODHOD programmes)								
ELT/333 ECM system								
ELT/243 ESM/ELINT system								
<b>Electronic warfare suite</b>								
Virgilius (A129, Baynunuh corvettes)								
Loki ELT/950 (NSM)								
<b>Cybersesurity</b>								
Digital & Spectrum Intelligence Integrated Suite						●		

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ After performing well in 2014 and 2015, lacklustre results in 2016, with sales and net profit down 5.2% (at €219m) and 28% (€18m), respectively.
- ▶ Electronics specialist, partner for Italy's major platform suppliers and system integrators, particularly Leonardo and Fincantieri naval group.
- ▶ Strategy to extend product range in ELINT sector, with launch of land-based version of ELT/950 LOKI EW system (based on Virgilius electronic warfare suite), presentation of ADRIAN anti-UAV system at end of 2016 and introduction of new ELEPHANT electronic warfare training services in July 2017.
- ▶ Diversification of defence and security activities, exemplified by penetration of market for ISR systems for UAVs (partnership with Piaggio Aero, prime contractor for P1HH MALE UAV) and cyberdefence market (creation of Cy4Gate JV with Expert Systems, an Italian specialist in semantic analysis).
- ▶ Development of non-defence activities of its German subsidiary with inauguration in 2015 of a new production line for digital technologies for aerospace and defence, civil security, telecommunications and transport sectors.

### Home market

- ▶ Present on main national and cooperative programmes in aerospace and naval sectors (Eurofighter combat aircraft, three-engine AW-101 helicopter, C-27J tactical transport, twin-engine NH90 helicopter, FREMM frigates, future multi-mission patrol vessels).
- ▶ An equipment supplier heavily dependent on domestic market (40% of 2016 order book) and a beneficiary, alongside Leonardo and Fincantieri, of Italian fleet modernisation programme.
- ▶ In December 2016, delivery of first two ATR-72 maritime patrol aircraft (out of an order for four units) equipped with ELT8000V2 suite. Leonardo is prime contractor on this programme.
- ▶ Signature of partnership agreement with Italian Air Force concerning electronic warfare activities, both nationally (operational support and maintenance, R&D projects) and on export markets (development of local capacities in Kuwait in connection with contract for 28 Eurofighter Typhoon).

### Export markets

- ▶ European market accounts for 21% of 2016 order book, vs. 39% for major export markets (government customers in 28 countries worldwide).
- ▶ Main growth opportunities seen in Middle East, Asia-Pacific and Latin America.
- ▶ Reinforced export presence in Middle East, particularly in UAE (maintenance and mobile electronic solutions) and more recently in Kuwait (in connection with Eurofighter Typhoon contract) and Qatar (delivery of seven corvettes equipped with Virgilius electronic warfare suite).
- ▶ Entry into Russian civil aircraft market, symbolised by partnership concluded with Rosoboronexport and JSC Aviacor to equip Antonov An-140-100s with a Directional Infrared Counter Measures (DIRCM) system.

### Technology and Innovation

- ▶ Steady increase in R&D spending since 2013 (+22% in three years), to €11.2m, or 5.1% of sales, in 2016.
- ▶ Main research areas: signal processing, complex electronic scanning antennas, monolithic microwave integrated circuits (MMIC), multi-chip modules (MCM), microwave technologies.



## BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Commercial and military aircraft (light, transport and surveillance)
- ▶ Radar systems
- ▶ C4ISR systems
- ▶ Space systems

## GOVERNANCE

Chairman of the Board  
President and CEO  
Chief Financial Officer

A. Gonçalves Silva  
P. C. de Souza e Silva  
J.-A. de A. Filippo

## KEY FIGURES (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	4 753	4 785	5 486	5 559
Δ (%)/[R\$]*	11,95%	9,53%	35,93%	5,59%
Defence (%)	19%	23%	14%	15%
Export (%)	79%	79%	89%	89%
Operating profit/loss	560	148	298	N186
Operating Margin	11,78%	8,73%	5,43%	3,35%
Net profit/loss	271	265	76	153
Order book	13 175	17 354	20 667	18 594
Employees	19 278	19 167	19 373	18 506

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

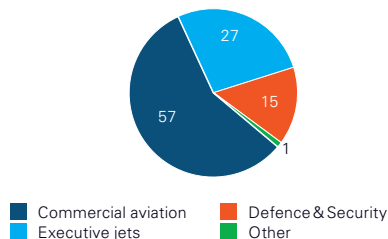
## OWNERSHIP STRUCTURE

Symbol	EMBR3, ERJ
Listed on	BOVESPA et NYSE
Market Cap (M R\$)	12 336

### Major Shareholders (as of 30.06.2017)

Brandes Investments Partners	10,94%
Oppenheimer Funds	7,11%
Holowesko Partners Ltd	1,73%
Dimensional Fund Advisors Inc.	1,71%

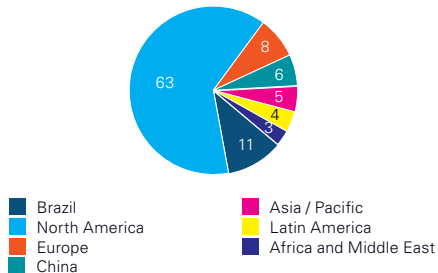
## REVENUE BY BUSINESS LINE (%)



## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
OGMA-Indústria Aeronáutica de Portugal	65%	Portugal
Visiona Tecnologia Espacial	51%	Brazil
Bradar Aerolevantamento	25%	Brazil

## REVENUE BY REGION (%)



## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Boeing	Elbit Systems	Sierra Nevada Corp.	DRDO*	Teledias	Saab AB	BAE Systems	CTEX**	Thales Alenia Space	Aero Vodochody	FAdeA
Light attack and advanced trainer											
A-29 Super Tucano	●	●	●								
Fighter aircraft											
FX-2 Programme (Gripen NG)						●					
Airborne early warning and control aircraft											
EMB-145 AEW&C				●		●					
EMB-145 Multi INTEL											
Military transport aircraft											
KC-390	●	●							●	●	
Radar and C4ISR systems											
SABER-M60 surveillance radar							●				
SABER-M200 surveillance radar							●				
SENTIR-M20 portable ground radar							●				
SABER-S200R secondary radar (IFF)											
SISFRON integrated border monitoring system programme		●									
Satellites											
SGDC-1 Geostationary Satellite for Communications and Defense					●			●			

\* DRDO: Defence Research and Development Organization

\*\* CTEX: Centro Tecnológico do Exército

## STRATEGIC HIGHLIGHTS

## Business trends

- ▶ Sales up 5% in 2016, to R\$21.4bn (€5.6bn), including 15% in defence and security.
- ▶ After a period of annual growth in Defense & Security sales from 2006 to 2014 (with a peak of R\$1.4bn, or €378m, in 2014), 2015 saw a sharp decline (-79%), mitigated in 2016, as a result of Brazilian defence budget cutbacks and, more generally, Brazilian economic crisis.
- ▶ Today, Defense & Security activities highly dependent on KC-390 (35%) and Super Tucano (22%) programmes and, in medium term, on sectors related to C4I, satellites and land systems.
- ▶ In anticipation of increased demand for maintenance services, creation of a Business Unit dedicated to customer services and support in December 2016.
- ▶ Decision in March 2016 to integrate Bradar and Savis units into a single entity and, in June 2016, to sell its tactical drone JV, Harpia Sistemas, jointly owned with AEL Sistemas and Avibras.

## Home market

- ▶ Main beneficiary of major programmes launched over past decade (Super Tucano, KC-390, FX-2, SISFRON, SisGAAz, SGDC, etc.) and increasingly dependent on federal government orders (62% of sales in 2016, vs. 59% in 2015).
- ▶ As part of FX-2 combat aircraft programme (36 aircraft delivered between 2019 and 2034; selection of Gripen NG), inauguration of Gripen Design and Development Network (GDDN) in Gavião Peixoto (state of São Paulo) in November 2016, and continued training of Brazilian engineers and technicians by Saab in Sweden (80 Embraer employees trained out of a total of 350).
- ▶ Initial operational capability (IOC) of KC-390 transport aircraft scheduled by end-2017. First production aircraft currently in production for delivery in 2018 (28 aircraft ordered by Brazil).
- ▶ Accelerated deployment of SISFRON integrated border control system thanks to R\$450m (€119m) in additional financing released by Army.
- ▶ Delivered in December 2016 by VISIONA Tecnologia Espacial (prime contractor), SGDC (Geostationary Defense and Strategic Communications) satellite launched by Arianespace in May 2017, subsequently operated and controlled by Brazilian operator Telebras.

## Export markets

- ▶ Defence export offering structured around Super Tucano (200 aircraft delivered, 230 orders; 50% market share), EMB-145 AEW&C and now KC-390 (agreement with Boeing to market the aircraft internationally).
- ▶ New export prospects for Super Tucano light attack aircraft: future OA-X programme in U.S. to replace current A-10 fleet (orders for 200 aircraft by 2022; Embraer teamed with Sierra Nevada) and tentative orders from Philippines and Bolivia.
- ▶ Following initial Brazil/Portugal strategic dialogue on defence industry organised in February 2017, start of discussions on acquisition of five KC-390s in June 2017 (plus one option).

## Technology and Innovation

- ▶ Installation of a team of engineers in Boston and Silicon Valley in March 2017 to develop cooperation with start-ups, academic laboratories and design bureaux of major groups.



## BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Naval shipbuilding (commercial and military)
- ▶ Offshore
- ▶ Naval equipment and systems (propulsion systems, guidance systems)
- ▶ Maintenance and services

## GOVERNANCE

Chairman	Giampiero Massolo
Chief Executive Officer	Giuseppe Bono
Chief Financial Officer	Giuseppe Dado

## KEY FIGURES (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	3 811	4 399	4 183	4 429
$\Delta$ (%)	60,06%	15,42%	-4,90%	5,88%
Defence (%)	30%	24%	25%	26%
Export (%)	76%	82%	85%	84%
Operating profit/loss	209	198	-137	157
Operating Margin	5,48%	4,50%	-3,28%	3,54%
Net profit/loss	85	55	-289	14
Order book	8 068	9 814	15 721	18 231
Employees	20 389	21 689	20 019	19 181

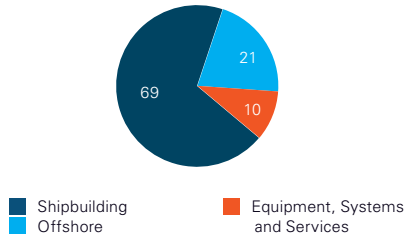
## OWNERSHIP STRUCTURE

Symbol	FCT
Listed on	Borsa Italiana
Market Cap (M€)	1 599

### Major Shareholders (as of 30.06.2017)

Fintecna S.p.A. (Italian State)	71,60%
Invesco Asset Management Ltd	1,18%
Deutsche Asset & Wealth Management Investment GmbH	0,69%
Vanguard Group Inc.	0,62%

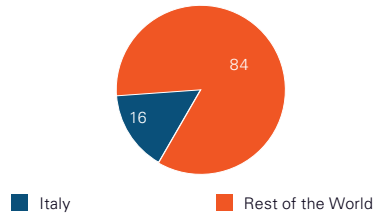
## REVENUE BY BUSINESS LINE (%)



## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Orizzonte Sistemi Navali	51%	Italy
Etihad Ship Building LLC	35%	UAE
Marinette Marine Corp.	87,44%	U.S.
Centro Per Gli Studi Di Tecnica Navale Cetena S.p.A.	86,10%	Italy
Vard Holdings Ltd	70%	Singapore

## REVENUE BY REGION (%)



## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Gibbs & Cox	Lockheed Martin	Naval Group*	Thales	Leonardo	Bharat Electronics	Renk	General Electric	TKMS**
<b>Surface ships</b>									
PPA multipurpose offshore patrol vessels					●				
Multirole corvette (Qatari contract)					●				
Horizon-class frigates			●					●	
FREMM-class frigates			●	●	●		●	●	
Landing Helicopter Dock (LHD) 20 000t					●				
Cavour aircraft carrier					●			●	
Deepak-class logistics support ships						●			
Freedom-class LCS frigates	●	●							
Mark V-class OPV					●				
Marco Polo-class OPV					●				
AOR Logistics support ship					●				
<b>Submarines</b>									
212A-class submarines (built under licence)									●
<b>Propulsion systems and guidance systems</b>									
Bow thruster									
Propeller propulsion system and shaft lines									
FIN stabilizer									
Rudder roll governance and stabilization system									
Positioning system					●				

\* formerly DCNS

\*\* ThyssenKrupp Group

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Sales up 5.9%, to €4.43bn, in 2016, helped by very strong growth in cruise ship construction (+32%) and military naval (+9.5%) sectors, compensating for persistent difficulties in offshore market (-20%).
- ▶ Order book at historic peak: €18.2bn in 2016, vs. €15.7bn the previous year.
- ▶ Strategic business plan for 2016-2020 presented in March 2016 to support very strong growth and development of international activities.
- ▶ To consolidate industrial and technological competences on its Italian sites, signed a partnership agreement with Ferretti Group in February 2017 (repair and conversion activities) and bought a stake in Isselhorn engineering company in June.
- ▶ Agreement concluded on takeover of STX France following Franco-Italian summit on 27th September 2017; French and Italian governments started preparatory work to create alliance between Naval Group and Fincantieri focused on surface ships.

### Home market

- ▶ "Monopolistic" position on Italian market, main beneficiary of Navy modernisation plan (€5.4bn over 20 years).
- ▶ Workload of Italian shipyards supported by FREMM frigate programme (target, 10 ships), with delivery of 6th unit in April 2017; 7th and 8th units expected in 2018 and 2019.
- ▶ In intermediate-size frigates, keel laying of lead ship in PPA programme (Pattugliatore Polivalente d'Altura; seven units ordered to date) in Muggiano shipyard in January 2017.
- ▶ In February 2016, start of construction of new logistics support ship (LSS programme) in Castellamare di Stabia, Muggiano and Riva Trigoso shipyards, with delivery scheduled for February 2019 (forward section completed in February 2017) and first steel-cutting for new landing helicopter dock (LHD) in July 2017 (delivery in 2022).
- ▶ Salvatore Todaro-class submarine programme (built under licence to TKMS) now completed, with entry into service of 4th ship in May 2017.

### Export markets

- ▶ Strongly export-focused group (84% of sales in 2016) with multiple international facilities (U.S., Brazil, Australia, Europe and now China).
- ▶ Keel laying for 4th Freedom-class ship (U.S. Navy Littoral Combat Ship programme) at group's U.S. shipyard, Marinette Marine (in partnership with Lockheed Martin), in May 2017.
- ▶ In Qatar, contract to supply four air defence corvettes, two offshore patrol vessels and one Landing Platform Dock (LPD) signed in August 2017; in Australia, preselected along with BAE Systems and Navantia in August 2016 for SEA 5000 frigate programme.
- ▶ Major strategic partnership signed in May 2017 with China State Shipbuilding Corp. (Shanghai Waigaoqiao Shipbuilding) and Baoshan district for creation of industrial park dedicated to design and construction of cruise ships (for Chinese and Asian markets), a few months after the announcement of a joint venture.

### Technology and Innovation

- ▶ R&D investments reached €96m in 2016 (+7% in one year), i.e. 2.2% of consolidated sales.





## BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Sensors, radar systems, directed energy weapons
- ▶ Unmanned aircraft systems
- ▶ Electromagnetic systems, advanced arresting gear
- ▶ Energy solutions (nuclear, fuel)
- ▶ R&T project (nuclear fusion)
- ▶ Control solutions (nuclear, health, agriculture)

## GOVERNANCE

Chairman and CEO

James N. Blue

Chief Financial Officer

Liam Kelly

Directeur de GA-ASI

Linden P. Blue

## OWNERSHIP STRUCTURE

Symbol

Listed on

Non Listed Company

Market Cap (M\$)

Major Shareholders (as of 30.06.2017)

Blue Family

100%

## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
ConverDyn	50%	U.S.
TRIGA International	N/A	U.S.

## KEY FIGURES (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	N/A	N/A	2 704	2 710
Δ (%)/[€]*	N/A	N/A	N/A	N/A
Defence revenue**	1 619	1 246	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 profit/loss	N/A	N/A	N/A	N/A
Order book	N/A	N/A	N/A	N/A
Employees	6 000	N/A	7 500	7 500

\* Variation based on the revenue in local currency.

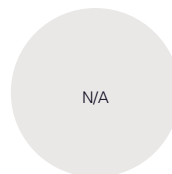
See €/\$ exchange rates p.7.

\*\* Defense News Top 100 Figures.

## REVENUE BY BUSINESS LINE (%)



## REVENUE BY REGION (%)



# GENERAL ATOMICS

## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Diehl Defence	Lockheed Martin	Boeing	Leonardo	Huntington Ingalls	Harris Corp.	GKN	Textron	Sener	Oinetia	CAE
<b>Unmanned aircraft systems and ISR</b>											
Predator MQ-1	●		●								●
Predator B/ Reaper MQ-9					●	●		●			●
Predator B (CPB and Skyguardian)											
Gray Eagle MQ-1C											
Predator XP											
ALTUS demonstrator UAS											
Avenger (Predator C) UCAS											
Griffin Eye ISR system (King Air 350)							●				
<b>EMALS, advanced arresting gear</b>											
EMALS		●		●							
Advanced Arresting Gear (AAG)					●					●	
Blitzer electromagnetic railgun											
<b>Laser systems</b>											
Trident tactical airborne laser											
High Energy Liquid Laser Area Defense System (HELLADS)	●										
<b>Sensors</b>											
Lynx radar											
Highlighter I airborne electro-optical sensor											
Claw 3 integrated sensor payload control and analysis software											

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Estimated sales of \$3bn (~ €2.7bn), reflecting dynamic performance in drones, electromagnetic defence systems and ISR.
- ▶ Strategy to diversify into services, a promising market in view of USAF target to double number of drone patrols by 2019, and homeland security sector (training for U.S. government agencies).
- ▶ New STANAG 4671-certifiable version of Predator B, Sky Guardian, launched in January 2017; received Federal Aviation Administration (FAA) experimental certificate (EC) for Predator C Avenger in July 2016.
- ▶ Reinforced competences in hypersonic vehicles and micro-satellites through acquisition of Miltec Corporation in February 2016.

### Home market

- ▶ Leading player in U.S. MALE drone sector thanks to systems, Predator and Reaper.
- ▶ Contract award in June 2017 as sole supplier of Electromagnetic Aircraft Launch System (EMALS) and Advanced Arresting Gear (AAG) for three future Ford-class aircraft carriers Gerald R. Ford (CVN 78), John F. Kennedy (CVN 79), and Enterprise (CVN 80).
- ▶ New order for MQ-9 Reaper awarded by USAF in May 2017, covering production of 36 systems (fleet targeted to reach 350 MQ-9 Reaper by 2021).
- ▶ Pre-selected for phase 2 of Gremlins programme (swarm of ISR drones that can be recovered in flight) in March 2017 (after phase 1 in March 2016), along with Dynetics.
- ▶ Following abandonment of U.S. Navy's Unmanned Carrier-Launched Surveillance and Strike (UCLASS) programme, awarded one-year risk reduction contract in October 2016 for MQ-25 Stingray Unmanned Carrier Aviation Air System (UCAAS), along with Boeing, Lockheed Martin and Northrop Grumman.

### Export markets

- ▶ Export strategy limited by ITAR regulations and Missile Technology Control Regime (MTCR); contracts concluded through Foreign Military Sales (FMS) procedures, mainly on the basis of unarmed platforms.
- ▶ Marketing office installed in India end-2016 after authorities' decision to join MTCR, followed by U.S. government go-ahead in June 2017 for sale (FMS) of 22 Guardian systems (naval version of Predator B, unarmed).
- ▶ Other successes for MQ-9 Reaper in Europe, with contract awards in France (4th system ordered in December 2016), Spain (four systems, February 2016, partnership with Sener) and Netherlands (four systems, mid-2016, partnership with GKN Aerospace and the Netherlands Aerospace Centre-NLR).
- ▶ Certifiable Predator B (CPB) selected by UK Ministry of Defence (MoD) in July 2016 to replace 10 Reaper drone systems currently in service from 2018 onwards (Protector programme, planned orders for more than 20 systems).

### Technology and Innovation

- ▶ Main R&D programmes: Predator drone family upgrades, electromagnetic railguns (Blitzer and MMRRWS), integration of "Sense and Avoid" function (Due Regard Radar system of Guardian drone), Lithium-ion batteries (Fault Tolerant), electrical arresting gear and hypersonic projectiles.



## 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

## OWNERSHIP STRUCTURE

Symbol	GD
Listed on	NYSE
Market Cap (M\$)	59 533

Major Shareholders (as of 30.06.2017)

Longview Management Group	11,13%
Evercore Trust Company N.A.	7,33%
Capital Research & Management Co.	6,56%
State Street Corp.	4,11%

## MAIN JOINT VENTURES AND ASSOCIATES

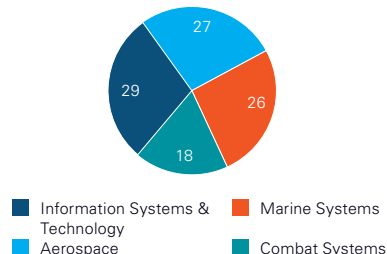
Name	%	Country
GR Dynamics LLC	50%	U.S.
Defense Munitions International LLC	50%	U.S.
American Powder Company	50%	U.S.
GD Mission Systems International Middle East	N/A	UAE
RGNext	50%	U.S.

## KEY FIGURES (Fiscal year ended: 31.12.2016)

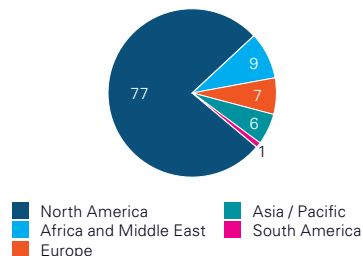
€ millions	2013	2014	2015	2016
Revenue	23 289	23 223	28 363	28 325
Δ (%)/[\$]*	-0,20%	-0,25%	2,00%	-0,37%
Defence (%)	60%	60%	61%	63%
Export (%)	20%	25%	26%	25%
Operating profit/loss	2 778	2 927	3 766	3 893
Operating Margin	11,93%	12,61%	13,28%	13,74%
Net profit/loss	1 775	1 907	2 672	2 670
Order book	33 216	59 641	60 733	56 731
Employees	96 000	99 500	99 900	98 800

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

## REVENUE BY BUSINESS LINE (%)



## REVENUE BY REGION (%)



# GENERAL DYNAMICS

## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	BAE Systems	Rafael	Thales	Northrop Grumman	Huntington Ingalls	Raytheon	Rockwell Collins	Lockheed Martin	Harris Corp.	Austal	IAI
<b>Aircraft</b>											
Gulfstream special missions											●
<b>Submarines</b>											
Virginia-class nuclear-powered attack submarines			●	●							
Ohio-class ballistic missile submarines			●								
<b>Surface ships</b>											
Zumwalt-class destroyers (DDG-1000)	●			●	●						
Arleigh Burke-class destroyers (DDG-51)				●							
<b>Military vehicles</b>											
Abrams M1A2 main battle tank											
Stryker wheeled combat vehicle											
AJAX (Scout SV) UK programme			●				●				
<b>Weapons, artillery systems, ammunition</b>											
155mm advanced gun system	●										
Goalkeeper and Phalanx close-in weapon system			●		●						
Samson remote controlled weapon station	●										
Reactive armour	●										
Guns/cannons for fighter aircraft (GAU-12/U, M6A2, GAU-22/A)			●		●						
<b>Mission systems and C4ISR</b>											
Bowman C4I system	●					●		●			
Warfighter Information Network-Tactical (WIN-T)	●					●					
Open architecture computing infrastructure OPEN CI (LCS frigates)										●	

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Relatively flat sales in 2016, at \$31.35bn (€28.3bn), with increased revenue in Marine Systems (+2.4%) and Information Systems and Technology (+2.5%) compensating for declines in Aerospace (-5%) and Combat Systems (-0.7%).
- ▶ In secure communications, HOOK3 Combat Survival Radio (CSR) launched onto the market in July 2017; acquisition of Electronics and Communications division of Advatech Pacific (U.S.) in May 2017.
- ▶ Solid position in civil aeronautics via Gulfstream subsidiary (announcement of three new bizjet models – G500, G600 and G600ER – scheduled for delivery in 2018), as a result of diversification to limit dependence on military orders (particularly armoured vehicles).

### Home market

- ▶ Highly dependent on home market (75% of sales in 2016) and on government customers in particular (60% including FMS), led by the U.S Department of Defense (DoD).
- ▶ In surface ships, christening of DDG 116 guided missile destroyer (USS Thomas Hudner) at Bath Iron Works shipyard in April 2017 and start of construction of fifth Expeditionary Sea Base (ESB-5) by NASSCO for U.S. Navy in January 2017.
- ▶ In submarines, period marked by christening of 15th Virginia-class nuclear-powered attack submarine (USS Colorado) at General Dynamics Electric Boat shipyard at end of 2016 and continued development of Virginia Payload Module mid-body sections for future Block V vessels, and selection as prime contractor for future ballistic missile submarines (with Huntington Ingalls Industries) in April 2016.
- ▶ In cybersecurity, awarded multi-year Enterprise Cyber Network Defense contract by Defense Intelligence Agency (DIA) in February 2017, covering cybersecurity services required to defend intelligence networks and systems for the Agency and various Military Services (e.g. Combatant Commands).
- ▶ New order for General Dynamics Ordnance and Tactical Systems in October 2016 to supply 2.75"/70mm Hydra-70 rockets for the U.S. Army and FMS customers (\$170m, or €154m) under multi-year contract awarded in 2014.

### Export markets

- ▶ 25% of sales generated by exports in 2016, with revenue declines in Europe and South America, but strong increase in Asia-Pacific (+14%) and, to lesser degree, Africa/Middle East (the latter still the group's leading export destination).
- ▶ Solid industrial presence in Europe via General Dynamics European Land Systems (contracts won in 2017 in Switzerland, Romania and Denmark, and prospects in Spain and Czech Republic) and its British subsidiary GD UK (new success with a contract to design and develop next-generation tactical communication and information system as initial phase of MORPHEUS programme, awarded in April 2017, and focus on upcoming Challenger 2 LEP contract, in partnership with BAE Systems, and ultimately 8x8 MIV).
- ▶ In Canada, contract won in February 2017 to upgrade 141 LAV III light vehicles for \$CA404m (€280m) and presentation in June of two new versions, LAV 6.0 Combat Support Vehicle-Ambulance (CSV-A) and LAV 6.0 Combat Support Vehicle-Maintenance and Recovery (CSV-MR), with a view to upcoming ACSV (Armoured Combat Support Vehicle) competition.

### Technology and Innovation

- ▶ R&D expenditure of \$418m (€376m) in 2016, i.e. 1.3% of sales.



# GENERAL ELECTRIC AVIATION (GE AVIATION)

## BUSINESS AREAS

Engine manufacturer, systems integrator/equipment supplier

Branch of General Electric (GE) conglomerate

- ▶ Aircraft engines (combat aircraft, transport aircraft, helicopters), gas turbines, propulsion systems
- ▶ Digital systems (avionics, electrical power, structures, dowty propellers)
- ▶ Support services and maintenance solutions

## GOVERNANCE

Chairman and CEO  
Chief Financial Officer

David L. Joyce  
Shane Wright

## OWNERSHIP STRUCTURE\*

Symbol	GE
Listed on	NYSE
Market Cap (M\$)	221 297

Major Shareholders (as of 30.06.2017)

Vanguard Group Inc.	6,87%
State Street Corp.	4,08%
GE Savings and Security Program	4,29%
Capital World Investors	1,50%

\* General Electric Company

## MAIN JOINT VENTURES AND ASSOCIATES

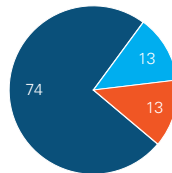
Name	%	Country
CFM International	50%	U.S.
NGS Advanced Fibers	25%	Japan
TUSAS Engine Industries	46%	Turkey
Advanced Ceramic Coatings	50%	U.S.
GE Aviation / Woodward	50%	U.S.

## KEY FIGURES (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	16 498	18 058	22 226	23 725
Δ (%)/(\$)*	9,59%	9,49%	2,79%	6,49%
Defence (%)	N/A	17%	15%	13%
Export (%)	N/A	59%	61%	59%
Operating profit/loss	3 272	3 743	4 963	5 524
Operating Margin	19,83%	20,73%	22,33%	23,29%
Net profit/loss	N/A	N/A	N/A	N/A
Order book	90 711	110 536	138 881	146 571
Employees	32 000	44 000	45 000	45 000

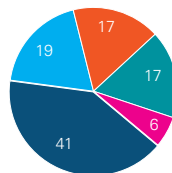
\* Variation based on the revenue in local currency. See €/€ exchange rates p.7.

## REVENUE BY BUSINESS LINE (%)



■ Commercial Engines & Services  
■ Military  
■ Systems & Other

## REVENUE BY REGION (%)



■ U.S.  
■ Asia  
■ Europe  
■ Africa and Middle East  
■ Americas (excl. U.S.)

# GENERAL ELECTRIC AVIATION (GE AVIATION)

## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Hanwha Techwin	Safran	MTU Aero Engines	IHI	ITP	GKN	TransCanada Turbines
<b>Aircraft engines</b>							
F110 (F-16C/D, F-15SG, F-15SA et F-15S)	●	●	●			●	
F404 (F/A-18C/D, F-117, T-50)	●	●				●	
F414 (F/A-18E/F, Gripen NG, Tejas Mk II)		●		●		●	
RM12 (Gripen)						●	
F108/CFM56-2 (KC-136, E-3 AWACS)		●					
F138/CF6-80 (C-5, B767 AWACS, A310 MRTT)		●					
LEAP (A320neo, B737MAX, C919)		●					
<b>Helicopter engines</b>							
T700/CT7 (UH-60, AH-64D/E, NH90, Surion)	●			●	●		
T408 (formerly GE38) (CH-53K)			●				
<b>Gas turbines</b>							
GE LM2500 (FREMM, Horizon, Arleigh Burke, Cavour, INS Vikrant)	●	●	●			●	●
<b>Systems and structures</b>							
Landing gear systems (X-47B, T-38, AH-64)							
Fuel tanks and pods (F/A-18, Eurofighter Typhoon)							
Refuelling probe (A400M)							
Pylons and structures (P-8 Poseidon, HAWK AJT, C-17)							
Propellers (C-27J, C-130J, US-1A, C-212)							



## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Sales up 6.5% in 2016, to \$26.3bn (€23.7bn), helped by services and sales of LEAP new-generation civil engines.
- ▶ Military sales down again, to \$3.5bn (€3.2bn), with 571 engines delivered in 2016, but good outlook for 2017 (640 engines deliveries).
- ▶ Maintenance activities gaining importance, with fleet of in-service engines due to reach 31,000 by 2020 (combat aircraft engines and turboshaft engines for helicopters), vs. 27,000 in 2015.
- ▶ Continues to extend and modernise facilities in the U.S. (Hooksett and West Jefferson, creation of five additional sites) and internationally (Canada, Hungary, Singapore, Czech Republic, Italy) under a \$3.5bn (€2.6bn) investment plan over the period 2014-2017.
- ▶ Three significant acquisitions between end-2016 and June 2017, the first two targeting additive manufacturing specialists Arcam AB (Sweden) and SLM Solutions Group (Germany) for a total of \$1.4bn (€1.3bn) and the third, OC Robotics (UK).

### Home market

- ▶ 86% of sales from civil engines in 2016 and 41% from home market, but still strongly dependent on U.S. Department of Defense (DoD) orders in military engines (aviation and marine, with installed base of 26,100 units).
- ▶ U.S. Army one of main defence customers; most recent major contract (ID/IQ type), a \$1bn (€903m) deal to produce 2,500 T700 turboshaft engines through 2019, awarded in April 2017.
- ▶ New contracts also from U.S. Navy, including 28 F414-GE-400 engines for F/A-18 and EA-18G Hornet (March 2017) and continued deliveries of LM2500 gas turbines for LCS ships and Arleigh Burke-class destroyers.

### Export markets

- ▶ 59% of sales from exports, mostly from civil engines and mainly for Asia (19%), followed by Africa/Middle East (17%) and Europe (17%).
- ▶ LM2500 export success story continues (35 customer navies), with recent selection by India for P17A frigate (December 2016), following selections by Royal Australian Navy (for two LHDs), Turkish Navy (MILGEM corvette programme), Italian Navy (PPA programme) and Japan Maritime Self-Defense Force (Aegis destroyer).
- ▶ In May 2016, in combat aircraft propulsion segment, F414-GE-400 selected by South Korea for KF-X programme and roll-out by Saab (Sweden) of first Gripen E (equipped with F414-GE-39E, more powerful version of F414G).

### Technology and Innovation

- ▶ Continuing R&D work on Adaptive Engine Transition Program (AETP, in partnership with Pratt&Whitney) following award of \$1bn (~ €895m) contract from US Air Force in July 2016.
- ▶ In October 2016, successful first tests of new-generation turbine engine being developed in cooperation with U.S. Army under Future Affordable Turbine Engine (FATE) programme.
- ▶ Awarded 24-month contract under preliminary design phase of U.S. Army's Improved Turbine Engine Program (ITEP, GE3000 engine).
- ▶ At 2017 Paris Air Show, announced collaboration with Airbus Helicopters, ONERA and Safran on Rapid And Cost Effective Rotorcraft (RACER) high-speed helicopter project.



## BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Fighter aircraft
- ▶ Helicopters
- ▶ Structures and components
- ▶ Avionics
- ▶ Engines

## GOVERNANCE

Chairman and CEO

T. Suvarna Raju

Chief Financial Officer

C.V. Ramana Rao

## KEY FIGURES (Fiscal year ended: 31.03.2016)

€ millions	2012-13	2013-14	2014-15	2015-16
Revenue	1 838	1 867	2 194	2 250
$\Delta$ (%) [Rs Cr.]*	0,84%	5,62%	3,26%	7,14%
Defence (%)	97%	97%	95%	94%
Export (%)	3%	3%	3%	3%
Operating profit/loss	449	441	446	442
Operating Margin	24,41%	23,65%	20,31%	19,65%
Net profit/loss	385	332	335	223
Order book	N/A	N/A	N/A	N/A
Employees	32 644	32 108	31 144	30 300

\* 1 crore equals 10,000,000.  
Variation based on the revenue in local currency.  
See €/INR exchange rates p.7.

## OWNERSHIP STRUCTURE

Symbol

Listed on

Non Listed Company

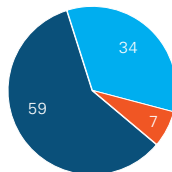
Market Cap (M Rs Cr.)

Major Shareholders (as of 30.06.2017)

Indian State

100%

## REVENUE BY BUSINESS LINE (%)

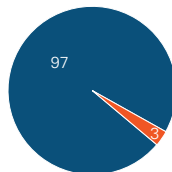


■ Aircrafts & Helicopters ■ Other  
■ MRO

## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
BAeHAL Software Ltd	49%	India
Indo-Russian Aviation Ltd	48%	India
Helicopter Engines MRO Pvt Ltd	50%	India
HALBIT Avionics Pvt Ltd	50%	India
India-Russia Helicopters Ltd	50,5%	India

## REVENUE BY REGION (%)



■ India ■ Rest of the World

# HINDUSTAN AERONAUTICS LTD (HAL)

## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Elbit Systems	Dassault Aviation	Thales	BAE Systems	RUAG	Boeing	Airbus	Safran	NPO Saturn	Tumansky	Rolls-Royce	UAC
<b>Military aircraft</b>												
Su-30 MKI* fighter aircraft	●	●										●
MiG-27M* fighter aircraft												●
LCA Tejas fighter aircraft	●											●
Hawk Advanced Jet Trainer* (AJT)			●									
Do-228* maritime patrol aircraft				●								
<b>Military helicopters</b>												
<b>Dhruv</b>												
Chetak and Cheetah*							●					
<b>Unmanned aircraft system</b>												
Skylark* mini-UAS	●											
<b>Modernization projects</b>												
Jaguar (avionics)												
Mirage 2000		●	●									
<b>Structures</b>												
Weapons bay doors (F/A-18, P-8I)						●						
<b>Engines</b>												
AL-31 FP (Su-30MKI)*								●				
R-29B (MiG-27M)*									●			
Adour Mk811 (Jaguar, Hawk)*							●				●	
Artouste MkIII (Cheetah, Chetak)*							●					
Ardiden 1H1 (Dhruv)							●					

\* Built under licence

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Preliminary sales for 2016-2017 up 4%, at INR17,406 crore (~ €2.4bn), a historic peak, helped by licence production of platforms for Indian armed forces and service contracts.
- ▶ Sales target for 2017-2018 set at INR17,900 crore (~ €2.5bn), under terms of a Memorandum of understanding (MoU) between group and Indian Ministry of Defence signed in July 2017.
- ▶ Almost exclusively focused on defence (94% of sales in 2015-2016) but has declared its intention to diversify into civil aerospace, e.g. with RTA-70 regional transport aircraft project.
- ▶ Continues to modernise industrial facilities with start of construction of a new 3-12t helicopters production and test centre in Tumakuru in February 2017.

### Home market

- ▶ Competences mostly acquired from Russian and European suppliers through technology and know-how transfer agreements negotiated under national defence equipment acquisition contracts ("Make in India" policy).
- ▶ Government has set a target to increase local content by 5% by 2018, particularly on HTT-40 trainer aircraft, Light Combat Helicopter (LCH) and Light Utility Helicopter (LUH) programmes.
- ▶ In military helicopters, May 2017 saw first flight of LUH and creation of India Russia Helicopters Ltd. JV (50.5% HAL / 49.5% Russian Helicopters + Rosoboronexport) to produce Ka-226T light helicopters for Indian Air Force (IAF) and Indian Army (but not for Indian Navy, which plans to buy 110 helicopters).
- ▶ In July 2016, delivery of first Tejas Mk1-As to IAF (40 aircraft ordered to date out of a potential total of 120). However, Indian Navy rejected navalised version in January 2017, on the grounds that it was not technically mature.
- ▶ In transport aircraft, two setbacks with abandonment of Indo-Russian Multirole Transport Aircraft (MTA) and Indian Ministry of Defence's rejection of its request to be prime contractor for C295 programme (negotiations with Airbus, teamed with TASL, started in March 2017 for acquisition of 56 aircraft, including 40 to be built locally).

### Export markets

- ▶ Very little export business (3% of sales since 2011-2012). With exception of Dhruv military helicopter (selected by Nepal and Bolivia), exports primarily oriented towards civil aerospace (including subassemblies for Boeing 737 and 777 and Airbus A320).
- ▶ In medium term, combat aircraft export ambitions likely to revolve around light attack version of Hawk 132 trainer in cooperation with BAE Systems or LCA Tejas Mk1-A (presented at Bahrain International Airshow in early 2016) pending arrival of Mk2 version.
- ▶ In military helicopters, LCH being actively promoted in Africa.

### Technology and Innovation

- ▶ R&D spending in 2015-2016 reached INR1,182 crore (~ €159m).
- ▶ Presentation of prototype IMRH twin-engine multi-role helicopter (12t) in May 2017.



## BUSINESS AREAS

Engine manufacturer, systems integrator/equipment supplier

- ▶ Commercial and military aerospace (engines, air and thermal management, electric power, APU, actuation)
- ▶ Avionics, navigation systems and radios
- ▶ NRBC and protection solutions
- ▶ Infrastructures, Energy
- ▶ Equipment for car industry

## GOVERNANCE

Executive Chair David M. Cote  
 President and CEO Darius Adamczyk  
 Chief Financial Officer Thomas A. Szlosek

## OWNERSHIP STRUCTURE

Symbol	HON
Listed on	NYSE
Market Cap (M\$)	105 468

Major Shareholders (as of 30.06.2017)

Vanguard Group Inc.	6,36%
State Street Corp.	5,51%
Morgan Stanley Smith Barney LLC	4,01%
Wellington Management Company LLP	3,06%

## MAIN JOINT VENTURES AND ASSOCIATES

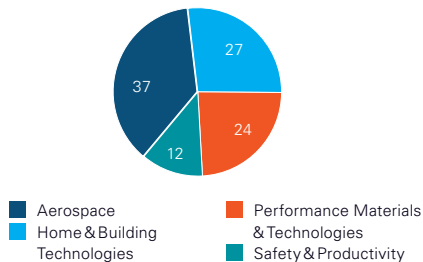
Name	%	Country
ITEC LLC	50%	U.S.
ATEC LLC	50%	U.S.
LHTEC LLC	50%	U.S.
Integrated Guidance Systems LLC	50%	U.S.
Honeywell TAECO Aerospace Co. Ltd	65%	China

## KEY FIGURES (Fiscal year ended: 31.12.2016)

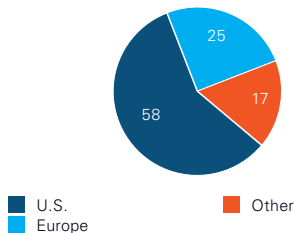
€ millions	2013	2014	2015	2016
Revenue	29 407	30 339	34 773	35 506
Δ (%) / (\$)*	3,69%	3,20%	-4,28%	1,87%
Defence (%)	14%	12%	12%	11%
Export (%)	41%	41%	38%	42%
Operating profit/loss	4 075	4 379	5 936	5 824
Operating Margin	13,86%	14,43%	17,07%	16,40%
Net profit/loss	2 955	3 191	4 367	4 378
Order book	13 273	13 279	14 977	18 096
Employees	131 000	127 000	129 000	131 000

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

## REVENUE BY BUSINESS LINE (%)



## REVENUE BY REGION (%)



## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Rolls-Royce	Lockheed Martin	AIDC	Harris Corp.	NI/IO	General Dynamics	Mku PVT	Taurus	Pratt & Whitney*	KHI	HAL
<b>Engines and Auxiliary Power Units (APU)</b>											
T55 (CH-47)										●	
HPW3000 (via ATEC JV)								●			
TPE331 (MQ-9 Reaper)											●
LTHECT800/CTS800 (Lynx)	●										
F124/F125 (M346, L-159)		●									
36 series APUs (A-10, AH64, UH-60, F/A-18)											
G230 and G250 APUs (F-35, F-22)											
<b>Avionics</b>											
DTM/D control and communication system				●							
Enhanced Ground Proximity Warning System (EGPWS)											
<b>Communication and radar detection systems</b>											
PRIMUS airborne integrated avionics system				●							
<b>NRBC Solutions</b>											
Joint Service Lightweight Standoff Chemical Agent Detector (JSLSCAD)						●					
<b>Ballistic protection</b>											
Goldshield body armor							●	●			
<b>Unmanned aircraft system</b>											
RQ-16 T-Hawk micro air vehicle (MAV) system											
<b>Defence electronics</b>											
Weapons guidance devices	●										

\*United Technologies Corporation (UTC)

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ After a difficult 2015, small (+1.86%) increase in sales in 2016, to \$39.3bn (€35.5bn), essentially due to revenue growth at Home and Building Technologies division (+16%).
- ▶ In aeronautics sector, further decline in defence and space revenues (-7%) on home and export markets, and sale of Honeywell Technology Solutions (HTSI, 3,500 employees) to KBR in August 2016.
- ▶ Under leadership of David Cote, this engine-maker, systems integrator and equipment supplier has become a high-ranked player worldwide, thanks to particularly dynamic external growth strategy involving more than 87 acquisitions over 15 years, including Intelligrated for \$1.5bn (€1.35bn) in August 2016.
- ▶ Growing presence in cybersecurity and Internet of Things, illustrated by creation of new Business Unit dedicated to digital transformation issues, signature of partnership with Palo Alto Networks and acquisition of Nextnine (June 2017).
- ▶ Launch of Honeywell Venture, a \$100m (€92m) fund focused on start-up support and/or acquisitions, in May 2017.

### Home market

- ▶ Home market accounted for 58% of sales in 2016, but only a relatively limited share generated by defence customers (7%, or \$2.7bn, i.e. €2.4bn, in the military aeronautics sector).
- ▶ Historical presence on main U.S. aerospace programmes (engines, avionics, embedded electronics, APU, etc.), including F-35.
- ▶ Sales helped by multi-year contracts for maintenance and modernisation of equipment and platforms in service (Embedded Global Positioning System programme and modernisation of Tinker USAF base, HUMS systems for AH-64 helicopters and Total Integrated Engine Revitalization programme for U.S. Army, including T-55 engine upgrade for CH-47 Chinook).

### Export markets

- ▶ Exports represented 42% of group sales in 2016 (only 8% in military aeronautics segment).
- ▶ Export strategy based on licence production agreements and partnerships in maintenance of engines and equipment in service, particularly in Asia (China is group's leading market, behind U.S., Japan, South Korea and Indonesia).
- ▶ In UK, TALIN system selected by GD UK in November 2016 to equip AJAX armoured vehicles.
- ▶ Consolidation of partnership with IAI (Israel) following signature of an agreement on design of GPS anti-jam navigation system in July 2017, one year after launching cooperation on joint development of "Sense and Avoid" capability for Heron drones.

### Technology and Innovation

- ▶ R&D financing amounted to \$3.1bn (€2.8bn) in 2016.
- ▶ Work focused on on-board energy management, new-generation turbine (in partnership with Pratt & Whitney), inertial instruments, virtual reality, cybersecurity and ceramic matrix composites (CMC).



## BUSINESS AREAS

Systems integrator/equipment supplier

- ▶ Defence and security (air defence, radar, UAS, surveillance systems, C4I)
- ▶ Transportation
- ▶ Energy and Industry
- ▶ Financial services
- ▶ Public and Health sectors
- ▶ Telecom and Media

## GOVERNANCE

Chairman and CEO

F. Abril-Martorell

Chief Financial Officer

J. Lázaro Rodríguez

## OWNERSHIP STRUCTURE

Symbol	IDR
Listed on	SIBE
Market Cap (M€)	2 228

Major Shareholders (as of 30.06.2017)

SEPI (Spanish State)	18,70%
Corporación Financiera Alba	10,50%
Fidelity Management & Research LLC	9,40%
Norges Bank	3,50%

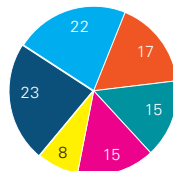
## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Inmize Sistemas S.L.	50%	Spain
Euromids S.A.S.	25%	France
UTE Indra-Eurocopter	63%	Spain
SAES Capital S.A.	49%	Spain
Eurofighter Simulation System GmbH	26%	Germany

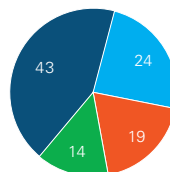
## KEY FIGURES (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	2 914	2 938	2 850	2 709
Δ (%)	-0,91%	0,82%	-2,98%	-4,95%
Defence (%)	17%	17%	19%	22%
Export (%)	61%	61%	57%	57%
Operating profit/loss	198	-42	-641	162
Operating Margin	6,80%	-1,45%	-22,50%	5,96%
Net profit/loss	117	-90	-642	70
Order book	3 493	3 473	3 193	3 129
Employees	38 548	39 130	37 060	34 294

## REVENUE BY BUSINESS LINE (%)



## REVENUE BY REGION (%)





## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Leonardo	Lockheed Martin	Thales	CyberAero	IAI	Airbus	Safran	Diehl Defence	Saab AB	Aries	Navantia
<b>C2 systems</b>											
Amphibious Operations Command and Control Information System (AOCCIS)											
<b>UAS and air collision avoidance system</b>											
Pelicano VTOL UAS				●							
PASI Programme (Searcher MkIII UAS)					●	●					
MIDCAS system	●	●				●	●	●	●		
ATLANTE tactical UAS						●				●	
<b>Optronics and vetronics</b>											
Fire control systems and sights (Armoured vehicles and MBT)											
<b>Defence electronics</b>											
RF ALQ-500 ECM system (spanish F/A-18)											
ALR-400 Radar warning receiver (A400M, F/A-18, NH-90)						●					
<b>Simulation solutions</b>											
EF-2000 (Eurofighter)											
S-800 (S-80 submarine)											●
<b>Radars and sonars</b>											
3D Lanza radar family											
LWHP53 sonar		●									
HORUS multimode airborne radar			●								
<b>Communication systems</b>											
MANPACK II satellite communications remote terminal											

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Decline in sales for the second year running, to €2.7bn (-4.9%) due to slowdown in civil divisions (which accounted for 81% of sales in 2016).
- ▶ Good performance of Defence & Security activities (€599m, +8%), helped by Spanish defence ministry orders for defence electronics, and export sales in airborne systems and C4ISR.
- ▶ New strategic plan announced in June 2017 to perpetuate the restructuring efforts launched under the previous plan in 2015, and consolidate the Defence & Security division thanks to improvements in marketing strategy, HR policy and production management.
- ▶ Following the February 2016 creation of the Minsait Business Unit dedicated to cyber security activities, new services offered in air traffic management, along with multiple new partnerships (e.g. with FireEye and Huawei).

### Home market

- ▶ Still strongly dependent on national orders (43% of sales in 2016), though this has been steadily falling since 2011 (57% at that time).
- ▶ Along with Navantia and GDELS, one of the main beneficiaries of the Spanish armed forces equipment modernisation programme – over the past two years, contract awards related to F110 frigates, 8x8 VCR vehicles, NH90 and H135 simulators, and modernisation of the Leopard 2 main battle tank fleet (joint offer with Thales for upgrade of the Lince BMS system).
- ▶ Prototype space debris surveillance radar developed by Indra Espacio SA ultimately selected by ESA in September 2016 (€17m contract).
- ▶ Signature of a Master Agreement with the defence ministry in March 2016, making the electronics firm the primary maintenance provider for terminals used with Spanish military telecommunications satellites (SECOMSAT).

### Export markets

- ▶ 57% of group sales in 2016 from exports (mainly on the civil side), stable vs. 2015, which was marked by difficulties on the Brazilian market.
- ▶ Historical positions in China, India, Malaysia and the Philippines. Extension of naval equipment activities in Asia, including South Korea (systems for South Korea's KSS-III submarines) and Indonesia (equipment for Type 209 submarines, modernisation of the KRI-362 Malahayati corvette combat system in partnership with Navantia).
- ▶ Good prospects on the submarine market linked to the modernisation of MRBR-800 electronic support measures systems installed on German and Italian Type 212 A submarines.
- ▶ Reinforced presence in Latin America, with the creation of a dedicated cyber security operations centre (iCSOC) in Colombia (operational in 2016), and in Africa, with a local office opened in Algeria (2015).

### Technology and Innovation

- ▶ Increased funding for R&D in 2016 (+7%, €163m), representing 6% of sales.
- ▶ Vast majority of R&D work performed in cooperative programmes with foreign partners (e.g. Lockheed Martin for development of an S-band radar system) or academia (Polytechnic University of Madrid for the PROTEC F110 sensor programme).



# ISRAEL AEROSPACE INDUSTRIES (IAI)

## BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Commercial and military aircraft
- ▶ Unmanned aircraft systems
- ▶ Space systems and C4ISR systems
- ▶ Theater defence
- ▶ Cyberdefence
- ▶ Naval systems and platform

## GOVERNANCE

Chairman	Yair Shamir
President and CEO	Joseph Weiss
Chief Financial Officer	Eyal Younian

## OWNERSHIP STRUCTURE

Symbol	ARSPB1
Listed on	TASE
Market Cap (M NIS)	En bourse mais non cotée

Major Shareholders (as of 30.06.2017)

Israeli State	100%
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## MAIN JOINT VENTURES AND ASSOCIATES

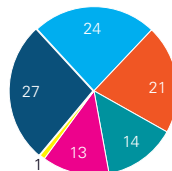
Name	%	Country
EAE Aerospace Solutions	50%	Brazil
D.T.S. Ltda.	50%	Chile
Tiltan Systems Engineering	30%	Israel
Pioneer UAV Inc.	50%	U.S.
HELA Systems Pvt Ltd	26%	India

## KEY FIGURES (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	2 742	2 881	3 342	3 232
Δ (%)/[€]*	9,11%	5,08%	-3,11%	-3,53%
Defence (%)	73%	73%	75%	73%
Export (%)	73%	78%	78%	77%
Operating profit/loss	60	107	42	-95
Operating Margin	2,31%	3,68%	1,27%	-2,94%
Net profit/loss	56	20	8	-99
Order book	7 891	7 495	7 807	8 538
Employees	16 115	16 008	15 734	14 152

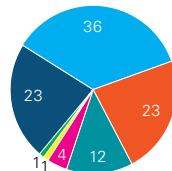
\* Variation based on the revenue in local currency. See €/\$ exchange rates p. 7.

## REVENUE BY BUSINESS LINE (%)



■ Missiles & Space	■ Bedek Aviation
■ ELTA Systems	■ Civil aircraft
■ Military aircraft	■ Other

## REVENUE BY REGION (%)



■ Israel	■ South America
■ Asia	■ Africa
■ North America	■ Australia
■ Europe	

# ISRAEL AEROSPACE INDUSTRIES (IAI)

## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Airbus	Boeing	Indra Sistemas	DRDO (India)*	Lockheed Martin	Rheinmetall Defence	MDA Corp	UZGA	Leonardo	Rafael	HAL
<b>ISR systems</b>											
POP electro-optical stabilized payload											
<b>Space systems</b>											
OPSTAT3000 optical reconnaissance satellite								●			
<b>Unmanned aircraft systems</b>											
Heron 1 MALE UAS	●				●	●					
Searcher Mk III tactical UAS			●				●				
Heron TP MALE UAS	●		●								
Naval Rotary UAV (NRUAV)											●
<b>Theater defence</b>											
Arrow (1/2/3) anti tactical ballistic missiles (ATBM) defence system		●									
ELM-2084-MMR radar					●						
ELW-2090 AEW&C system (IAI Phalcon)											
LR-SAM (Barak 8) missile defence system				●						●	
<b>Naval systems</b>											
SuperDvora Mk.3 patrol boat											
ELM-2248 MF-STAR radar											
<b>Land systems</b>											
MGLGB advanced laser/GPS guided gliding bomb											
Green Rock/Wind Shield C-RAM radar											
<b>Military aircraft</b>											
Modernization project (C-130 avionics)				●							

\* DRDO: Defence Research and Development Organization

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Decline in sales for second year running, -3% in 2015 and -3.5% in 2016 (to \$3.6bn, ~ €3.2bn), as a result of downturn at Elta Systems unit (-30%) and weaker export performance, particularly in Asia (-9%).
- ▶ Aims to consolidate its Civil Aviation unit (strategic agreement signed with Boeing in January 2016 to produce empennage leading edges for future 777X, installation of MRO centre in China) and develop activities in space, radar and robotic solutions.
- ▶ Another priority to reinforce competences in cybersecurity (\$100m sales in 2016) through acquisitions and partnerships (acquisition of Ness Technologies' TSG division in January 2016, investment in Inpedio BV, Holland, and Cytrox, Hungary, in June 2017, partnership with Formula Systems).

### Home market

- ▶ Leading Israeli aerospace and defence group. 23% of sales on home market in 2016.
- ▶ Major cyber contract award in June 2017, in partnership with TSG and Leidos, for centralisation of Israeli Army IT infrastructure (currently distributed across a dozen sites).
- ▶ Successful integration of first ALPHA ELM-2258 early warning radar on Sa'ar 4.5 missile ship (two other systems to be installed by end-2017 out of a total order for 11 units).
- ▶ Air Force announced order for Heron 1 (Shoval) naval UAVs in May 2017 which will ultimately replace Sea Scan maritime patrol aircraft.
- ▶ Following successful tests in April 2016, start of full-scale production of C4 systems for 33 F-35I Adir combat aircraft (Israeli version of F-35, first aircraft delivered end-2016) and an additional order from Lockheed Martin in February 2016 for F-35A wing sets.

### Export markets

- ▶ Historically focused on exports (77% of sales in 2016), mainly to Asia (36%), North America (23%) and Europe (12%).
- ▶ New regulations introduced by Israeli authorities in June 2017 to allow Israeli companies to team up on certain export markets (particularly UAVs) instead of competing with each other.
- ▶ In view of German's one-year extension of leasing contract for Heron UAVs (€600m) and future market prospects, decision to open office in Berlin and close French office.
- ▶ In February 2017, launch of a new export version of its flagship Heron TP, designated Heron TP XP, with modified characteristics in order to comply with MTCR category II (like Heron 1) and facilitate acquisition by countries like India.
- ▶ Confirmed increase in cyber export sales in Asia and South America (IC3 consortium led by IAI selected in 2017 to build national cybersecurity centre).
- ▶ In India, major contracts awarded in 2016 and 2017 (radars, UAVs, surveillance aircraft and missile systems) and new partnerships signed during Indian Prime Minister's visit to Israel in July 2017 (Elcom Systems, Dynamic Technologies, Wipro Enterprises, Kalyani Group).

### Technology and Innovation

- ▶ R&D budget down 8%, to \$165m (~ €149m), i.e. 4.6% of sales in 2016.



## BUSINESS AREAS

Platform manufacturer and systems integrator  
Defence branch of CNH Industrial N.V.

- ▶ Military vehicles (light multirole vehicles, armoured fighting vehicles, main battle tank)
- ▶ Civil security vehicles

## GOVERNANCE

Iveco Brand President	P. Lahutte
CEO of Iveco Specialty Vehicles	A. Nasi
CEO of Iveco Defence Vehicles	V. Giannelli

## OWNERSHIP STRUCTURE\*

Symbol	CNHI
Listed on	NYSE et Borsa Italiana
Market Cap (M€)	13 600

Major Shareholders (as of 30.06.2017)

Exor SpA	26,89%
Harris Associates LP	9,40%
Franklin Mutual Advisers LLC	2,65%
Southeastern Asset Manager Inc.	1,84%

\* CNH Industrial.

## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Consorzio Iveco Oto-Melara	50%	Italy

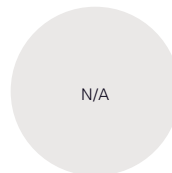
## KEY FIGURES (Fiscal year ended: 31.12.2016)\*

€ millions	2013	2014	2015	2016
Revenue	8 619	8 196	8 600	8 630
Δ (%)/\$**	-	-3,18%	-12,36%	0,12%
Defence (%)	N/A	N/A	N/A	N/A
Export (%)	N/A	N/A	N/A	N/A
Operating profit/loss	101	22	255	301
Operating Margin	1,15%	0,27%	2,97%	3,49%
Net profit/loss	N/A	N/A	N/A	N/A
Order book	N/A	N/A	N/A	N/A
Employees	27 011	25 881	24 783	23 882

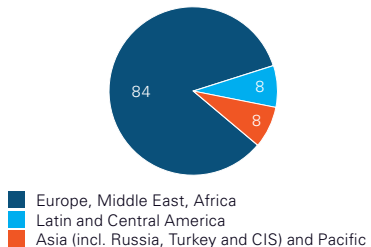
\* Key figures of the Commercial Vehicles Branch.

\*\* Variation based on the revenue in local currency.  
See €/€ exchange rates p.7.

## REVENUE BY BUSINESS LINE (%) (COMMERCIAL VEHICLES BRANCH)



## REVENUE BY REGION (%) (COMMERCIAL VEHICLES BRANCH)



## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Leonardo	KMW*	Lohr - Soframe	Cristanini	BAE Systems	FPT Industrial
<b>Main battle tank</b>						
Ariete	●					
<b>Armoured fighting vehicles</b>						
Centauro II and Freccia armoured fighting vehicles	●					
Superav 8x8 amphibious armoured personnel carrier					●	
PUMA (4x4 and 6x6) light wheeled armoured fighting vehicle family	●					
PzH 2000 155mm self-propelled howitzer	●	●				
MPV 4x4 medium protected vehicle		●				
VTM 4x4 light vehicle		●				
<b>Tactical and logistic wheeled vehicles</b>						
PPT 8x8 special high-mobility military vehicle			●			
M1250.70T WM 8x8 logistic vehicle						●
<b>Light multirole vehicles</b>						
LMV				●	●	
LMV 2						

\* KNDS

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ As of October 2013, Iveco Defence Vehicles consolidated into Iveco Specialty Vehicles BU, which is attached to Commercial Vehicles division of CNH Industrial conglomerate (following merger between CNH Global and FIAT Industrial).
- ▶ Commercial Vehicles sales relatively stable, at \$9.5bn (€8.6bn) in 2016.
- ▶ In special purpose vehicles segment (defence and civil protection), 2016 marked by delivery of 2,500 vehicles (1.7% of total vehicles delivered in this segment), a 37.5% decline from the previous year.

### Home market

- ▶ In context of Italian armed forces modernisation, renewal of vehicle product line in partnership with Germany's KMW (KNDS) and Italy's Oto Melara (Leonardo).
- ▶ Continued development of new version of Centauro armoured vehicle, Centauro II, in partnership with Leonardo (planned acquisition of first tranche of 50 vehicles, including 11 pre-production units, out of target total of 150 units by 2023, for €530m).
- ▶ Contract for development and production of 381 Freccia VBM 8x8 armoured vehicles (derivative of Centauro coproduced with Oto Melara) awarded in December 2014, but subsequently affected by strong budget pressures (deliveries planned from 2018 to 2024).

### Export markets

- ▶ Strong presence historically in Latin America, particularly in Brazil (Iveco do Brasil subsidiary) following selection of its VBTP-MR programme bid (Guarani 6x6 wheeled armoured vehicles) in 2009, with a new batch of 1,580 vehicles awarded in November 2016.
- ▶ Consolidation of positions on Brazilian market, following award of VBMT-LR contract in April 2016 (target 186 units) thanks to bid based on LMV 4x4 armoured vehicle, but decision by authorities (July 2017) to push back launch of VBR-MR programme for development of 8x8 armoured reconnaissance vehicle.
- ▶ In U.S., joint bid with BAE Systems (based on SuperAV 8x8) preselected in November 2015 for Engineering, Manufacturing & Development (EMD) phase of U.S. Marine Corps ACV 1.1 Amphibious Combat Vehicle programme (planned acquisition of 204 units through 2020) covering production of 16 prototypes (first prototype presented in December 2016).
- ▶ In military logistics trucks, order for 400 vehicles for Swiss armed forces in May 2017, to be delivered in 2017-2021 (linked to framework contract awarded in November 2015).

### Technology and Innovation

- ▶ Presentation of following new vehicles at Eurosatory 2016: LMV2 4x4 light armoured vehicle (improved engine and payload capacity, modular armour), Centauro II 8x8 armoured vehicle with 120mm cannon, M70.20 WM 4x4 logistics vehicle (successor to M40.10 WM series) and M1250.70T WM 8x8 heavy logistics truck produced by Astra Veicoli Industriali subsidiary.





## BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Main battle tanks, armoured vehicles, infantry fighting vehicles
- ▶ Weapon systems, artillery systems, ammunition
- ▶ Mechanical and hydraulic equipment
- ▶ Electronic equipment
- ▶ Optical and vision systems for armoured vehicles
- ▶ Robotics
- ▶ NRBC solutions
- ▶ Simulation and training solutions

## GOVERNANCE

Chairman of the Board	Christian Jourquin
Co-President of the Directorate	Stéphane Mayer
Co-President of the Directorate	Frank Haun

## OWNERSHIP STRUCTURE

Symbol	
Listed on	Non Listed Company
Market Cap (M€)	

Major Shareholders (as of 30.06.2017)

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

## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
------	---	---------

### NEXTER

CTA International	50%	France
TNS-MARS	37,5%	France
Cime Bocuze	34%	France

### KMW

ARTEC GmbH	36%	Germany
PSM GmbH	50%	Germany

## KEY FIGURES (Fiscal year ended: 31.12.2016)\*

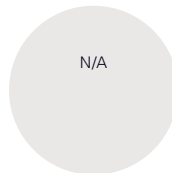
€ millions	2013	2014	2015	2016
Revenue	-	-	-	2 600
Δ (%)	-	-	-	-
Defence (%)	-	-	-	100%
Export (%)	-	-	-	N/A
Operating profit/loss	-	-	-	N/A
Operating Margin	-	-	-	N/A
Net profit/loss	-	-	-	N/A
Order book	-	-	-	8 600
Employees	-	-	-	6 800

\* New entity combining KMW and NEXTER Defense Systems officially formed in December 2015.

## REVENUE BY BUSINESS LINE (%)



## REVENUE BY REGION (%)



# KMW + NEXTER DEFENSE SYSTEMS (KNDS)

## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

- NEXTER
- KMW

	Rheinmetall Defence	BAE Systems	Thales	Safran	Diehl Defence	Zodiac Aerospace	RTD *	General Dynamics	JV Iveco-Oto Melara	METKA	FNSS
<b>Armoured vehicles</b>											
<span style="color: green;">■</span> Leclerc main battle tank		●	●								
<span style="color: green;">■</span> VBCI armoured infantry fighting vehicle						●					
<span style="color: green;">■</span> Griffon VBMR multirole armoured vehicle		●				●					
<span style="color: green;">■</span> Jaguar EBRC reconnaissance and combat armoured vehicle		●				●					
<span style="color: blue;">■</span> Leopard 2 main battle tank	●						●		●		
<span style="color: blue;">■</span> Boxer 8x8 multirole armoured vehicle	●										
<span style="color: blue;">■</span> Puma armoured infantry fighting vehicle	●										
<span style="color: blue;">■</span> Fennek 4x4 armoured vehicle											●
<b>Weapon systems and artillery systems</b>											
<span style="color: green;">■</span> 40mm Cased Telescoped Armament System (40CTAS)		●									
<span style="color: green;">■</span> CAESAR 155mm self-propelled gun-howitzer						●					
<span style="color: green;">■</span> ARX20 remote controlled weapon station											
<span style="color: blue;">■</span> PzH 2000 155mm self-propelled howitzer	●								●		
<span style="color: blue;">■</span> Donar 155 mm / L52 howitzer							●				
<span style="color: blue;">■</span> FLW (100, 200 and 500) RCWS											
<b>Ammunition</b>											
<span style="color: green;">■</span> SPACIDO course correction system**		●		●	●						
<span style="color: green;">■</span> 20mm, 25mm and 30mm											
<span style="color: green;">■</span> 90mm, 105mm and 120mm											
<span style="color: green;">■</span> BONUS 155mm		●									

\* Volvo Group

\*\* Cooperation with Junghans, a JV between Thales and Diehl Defence

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Contractual documents formalising strategic alliance between KMW and Nexter Systems signed on 29th July 2015, culmination of one year of negotiations (first framework agreement signed in July 2014), marking the creation of a Franco-German leader in land armaments and munition technologies.
- ▶ New entity combining KMW and Nexter Defense Systems (KNDS) officially formed in December 2015 with sales of around €2bn, order book of €9bn and more than 6,000 employees.
- ▶ KNDS one of the candidates to acquire Volvo Group's military vehicle division (comprising Panhard, Renault Trucks Defense, Mack Defense and Volvo Defense brands; ~ 1,300 employees), but divestment process ultimately put on hold in October 2017 as offers deemed inadequate.

### Home market (France, Germany)

- ▶ Under Scorpion programme to renew French Army combat capacities, French Ministry of Armed Forces awarded in May 2017 ad hoc consortium of RTD, KNDS/Nexter and Thales contract for first 319 VBMR multi-role armoured vehicles and first 20 EBRC armoured reconnaissance and combat vehicles.
- ▶ In Germany, 2017 marked by award of upgrade contract for 100 Leopard tanks, contract to upgrade 246 BOXER armoured fighting vehicles to latest A2 standard (KMW in charge of work on 208 vehicles between 2018 and 2023), along with contract to upgrade 30 FENNEK reconnaissance vehicles to JFST standard.

### Export markets

- ▶ New successes in first half 2017 for CAESAR 8x8 artillery system in Indonesia (18 systems, in addition to the 36 already delivered under first contract in 2012) and Denmark (15 systems + 6 on option) and for NARWHAL remotely operated 20mm gun turret, selected by Albanian Navy (four systems for STAN 4207 patrol vessels).
- ▶ In Brazil, integrated logistics support contract awarded in May 2017 for Leopard 1A5BR, GEPARD 1A2 SPAAG, Leopard 1BR and associated simulation systems (€60m over 2017-2027); work performed by local subsidiary KMW do Brasil Sistemas de Defesa.
- ▶ Netherlands became 17th customer for LEGUAN bridge layer system and 6th user to mount the system on Leopard 2 chassis, following contract for five systems awarded at end of 2016.
- ▶ New opportunities linked to French Scorpion programme, given Belgium's stated desire to join the programme (June 2017) and acquire 60 medium combat vehicles and 417 light combat vehicles (intergovernmental agreement to be signed in 2018).
- ▶ Export prospects for TITUS multi-role armoured vehicle (two contracts under negotiation in Czech Republic and a Middle East state), for 8x8 BOXER and VBCI (under UK's Mechanized Infantry Vehicle-MIV programme); also prospects for CAESAR howitzer and 20-125mm munitions.

### Technology and Innovation

- ▶ Initial discussions started concerning future preliminary studies of next-generation main battle tank concept (to replace upgraded Leclercs and Leopard 2s) and future artillery system.
- ▶ In unmanned ground vehicles, extension of robot product line developed by Nexter Robotics, with presentation in 2017 of heavy version of NERVA LG, NERVA LGH (weight 12kg, enhanced mobility and payload capacity).



## BUSINESS AREAS

Systems integrator/equipment supplier

- ▶ Weapon systems, missile defence
- ▶ Naval systems and defence systems (turrets and CMS)
- ▶ C4ISR
- ▶ Space and aircraft systems (structures, propulsion)

## GOVERNANCE

Chairman of the Board E. Reiten  
 President and CEO G. Håøy  
 Chief Financial Officer G. Skalleberg Ingerø

## OWNERSHIP STRUCTURE

Symbol KOG  
 Listed on Oslo Stock Exchange  
 Market Cap (M NOK) 15 540

Major Shareholders (as of 30.07.2017)

Norwegian State	50,00%
Arendals Fossekompani Asa	7,96%
Folketrygdfondet	6,53%
MP Pensjon PK	3,54%

## MAIN JOINT VENTURES AND ASSOCIATES

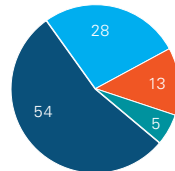
Name	%	Country
Kongsberg Satellite Services AS	50%	Norway
HKV Joint Venture	50%	Norway
Patria Oyj	49,9%	Norway

## KEY FIGURES (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	2 091	1 989	1 903	1 705
Δ (%) [NOK] *	4,29%	1,78%	2,52%	-6,97%
Defence (%)	39%	35%	34%	41%
Export (%)	76%	77%	83%	82%
Operating profit/loss	213	151	105	74
Operating Margin	10,16%	7,57%	5,54%	4,37%
Net profit/loss	157	105	84	70
Order book	1 876	2 325	2 041	1 861
Employees	7 493	7 726	7 688	7 159

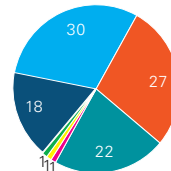
\* Variation based on the revenue in local currency. See €/NOK exchange rates p.7.

## REVENUE BY BUSINESS LINE (%)



■ Kongsberg Maritime  
 ■ Kongsberg Defence Systems  
 ■ Kongsberg Protech Systems  
 ■ Other

## REVENUE BY REGION (%)



■ Norway  
 ■ North America  
 ■ Asia  
 ■ Europe  
 ■ Australia  
 ■ South America  
 ■ Africa

## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Thales	Nammo	Raytheon	Northrop Grumman	BAE Systems	Rheinmetall Defence	Babcock	Magellan Aerospace	Orbital ATK	PGZ
<b>Defence systems</b>										
PROTECTOR remote weapon station	●				●			●		
<b>Missile systems</b>										
Penguin anti-ship missile	●	●								
Naval Strike Missile (NSM)		●	●			●			●	
Joint Strike Missile (JSM)			●	●						
2,75" (SAL or GPS) guided rocket							●			
<b>Air defence systems</b>										
NASAMS advanced surface-to-air missile system			●							
HAWK XXI medium range surface-to-air missile system			●							
<b>C4ISR</b>										
Tactical network solutions (FDC, BNL, NAN)			●							
AGS System Master Archival/Retrieval Facility Information (SMARF)				●						
C4I cortex system										
<b>Naval systems</b>										
MCM C2 tactical system										
PROTEUS submarine command team trainer			●							
MSI-90U Mk2 combat management system for submarine										
<b>Space systems</b>										
Ariane 5 booster attachment and release mechanism (DAAV/DAAR)										

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Sales down 7% in 2016, to NOK15.8bn (€1.7bn) as a result of downturn in Kongsberg Maritime division, hit by difficulties in offshore market.
- ▶ Defence activities accounted for 41% of sales in 2016, thanks to solid revenues at Kongsberg Defence Systems (+4.5%) and Kongsberg Protech Systems (+18%); these two branches merged to form Kongsberg Defence & Aerospace (KDA) in October 2017.
- ▶ Ambitious target to achieve 10% annual growth by 2021 through an extended range of solutions and a more aggressive export strategy.
- ▶ In May 2016, acquired 49.9% stake in Patria (long-term strategic partner) from State of Finland, making Kongsberg a key player in Scandinavian DTIB.
- ▶ Creation of Kongsberg Digital (KD) to achieve its ambitions in software and simulation sectors.

### Home market

- ▶ Home market down to only 18% of group sales in 2016.
- ▶ Positive prospects in view of strong increase in equipment expenditure in 2020 timeframe (new NASAMS battery, modernisation of armoured combat vehicles, acquisition of 52 F-35 fighter aircraft and 4 submarines, replacement of maritime patrol aircraft).
- ▶ Following February 2017 announcement of strategic partnership between Norway and Germany for joint acquisition of 212NG-type submarines (4+2, contract to be signed by 2019), creation of combat system JV with German firms TKMS and Atlas Elektronik.
- ▶ As part of strategic partnership with Germany, cooperation extended to missile sector, particularly Joint Strike Missile programme (JSM, currently in testing), with orders expected from German Navy.
- ▶ Also in 2016 and 2017, awarded contract to supply air defence system to Army, contract to supply four HUGIN autonomous underwater vehicles (AUVs), as well as fleet upgrade contracts (Fridtjof Nansen-class frigates and Ula-class submarines).
- ▶ Partner of Lockheed Martin and Northrop Grumman on F-35 programme for which it is an equipment supplier (fuselage and main landing gear parts) and missile manufacturer (JSM).

### Export markets

- ▶ An export-focused company (82% of sales in 2016), with relatively balanced breakdown between Europe (22%, not including Norway), Asia (27%) and North America (30%)
- ▶ World leader in remote weapon stations (PROTECTOR product line, more than 18,500 turrets sold to 18 countries, 800 turrets delivered in 2016).
- ▶ Long-term partnership signed with Leonardo (Italy) in December 2016, covering MRO on NH90 and AW101 helicopters operated by Norway, Finland, Denmark and Canada.

### Technology and Innovation

- ▶ R&D spending of NOK793m (~ €10m) in 2016, i.e. 5% of sales.



# KOREA AEROSPACE INDUSTRIES (KAI)

## BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Commercial aircraft (structures and MRO)
- ▶ Military aircraft (fighter aircraft, trainer, MALE UAV, helicopters)
- ▶ Space (satellite)

## GOVERNANCE

Chairman and CEO

Sung-Yong Ha

## KEY FIGURES (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	1 387	1 656	2 309	2 415
Δ (%)/[KRW]*	31,39%	14,81%	25,32%	6,88%
Defence (%)	75%	53%	67%	64%
Export (%)	34%	46%	62%	56%
Operating profit/loss	85	115	227	245
Operating Margin	6,15%	6,97%	9,85%	10,16%
Net profit/loss	62	79	144	209
Order book	8 283	N/A	7 313	7 858
Employees	3 144	3 321	3 512	3 905

\* Variation based on the revenue in local currency.  
See €/KRW exchange rates p.7.

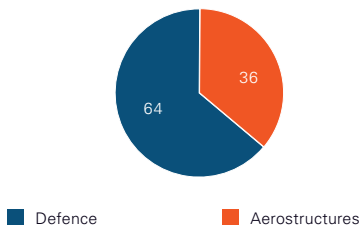
## OWNERSHIP STRUCTURE

Symbol	047810
Listed on	KRX
Market Cap (Mds KRW)	3 850

### Major Shareholders (as of 31.12.2016)

The Korea Development Bank	19,00%
National Pension	8,30%
The Export-Import Bank of Korea	7,70%
Hanwha Techwin	6,00%

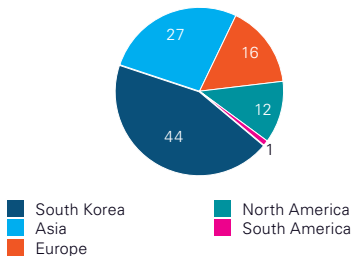
## REVENUE BY BUSINESS LINE (%)



## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
KAI-Airbus Helicopters	51%	South Korea
T-50 International Company (TFIC)	50%	U.S.
S&K Aerospace	29%	South Korea

## REVENUE BY REGION (%)



# KOREA AEROSPACE INDUSTRIES (KAI)

## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Lockheed Martin	Airbus	PT Dirgantara Indonesia	Bell Helicopter	Boeing	Hanwha Techwin	Korean Air	Doowon HI	TAI	SEMAN	CAE
<b>Military aircraft and aerostructures</b>											
KFX fighter aircraft	●	●									
T-50 trainer aircraft	●										
TA-50 and FA-50 light attack aircraft											
KT-1 basic trainer aircraft								●			
KA-1 light attack aircraft									●		
Aerostructures (F-15K, AH-64D, A-10, P-8, F-16)	●		●	●							
<b>Military helicopters</b>											
KUH-1 Surion twin-engine transport helicopter (9t)		●									
LAH light combat helicopter (4,5t)		●									
<b>Tactical UAS</b>											
RQ-101 Night Intruder 300 (ISR missions)											
<b>Simulation solutions</b>											
T/TA-50											●
FA-50											
KUH Surion											
<b>Satellite</b>											
KOMPSAT multi-purpose satellite		●			●	●	●				
<b>Modernization and MRO</b>											
P-3CK maritime patrol aircraft	●										
E-737 AEW&C aircraft				●							



## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Sales up 6.9% in 2016, to KRW3,101bn (~ €2,4bn), another historic peak after three record years.
- ▶ Sales doubled since 2012, boosted by Republic of Korea Air Force modernisation efforts (T-50/F-50 trainer/ attack aircraft, KUH Surion helicopter and KT-1 trainer) and by civil activities (aerospace equipment, which accounted for 36% of sales in 2016).
- ▶ 2016 marked by continued implementation of performance plan aimed at achieving sales of KRW10,000bn (~ €7,6bn) by 2020 and a place among world's Top 15 aerospace companies.
- ▶ Still looking for a domestic industrial partner, following decision by Hyundai Motor, one of the founding members and a core shareholder in KAI, to sell its share (4.97%) in November 2016, just a few months after Hanwha Techwin sold half of its stake.
- ▶ Expanded activities in MRO sector, illustrated by start of construction in July 2016 of a new dedicated site in Saecheon (due to be operational by 2018; an investment of KRW510bn, or ~ €397m), and in production of composite aerostructures (fuselage, wings, rotor blades), in response to acceleration of KF-X and LAH/LCH programmes.

### Home market

- ▶ Increasing technical and industrial competence thanks to domestic orders (44% of sales in 2016) and government's desire to see country fully assume role among main producers and exporters of defence equipment.
- ▶ Prime contractor for KF-X new-generation combat aircraft programme (120 units to be delivered between 2026 and 2032). First contract awarded by the Defense Acquisition Program Administration (DAPA) at end of 2015 for construction of first prototypes; start of design phase expected in 2017. Programme being conducted in partnership with Lockheed Martin (U.S.) and PT Dirgantara (Indonesia).
- ▶ As part of acquisition of 40 U.S. F-35 combat aircraft, offset agreements totally oriented towards supporting KF-X programme (flight control system, avionics, systems integration, materials, weapon systems).
- ▶ In military helicopters, two new DAPA contracts at end of 2016 for production of Surion (3rd batch of 70 units) and its navalised variant (30 units) for a total of KRW2,193bn (~ €1.7bn).

### Export markets

- ▶ Good export performance (particularly in Asia), even though international sales down slightly in 2016 (56% of sales, compared with 62% previous year).
- ▶ Exports primarily focused on T-50 light trainer (sold to Indonesia, Iraq and Thailand) and F-50 attack variant (Philippines and possibly Argentina), as well as KT-1 (Turkey, Peru, Senegal).
- ▶ Joint offer with Lockheed Martin for future USAF T-X trainer programme (~ 350 units), based on modernised version of T-50, T-50A (first flights in July 2016; first assembly line established at Greenville, South Carolina).

### Technology and Innovation

- ▶ Dynamic R&D activities in space sector (contract with Korea Aerospace Research Institute, KARI, in May 2017 to develop platform for multi-mission satellite n°7).



## BUSINESS AREAS

Systems integrator/equipment supplier

- ▶ Aerospace systems (integrated solutions, MRO, modernization, ISR aircraft)
- ▶ Electronic systems (EW, optronics, radar systems, simulation, acoustic systems, UAS)
- ▶ Communication systems (terminals, radios, data link solutions, antennas, semiconductors)
- ▶ Homeland security (cybersecurity, IT solutions, intelligence systems)

## GOVERNANCE

Chairman of the Board  
Chief Executive Officer  
Chief Financial Officer

Michael T. Strianese  
Christopher E. Kubasik  
Ralph G. D'Ambrosio

## OWNERSHIP STRUCTURE

Symbol	LLL
Listed on	NYSE
Market Cap (M\$)	13 937

Major Shareholders (as of 30.06.2017)

Vanguard Group Inc.	10,43%
ClearBridge Advisors LLC	7,73%
State Street Corp.	4,72%
Fidelity International Ltd	3,49%

## MAIN JOINT VENTURES AND ASSOCIATES

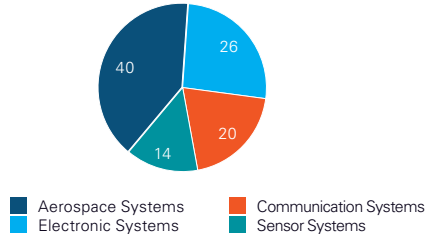
Name	%	Country
IBL LLC	33%	U.S.
Aviation Communication & Surveillance Systems LLC (ACSS)	70%	U.S.
AYESAS	40%	Turkey
Global Military Aircraft Systems LLC (GMAS)	49%	U.S.

## KEY FIGURES (Fiscal year ended: 31.12.2016)

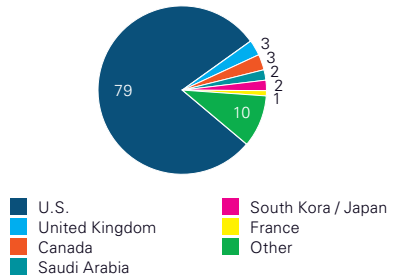
€ millions	2013	2014	2015	2016
Revenue	9 504	9 126	9 433	9 496
Δ (%) / (\$) *	-3,70%	-3,95%	-13,68%	0,43%
Defence (%)	82%	81%	84%	84%
Export (%)	22%	24%	24%	22%
Operating profit/loss	913	817	428	911
Operating Margin	9,60%	8,95%	4,54%	9,59%
Net profit/loss	572	510	-203	654
Order book	7 505	8 450	7 737	8 439
Employees	48 000	45 000	38 000	38 000

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

## REVENUE BY BUSINESS LINE (%)



## REVENUE BY REGION (%)



# L-3 TECHNOLOGIES (FORMERLY L-3 COMMUNICATIONS)

## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Boeing	Rockwell Collins	BAE Systems	Northrop	General Atomics	Lockheed Martin	Textron	Inmarsat	Elbit Systems
<b>Aerospace systems</b>									
RC-12W/SPYDR and SPYDR II tactical aircraft			●			●			
RC-135 Airseeker ISR/SIGINT aircraft									
Block I modification for the E-6B Mercury aircraft	●								
EC-130H USAF programme (systems integration and maintenance)	●	●			●				
<b>Electronic systems</b>									
Avionic systems (navigation products, aviation recorders, TCAS, electrical distribution)	●		●	●	●				
EO/IR sensor systems (imaging and targeting systems)			●	●	●			●	
MX-series electro-optical payload									
Sonar systems									
Mast systems									
<b>Unmanned systems</b>									
CUTLASS Tactical UAS									
APEX Tactical UAS									
REMORA autonomous underwater vehicle									
<b>Communication systems</b>									
Tactical SATCOM terminals (Manpack Panther, Hawkeye, Cheetah, FSS)							●		
Data link solutions (tactical network, transmitter responder, receiver, modem)									
Xenon Ion propulsion system (702sp satellite)	●								

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Slight increase (+0.4%) in sales, to \$10.5bn (€9.5bn), after five consecutive years of decline, thanks to revenue growth in Aerospace Systems (+2%) and Sensor Systems (+2%).
- ▶ Internal reorganisation completed in December 2016 with decision to change name to L-3 Technologies (L-3T) and organise activities into four divisions as of 1st March 2017 (Electronic Systems, Aerospace Systems, Sensor Systems et Communications Systems).
- ▶ Still pursuing dynamic external growth strategy with a view to consolidating core business offerings (aeronautics, defence electronics, ISR systems) and developing civil applications, with six companies targeted between October 2016 and May 2017 (Microo Ltd., Aerosim, MacDonald Humfrey (Automation) Ltd., explosives detection activities of Implant Sciences, OceanServer Technology, and Open Water Power Inc.).
- ▶ Eighth share repurchase plan launched in May 2017 for a total of \$1.5bn (€1.4bn).
- ▶ Consolidation of training activities with creation of new unit, Commercial Training Solutions, within Electronic Systems division in July 2016. New unit includes L-3 Link UK and L-3 CTC Aviation.
- ▶ Reinforced offering in EO/IR sector with introduction of MX-8 turret from its Wescam subsidiary in October 2016 and, in ISR sector, presentation of AT-802L Longsword (avionics upgrade) and SPYDR II special-mission aircraft in June 2017.

### Home market

- ▶ Still strongly dependent on home market, with U.S. DoD alone accounting for 70% of sales (USAF largest customer).
- ▶ \$1.9bn (€1.6bn) Contractor Logistics Support (CLS) contract award in June 2016 (confirmed in October 2016, after competitor protest) for USAF fleet of 59 KC-10 in-flight refuelling aircraft.
- ▶ Several U.S. Army contracts awarded in 2017, for M783 and M734A1 mortar fuses and production of STORM SLX laser rangefinders.
- ▶ In naval sector, initial contract award from GD Bath Iron Works in March 2016 to supply Power Node Control Centers (PNCC) for Arleigh Burke-class destroyers (eight systems per ship), and C4ISR tender selected by Bollinger Shipyards LLC in July 2016 to equip Sentinel-class Coast Guard patrol boats.

### Export markets

- ▶ 22% of sales from exports in 2016, below the group's target of 35% for that year.
- ▶ Main export markets: UK, Australia, Canada, South Korea, Saudi Arabia, Germany and Japan.
- ▶ Historical presence reinforced in the UK, with opening of new purpose-built airline pilot training centre and production facility for manufacture of aircraft simulators in 2018, and in Canada, following creation of L-3 Canada Marine Systems and L-3 Communication Systems – Canada in 2016 (creation of R&D centre in Ottawa).

### Technology and Innovation

- ▶ Internally funded R&D amounted to \$258m (€233m), or 2.4% of sales in 2016.



## BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Aeronautics
- ▶ Defence electronics
- ▶ Helicopters
- ▶ Defence systems
- ▶ Space systems

## GOVERNANCE

- Chairman
- Chief Executive Officer
- Chief Financial Officer

G. De Gennaro  
A. Profumo  
G.- P. Cutillo

## KEY FIGURES (Fiscal year ended: 31.12.2016)

€ millions	2013*	2014	2015	2016
Revenue	13 690	14 663	12 995	12 002
Δ (%)	-17,05%	7,11%	1,81%*	-7,64%
Defence (%)	50%	54%	65%	64%
Export (%)	82%	80%	84%	82%
Operating profit/loss	-185	539	623	687
Operating Margin	-1,35%	3,68%	4,79%	5,72%
Net profit/loss	74	20	527	507
Order book	36 831	38 234	28 793	34 798
Employees	56 282	54 380	47 156	45 631

\* Figures restated (adoption of IFRS11 ; sale of the Transport BU)

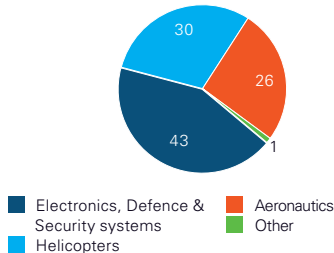
## OWNERSHIP STRUCTURE

Symbol	LDO
Listed on	Borsa Italiana
Market Cap (M€)	8 395

### Major Shareholders (as of 30.06.2017)

Italian Ministry of Economy and Finance	30,20%
Capital Research & Management Co.	4,38%
Vanguard Group Inc.	1,55%
Citibank China Co. Ltd	1,59%

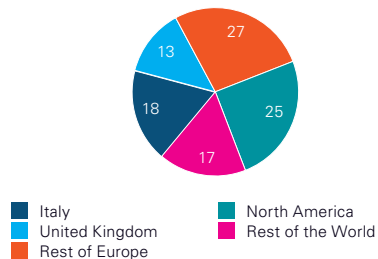
## REVENUE BY BUSINESS LINE (%)



## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
NHIndustries	32%	France
Elettronica	31,33%	Italy
Telespazio	67%	Italy
Thales Alenia Space	33%	France
MBDA	25%	France
ATR	50%	France

## REVENUE BY REGION (%)



## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	BAE Systems	Airbus	Orbital ATK	Boeing	General Dynamics	Dassault Aviation	Saab AB	Naval Group*	TAI	KHI	PGZ
<b>Military aircraft and UAS</b>											
Eurofighter fighter aircraft	●	●									
M346 advanced trainer				●							●
NEURON UCAV demonstrator (smart bomb bay, electrical system and various subsystems)						●					
C-27J Spartan and MC-27J Praetorian tactical airlifter				●							
Falco and Falco EVO tactical UAS											
European MALE RPAS definition study		●				●					
<b>Helicopters</b>											
AW159 twin-engine helicopter (6t)				●							
NH90 twin-engine helicopter (11t)		●									
AW101 three-engine helicopter (16t)										●	
A129 Mangusta combat helicopter								●			
<b>Weapons and artillery systems</b>											
VULCANO 127/64 lightweight naval gun											
Blackshark heavyweight torpedo							●				
<b>Defence electronics</b>											
EMPAR radar (FREMM)											
E-CAPTOR AESA radar (Eurofighter)		●									
Raven ES AESA radar (Gripen NG)						●					
<b>Space (excl. Thales Alenia Space)</b>											
SICRAL 2 military communications satellite (ground segment)											

\* formerly DCNS

## STRATEGIC HIGHLIGHTS

## Business trends

- ▶ 7.6% decline in sales in 2016, to €12bn, due to difficulties in Helicopters (-19%) and Electronics, Defence & Security Systems (-3%), but improvement expected in 2017 thanks to order book in excess of €34bn (and ~€20bn in orders booked in 2016).
- ▶ After refocusing activities (2014-2016), the next five years (2017-2021) dedicated to quest for intragroup synergies and growth through partnerships and targeted acquisitions (objective: +3-5% in sales per year).
- ▶ Group now organised into seven divisions (marking abandonment of holding company model in favour of integrated company renamed “Leonardo” in January 2017), with reduced workforce, -3% in 2016 (-1,525 jobs), for a group total of 45,631 employees (vs. 56,282 in 2013).
- ▶ Competences in UAVs and laser technologies reinforced through acquisition of Sistemi Dinamici (Italy, December 2016) and Daylight Solutions, (U.S., June 2017) and, in space sector, increased stake in Avio (from 14% to 28%), closed in March 2017.

## Home market

- ▶ 18% of sales from home market in 2016 (+2% in one year), ahead of UK (13%) but well behind sales generated from across the Atlantic (25%).
- ▶ Production ramp-up on F-35 programme (planned acquisition of 60 F-35As and 30 F-35Bs), with roll-out of first F-35B produced at Cameri facility (May 2017) and delivery of fifth and sixth F-35As to Air Force (Amedola Base) in December 2016, first four aircraft having being transferred to Luke AFB, Arizona, headquarters for F-35 pilot training.
- ▶ January 2017 marked by two key contract awards, one for five M-345 jet trainers (out of planned total of 45, alongside 18 M-346s already ordered, to replace MB-339 fleet), and the other, for development and production phase of New Exploration and Escort Helicopter (NEES), with plans for one prototype and three pre-production machines at this stage (48 units planned, to replace AW129 as of 2025).
- ▶ First NH90 MITT helicopter and two ATR 72MPs delivered, respectively, to Italian Navy in February 2017 and Air Force in December 2016.

## Export markets

- ▶ 82% of sales generated from outside home market in 2016, a decline of 10.5% (including -8% in North America and -11% in Europe).
- ▶ British subsidiaries (AgustaWestland Ltd., Selex ES Ltd., DRS Technologies UK Ltd. and Finmeccanica UK Ltd.) consolidated into single entity, Leonardo MW Ltd., as of January 2017, with 7,100 employees.
- ▶ Noteworthy successes in military helicopters in first half of 2017, particularly for AW159 Wildcat (service and support contract in UK, additional orders from Pakistan, selected by Boeing for joint proposal for USAF UH-1N Huey Replacement programme) and new partnerships signed in Poland (with PGZ) and in Algeria (JV created to produce light and medium heavy helicopters).
- ▶ PicoSAR AESA radar selected by Safran in February 2017 to equip Patroller UAVs (French SDT programme) and by Schiebel for Camcopter S-100 ordered by North African country.

## Technology and Innovation

- ▶ R&D budget down 3.7% in 2016, to €1.37bn, i.e. 11.4% of sales.



## BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Aerospace (aircraft, helicopters, UAS, satellites and launch vehicles)
- ▶ Missiles, guided weapons and missile defence
- ▶ Land platform and systems (armoured vehicles, UGV and artillery systems)
- ▶ Maritime systems (surface ships, combat systems)
- ▶ Defence electronics
- ▶ Cyber solutions

## GOVERNANCE

Chairman and CEO  
Chief Financial Officer

Marilyn A. Hewson  
Bruce L. Tanner

## OWNERSHIP STRUCTURE

Symbol	LMT
Listed on	NYSE
Market Cap (M\$)	86 426

Major Shareholders (as of 30.06.2017)

State Street Corp.	16,54%
Capital World Investors	8,91%
Vanguard Group Inc.	6,72%
Wellington Management Company LLP	3,30%

## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Ascent Flight Training Holding Ltd	50%	United Kingdom
MEADS International Inc.	50%	U.S.
United Space Alliance LLC	50%	U.S.
United Launch Alliance LLC	50%	U.S.
Raytheon-Lockheed Martin Javelin JV	50%	U.S.

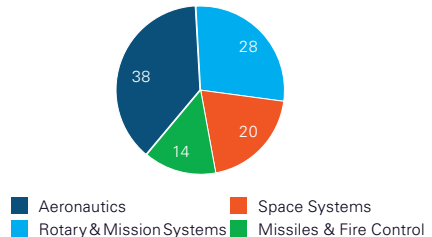
## KEY FIGURES (Fiscal year ended: 31.12.2016) \*

€ millions	2013	2014	2015	2016
Revenue	34 153	34 324	41 579	42 685
Δ (%)/[\$]**	-3,87%	0,53%	1,17%	2,42%
Defence (%)	89%	88%	88%	92%
Export (%)	17%	20%	21%	27%
Operating profit/loss	3 392	4 209	4 899	5 013
Operating Margin	9,93%	12,26%	11,78%	11,74%
Net profit/loss	2 245	2 720	3 249	4 414
Order book	59 794	66 343	91 485	91 263
Employees	115 000	112 000	126 000	97 000

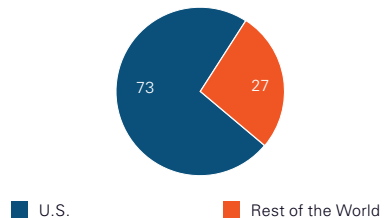
\* Figures restated.

\*\* Variation based on the revenue in local currency. See €/€ exchange rates p. 7.

## REVENUE BY BUSINESS LINE (%)



## REVENUE BY REGION (%)





## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	BAE Systems	Northrop Grumman	Pratt & Whitney	MHI	Leonardo	Boeing	General Dynamics	Fincantieri	Raytheon	TAI	Navantia	KAI
<b>Military aircraft</b>												
F-35 Lightning II multirole fighter aircraft	●	●	●	●	●							
F-22 Raptor air-superiority fighter aircraft			●		●							
F-16 Fighting Falcon fighter aircraft			●	●								●
T-50 multi-trainer aircraft												●
C-130J tactical airlifter												●
P-3C Orion maritime patrol aircraft				●								
S-92/H-92 twin-engine transport helicopter (12t)				●								
Sea Hawk and Black Hawk twin-engine multirole helicopter (10t)				●					●			
Stallion CH-53 three-engine helicopters family (34t)												
<b>Maritime systems</b>												
Freedom-class Littoral Combat Ship (LCS)							●					
<b>Navigation and combat systems</b>												
Trident missile navigation system												
AEGIS combat system								●			●	
<b>Space</b>												
GPS III satellite						●						
<b>Missile systems and missile defence</b>												
PAC-3, PAC-3 MSE and THAAD Interceptors & THAAD missile defence system								●				
Hellfire II and Javelin Anti-tank missiles								●				
Multiple Launch Rocket System (MLRS)	●											

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Sales peaked in 2016, at \$47.2bn (€42.7bn), helped by Rotary and Mission Systems (+48%) and Aeronautics (+14%).
- ▶ To reduce dependence on F-35 programme (23% of sales in 2016), acquired helicopter manufacturer Sikorsky from UTC in November 2015 for \$7.1bn (~ €6.4bn), consolidated as of 2016 into new business area Rotary and Mission Systems (RMS).
- ▶ 2016 and first half 2017 also marked by implementation of workforce reduction plan (-2,500 jobs), sale of civil IT and Technical Services businesses to Leidos Holdings and reorganisation of Space Systems facilities (650 jobs transferred from California to Florida and Colorado over next eight years).
- ▶ In space sector, investment in U.S. nanosatellite specialist Terran Orbital through Lockheed Martin Ventures in June 2017.

### Home market

- ▶ Highly dependent on home market (73% of sales in 2016) and U.S. DoD still largest defence customer.
- ▶ F-35 programme gathering momentum, with total of 200 aircraft delivered to U.S. forces and partner countries as of 31st December 2016 (including 46 in 2016) and 173 aircraft in the order book (agreement in February 2017 for LRIP 10, comprising 90 aircraft, at reduced unit cost).
- ▶ In military helicopters, awarded ninth multi-year contract (five years) for H-60 Black Hawks (U.S. Army and FMS customers) in June 2017 for 257 helicopters (UH-60M and HH-60M; +103 options) for \$3.8bn (€3.4bn).
- ▶ Missile business reinforced by important contract awards (PAC-3, PAC-3 MSE and THAAD interceptors, JASSM and JASSM-ER missiles); TACMS missile production line restarted at Camden in March 2016.
- ▶ In naval sector, keel laying for fourth Freedom-class ship (U.S. Navy Littoral Combat Ship programme) in May 2017 at shipyard of partner Fincantieri Marinette Marine.
- ▶ Successful first flight of second aircraft produced as part of USAF T-X trainer programme bid (in partnership with KAI, South Korea) in February 2017.

### Export markets

- ▶ 27% of sales from exports in 2016 (66% via FMS, 34% direct), steadily increasing share helped by F-35, helicopters and missiles.
- ▶ MoU for the sale of 440 F-35s to 11 countries (Australia, Denmark, Italy, Israel, Japan, Netherlands, Norway, Turkey, South Korea, UK, U.S.) over the period 2018-2020 in final phase of negotiations (July 2017).
- ▶ Multiple strategic partnerships and operations in Middle East (UAE, but especially Saudi Arabia since President Trump's visit in May 2017; planned acquisition of more than \$28bn of defence equipment), Asia-Pacific (Australia, Singapore, India), Europe (UK, Poland) and Turkey.

### Technology and Innovation

- ▶ 21% increase in R&D investments (not including customer contributions) in 2016, to \$988m (€893m).



**BUSINESS AREAS**

Missiles producer, systems integrator

- ▶ Air dominance (air-to-air and air-to-surface missile systems)
- ▶ Maritime superiority (anti-ship missile systems, naval air defence systems)
- ▶ Battlefield engagement (man portable and air-launched anti-armour weapon systems)
- ▶ Ground based air defence (medium and long range anti-air missiles)

**GOVERNANCE**

Chairman and CEO  
Chief Financial Officer

Antoine Bouvier  
Peter Bols

**OWNERSHIP STRUCTURE**

Symbol  
Listed on Non Listed Company  
Market Cap (M€)

Major Shareholders (as of 30.06.2017)

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

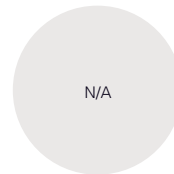
**MAIN JOINT VENTURES AND ASSOCIATES**

Name	%	Country
Eurosam	66,7%	France
Roxel	50%	France
MEADS International Inc.	42%	U.S.
Taurus Systems GmbH	66,7%	Germany
PARSYS GmbH	50%	Germany
L&T MBDA Missile Systems	49%	India

**KEY FIGURES** (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	2 800	2 394	2 875	3 000
Δ (%)	-6,67%	-14,50%	20,09%	4,35%
Defence (%)	100%	100%	100%	100%
Export (%)	39%	N/A	43%	50%
Operating profit/loss	N/A	148	218	N/A
Operating Margin	N/A	6,18%	7,58%	N/A
Net profit/loss	N/A	N/A	N/A	N/A
Order book	10 800	12 600	15 100	15 900
Employees	10 061	~10 000	~10 000	10 338

**REVENUE BY BUSINESS LINE (%)**



**REVENUE BY REGION (%)**



MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Thales	Saab AB	Diehl Defence	Textron	Inmize	Bharat Dynamics Ltd
<b>Ground based air defence</b>						
ASTER 15 and 30 surface-to-air missile	●					
CAMM ER common anti-air modular missile	●					
VL MICA vertical launch short range air defence system						
<b>Air dominance</b>						
BANG multi-purpose insensitive bombs						
METEOR beyond visual range air-to-air missile	●			●		
STORM SHADOW/SCALP air-launched long range deep strike weapon						
TAURUS KEPD 350E modular stand-off weapon system for precision strikes	●		●			
Brimstone precision attack weapon						
SPECTRA self-protection equipment to counter threats for RAFALE aircraft	●					
<b>Maritime superiority</b>						
Naval Cruise Missile (MdCN - NCM)						
Exocet MM40 Block 3 anti-ship missile system						
Sea VeNom-ANL Future anti-surface guided weapon						
<b>Battlefield engagement</b>						
MILAN-ER medium range weapon system						●
MMP land combat missile system		●				
PARS 3 LR high precision fire-and-forget weapon system						
VDM route clearance / solutions for C-IED / countermining						

## STRATEGIC HIGHLIGHTS

## Business trends

- ▶ After difficult 2013 and 2014, sales increased strongly in 2015 (+20%) and trend continued in 2016 with sales reaching €3bn (+4.3%) and order book at historic peak of €15.9bn (including €4.7bn orders booked in 2016).
- ▶ In view of growth, ambitious recruitment plan, with 1,100 additional employees to be hired by end-2017.
- ▶ MBDA Deutschland integrated into the group as of 1st January 2017. Two new centres of excellence created in UK at Bolton and Stevenage in November 2016, in accordance with site specialisation strategy under One MBDA project.

## Home market

- ▶ In UK, 2016-2017 marked by several major contract awards, including integration of ASRAAM/CAMM air-to-air and air defence missiles on F-35 fighter and Type 26 frigate, launch of development phase of SPEAR next-generation high-precision air-to-surface missile which will equip British F-35s (and possibly Eurofighter Typhoon), and in-service support for Sea Viper weapon system on Type 45 destroyers.
- ▶ In France, mid-life upgrade contract for airborne ASMPA missile (ASMPA-R, entry into operational service as of 2022) and continuation of development work on new Block 1NT version of Aster 30 (first deliveries in 2023; Italy joined programme in June 2016).
- ▶ In deep strike sector, mid-life upgrade contract for SCALP/Storm Shadow missiles awarded by French and British defence ministries in February 2017.
- ▶ Bid for Germany's TLVS programme (acquisition of MEADS system) submitted by MBDA Deutschland in September 2016; decision expected in 2018.

## Export markets

- ▶ 50% of sales from exports in 2016, helped by marketing drive aimed at Middle East and Asia (and boosted by Rafale and Eurofighter sales).
- ▶ In Qatar, contract award in September 2016 for MCDS coastal defence systems (Exocet MM40 Block 3 and Marte ER missiles, for €640m), a few months after signing contracts to supply weapons for Fincantieri ships for Qatari Emiri Navy (Exocet MM40 Block 3, Aster 30 Block 1 and VL MICA for total of €1bn).
- ▶ In line with "Make in India" initiative, creation of JV with Larsen & Toubro, L&T MBDA Missile Systems Ltd (51% MBDA), in February 2017, for development and local production of missiles for Indian forces.
- ▶ Ambitions in Poland (strategic partnership signed with PGZ in February 2017), Turkey (cooperation with Eurosam officially announced in July 2017) and Australia.

## Technology and Innovation

- ▶ In March 2017, Franco-British agreement to launch FC/ASW conception phase (development of joint next-generation missiles to replace Exocet, Harpoon, SCALP and Storm Shadow missiles in 2030 timeframe); €50m funding from each country over three years.
- ▶ First development firing of ANL missile in June 2017 and presentation of SmartGlider family of glider weapons and Hexabomb Smart Launcher at Paris Air Show.



**BUSINESS AREAS**

Systems integrator/equipment supplier

- ▶ Aircraft braking systems
- ▶ Control systems
- ▶ Polymers and composites
- ▶ Sensing systems
- ▶ Avionic systems
- ▶ Defence systems
- ▶ Auxiliary Power Unit (APU)

**GOVERNANCE**

Chairman

Sir Nigel Rudd

Chief Executive Officer

Stephen Young

Chief Financial Officer

Doug Webb

**OWNERSHIP STRUCTURE**

Symbol	MGGT
Listed on	LSE
Market Cap (ME)	3 863

Major Shareholders (as of 30.06.2017)

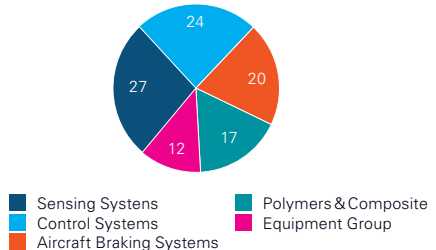
Capital Research and Management Co.	5,88%
Harris Associates LP	5,55%
First Pacific Advisors LLC	5,20%
T. Rowe Price Associates Inc.	4,18%

**KEY FIGURES** (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	1 928	1 927	2 263	2 431
$\Delta$ (%) [€]*	1,96%	-5,11%	6,02%	20,96%
Defence (%)	38%	34%	35%	35%
Export (%)	90%	90%	91%	90%
Operating profit/loss	354	293	326	285
Operating Margin	18,34%	15,20%	14,36%	11,73%
Net profit/loss	274	220	251	209
Order Intake	N/A	2 067	2 222	2 712
Employees	10 715	10 685	10 851	11 210

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

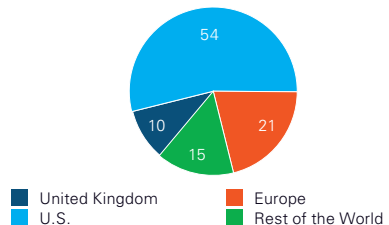
**REVENUE BY BUSINESS LINE (%)**



**MAIN JOINT VENTURES AND ASSOCIATES**

Name	%	Country
Integrated Targeted Services	50%	United Kingdom
Parkway-Hamilton Sundstrand Mexico S. de R.L. de C.V.	70%	Mexico

**REVENUE BY REGION (%)**



MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	BAE Systems	Airbus	Lockheed Martin	Boeing	Leonardo	General Dynamics	Dassault Aviation	Textron	Kaman Aerospace	Raytheon
<b>Aircraft braking systems</b>										
Carbon brakes	●	●	●	●	●	●	●	●		
Steel brakes	●	●	●	●	●	●	●	●	●	
Control systems	●	●	●	●	●	●	●	●		
<b>Security systems</b>										
Fire detection control unit	●	●	●	●	●	●	●	●		
<b>Polymers and composites</b>										
Composites structures	●	●	●	●	●	●		●		
Fuel containment	●	●	●	●	●			●		
<b>Power conversion</b>										
Power converter systems	●	●	●	●		●		●		
<b>Control systems</b>										
Ice protection systems		●		●	●			●		
Pressure indicator and gauge		●	●	●	●			●		●
<b>Avionic systems</b>										
Integrated Secondary Flight Display (ISFD)	●	●	●	●	●					
Threat Warning Indicator (TWI)	●	●	●	●	●					
<b>Defence systems</b>										
Aerial target systems (AGTS-36, GT-400) and countermeasures			●	●						●
Automatic ammunitions handling			●	●		●		●		

## STRATEGIC HIGHLIGHTS

## Business trends

- ▶ Sales up for a second year in a row, +6% in 2015, +21% in 2016, at £1.9bn (€2.4bn) due to a favourable exchange rate and integration of recently acquired activities in composite structures for new-generation civil aircraft (Precision Engine Controls Corporation, composite divisions of Cobham and EDAC).
- ▶ Group net result in steady decline since 2012, with globally disappointing results in the civil and energy sectors, and flat sales in defence.
- ▶ Continuation of external growth strategy with the acquisition in March 2017 of U.S. civil and military aeronautical MRO specialist Elite Aerospace, just a few months after selling Meggitt Target Systems, purchased by Britain's QinetiQ in December 2016.
- ▶ To boost competitiveness, announcement of an internal rationalisation plan to reduce the number of industrial sites by 20% by 2021 (through site closures and/or consolidation to create centres of excellence).
- ▶ New production site opened in Vietnam, following sites in China and Mexico – facilities in low cost zones designed to support civil aircraft production rates.

## Home market

- ▶ U.K. market only represented 10% of sales in 2016 and 24% of the workforce.
- ▶ Company present on all major U.K. and cooperative programmes (Eurofighter Typhoon, Taranis, Hawk, Harrier, F-35, A-129, EH101, AW159).
- ▶ Its ammunition handling system was selected by Lockheed Martin UK in August 2015 to equip the 40 CTAS cannons installed on Ajax armoured vehicles (deliveries scheduled from 2016 to 2021).

## Export markets

- ▶ An equipment supplier well established in the U.S. (54% of sales and 53% of the workforce) and a strategic partner for the major systems integrators (Boeing, Sikorsky, Bell) for the main U.S. defence programmes (F-35 and its F-135 engine, V-22, B1B, F/A-18 E/F and Apache helicopters).
- ▶ Export strategy targeted at Southeast Asia (maintenance centres established in Singapore and Taiwan), Australia (July 2016 contract award to supply 460 EF88 Steyr assault rifle simulators and 115 SL40 40mm simulated grenade launchers) and Latin America (local office in Sao José dos Campos, Brazil).
- ▶ In the training aircraft segment, Meggitt Aircraft Braking Systems (MABS) has an important role in Italy's M-346, South Korea's T50 and the British Hawk programmes, and is positioned on the future U.S. T-X programme (systems installed on all the demonstrators proposed to the U.S. Department of Defense).

## Technology and Innovation

- ▶ After reaching a historic peak in 2015, at £158.7m (€218.6m), R&D spending dipped slightly in 2016 (-1%) to £157.8m (€192.56m), e.g. 7.9% of sales, due to the progressive entry into service of the Boeing 737 MAX and 777X, Embraer E2 and Falcon 5X.





## BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Naval shipbuilding
- ▶ Energy
- ▶ Industry and transport
- ▶ Aerospace
- ▶ Power systems and special vehicles
- ▶ Air-conditioning systems and cooling systems

## GOVERNANCE

Chairman	Hideaki Omiya
Chief Executive Officer	Shunichi Miyanaga
Chief Financial Officer	Masanori Koguchi

## KEY FIGURES (Fiscal year ended: 31.03.2017)

€ millions	2013-14	2014-15	2015-16	2016-17
Revenue	23 874	29 619	32 590	32 563
Δ (%) / (¥)**	18,87%	19,18%	1,37%	-3,28%
Defence (%)	14%	12%	12%	12%
Export (%)	49%	53%	55%	31%
Operating profit/loss	1 469	2 197	2 493	1 252
Operating Margin	6,15%	7,42%	7,65%	3,85%
Net profit/loss	1 143	976	617	876
Order Intake	24 013	36 442	36 442	33 429
Employees	80 583	81 845	83 932	82 728

\* Variation based on the revenue in local currency.  
See €/¥ exchange rates p.7.

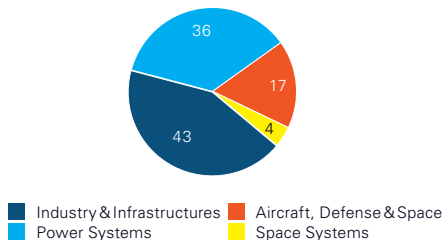
## OWNERSHIP STRUCTURE

Symbol	7011
Listed on	Tokyo Stock Exchange
Market Cap (M¥)	1 488 000

### Major Shareholders (as of 31.03.2017)

Japan Trustee Services Bank Ltd	5,04%
The Master Trust Bank of Japan Ltd	4,33%
Nameura Trust & Banking Co. Ltd	3,12%
Meiji Yasuda Life Insurance Company	2,37%

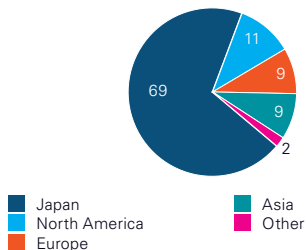
## REVENUE BY BUSINESS LINE (%)



## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
ATMEA	50%	France
L&TMHPS Boilers Pvt Ltd	49%	India
Shenyang Aerospace Xinguang MHI Engine Valve	65%	China
MHIEL	89%	Japan

## REVENUE BY REGION (%)



## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Lockheed Martin	Boeing	KHI	Raytheon	Mitsubishi Electric	IHI	Japan Steel Work	Japan Aviation Electric	NEC
<b>Fighter aircraft</b>									
F-2 fighter aircraft	●			●	●		●	●	
F-15J fighter aircraft (built under licence)	●	●		●	●				
X2 demonstrator (formerly ATD)					●	●			
<b>Military helicopters</b>									
UH/SH-60J twin-engine transport helicopter (10t) (built under licence)	●								
<b>Missile systems and guided weapon systems</b>									
PATRIOT (PAC-2 et -3) missile defence system				●					
Mk41 vertical launch system	●								
IR AAM (3, 4, X-5) air-to-air missiles					●			●	
Type 97 light weight torpedo									
<b>Special vehicles</b>									
Type10 main battle tank							●		
Type 99 155mm self-propelled howitzer							●		
<b>Engines</b>									
TS1 (OH-1 Helicopter)			●						
<b>Submarines</b>									
Soryu-class Soryu attack submarines			●						
<b>Surface ships</b>									
Atago-class AEGIS destroyers	●								

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ After a stable 2015-2016, sales down 3% for Integrated Defense & Space Systems (IDSS) division in 2016-2017, to ¥4,706bn (~ €3.9bn), or 17% of group sales.
- ▶ As of February 2017, activities organised into three main divisions: Power Systems, Industry&Infrastructure, and Aircraft, Defense&Space (ADS), latter including IDSS, civil aerospace activities and subsidiary in charge of Mitsubishi Regional Jet (MRJ) programme.
- ▶ Group with lofty ambitions for its new ADS division, growth of which will rely on internationalisation and diversification of product line (dual applications, particularly in cybersecurity sector with creation of Cyber Lab R&D centre).
- ▶ MRJ programme continues to struggle. Announcement in January 2017 of a new, two-year delay in first deliveries, to mid-2020.
- ▶ Since December 2016, all the group's civil and military aerospace engine activities integrated into new Mitsubishi Heavy Industries Aero Engines Ltd. (MHIAEL) unit.

### Home market

- ▶ Heavily dependent on orders for national Self-Defense Forces (F-35A combat aircraft, SH-60K helicopter, Type 10 main battle tank, MCV armoured vehicle, Aegis destroyer, Soryu-class submarines, Type 12 anti-ship missile, PAC-3 MSE air defence system).
- ▶ In naval sector, delivery of 7th Soryu-class submarine ("Jinryu", March 2016) and launching ceremony for 9th unit ("Seiryu", October 2016), followed by launching ceremony for lead ship in Asahi-class destroyer programme.
- ▶ In combat aircraft sector, presentation of first F-35A assembled in Nagoya in June 2017 (42 F-35As ordered, including 38 to be assembled locally), start of flight testing of new-generation combat aircraft demonstrator (X-2 programme) in November 2016 and decision to upgrade fleet of 200 F-15Js (payload capacity doubled) in response to tensions with China (June 2016).

### Export markets

- ▶ Since regulatory situation was relaxed in April 2015, group has become vector for Japan's ambitions to become one of main producers and exporters of defence equipment.
- ▶ ADS division at forefront of efforts to prevail on export markets, relying in particular on experience from F-35 and SM-3 programmes.
- ▶ In land forces sector, start of discussions with BAE Systems Inc. to explore possible collaboration on development of a line of new-generation armoured combat vehicles for U.S. Army.
- ▶ Despite personal support from Prime Minister Shinzo Abe, rejection of Japan's proposal for Australia's SEA 1000 programme (acquisition of 12 submarines), for which Naval Group of France was selected in April 2016.

### Technology and Innovation

- ▶ In addition to flagship X-2 combat aircraft programme, future involvement in Type 12 SSM anti-ship missile upgrade programme (extended range).



## BUSINESS AREAS

Engine manufacturer, systems integrator/equipment supplier

- ▶ Engines (commercial and military aircraft)
- ▶ Industrial gas turbines
- ▶ Equipment and component
- ▶ MRO

## GOVERNANCE

Chairman of the Supervisory Board    K. Eberhardt  
 Chief Executive Officer and CFO        R. Winkler

## KEY FIGURES (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	3 742	3 914	4 435	4 733
Δ (%)	5,79%	9,51%	13,32%	6,71%
Defence (%)	13%	13%	11%	11%
Export (%)	87%	88%	89%	89%
Operating profit/loss	317	334	386	453
Operating Margin	8,88%	8,52%	8,69%	9,57%
Net profit/loss	166	195	218	313
Order book*	9 375	11 177	12 494	14 172
Employees	8 343	8 333	8 334	8 368

\* Not consolidated.

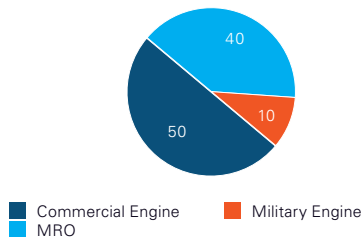
## OWNERSHIP STRUCTURE

Symbol	MTX
Listed on	XETRA
Market Cap (M€)	6 430

Major Shareholders (as of 31.12.2016)

Capital Research & Management Co.	9,94%
Sun Life	5,77%
Harris Associates LP	5,23%
Deutsche Asset & Wealth Management Investment GmbH	4,25%

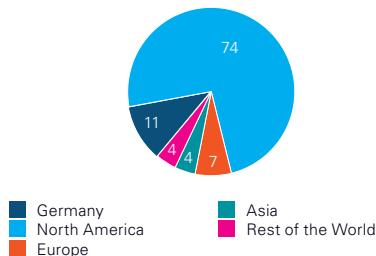
## REVENUE BY BUSINESS LINE (%)



## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
EUROJET Turbo GmbH	33%	Germany
EPI Europrop International GmbH	28%	Germany
MTU Turbomeca	25%	Germany
Rolls-Royce ITP GmbH		
Middle East Propulsion Company Ltd	19,30%	Saudi Arabia

## REVENUE BY REGION (%)



## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Rolls-Royce	Avio Aero*	ITP**	General Electric	Safran	P Pratt & Whitney***	Japanese Aero Engines	GKN	Techspace Aero	Vencor
<b>Fighter aircraft engines</b>										
EJ200 (Eurofighter)	●	●	●							
Larzac 04 (Alpha Jet)	●				●					
F110 (F-15, F-16)		●		●			●	●		
F414 (F/A-18E/F, EA-18G)				●			●			
RB199 (Tornado)	●	●								
<b>Military transport aircraft engines</b>										
TP400-D6 (A400M)	●		●		●					
Tyne Mk 21/22 (C-160, Breguet Atlantic)	●				●				●	
IAE V2500 (KC-390)						●	●			
PW2000 (C-17)		●				●		●		
<b>Helicopter engines</b>										
T64 (CH-53G)				●						
MTR390-2C (Tiger)	●				●					
T408 (ex-GE38) (CH-53K)				●						
MTR390-E (Tiger)	●		●		●					
<b>Gas turbines</b>										
LM2500			●	●						
LM5000			●	●						
LM6000			●	●						
ETF40B										●

\* General Electric  
 \*\* Rolls-Royce  
 \*\*\* UTC

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Sales up 6.7%, to €4.7bn, in 2016, a healthy situation linked to good performance in civil MRO activities (+21%) and military engines (+4%, including EJ200 engine for Eurofighter).
- ▶ Against backdrop of strong growth in civil engine production and MRO, very positive outlook for 2017, with sales target around €5.1bn, but expected sharp decline in military engine sales.
- ▶ Continuing with Cash for Future Project strategic plan which aims to boost sales to €6bn by 2020 and improve competitiveness by adapting headcount and industrial facilities in Germany (Munich and Hannover) and moving some civil production to Poland (Rzeszów production site).
- ▶ Reinforcement of historical ties to U.S. engine maker GE following acquisition of 13% stake in LM6000PF+ gas turbine programme (CF6 derivative) in October 2015, expected to generate revenues of €1bn.

### Home market

- ▶ Germany largest defence market and second overall (11% of sales in 2016).
- ▶ Defence activities (military aircraft engines) heavily impacted by order cutbacks and technical difficulties on A400M, Eurofighter and NH90 programmes.
- ▶ Signature of partnership with Airbus Helicopters Germany and six other German companies on 5th July 2017 to lobby government for local industry involvement in future heavy-lift helicopter programme (€3.8bn through 2029; two options being considered to date – Boeing CH-47F and Lockheed Martin CH-53K).

### Export markets

- ▶ Eurofighter Typhoon selected by Kuwait in September 2015 (28 aircraft); export sales of EJ200 engines guarantee workload of MTU production line until 2021.
- ▶ Varying degrees of involvement in several U.S. civil and military engine programmes (F110, F404, F414, PW2000, GEnx, PW4000), ensuring presence on international markets.
- ▶ High expectations in helicopter engines, with start of production of CH-53 King Stallion with T408-1B engine for USMC in April 2017 (first four deliveries in 2018, rising to 24 per year from 2020), and tactical transport aircraft engines, with ramp-up of KC-390 programme (V2500 engine).
- ▶ Aims to develop activities in close proximity to final customer, illustrated by creation of MEPC JV (19.3%) in Saudi Arabia, in charge of maintenance of RSAF Tornados, PC-21s, PC-9s and F-15SAs.

### Technology and Innovation

- ▶ Slight drop (-0.7%) in R&D budget, to €208.6m, with marginal share for defence, where financing has been divided by five since 2010 (€15.5m in 2016).
- ▶ R&D focus on civil engines, particularly geared turbofan technologies (programmes linked to GTF/PW1100G-JM) and GE9X engine (Boeing 777X).



**BUSINESS AREAS**

- Provider of ammunition and rocket engines
- ▶ Ammunition (commercial, small, medium and large caliber)
  - ▶ Weapon systems (shoulder fired systems, warheads and fuzes)
  - ▶ Explosives and pyrotechnics (hand grenades, initiation systems)
  - ▶ Rocket motors (missiles, boosters, hybrid)
  - ▶ Demilitarization services (conventional ammunition)

**KEY FIGURES** (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	474	445	423	445
Δ (%) (NOK)*	11,83%	0,41%	1,76%	9,22%
Defence (%)	N/A	85%	80%	100%
Export (%) **	88%	86%	91%	76%
Operating profit/loss	63	34	32	41
Operating Margin	13,22%	7,70%	7,50%	9,29%
Net profit/loss	42	23	24	30
Order book	458	426	534	525
Employees	2 139	2 160	2 088	2 152

**GOVERNANCE**

Chairman of the Board  
President and CEO  
Chief Financial Officer

J. E. Korssjøen  
M. Brandtzæg  
P. L. Raadal

\* Variation based on the revenue in local currency. See €/NOK exchange rates p.7.  
\*\* Since 2016, Home market = Scandinavian market.

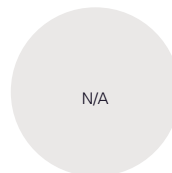
**OWNERSHIP STRUCTURE**

Symbol	
Listed on	Non Listed Company
Market Cap (M€)	

**Major Shareholders** (as of 30.06.2017)

Norwegian State	50%
Patria Oyj	50%

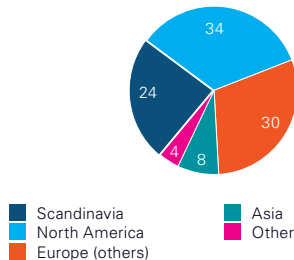
**REVENUE BY BUSINESS LINE (%)**



**MAIN JOINT VENTURES AND ASSOCIATES**

Name	%	Country
SN Technologies S.A.	50%	Switzerland
Komm-In AS	14%	Norway
Raufoss Industripark III AS	25%	Norway
Sintef Raufoss Manufacturing AS	14%	Norway
Nordic Additive Manufacturing AS	19,5%	Norway

**REVENUE BY REGION (%)**



## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	BAE Systems	Forsvarets F1	Raytheon	Saab AB	Cyalume Technologies	PGZ	Eurenc <sup>*</sup>	Thales	Diehl Defence	Kongsberg	MBDA
<b>Ammunition</b>											
Small caliber (4,6mm - 12,7mm)											
Medium caliber (12,7mm - 57mm)				●	●		●	●			
Large caliber (120mm - 155mm)	●	●	●								
Mortar rounds (60mm, 81mm and 120mm)											
<b>Weapon systems</b>											
Warheads (M282) and fuzes (D652, Jupiter, Mercury, Venus)											
Shoulder fired systems (M72 LAW, BDM, SMAW et SMAW-T)			●								
<b>Explosives and pyrotechnics</b>											
Hand grenades											
Initiation systems											
PBX (Plastic bounded explosives)						●					
<b>Rocket motors</b>											
Rocket motors for missiles (ESSM, IRIS-T SL, IDAS, Penguin, AMRAAM, Sidewinder, NSM)			●					●	●		
Auxiliary boost rocket motors (Exocet MM40, NSM)									●	●	
Booster separation motor and acceleration Booster (Ariane 5)											
Hybrid rocket motors			●								
<b>Demilitarization services</b>											
Demilitarization and thermal treatment											●

<sup>\*</sup> GIAT Industries SA



## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Sales up 9.2% in 2016, taking company past NOK4bn mark for first time (to NOK4.1bn, or ~ €445m).
- ▶ A niche player that is one of the world leaders in propulsion systems (for tactical missiles and space launchers) and munitions (from production to disassembly).
- ▶ Thanks to good performance in 2016, continuation of internal and external growth strategy, with a target of NOK1bn (~ €108m) investment over next five years.
- ▶ In munitions, following acquisition of GDELS ammunition activities in Spain and Patria weapon system equipment production facility in Finland, launch of new automated production line for 20-30mm ammunition (including 25mm APEX rounds for F-35A) at Raufoss in March 2017.
- ▶ Has announced its intention to grow space propulsion activities (hybrid rocket motors) and has taken a first step with acquisition of Propulsion Systems BU of UK-based Moog in June 2017 (integration of three sites at Dublin, Cheltenham and Westcott).
- ▶ Reinforced strategic partnership with Kongsberg Defence & Aerospace, following latter's acquisition of 49.9% of shares in Patria (joint owner of Nammo alongside Norwegian government) in May 2016.

### Home market

- ▶ Company enjoys "monopolistic" position, with key competences in propulsion systems (participation in JSM, NSM and Penguin programmes).
- ▶ Scandinavian market (Norway, Sweden, Finland and Denmark) still strategically important (24% of sales in 2016), since it is driven by regional intergovernmental cooperation.
- ▶ Finland is largest customer for 155mm Insensitive Munition High Explosive Extended Range (IM HE-ER) artillery ammunition (development completed in April 2015) which offers good sales prospects in Scandinavia (Norway, Finland and Sweden) and Baltic States.

### Export markets

- ▶ Strong international focus – 76% of sales on export markets (not including Scandinavia), subsidiaries in a dozen countries (Finland, Sweden, Spain, Germany, Switzerland, Canada, U.S., Australia and, more recently, UK, Ireland, Poland, India and UAE).
- ▶ One of three major suppliers of ammunition to DoD, along with American firms General Dynamics and Orbital ATK, thanks to acquisition of Talley in 2007 and Pocal Industries in 2013 (34% of sales in 2016 from U.S. defence market).
- ▶ Reinforced U.S. presence following signature of a 30-year public private partnership between its subsidiary Nammo Energetics Indian Head (NEIH) and U.S. Naval Surface Warfare Center (NSWC) in January 2017 for supply of solid rocket motors, tactical warheads and demilitarisation services (additional facility in U.S., for a total of eight).
- ▶ Aims to penetrate Southeast Asian market, illustrated by creation of Indian subsidiary in June 2016, and Middle East.

### Technology and Innovation

- ▶ Main areas of research: conventional 155mm munitions (90km range), guided munitions (participation in Raytheon Excalibur programme), smart 40mm munitions, development of Additive Layer Manufacturing (ALM) techniques for rocket motor production.

## BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Surface ships
- ▶ Submarines
- ▶ Underwater weapons
- ▶ Combat systems, navigation systems, naval integration of drones
- ▶ Maintenance, modernization, naval infrastructures
- ▶ Marine renewable energies

## GOVERNANCE

Chairman and CEO

Hervé Guillou

General Secretary

Jean-Yves Battesti

Senior EVP finance

Frank Le Rebeller

## OWNERSHIP STRUCTURE

Symbol

Listed on

Non Listed Company

Market Cap (M€)

Major Shareholders (as of 31.12.2016)

French State	62,49%
Thales	35%
FCPE Actions Naval Group	1,64%
Naval Group Actionnariat	0,87%

## MAIN JOINT VENTURES AND ASSOCIATES

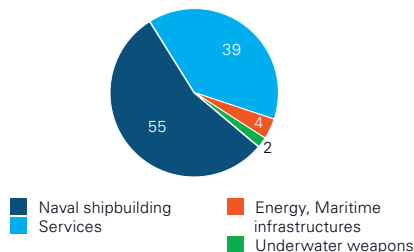
Name	%	Country
Eurotorp	26%	France
Kership S.A.S.	45%	France
Itaguaí Construções Navais SA (ICN)	41%	Brazil
Boustead DCNS Naval Corporation Sdn Bhd	40%	Malaysia
TechnicAtome*	20,3%	France

\* formerly Areva TA

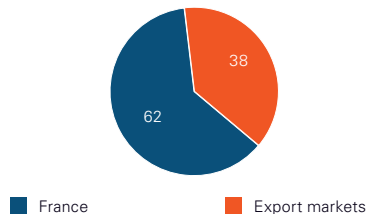
## KEY FIGURES (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	3 312	3 066	3 039	3 191
$\Delta$ (%)	12,88%	-7,42%	-0,88%	5,01%
Defence (%)	99%	99%	97%	97%
Export (%)	38%	33%	50%	38%
Operating profit/loss	160	-430	49	80
Operating Margin	4,96%	-14,01%	1,62%	2,51%
Net profit/loss	110	-347	58	88
Order book	12 625	13 168	12 260	11 600
Employees	13 156	14 024	13 878	13 870

## REVENUE BY BUSINESS LINE (%)



## REVENUE BY REGION (%)



# NAVAL GROUP (FORMERLY DCNS)

## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	STX France	TechnicAtome*	Fincantieri	Thales	Leonardo	Magazon Dock Limited	Odebrecht	Alexandria Shipyards	Boustead Naval Shipyard	Atlas Elektronik**	Priou
<b>Submarines</b>											
Le Triomphant-class ballistic missile submarines		●		●							
Rubis-class nuclear-powered attack submarines		●		●							
Barracuda-class nuclear-powered attack submarines		●		●							
Scorpene-class conventionally-powered attack submarines				●	●	●		●			
Shortfin Barracuda-class conventionally-powered attack submarines											
<b>Surface ships</b>											
Charles de Gaulle aircraft carrier		●		●							
Mistral-class LHDs	●			●							
FREMM-class frigates			●	●							
Horizon-class frigates			●	●	●						
Multi-mission vessels and corvettes (GOWIND, B2M, MPV80)				●			●	●		●	
FTI / Belharra-class 4000-ton frigates				●							
<b>Underwater weapons</b>											
F21 heavyweight torpedo				●						●	
MU90 lightweight torpedo				●	●						
CANTO-S, CANTO-V and Contralto anti-torpedo countermeasure systems											
<b>Systems and equipment</b>											
SUBTICS, SENIT and SETIS combat management systems				●							
SHIPMASTER ship management system											

\* formerly Areva TA \*\* TKMS (ThyssenKrupp Group)

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Sales up 5% in 2016, to €3.2bn, thanks to domestic programmes (FREMM, Barracuda) and export markets.
- ▶ Sales target €5bn by 2025 and more diversified, with 25% of revenue from renewable marine energies, hence creation of Naval Energies in early 2017 (capital held by Naval Group as majority shareholder, Bpifrance, BNP Paribas Développement and Technip).
- ▶ As part of consolidation of French naval nuclear propulsion sector, acquired 20.3% stake in AREVA TA (since renamed TechnicAtome) in December 2016, alongside APE, CEA and EDF (historical shareholder), following AREVA's divestment of its 83.6% stake.
- ▶ Agreement concluded on STX France following Franco-Italian summit on 27th September 2017 (linked to Fincantieri take-over offer) protecting French industrial interests; French and Italian governments started preparatory work to create an alliance between Naval Group and Fincantieri focused on surface ships.

### Home market

- ▶ In June 2017, start of construction of French Navy's fourth multimission ship (B2M) ordered from Kership (co-owned with Piriou), for entry into service in 2019, and contract award to Chantiers Piriou-Kership-Naval Group alliance for third and fourth BSAH offshore support and assistance vessels in October 2017.
- ▶ Qualification firing of new F21 heavy torpedo (Artémis programme) in June 2017, following performance validation firings at end of 2016.
- ▶ In frigate segment, April and May 2017 marked by delivery of fourth FREMM, L'Auvergne, to the French Navy (eight ships ordered), contract award for development and construction of five FTI intermediate size frigates and contract received to upgrade the three most recent La Fayette-class frigates.
- ▶ On IA M51 programme, launch of IPER maintenance operations and work to adapt a ballistic missile submarine to M51 (December 2016); in submarine maintenance segment, routine maintenance contract award from Fleet Support Service for the four ballistic missile submarines based in Brest (November 2016).
- ▶ Continuation of work on Barracuda-class attack submarine programme with assembly of lead boat, Suffren, being completed for delivery in 2019 (24 months behind schedule).

### Export markets

- ▶ 38% of sales from exports in 2016 and prospects in Poland (industrial agreement with PGZ), Netherlands, Colombia (installation of local office with an eye on contract for four frigates) and Indonesia (partnership with PT PAL).
- ▶ Start of sea trials of Elfatih Gowind 2500-class corvette for Egypt in March 2017, for delivery in September 2017 (three other units assembled locally by Alexandria Shipyards).
- ▶ In submarine sector, following selection of its bid by Australia (April 2016), signature of global security agreement and intergovernmental agreement for development, construction, maintenance and upgrading of future RAN submarines at end of 2016, and launch of second of six Scorpenè-class submarines for India, built in partnership with Magazou Dock Ltd. (P-75 programme), in January 2017.

### Technology and Innovation

- ▶ Internally funded R&D amounting to ~ €114m in 2016, i.e. 3% of sales.



## BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Naval shipbuilding (patrol vessels, corvettes, frigates, landing helicopter dock, submarines)
- ▶ Systems and equipment
- ▶ Propulsion systems
- ▶ Maintenance and modernization

## GOVERNANCE

Chairman and CEO

D. E. G. Vilasánchez

Chief Financial Officer

L. J. Romero Sánchez

## OWNERSHIP STRUCTURE

Symbol

Listed on

Non Listed Company

Market Cap (M€)

Major Shareholders (as of 30.06.2017)

SEPI (Spanish State)

100%

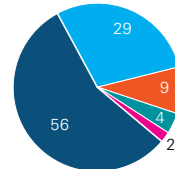
## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
SOCIBER Ltd	50%	Chile
Inmize Capital SI	20%	Spain
SAES-Capital S.A.	51%	Spain
Surveillance Maritime S.A.	10%	Spain

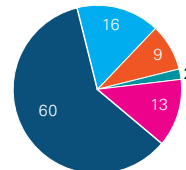
## KEY FIGURES (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	701	548	689	710
$\Delta$ (%)	-22,65%	-21,90%	25,82%	3,06%
Defence (%)	N/A	~80%	N/A	~80%
Export (%)	67%	61%	58%	40%
Operating profit/loss	-87	-23	-213	-277
Operating Margin	-12,44%	-4,24%	-30,92%	-39,01%
Net profit/loss	-58	-27	-167	-230
Order book	1 199	1 611	1 876	2 163
Employees	5 477	5 432	5 348	5 296

## REVENUE BY BUSINESS LINE (%)



## REVENUE BY REGION (%)



## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Lockheed Martin	General Dynamics	Indra Sistemas	L3 Technologies*	UTC	MTU**	Avio Aero***	BAE Systems	DIANCA	Larsen & Toubro	SEDEF
<b>Submarines</b>											
S-80-class attack submarines	●	●	●	●	●	●	●				
<b>Frigates and patrol vessels</b>											
F-100-class frigates	●	●									
F-310-class frigates	●				●						
AVANTE Family corvettes	●				●			●			
<b>LHD, LPD, Minehunter, Fast landing craft</b>											
ATHLAS 26000 amphibious warfare ships (LHD Juan Carlos I and LHD Canberra-class)		●					●		●	●	
ARENA 65 LCM fast landing craft							●			●	
ATHLAS 13000 Landing Platform Dock (LPD) (Galicia-class)											
M-31 Segura-class minehunter											
AOR Cantabria-class logistic support vessel									●		
<b>Systems and equipment</b>											
Dorna and Skydor Fire control systems (LCS-class frigates)	●										
Weapons command and control systems (F-100-class frigates)	●										
SCOMBA naval combat management system (Juan Carlos I LHD, F-100-class frigates)	●										
<b>Gas turbines</b>											
MTU series 396, 956 et 1163 (built under licence)						●					

\* formerly L3 Communications

\*\* Rolls-Royce

\*\*\* General Electric

## STRATEGIC HIGHLIGHTS

## Business trends

- ▶ Sales up for second year running (+3% in 2016, to €710m; +26% in 2015, to €689m), thanks to good performance in naval construction (+13%) and engineering (+63%), supported mainly by domestic orders, but a continuous decline of the net profit/loss.
- ▶ Go-ahead from SEPI (public agency in charge of state-owned companies) in July 2017 for new naval shipyard restructuring plan, to be implemented by Esteban García Vilasánchez, appointed Navantia president in May 2017.
- ▶ In February 2017, Senate approval for investment strategy aimed at supporting the group and increasing visibility (€700m needed; request to the executive authority to accelerate F110 frigate programme, for which design studies started in August 2015).
- ▶ To reduce dependence on military naval market, implementation of diversification strategy into civil sector, including marine energy and civil naval construction (oil tankers, hotel ships for offshore activities, cruise ship maintenance and upgrade).

## Home market

- ▶ Group still strongly tied to national orders (S-80, F-100 frigates, Juan Carlos I LHD, BAM Meteoro), which represented 48% of sales in 2016, vs. 42% in 2015.
- ▶ Workload of Ferrol and Cadix shipyards supported by orders for 5th and 6th BAM offshore patrol boats (four units delivered in 2011 and 2012), keels for both boats laid simultaneously at end of April 2016, delivery expected in 2017.
- ▶ Following multiple technical problems on S-80 submarine programme (target, four units), announcement in October 2016 of revised delivery schedule, with lead boat to be delivered in 2021 (nine years late) and the last unit, in 2026.

## Export markets

- ▶ Drop in share of exports in 2016, to 40% of sales, vs. 58% in 2015 (historic peak in 2013, at 67%).
- ▶ Reinforced presence in Australia, thanks to mid-2016 order for two replenishment ships (delivery scheduled for 2019 and 2020, but technical problems with propulsion system detected in June 2017) and pre-selection of tender (derivative version of F-100 frigates) for SEA 5000 frigate programme (design study and risk reduction contract awarded in August 2016).
- ▶ In Indonesia, KRI-362 Malahayati corvette combat system upgrade contract awarded in partnership with Indra (October 2016) and, in Turkey, keel laying for LHD ordered in May 2015 at SEDEF shipyard (April 2016), followed by agreement signed with AYESAS for integration of IPMS system on the ship (May 2017).
- ▶ New commercial office established in Norway, the group's sixth, in July 2017, to accompany growth of Support & Services activities there (multi-year contract awarded in April 2017 for maintenance of five F310 Fridtjof Nansen-class frigates).
- ▶ Bold ambitions in Middle East, with focus on surface ship contracts in Saudi Arabia (discussions for sale of five corvettes), UAE and Kuwait.

## Technology and Innovation

- ▶ Launch of three-year "Shipyard 4.0" programme in partnership with University of A Coruña (shared laboratory) to improve design and construction processes for future ships, including F110-class frigates (€140m to be invested ultimately at Ferrol site).



## BUSINESS AREAS

Platform manufacturer, systems integrator/  
equipment supplier

- ▶ Military aircraft, autonomous systems
- ▶ Defence electronics
- ▶ Space systems and C4ISR
- ▶ Cybersecurity
- ▶ Modernization and logistic services

## GOVERNANCE

Chairman and CEO

Wes Bush

Chief Financial Officer

Kenneth L. Bedingfield

## OWNERSHIP STRUCTURE

Symbol	NOC
Listed on	NYSE
Market Cap (M\$)	46 974

Major Shareholders (as of 30.06.2017)

State Street Corp.	11,32%
Vanguard Group Inc.	7,31%
Fidelity Management and Research Co.	4,13%
Capital World Investors	3,48%

## MAIN JOINT VENTURES AND ASSOCIATES

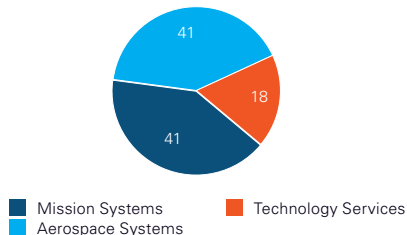
Name	%	Country
Longbow LLC	50%	U.S.
NSTec LLC	N/A	U.S.
Northrop Grumman Mission Systems Arabia Co. Ltd	N/A	Saudi Arabia
EuroHawk GmbH	50%	Germany

## KEY FIGURES (Fiscal year ended: 31.12.2016)

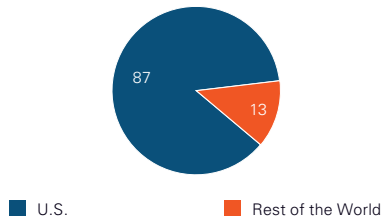
€ millions	2013	2014	2015	2016
Revenue	18 569	18 050	21 204	22 141
Δ (%)/[\$] *	-2,21%	-2,77%	-1,89%	4,17%
Defence (%)	79%	77%	75%	82%
Export (%)	14%	16%	14%	13%
Operating profit/loss	2 351	2 406	2 772	2 885
Operating Margin	12,66%	13,33%	13,07%	13,03%
Net profit/loss	1 470	1 557	1 794	1 988
Order book	26 853	31 463	32 996	43 012
Employees	65 300	64 300	65 000	67 000

\* Variation based on the revenue in local currency.  
See €/€ exchange rates p.7.

## REVENUE BY BUSINESS LINE (%)



## REVENUE BY REGION (%)





## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Lockheed Martin	Boeing	General Electric	BAE Systems	Textron	Raytheon	Rolls-Royce	L3 Technologies*	Rockwell Collins
<b>Autonomous systems</b>									
RQ-4 Global Hawk Block 10/20/30/40 HALE UAS	●					●	●	●	
MQ-8C Fire Scout VTOL UAS			●						
MQ-4C Triton HALE UAS			●	●	●	●			
Bat and R-Bat tactical UAS								●	
Firebird ISR manned and unmanned aircraft									
X-47B UCAS	●	●						●	
<b>Military aircraft</b>									
E-2C/D Hawkeye airborne early warning aircraft	●					●	●		
A-10 Thunderbolt II ground attack aircraft	●	●	●						
B-2 Spirit stealth bomber	●	●	●		●			●	
E-8C (JSTARS) Joint Surveillance Target Attack Radar Systems	●								
B-21 long-range strike bomber			●					●	
<b>Space systems</b>									
Advanced Extremely High Frequency (AEHF) payload	●								
<b>C4ISR</b>									
MESA surveillance radar (E-7A Wedgetail)	●	●							
AN/APG-77 -80 -81 -83 AESA radar (F-16, F-22, F-35)									
AN/TPS-80 G/ATOR 3D multimission radar									

\* formerly L3 Communications

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Sales back on growth track in 2016 (+4.7%), at \$24.5bn (~ €22bn), after five consecutive years of decline, thanks to solid performance in Aerospace Systems (+9%, related to ramp-up of F-35, E-2D Advanced Hawkeye, Triton and Global Hawk).
- ▶ Order book at historic high, at \$45bn (~ €43bn), up 30% from previous year.
- ▶ Acquisition of U.S. group Orbital ATK for \$9.2bn in September 2017.
- ▶ Ongoing internal rationalisation, with sale of non-strategic assets (BluVector acquired by LRR Partners in January 2017) and activities reorganised into three main business sectors as of 1st January 2016 (Aerospace Systems, Mission Systems and Technology Services).
- ▶ Extra production capacities at Moss Point (Mississippi) and Grand Forks (North Dakota), in charge of fixed and rotary wing drones, as well as at Palmdale (California, facility operational in 2019) in connection with B-21 strategic bomber programme.

### Home market

- ▶ Strongly dependent on domestic orders (87% of sales in 2016).
- ▶ Following abandonment of U.S. Navy's UCLASS programme (Unmanned Carrier-Launched Airborne Surveillance and Strike), awarded one-year risk reduction contract in October 2016 for MQ-25 Stingray UCAAS (Unmanned Carrier Aviation Air System), along with Boeing, Lockheed Martin and General Atomics.
- ▶ 1Q17 marked by selection of APG-83 SABR AESA radar for upgrade of 72 Air National Guard F-16s (same system as F-16 Block 70) and delivery of first AN/TPS-80 Ground/Air Task-Oriented Radar (G/ATOR) to USMC (total of five ordered).
- ▶ Submitted bid to USAF in October 2016 for ICBM system upgrade as part of Ground Based Strategic Deterrent (GBSD) programme.
- ▶ Producing 10 additional Fire Scout MQ-8C VTOL drone systems, following additional order from U.S. Navy in September 2016 (bringing total in-service fleet to 29 systems).

### Export markets

- ▶ Small (4%) drop in export sales, to \$3.2bn (€2.9bn), i.e. 13% of total sales.
- ▶ Consolidation of presence in Saudi Arabia, following new National Guard training contract in 2015 (\$947m, ~ €853m).
- ▶ Expanding activities in Australia, with installation of support service centres for LAIRCM systems (Large Aircraft Infrared Countermeasures) and KC-30A aircraft in 2017, new-generation communications satellite contract award (AUD223m, or €155m) in July 2017 and involvement of local subsidiary in F-35 regional support centre for Asia-Pacific.
- ▶ Contract awards in Denmark (LITENING targeting pod) and Netherlands (AN/ALQ-131 electronic countermeasures system upgrade) as part of F-16 fleet upgrade programme.
- ▶ UK subsidiary involved in F-35 regional support centre (operational in 2018, in partnership with BAE Systems). In Germany, Triton MQ-4C HALE drone selected by Bundeswehr in March 2017 (three systems ordered).

### Technology and Innovation

- ▶ R&D spending reached \$705m (€605m) in 2016.

**BUSINESS AREAS**

Platform manufacturer and systems integrator

- ▶ Space systems (satellites, payloads)
- ▶ Structures, components, propulsion systems
- ▶ Industrial products

**GOVERNANCE**

Chairwoman of the Supervisory Board	C. Fuchs
Chief Executive Officer	M. R. Fuchs
Chief Financial Officer	K. Melching

**OWNERSHIP STRUCTURE**

Symbol	OHB
Listed on	XETRA
Market Cap (M€)	576

Major Shareholders (as of 31.12.2016)

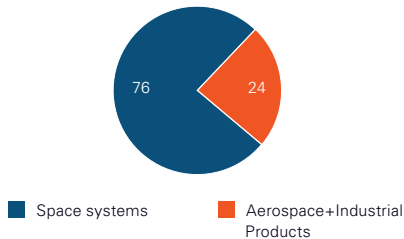
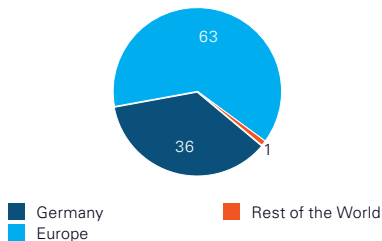
Fuchs Family	69,72%
Degroof Gestion Institutionnelle-Lux	1,37 %
Lazard Asset Management GmbH	0,56%
KBC Asset Management NV	0,86%

**MAIN JOINT VENTURES AND ASSOCIATES**

Name	%	Country
RST Radar Systemtechnik	24%	Germany
COSMOS International Satellitenstart GmbH	49,9%	Germany
Arianespace	8,26%	France
Antares Scarl	24%	Italy
MT Aerospace Holding GmbH	70%	Germany

**KEY FIGURES** (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	700	773	730	728
Δ (%)	10,64%	10,41%	-5,51%	-0,27%
Defence (%)	N/A	N/A	N/A	N/A
Export (%)	72%	67%	62%	64%
Operating profit/loss	36	40	40	43
Operating Margin	5,19%	5,23%	5,51%	5,86%
Net profit/loss	19	26	21	22
Order book	2 340	2 106	1 684	1 560
Employees	2 412	2 086	2 056	2 298

**REVENUE BY BUSINESS LINE (%)****REVENUE BY REGION (%)**

MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Thales Alenia Space	Airbus	Boeing	Saab AB	Arianespace*	Tesat SpaceCom	Stemme	Avio Spazio	Telespazio	IAI
<b>Satellites</b>										
SAR-Lupe satellite-based reconnaissance system	●	●		●	●					
E-SGA / FSLGS / CPHD Europeanization of satellite-aided reconnaissance programme										
Galileo European global navigation satellite system	●	●								
ATHENE missile early-warning system										
EDRS-C European data relay system		●			●	●		●		
OPSAT3000 high-resolution optical reconnaissance satellite					●			●	●	
<b>Aerial systems</b>										
OMCoSS multimission communication & surveillance system						●				
ARDS aerial reconnaissance data system		●								
<b>Structures, components, propulsion systems</b>										
Ariane 5 structures parts and components		●			●					
Antennas and mechatronics (ALMA, VBLI2010)										
Optical systems (EISCAT, MERLIN, Cherenkov)							●			
Propulsion systems (electrical, cold-gas, monopropellant and bipropellant systems)			●							
Missile components										

\* ArianeGroup

## STRATEGIC HIGHLIGHTS

## Business trends

- ▶ Decline in sales for second year running (-0.3% in 2016, to €728m; -5.5% in 2015, to €730m) due to reduced revenues in Aerospace & Industrial Products (-8%) and, to a lesser extent, Space Systems (-1.5%).
- ▶ Following creation of “Optics & Science” centre of excellence (360 employees) in Oberpfaffenhofen (group headquarters) in April 2016, construction of second Ariane 6 and Vega-C booster production line on MT Aerospace site by 2018, with commitment to reduce costs by 30%.
- ▶ Extension of equipment production and integration capacities of Belgian affiliate Antwerp Space with inauguration of new 100m<sup>2</sup> clean room at Hoboken site in October 2016.
- ▶ Two strategic operations concluded by venture capital subsidiary, OHB Venture Capital GmbH, in first half of 2017 with acquisition of Institute of Astronomy and Space Technology, Astrofactum GmbH, based in Munich, and creation with LuxSpace (OHB subsidiary) of new Luxembourg-based affiliate Blue Horizon (objective: create conditions necessary for sustainable life in space).
- ▶ Growth of activities in machine-to-machine communications (M2M) et Internet of Things (IoT) through establishment of new Austrian-based specialised subsidiary, M2M Europe Network&Solutions GmbH, in May 2016, to market Orbcomm products using solutions from OHB Logistics Solution GmbH.

## Home market

- ▶ Leader on home market and increasingly present at European level (as prime contractor), thanks to support from government authorities, state of Bremen, Bundeswehr and DLR (German Aerospace Center).
- ▶ Awarded €310.5m prime contractorship by DLR for construction of Heinrich Hertz (H2Sat) national telecommunications satellite technology demonstrator on 28th June 2017.

## Export markets

- ▶ Near-total dependence on European institutional market (37.5% of sales in 2016 on German market and 63.5% on European market, with ESA as largest customer), a dependence that will increase following launch of Ariane 6 and Vega-C programmes.
- ▶ Development of European activities through acquisition of medium-sized companies: CGS SpA in Italy, space division of SSC in Sweden, Antwerp Space in Belgium, and LuxSpace in Luxembourg.
- ▶ At 2017 Paris Air Show, signature in ESA pavilion of order for 3rd batch of Galileo satellites (eight additional satellites produced in partnership with British firm SSTL), which will complete initial deployment of European satellite navigation system (fully operational in 2020).
- ▶ Successful launch on 27th January 2017 of H36W-1 telecommunications satellite (for Spanish customer HispaSat), based on OHB's SmallGEO light platform, the first to be developed, integrated and built in Germany for more than 20 years.

## Technology and Innovation

- ▶ Strong increase in internally funded R&D spending, to €45m in 2016 (6.1% of sales) vs. €24m in 2015.



## BUSINESS AREAS

Engine manufacturer, systems integrator/equipment supplier

- ▶ Space systems (launch vehicles, spacecraft buses) and aerospace structures
- ▶ Weapon systems (cannon, remote controlled weapon station)
- ▶ Defence electronics
- ▶ Missile systems and ammunition
- ▶ Propulsion systems

## GOVERNANCE

Non-exec. Chairman of the Board  
Chairman and CEO  
Chief Financial Officer

R. R. Fogleman  
D. W. Thompson  
G. E. Pierce

## OWNERSHIP STRUCTURE

Symbol	QA
Listed on	NYSE
Market Cap (M\$)	6 056

Major Shareholders (as of 14.07.2017)

First Eagle Investment Management LLC	8,20%
BlackRock Fund Advisors	8,20%
Vanguard Group Inc.	7,80%
London Company of Virginia LLC	5,00%

## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
COI Ceramics Inc.	65%	U.S.
Alliant Techsystems Operations Saudi Arabia Ltd	N/A	Saudi Arabia
ViviSat LLC	50%	U.S.
Magna Uranium Services LLC	N/A	U.S.

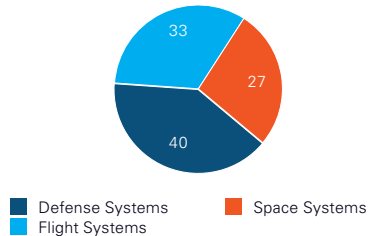
## KEY FIGURES (Fiscal year ended: 31.12.2016)\*

€ millions	2013	2014	2015*	2016*
Revenue	2 414	1 659	3 063	4 025
Δ (%)/[€]**	-11,20%	-	53,86%	31,38%
Defence (%)	73%	N/A	61%	60%
Export (%)	10%	N/A	23%	24%
Operating profit/loss	255	N/A	301	426
Operating Margin	10,54%	N/A	10,59%	10,59%
Net profit/loss	205	170	168	265
Order book	N/A	N/A	11 941	13 661
Employees	N/A	N/A	12 300	12 700

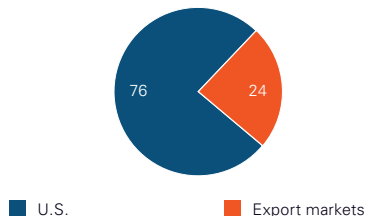
\* Since 2015, the reporting date is 31.12. vs 31.03 previously. The duration of this transitional exercise was of 9 months. 2015 Figures restated.

\*\* Variation based on the revenue in local currency. See €/€ exchange rates p.7.

## REVENUE BY BUSINESS LINE (%)



## REVENUE BY REGION (%)



# ORBITAL ATK

## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Airbus	Boeing	Lockheed Martin	Raytheon	Northrop Grumman	Yuzhnoye / Yuzhmash	BAE Systems	Elbit Systems	Leonardo	ST Engineering	MBDA
<b>Aerospace platform and structures</b>											
Aircraft structures (F-35, F-22, B-2, C-17)	●	●	●	●							
Launch vehicle structures (Ariane 5, Delta II and IV, Atlas V, Orion)	●	●	●								
Missile structures (GMD, Arrow II, Stunner, Trident II D5)		●	●	●							
Spacecraft buses (LEOStar, GEOStar, RapidStar, A100)				●	●					●	
<b>Launch vehicles</b>											
Antares					●						
Minotaures Family (1, 4, 5, 6, C)											
<b>Propulsion systems</b>											
Rocket boosters (Delta II et IV, ALV, SLS)		●	●								
Missile propulsion systems (Minuteman III, Trident II D5, Brimstone, Hellfire, AMRAAM, JAGM, SM-3 Block IA)		●	●	●	●						●
Scramjet (X-43A, HyFire, HyShot, HyBolt, Hy-V)			●								
<b>Precision weapons and armament systems</b>											
Precision Guidance Kit (PGK)											
Bushmaster cannons (M242, Mk44, M230)						●		●	●		
Guided Advanced Tactical Rocket (GATR) 70mm							●				
<b>Defence electronic systems</b>											
Advanced Anti-Radiation Guided Missile (AARGM) (AGM-88E)											●
Countermeasure systems (M-278, M-257, M-212, LUU-19)											

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Sales of \$4.5bn (~ €4bn) in 2016 and a target of \$4.6bn (€4.2bn) in 2017.
- ▶ Created by merger of satellite and launcher manufacturer ATK (excluding sporting goods arm) and propulsion specialist Orbital Sciences Corporation in February 2015. Orbital ATK acquired by Northrop Grumman in September 2017 (operation to close in first half 2018).
- ▶ Extension of Gilbert (Arizona) satellite production facility completed in June 2017 (creation of 155 jobs), following extension of Northridge (California), Rocket Center (West Virginia) and Chandler (Arizona) sites.
- ▶ Aims to reinforce leadership in boosters for space launchers and missiles, munitions and satellites, and wants to develop activities in on-orbit services (autonomous Mission Extension Vehicle, MEV, in partnership with Intelsat).

### Home market

- ▶ Highly dependent on domestic institutional orders (76% of sales in 2016).
- ▶ One of leading suppliers of small-calibre ammunition for the U.S. Department of Defense (seven-year contract representing 6% of sales in 2016).
- ▶ In June 2017, delivery of 500th Advanced Anti-Radiation Guided Missile (AARGM) to U.S. Navy and finalisation of initial concept of improved (ER) version of the missile (adapted to A2/AD environment).
- ▶ In interceptors and target missiles, successful launch of first target under Missile Defense Agency's Intermediate Range Ballistic Missile (IRBM) Target programme in mid-July 2017 (16 units to be delivered by 2019) and successful demonstration of Zombie Pathfinder low-cost guided target (programme financed by U.S. Army) in December 2016.
- ▶ Following signature of long-term partnership with United Launch Alliance (ULA) in 2015, sole supplier of boosters for Atlas V and Vulcan launchers, and in charge of supplying large composite structures.

### Export markets

- ▶ Exports accounted for 24% of sales in 2016, mostly from Defence Systems division (56%).
- ▶ Reinforced international deployment, particularly in Middle East (two subsidiaries in UAE in partnership with Al Tuff International, several contract awards in Iraq in logistics and aeronautical maintenance, and Saudi Arabia) and Asia (regional marketing bureau opened in Singapore).
- ▶ New export successes for Bushmaster cannon (more than \$600m, or €544m, in orders in 1Q17, including contract in Lithuania to equip Vilkas 8x8 Infantry Fighting Vehicles)

### Technology and Innovation

- ▶ Customer-financed R&D budget of \$396m (€358m), vs. \$116m (€105m) internally funded.
- ▶ Several milestones achieved in Next Generation Launcher (NGL) programme (preliminary design review), solid rocket motors (ground testing of QM-2 qualification motor), launch abort system (LAS) for Orion spacecraft (successful tests of attitude control motor –ACM) and development contract award for 120mm Advanced Multi-Purpose (AMP) tank round.





## BUSINESS AREAS

Platform manufacturer and systems integrator

Defence subsidiary of Oshkosh Corporation

- ▶ Wheeled armoured vehicles
- ▶ Tactical and logistics vehicles
- ▶ Propulsion systems for armoured vehicles
- ▶ Maintenance and modernization

## GOVERNANCE\*

Chairman  
 Chief Executive Officer  
 Chief Financial Officer  
 Oshkosh Defense President

C. P. Omtvedt  
 W. R. Jones  
 D. M. Sagehorn  
 J. Bryant

\* Oshkosh Corp.

## KEY FIGURES (Fiscal year ended: 30.09.2016)\*

€ millions	2013	2014	2015	2016
Revenue	5 771	5 125	5 496	5 673
Δ (%) /\$/**	-5,85%	-11,18%	-10,43%	2,97%
Defence (%)	40%	25%	15%	22%
Export (%)	21%	23%	21%	24%
Operating profit/loss	381	379	359	329
Operating Margin	6,60%	7,39%	6,54%	5,80%
Net profit/loss	238	232	207	196
Order book	2 101	1 503	2 330	3 172
Employees	11 900	12 000	13 300	13 800

\* Oshkosh Corp. Key figures.

\*\* Variation based on the revenue in local currency. See €/€ exchange rates p.7.

## OWNERSHIP STRUCTURE\*

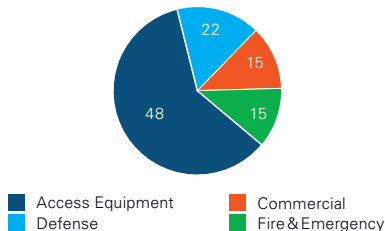
Symbol	OSK
Listed on	NYSE
Market Cap (M\$)	5 616

Major Shareholders (as of 30.06.2017)

Vanguard Group Inc.	9,05%
Reed Conner & Birdwell LLC	5,71%
BlackRock Fund Advisors	4,55%
AQR Capital Management LLC	3,94%

\* Oshkosh Corp.

## REVENUE BY BUSINESS LINE (%)

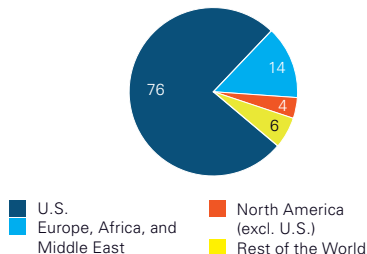


## MAIN JOINT VENTURES AND ASSOCIATES\*

Name	%	Country
RiRent Europe, B.V.	50%	Netherlands
Mezcladoras Trailers de Mexico, S.A. de C.V.	49%	Mexico

\* Oshkosh Corp. main JV and associates

## REVENUE BY REGION (%)



## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Plasan	DEW	General Dynamics	Link-Suspensions of Canada	Orbital ATK	Leonardo	Al Jaber Group	Rockwell Collins	MTU*	DGIM	EOS
<b>Light tactical vehicles</b>											
LATV light combat tactical all-terrain vehicle	●										
Joint Light Tactical Vehicle (JLTV)											
HMMWV modernization											
Special purpose All-Terrain Vehicle (S-ATV)											
SandCat	●									●	
<b>Medium tactical vehicles</b>											
FMTV family											
MSVS SMP		●	●	●							
6x6 MTVR											
<b>MRAP vehicles</b>											
M-ATV All-Terrain Vehicle family	●				●						●
<b>Heavy tactical vehicles</b>											
8x8 HEMTT A4 Heavy Expanded Mobility Tactical Truck									●		
8x8 HET Heavy Equipment Transporter					●	●					
8x8 LVSr Logistics Vehicle System Replacement											
<b>Vehicle systems and equipment</b>											
TAK-4 independent suspension system											
TerraMax unmanned ground vehicle technology							●				

\* Rolls-Royce

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ After several years of falling sales (decline in U.S. DoD orders following withdrawal of U.S. troops from Iraq and Afghanistan), return to growth for Oshkosh Corporation in 2016, +2.9%, to \$6.3bn (€5.7bn), thanks to solid performance in defence business unit (+44%).
- ▶ In military vehicles, sales target of \$2bn by 2019 (vs. \$1.3bn, or €1.2bn in 2016), including 50% from Joint Light Tactical Vehicle (JLTV) programme.
- ▶ Implementation of MOVE strategic plan to achieve savings of \$55m (€46m) per year as of 2017 and develop international activities.

### Home market

- ▶ Oshkosh Defense highly dependent on U.S. Department of Defense military vehicle orders (86% of sales in 2016; production and maintenance). Oshkosh Corporation in general highly dependent on home market (78% of sales in 2016).
- ▶ Following withdrawal in February 2016 of protest by Lockheed Martin – which lost JLTV competition won by Oshkosh Defense in August 2015 – steady production ramp-up, with 750 vehicles to be delivered in 2017, 2,000 in 2018 and 3,000 in 2019 (more than 18,000 vehicles to be delivered over eight years).
- ▶ In tactical vehicles, delivery of 35,000 vehicles (cargo vehicles and tractors) under Family of Medium Tactical Vehicles (FMTV) programme since 2009; new contract award in September 2016 for 1,661 vehicles, and launch of call for bids for FMTV A2, featuring capability enhancements (payload, survivability, mobility), in May 2017.
- ▶ Additional TACOM orders for modernisation of Family of Heavy Tactical Vehicles (FHTV), Heavy Expanded Mobility Tactical Trucks (HEMTT) and Palletized Load Systems (PLS) in April 2016 and May 2017.

### Export markets

- ▶ Slight increase in export sales at group level, to 24% of sales in 2016, vs. 21% in 2015.
- ▶ Aims to increase export sales by 15-20% in 2017, to 25-30% of global sales. Targets: Americas, Asia, Europe and Middle East (reinforced presence in the latter region, with goal of generating 45% of defence sales there).
- ▶ In July 2017, U.S. State Department approved FMS sale of 2,747 JLTV vehicles to the UK for \$1bn (€923m).
- ▶ Contract for 200 FMTV trucks awarded by Israeli Ministry of Defence in January 2017 as part of renewal of Israeli Defense Force tactical truck fleet.

### Technology and Innovation

- ▶ 30% decline in R&D spending in 2016, to \$103m (€93m), or 1.6% of sales in 2016.
- ▶ In defence sector, main focus on protection, remote operation and HUMS solutions.



**BUSINESS AREAS**

Platform producer and systems integrator

- ▶ Wheeled armoured vehicles
- ▶ Weapon systems (turrets, mortar systems)
- ▶ C41STAR (ELINT systems, IT systems, antennas)
- ▶ Aerostructures
- ▶ MRO and support services

**GOVERNANCE**

Chairman of the Board  
Chairman and CEO  
Chief Financial Officer

Christer Granskog  
Olli Isotalo  
Ville Jaakonsalo

**OWNERSHIP STRUCTURE**

Symbol

Listed on

Market Cap (M€)

Non Listed Company

Major Shareholders (as of 30.06.2017)

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

**MAIN JOINT VENTURES AND ASSOCIATES**

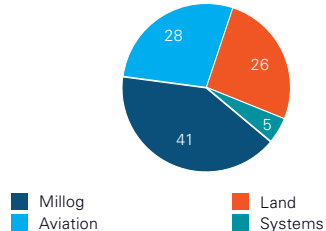
Name	%	Country
Millog	61,8%	Finland
Nammo	50%	Norway
Patria Hägglunds	50%	Finland
Patria Special Programmes	50%	Finland
Silverskin Information Security	25%	Finland

**KEY FIGURES** (Fiscal year ended: 31.12.2016)

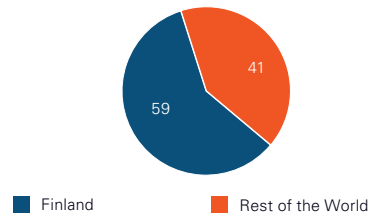
€ millions	2013	2014	2015	2016
Revenue	590	462	428	490
$\Delta$ (%)	14,64%	-21,56%	-7,50%	14,54%
Defence (%)	93%	89%	93%	95%
Export (%)	54%	50%	31%	41%
Operating profit/loss	88	56	47	75
Operating Margin	14,89%	12,11%	10,94%	15,23%
Net profit/loss	67	48	38	63
Order book	781	1 201	1 056	858
Employees*	2 612	2 546	2 806	2 765

\* Annual average number of employees.

**REVENUE BY BUSINESS LINE (%)**



**REVENUE BY REGION (%)**



MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	BAE Systems	Textron	Airbus	Duro Dakovic	PGZ	Denel	Kongsberg	Plasan Sasa	CMI Group	Gorenje	Rotis
<b>Wheeled armoured vehicles</b>											
8x8 AMV Armoured modular vehicle Family	●			●	●	●	●	●	●	●	●
<b>Weapon systems</b>											
NEMO											
NEMO Navy											
AMOS	●	●									
NEMO training simulator											
<b>C4ISTAR</b>											
Advanced Real-time Intelligence System (ARIS)											
Compact Airborne Networking Data Link (CANDL)											
Multi-purpose Networking Data Link (MPNDL)											
<b>Aerostructures</b>											
Composite wing spoiler (A380)			●								
Composite components (A400M, F/A-18, NH90)			●								
<b>MRO, services, logistics support</b>											
Pilot training											
F/A-18 (Switzerland), NH90 (Sweden, Norway, Finland), C-295 (Finland) MRO			●								

## STRATEGIC HIGHLIGHTS

## Business trends

- ▶ After two difficult years, strong increase in sales in 2016 (+14.5%, to €490m) helped by orders in life cycle support/MRO sector.
- ▶ After a period of restructuring in 2014 and 2015, marked by asset divestments (space activities sold to RUAG, ammunition subsidiary acquired by Nammo) and a headcount reduction plan, group now focused on reinforcing activities in life cycle support/MRO (extension of several sites in Millog branch), sensors (via Senop subsidiary, established in 2016) and cybersecurity.
- ▶ Major change in ownership in May 2016, with sale by State of Finland of 49.9% stake (while retaining remaining 50.1%) to Norway's Kongsberg (50%-owned by State of Norway), henceforth group's new industrial partner.
- ▶ Following Kongsberg's acquisition of a stake in company, change in strategy, with emphasis henceforth on internationalisation of activities.

## Home market

- ▶ A group largely focused on defence (95% of sales in 2016) and highly dependent on domestic orders (59% of sales in 2016).
- ▶ Strong growth in life cycle support/MRO, helped by needs of Scandinavian forces, leading to signature of long-term strategic partnerships (outsourcing of life cycle support for armoured vehicles, ships, F/A-18s, Hawk M51s and NH90s of Finnish armed forces).
- ▶ In December 2016, delivery of last upgraded F/A-18 Hornet (MLU 2 version; total of 62 aircraft).
- ▶ Concerning replacement of Air Force F/A-18 Hornet fleet (retirement in 2025, HX Fighter project), group is likely to play a key role in discussions between Finnish State and foreign suppliers (RFI in December 2015; selection process starting in 2018).
- ▶ Partner company Rauma Marine Constructions (RMC) selected in April 2017 for design phase of future multi-role corvettes (Squadron 2020 project involving acquisition of four ships).

## Export markets

- ▶ Rebound in export sales (41% of sales in 2016, vs. 31% in 2015), helped by its flagship product, 8x8 AMV armoured vehicle (more than 1,600 units sold).
- ▶ AMV35 bid (offered in partnership with BAE Systems Australia) one of two tenders pre-selected by Australia in July 2016 to receive one-year risk-mitigation contracts (awarded in August 2016) under Land 400 programme (acquisition of 225 8X8 wheeled armoured vehicles).
- ▶ Middle East seen as strategic export target, hence creation of new subsidiary, Patria Land Middle East, in Abu Dhabi in March 2017.
- ▶ In helicopter life cycle support, two-year contract (with option for two further years) awarded in April 2017 for Norwegian NH90 NFH fleet.

## Technology and Innovation

- ▶ R&D budget stable at €7.3m in 2016, or ~1.5% of sales.
- ▶ First half of 2017 marked by testing of new AMV28A amphibious armoured vehicle with Kongsberg PROTECTOR MCT-30 turret (displayed at IDEX 2017 exhibition).
- ▶ In VTOL UAVs, partnership established with Austria's Camcopter (March 2017) to integrate CANDL (Compact Airborne Networking Data Link) system on S-100 drone.



### BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Tracked and wheeled armoured vehicles
- ▶ Weapon systems and artillery systems
- ▶ Missile systems
- ▶ Aircraft systems (UAS, MRO, modernization)
- ▶ Defence electronics
- ▶ Naval (maintenance)
- ▶ Energy and offshore (platform modules and metallic structures)

### GOVERNANCE

Chairman of the Supervisory Board  
President of the Management Board

P. Sulewski  
B. Wojnicz

### OWNERSHIP STRUCTURE

Symbol

Listed on

Non Listed Company

Market Cap (M PLN)

Major Shareholders (as of 30.06.2017)

Polish Department of the Treasury	36,75%
Polski Holding Obronny sp z.o.o (ex-Bumar)	33,50%
Agencja Rozwoju Przemysłu S.A.	29,75%

### MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Cenzin sp z.o.o.	68,30%	Poland
Nano Carbon sp z.o.o	51%	Poland
Huta Stalowa Wola S.A.	88,77%	Poland
Zakłady Mechaniczne Bumar - Labedy S.A.	94,32%	Poland

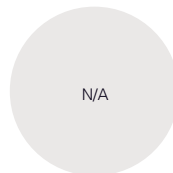
### KEY FIGURES (Fiscal year ended: 31.12.2016)\*

€ millions	2013	2014	2015	2016
Revenue	-	1 196	N/A	N/A
Δ €/PLN(%)**	-	-	N/A	N/A
Defence (%)	-	N/A	N/A	N/A
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 profit/loss	-	54	N/A	N/A
Order book	-	N/A	N/A	N/A
Employees	-	17 500	N/A	N/A

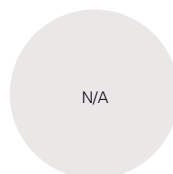
\* Holding company created in 2013, fully operational since 2014.

\*\* Variation based on the revenue in local currency.  
See €/PLN exchange rates p.7.

### REVENUE BY BUSINESS LINE (%)



### REVENUE BY REGION (%)



MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Rheinmetall Defence	Patria	Hanwha Techwin	SMW Gdynia	Saab AB	Pratt & Whitney*	Lockheed Martin	Naval Shipyard	ARP
<b>Armoured vehicles</b>									
8x8 Rosomak armoured vehicle (AMV under licence)	●								
BRDM-2 and ARV reconnaissance armoured vehicle									
8x8 Jelcz P882.53 logistic vehicle									
Armoured vehicles modernization (Leopard 2A4/2A5, BWP-1 PUMA, TUMAK-4)	●								
<b>Weapon systems, artillery systems, missiles</b>									
KRAB 155mm self-propelled tracked howitzer			●						
Mod.96 Beryl assault rifle Family									
BIRDS short-range air defence system									
Poprad VSHORAD system									
HYDRA remote-controlled anti-aircraft									
2K12 KUB (SA-6) surface-to-air missile system modernization									
<b>Aircraft systems</b>									
Helicopters and turbines MRO and modernization (Mil, TW3-117, SO-3)			●						
Aircraft and engines MRO and modernization (Su-22, MiG-29, F-16, F100)					●	●	●		
<b>Defence electronics</b>									
TRS-15 mobile medium-range 3D surveillance S-band radar									
ARS-800 airborne radar system									

\* UTC



## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Strategy for 2015-2030 presented in September 2015, with the ambition to triple annual sales, to PLN12bn (€2.9bn), including 50% from exports and civil markets, thanks to contracts on home market, introduction of around 100 new products over the period, and diversification (e.g. cybersecurity and space).
- ▶ Decision by Department of the Treasury in January 2017 to increase the group's capital by PLN300m (€69m) to modernise production facilities.
- ▶ In line with government's desire to consolidate the Polish naval sector, acquisition of Stocznia Marynarki Wojennej S.A. shipyard in May 2017 (in liquidation at the time).

### Home market

- ▶ Holding company (comprising 38 entities) created out of government authorities' desire to possess national defence industrial and technological capacities to ensure greater degree of autonomy and independence in acquisition of defence equipment.
- ▶ Primary recipient of contracts awarded under wide-ranging armed forces modernisation plan (14 programmes worth an estimated total of PLN60bn, or ~ €14.3bn, in 2022 timeframe).
- ▶ Key strategic partner for foreign suppliers seeking to penetrate Polish defence market (technology transfer agreements systematically negotiated by authorities).
- ▶ 2016/2017 marked by signature of partnerships in several sectors, e.g. helicopters (Bell, Leonardo and Lockheed Martin), missile systems (MBDA, Northrop Grumman), induction rocket systems (Thales TDA), naval systems (Naval Group, Saab), engines (Rolls-Royce), drones and defence electronics (Elbit Systems and IAI) and space (Thales Alenia Space).
- ▶ Following signature of Memorandum of Intent (MoI) between U.S. DoD and Polish Ministry of Defence in July 2017 for acquisition of Patriot missiles (Wisla programme), industrial cooperation being consolidated with Raytheon (U.S.).
- ▶ In vehicles sector, Jelcz subsidiary awarded three-year contract worth estimated maximum PLN420m (€105m) for supply of 500 Jelcz 442.32 trucks.
- ▶ Selection of PGZ/Polish Nauta ship repair yard to build ship platform for future signals intelligence vessel for Swedish Navy (April 2017).

### Export markets

- ▶ Marginal export sales at this time, but Polish ambition to ultimately become one of Europe's main arms producers and exporters.

### Technology and Innovation

- ▶ Dedicated UAV System Competence Centre opened in Bydgoszcz end-2016 to develop competences and know-how in drones. At the same time, signature of partnership with Microsoft in cybersecurity.
- ▶ Doctoral programme in space technologies launched with Warsaw Institute of Technology in October 2016.
- ▶ Creation of defence R&D centre (CIPPZ) and training centre (CSiR) on Radom site in 1Q16.



## BUSINESS AREAS

Missiles producer, systems integrator/equipment supplier

- ▶ Missiles systems and air defence systems
- ▶ Autonomous systems
- ▶ C4ISR
- ▶ Weapon systems and artillery systems (land and naval)
- ▶ Defence electronics
- ▶ Space (microsatellites, propulsion systems and components)

## GOVERNANCE

Chairman

Uzi Landau

Chief Executive Officer

Yoav Har-Even

Chief Financial Officer

David Vaish

## OWNERSHIP STRUCTURE

Symbol

Listed on

Non Listed Company

Market Cap (M NIS)

Major Shareholders (as of 30.06.2017)

Israeli State

100%

## MAIN JOINT VENTURES AND ASSOCIATES

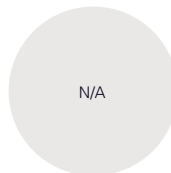
Name	%	Country
Shilat Optronics Ltd	50%	Israel
Opgal Optronic Industries Ltd	49,90%	Israel
GESPI Defense Systems	40%	Brazil
EuroSpike GmbH	20%	Germany
Controp Precision Technologies Ltd	50%	Israel

## KEY FIGURES (Fiscal year ended: 31.12.2016)

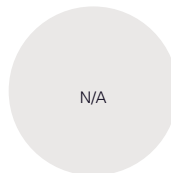
€ millions	2013	2014*	2015	2016
Revenue	1 541	1 477	1 819	1 957
Δ (%) / \$)*	15,32%	-4,10%	2,80%	7,33%
Defence (%)	100%	100%	100%	100%
Export (%)	54%	55%	61%	45%
Operating profit/loss	N/A	N/A	N/A	N/A
Operating Margin	N/A	N/A	N/A	N/A
Net profit/loss	76	68	106	111
Order book*	3 230	4 141	4 555	5 361
Employees	6 594	6 564	6 799	7 500

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

## REVENUE BY BUSINESS LINE (%)



## REVENUE BY REGION (%)



# RAFAEL ADVANCED DEFENSE SYSTEMS

## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	IAI	Lockheed Martin	BAE Systems	Northrop Grumman	Raytheon	Diehl Defence	Rheinmetall Defence	Elbit Systems	DRDO (India)*	General Dynamics	MBDA
<b>Missile systems and air defence systems</b>											
David's Sling missile defence system and Stunner interceptor					●						
Iron Dome C-Ram & very short air defence system	●										
Tamir interceptor (Iron Dome)					●						
SPYDER SR and MR-ADS short and medium range air defence systems	●										
Barak 1 and 8 surface-to-air missiles	●							●			
Python air-to-air missiles family											
POPEYE air-to-surface missiles (AGM-142 Raptor)		●									
Spike family anti-armor missiles						●	●		●	●	
SPICE guidance kit					●						
<b>Defence electronics</b>											
Missile's guidance systems							●				
LITENING advanced targeting pod				●							
<b>Autonomous system</b>											
Protector USV		●	●								
<b>Weapon systems and artillery systems</b>											
Mk I and Mk II remote-controlled weapon station									●		
THOR high energy laser IED neutralization system									●		
<b>Space</b>											
Propulsion systems											

\* Defence Research and Development Organization

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Sales up 7.4% in 2016, to \$2.1bn (~ €1.9bn), and a new record order book of \$5.6bn (~ €5.4bn), thanks to healthy national orders (Iron Dome and David's Sling systems, and Trophy active protection system) and new successes on export market.
- ▶ Third-ranked Israeli defence group, behind IAI and Elbit Systems, and leading Israeli missile builder.
- ▶ Launched \$409m (~ €378m) bond issue in March 2017 to finance R&D activities and possible acquisitions.

### Home market

- ▶ 55% of sales on home market in 2016, vs. 49% the previous year.
- ▶ Involvement in highly strategic programmes with U.S. financing, including missile defence systems – David's Sling (declared operational in April 2017) and Iron Dome (integration of C-Dome systems on Sa'ar-class ships started in May 2016) – both conducted in cooperation with missile supplier Raytheon.
- ▶ End-2016, announcement of contract for several hundred new-generation Trophy active protection systems (joint programme with IAI and IMI launched in 2014) to equip Israeli Defense Forces battle tanks and armoured vehicles.

### Export markets

- ▶ Export sales made up 45% of revenues in 2016, mainly in U.S. and, to a lesser extent, Asia and Latin America.
- ▶ Indian market highly strategic – reinforced local presence and new partnerships over past two years, and contract in April 2017 to supply 100 Barak-1 SR-SAM systems for Indian Navy.
- ▶ On European market, new success for Samson Mk2 remote-controlled weapon station (already ordered by 25 countries), selected by Lithuania in August 2016 to equip its 8x8 Boxer vehicles, and acquisition by British MoD of Modular, Integrated C4I Air & Missile Defense System (MIC4AD) under Sky Sabre ground-based air defence (GBAD) programme in February 2017.
- ▶ Initial export sale of Spike SR anti-tank missile, purchased by Singapore Ministry of Defence in June 2016 to replace Carl-Gustaf M2 currently in service.
- ▶ Australian office opened in 2016 in connection with Land 400 contract (225 armoured vehicles), for which group aims to propose Trophy system and Samson remote-controlled weapon station.
- ▶ Export offering in cyber sector for government customers and critical infrastructure operators (Cyber Dome solution to defend against attacks on SCADA systems).

### Technology and Innovation

- ▶ Presentation of improved version of Spike missile, Spike LR2 (with 5G capabilities), and new tactical drone detection and neutralisation system, Drone Dome, at 2017 Paris Air Show.
- ▶ Continued development of missile launch system for light helicopters (Light Helicopter Launcher programme), such as Airbus H145 and AS550 Fennec, Bell 407 and India's ALH.



## BUSINESS AREAS

Missiles producer, systems integrator/equipment supplier

- ▶ Missile systems
- ▶ Integrated defence systems (radar systems, electronic suite, air defence)
- ▶ C5ISR systems
- ▶ Cybersecurity
- ▶ Space and airborne systems
- ▶ Training and support services

## GOVERNANCE

Chairman and CEO  
Chief Financial Officer

Thomas A. Kennedy  
Anthony F. O'Brien

## OWNERSHIP STRUCTURE

Symbol	RTN
Listed on	NYSE
Market Cap (M\$)	50 736

### Major Shareholders (as of 30.06.2017)

Vanguard Group Inc.	7,48%
State Street Corp.	4,30%
Morgan Stanley Smith Barney LLC	2,52%
BlackRock Fund Advisors	2,05%

## MAIN JOINT VENTURES AND ASSOCIATES

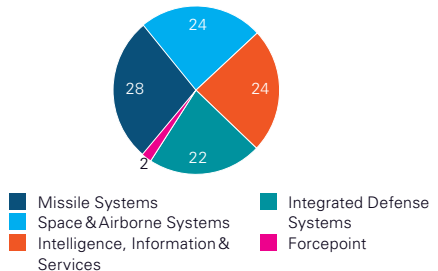
Name	%	Country
Diehl Raytheon Missile Systeme GmbH	50%	Germany
NetFires LLC	50%	U.S.
Forcepoint LLC	80,3%	U.S.
Raytheon-Lockheed Martin Javelin JV	50%	U.S.
TRS AMDC2	50%	France

## KEY FIGURES (Fiscal year ended: 31.12.2016)

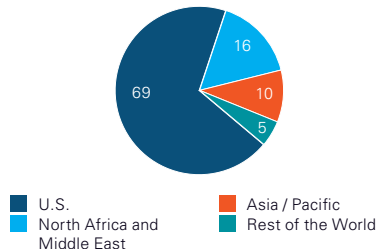
€ millions	2013	2014	2015	2016
Revenue	17 850	17 182	20 952	21 744
Δ (%)/(\$)*	-2,90%	-3,71%	1,84%	3,54%
Defence (%)	91%	97%	95%	95%
Export (%)	27%	29%	31%	31%
Operating profit/loss	2 212	2 393	2 716	2 872
Operating Margin	12,39%	13,93%	12,96%	13,21%
Net profit/loss	1 516	1 700	1 863	1 964
Order book	24 425	27 651	31 844	31 848
Employees	63 000	61 000	61 000	63 000

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

## REVENUE BY BUSINESS LINE (%)



## REVENUE BY REGION (%)



## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Nammo	Lockheed Martin	L3 Technologies*	Northrop Grumman	Huntington Ingalls Industries	BAE Systems	General Dynamics	MHI	Rafael	Orbital ATK	IMI
<b>Integrated defence systems</b>											
AMDR AESA radar (AEGIS)											
AN/TPY-2 ground-based surveillance radar											
PATRIOT missile defence system	●										
Iron Dome air defence system and Stunner interceptor (David's Sling)								●			
DDG-1000 Zumwalt-class (prime mission systems equipment integrator for all electronic and combat systems)				●	●	●					
<b>Weapon systems</b>											
JAVELIN anti-tank missile	●									●	
AIM-120 AMRAAM air-to-air missile		●				●				●	
AIM-9 Sidewinder air-to-air missile							●				
SM-2, SM-3, SM-6 interceptors	●	●					●				
TOMAHAWK cruise missile											
EXCALIBUR artillery projectile	●					●					
Paveway laser guided bomb											
PERM munitions (GPS guidance)											●
<b>Aerospace systems</b>											
Enhanced Integrator Sensor Suite (EISS) of the Global Hawk HALE UAS			●								
Next-generation jammers (EA-18G Growler)											
Space Tracking and Surveillance System Demonstrator (STSS-D)			●								

\* formerly L3 Communications

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Second consecutive year of growth in 2016 (+3.54%), to \$24.1bn (€21.7bn), helped by good results in Missile Systems (+8%, thanks to Paveway programme), Space and Airborne Systems (+7%) and Forcepoint (+73%). Sales target of around \$25bn (€23bn) in 2017.
- ▶ Against backdrop of strong growth in missile systems activities, decision to increase workforce and expand several production facilities, particularly in Arizona (+2,000 people by 2022, mainly for Patriot missile production) and New Mexico.
- ▶ Leveraging historical activities in intelligence systems, increasing presence in cybersecurity sector through external growth strategy (17 acquisitions since 2007), creation of new dedicated "Forcepoint" unit in early 2016 and opening of a cybersecurity centre in Augusta (Georgia) close to U.S. Army Cyber Command in August 2016.
- ▶ In June 2016, acquired Thales' 50% stake in Thales Raytheon Systems (TRS) LLC (based in U.S.) and sold its stake in TRS SAS (based in France) to the French group, thus ending partnership between the two groups initiated in 2001.

### Home market

- ▶ U.S. still strongly dependent on home market, though less so in recent years (67% of sales in 2016 vs. 74% in 2012).
- ▶ In February 2017, first successful intercept test with Standard Missile-3 (SM-3) Block IIA (deployment to start in 2018), and, in August 2016, additional Missile Defense Agency order for 47 SM-3 Block IB missiles.
- ▶ Selection as prime contractor of engineering and manufacturing development (EMD) for three Three-Dimensional Expeditionary Long-Range Radar (3DELRR) systems confirmed in June 2017. Selection had been contested in 2014 by losing bidders Northrop Grumman and Lockheed Martin.
- ▶ Ongoing AN/TPY-2 radar upgrade work (current and future systems) in support of transition to breakthrough gallium nitride (GaN) technology, replacing gallium arsenide (GaAs) components, with two Missile Defense Agency contracts (September 2016 and April 2017).
- ▶ Teamed with Kongsberg (Norway) in June 2017 to offer Naval Strike Missile for "over-the-horizon" requirement for U.S. Navy frigates.
- ▶ 1H17 also marked by DOMino contract award from Department of Homeland Security (DHS) for protection of ".gov" domain (\$1bn, or €923m, over five years) and by U.S. Army and USAF software system upgrade contracts.

### Export markets

- ▶ Share of exports (including FMS) stable, at 31% of sales in 2016.
- ▶ The 13 countries to have invested in acquisition and upgrade of Patriot missile systems for \$7.8bn (~ €7bn) since December 2014 joined by Poland in July 2017 (Memorandum of Intent signed between U.S. DoD and Polish Ministry of Defence).
- ▶ SM-2 missile production line restarted in June 2017 (shut down in 2013 due to lack of orders) to meet requirements for Netherlands, Japan, Australia and South Korea.

### Technology and Innovation

- ▶ R&D spending of \$755m (~ €697m) in 2016, i.e. 3% of sales.

## BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Wheeled armoured vehicles
- ▶ Tactical and logistics vehicles
- ▶ Propulsion systems
- ▶ Weapon systems (remote controlled weapon station)
- ▶ Maintenance and modernization

## GOVERNANCE

Chairman and CEO  
Chief Financial Officer

Emmanuel Levacher  
Christian Cusset

## KEY FIGURES (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	~420	~380	~400	~410
Δ (%)	20,00%	-9,52%	5,26%	2,50%
Defence (%)	100%	100%	100%	100%
Export (%)	~38%	~36%	~32%	N/A
Operating profit/loss	N/A	N/A	N/A	N/A
Operating Margin	N/A	N/A	N/A	N/A
Net profit/loss	N/A	N/A	N/A	N/A
Order book	N/A	N/A	N/A	N/A
Employees	~1 400	~1 200	~1 200	~1 400

## OWNERSHIP STRUCTURE\*

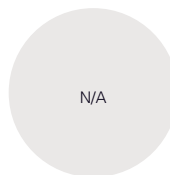
Symbol	VOLV.B
Listed on	Nasdaq OMX Stockholm
Market Cap (M SEK)	298 307

Major Shareholders (as of 30.06.2017)

Cevian Capital	8,70%
Industrivärden	7,00%
Swedbank Robur Funds	4,90%
Alecta	4,40%

\* Volvo Group ownership structure

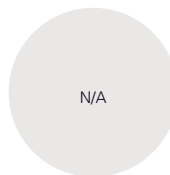
## REVENUE BY BUSINESS LINE (%)



## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
SOFRESA	1,98%	France
ODAS	2%	France
SOFEMA	4%	France

## REVENUE BY REGION (%)





## PRINCIPAUX PROGRAMMES ET LIENS DE COOPÉRATION

	Nexter*	Thales	Astais	Metravib**
<b>Reconnaissance vehicles</b>				
4x4 VBL Mk2 light armoured vehicle			●	
4x4 VBR light armoured vehicle				
4x4 PVP light protected vehicle				
<b>Armoured transport vehicles</b>				
4x4 / 6x6 VAB Mk1 armoured vehicle	●	●		
6x6 VAB Mk3 armoured vehicle		●		
6x6 VAB Ultima Génie armoured vehicle		●		●
Higuard MRAP				
<b>Propulsion systems</b>				
VBCI	●			
<b>Light tactical vehicles</b>				
4x4 VLRA (Commando, PC, STL, SAN, SH, DTT)				
4x4 Sherpa Light (APC, Scout, FS, SW, Carrier)				
4x4 ALTV (pick-up, Torpedo, SW, SAN, PC)				
<b>Heavy tactical and logistics trucks</b>				
4x4 / 6x6 / 8x4 / 8x8 KERAX				
4x4 / 6x6 Sherpa Medium				

\* KNDS

\*\* ACOEM

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ October 2012: Volvo AB (Sweden) buys Panhard, via Renault Trucks Defense, for €62.5m, with integration of previously independent ACMAT business (all consolidated into Volvo Group Governmental Sales – VGGS).
- ▶ Integration of Panhard product line into VGGS portfolio of vehicles for government customers, alongside Renault Trucks Defense, Mack Defense and Volvo Defense brands.
- ▶ VGGS generated ~ €480m in sales in 2016 (1.5% of overall sales).
- ▶ Following strategic review, parent company Volvo Group decided in November 2016 to sell military vehicle business (VGGS division, ~ 1,300 employees), but process ultimately put on hold in October 2017 as buyout offers deemed inadequate.

### Home market

- ▶ Under Scorpion programme to renew French Army combat capacities, French Ministry of Armed Forces awarded in May 2017 ad hoc consortium of RTD, Nexter and Thales contract for first 319 VBMR multi-role armoured vehicles and first 20 EBRC armoured reconnaissance and combat vehicles.
- ▶ In charge of supplying powertrains for Griffon (VBMR) and Jaguar (EBRC) vehicles, as well as Scorpion programme spares and components logistics.
- ▶ In light 4x4 vehicle segment, selection of RTD offer based on militarisation of commercial 4x4 vehicle under VLTP NP non-protected multi-role light tactical vehicle programme, with award of framework contract in December 2016 to build, supply and maintain 1,000 vehicles (out of planned total of 3,700 units to replace P4 off-road light vehicle fleet).
- ▶ In February 2017, delivery of first heavy vehicles for special forces (first batch of 25 units) under VTCFS contract awarded in December 2015 for supply of 443 vehicles (241 VLFS light vehicles and 202 PLFS heavy vehicles).
- ▶ In maintenance sector, partnership agreement signed with French Army's SMITer ground forces industrial maintenance unit and SIMMT ground forces maintenance unit for industrial repair work on Renault 6x6 GBC 180 tactical vehicles.

### Export markets

- ▶ Export sales momentum driven by Africa and Middle East, with 600 armoured vehicles (flagship Sherpa, VAB Mk3 and ACMAT equipment) and more than 2,000 military trucks delivered in recent years (including 1,500 trucks to Egypt).
- ▶ New opportunities linked to French Scorpion programme, given Belgium's stated desire to join the programme (June 2017) and acquire 60 Jaguar-type medium combat vehicles and 417 Griffon-type light combat vehicles (intergovernmental agreement to be signed in 2018).
- ▶ Following order for 120 Sherpa Scouts for National Guard, new contract in Kuwait at end of 2016 for 300 Sherpa Light vehicles valued at €270m.

### Technology and Innovation

- ▶ Main R&D activities: protection and armour technologies, vetronics, electronic architecture, remote weapon stations, connected vehicles, hybrid propulsion.



## BUSINESS AREAS

Platform manufacturer and systems integrator

Subsidiary of Rheinmetall AG

- ▶ Wheeled armoured vehicles
- ▶ Defence electronics and C4ISR
- ▶ Weapon systems and ammunition
- ▶ Air defence systems
- ▶ Simulation and training solutions

## GOVERNANCE

Chairman and CEO

Armin Papperger

Chief Financial Officer

Helmut P. Merch

## OWNERSHIP STRUCTURE\*

Symbol	RHM
Listed on	XETRA
Market Cap (M€)	3 816

Major Shareholders (as of 30.06.2017)

Dimensional Fund Advisors LP	3,63%
Norges Bank Investment Management	3,25%
Capital Research & Management Co.	3,06%
Horseman Capital Management Ltd	2,99%

\*Rheinmetall AG ownership structure

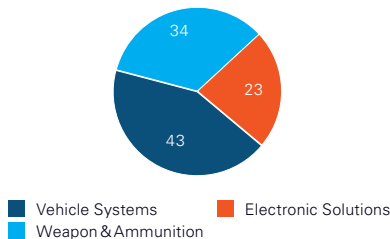
## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Projekt System & Management GmbH (PSM)	50%	Germany
ARTEC GmbH	64%	Germany
Rheinmetall Denel Munition Pty Ltd	51%	South Africa
Nitrochemie AG	51%	Switzerland
Eurospike GmbH	40%	Germany

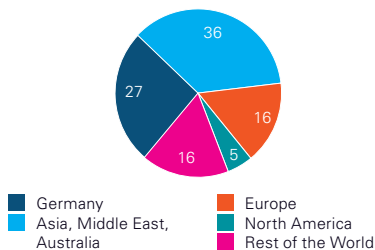
## KEY FIGURES (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	2 155	2 240	2 591	2 946
Δ (%)	-7,71%	3,94%	15,67%	13,70%
Defence (%)	100%	100%	100%	100%
Export (%)	68%	71%	68%	73%
Operating profit/loss	60	-9	90	147
Operating Margin	2,78%	-0,40%	3,47%	4,99%
Net profit/loss	-27	N/A	13	78
Order book	6 050	6 516	6 422	6 656
Employees	9 193	9 184	9 581	10 002

## REVENUE BY BUSINESS LINE (%)



## REVENUE BY REGION (%)



## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	KMW*	Kongsberg	Eurofighter GmbH	Thales	BAE Systems	General Dynamics	Supacat	Lockheed Martin	STV Group	Avior
<b>Armoured vehicles</b>										
8x8 Boxer armoured transport vehicle	●					●				
Puma infantry fighting vehicle	●									
<b>Weapon systems</b>										
L44 and L55 120mm tank guns (Leopard 2, M1 Abrams, PzH 2000)					●					
MK 30-2/ABM 30mm tank gun (PUMA)										
Chassis, fire control system, ammunition (PzH 2000 155mm self-propelled howitzer)	●									
<b>Turret systems and weapon stations</b>										
PROTECTOR remote weapon station		●								
LANCE and LANCE RC turret systems							●			
<b>Air defence systems</b>										
Oerlikon MOOTW Skyshield/ C-RAM systems										
Oerlikon Skyshield 35mm gun					●			●		
<b>Systems and equipment</b>										
X-TAR3D surveillance radar					●					
FCU-HW fire control system (Leopard 2)										
<b>Simulation and training solutions</b>										
Simulators (Tiger, Eurofighter, NH90, MiG-29K, Tornado)										
<b>Protection systems</b>										
Cirrus 118 array flare		●	●							●

\* KNDS

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Big increase in sales for second year running, +14% to €2.95bn in 2016 (+16% in 2015), helped by growth in Weapons & Ammunition (+26%) and Vehicle Systems (+16%).
- ▶ As of 1st January 2016, reorganised into three business areas: Vehicle Systems (formerly Wheeled Vehicles, now includes Rheinmetall Landsysteme GmbH and Rheinmetall MAN Military Vehicles GmbH), Weapons & Ammunition (formerly Combat Systems, not including Combat Platforms business, now consolidated into Vehicle Systems) and Electronic Solutions.
- ▶ In electronics sector, Rheinmetall Defence Electronics GmbH renamed Rheinmetall Electronics GmbH in July 2017 to reflect successful positioning in civil applications.

### Home market

- ▶ Domestic orders represented 26% of sales in 2016, less than in 2015, but positive outlook in short and medium term with multiple target markets.
- ▶ In armed vehicles, several major contract awards, including modernisation of 90 Fuchs/Fox armoured vehicles (December 2016, €135m), supply of additional equipment for PUMA armoured combat vehicles (July 2017, €115m), and production of 38 Boxer 8x8 vehicles in A2 configuration (via ARTEC consortium, July 2017, €21m).
- ▶ In Future Soldier System programme (IdZ-ES), order for fourth batch of 68 systems for €370m in June 2017 (deliveries between 2018 and 2020).
- ▶ Two strategic partnerships signed in January and March 2017, respectively, with Steyr Mannlicher (production and marketing of RS556 assault rifle) and Rohde & Schwarz (creation of JV in communications system segment) in anticipation of future calls for bids from Bundeswehr ("System Sturmgewehr Bundeswehr" programme to replace G36 rifle; and MoTaKo and MoTIV programmes).

### Export markets

- ▶ Highly internationalised business, with exports accounting for 73% of sales in 2016, mainly from Asia-Middle East-Australia (36%) and Europe, not including Germany (16%).
- ▶ Signed strategic partnership (MoU) with U.S. missile builder Raytheon in February 2017 covering several areas of cooperation (replacement of Patriot systems, weapons and munitions, vehicles, training, cybersecurity).
- ▶ Export strategy based on local presence, creation of regional hubs (Canada, Brazil, UK, Netherlands, Scandinavia, Russia/Kazakhstan, North Africa, South Africa, Israel, Saudi Arabia, India and Australia) and JVs (most recently in the U.S., Poland and Turkey, ultimately in Romania and Indonesia).
- ▶ New successes for Boxer 8x8 vehicles (ARTEC consortium), with preselection by Australia in July 2016 (Land 400 programme, in partnership with NIOA as of May 2017) and contract for 88 vehicles from Lithuania in August 2016.
- ▶ Prospects in UK following contract award for Assessment phase of Challenger 2 Life Extension Project (LEP) in December 2016 and Boxer bid submitted for MIV programme.

### Technology and Innovation

- ▶ Internally funded R&D slightly up, at €74m, in 2016.



**BUSINESS AREAS**

Systems integrator/equipment supplier

- ▶ Avionics and optronics
- ▶ Display & Control
- ▶ Navigation and targeting systems
- ▶ Communication systems
- ▶ Electronic warfare
- ▶ Simulation and training solutions

**GOVERNANCE**

Chairman and CEO  
Chief Financial Officer

Robert K. Ortberg  
Patrick Allen

**KEY FIGURES** (Fiscal year ended: 31.09.2016)

€ millions	2013	2014	2015	2016
Revenue	3 369	3 748	4 726	4 751
Δ (%) (\$)*	-1,26%	11,29%	5,32%	0,29%
Defence (%)	52%	45%	42%	42%
Export (%)	37%	40%	39%	37%
Operating profit/loss	660	690	909	869
Operating Margin	19,58%	18,40%	19,22%	18,29%
Net profit/loss	476	455	619	658
Order book	3 406	4 133	4 820	5 107
Employees	18 300	20 000	19 500	19 000

\* Variation based on the revenue in local currency.  
See €/€ exchange rates p.7.

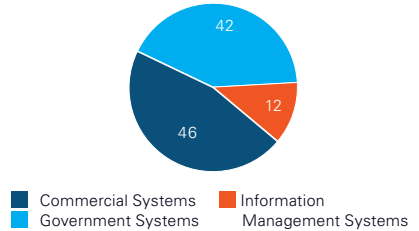
**OWNERSHIP STRUCTURE**

Symbol	COL
Listed on	NYSE
Market Cap (M\$)	20 423

Major Shareholders (as of 30.06.2017)

Vanguard Group Inc.	9,61%
Capital World Investors	7,25%
State Street Corp.	4,94%
BlackRock Fund Advisors	4,47%

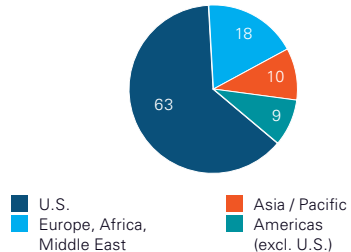
**REVENUE BY BUSINESS LINE (%)**



**MAIN JOINT VENTURES AND ASSOCIATES**

Name	%	Country
Data Link Solutions LLC	50%	U.S.
Integrated Guidance Systems LLC	50%	U.S.
Quest Flight Training Ltd	50%	United Kingdom
ESA Vision Systems LLC	50%	U.S.

**REVENUE BY REGION (%)**



## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Tata Group	BAE Systems	Elbit Systems	Honeywell	Embraer	Northrop Grumman	Cubic Corporation	Leonardo	Inmarsat	Boeing	Thales
<b>Communication systems</b>											
Software defined radio (Familie Flex-net, AN/ARC-220)	●										●
Tactical Targeting Network Technology (TTNT)					●						
Link 16 solutions (JTDIS, MIDS, URC-138, MOS)		●									
Satellite communication systems (SAT-906B, 2100B, 2200, 6100)								●			
<b>Avionics and Displays &amp; Control</b>											
Integrated digital vision system (M1A2, M2A1, Stryker, HMMWV)											
Griffin rear-projected dome (F-35 simulator)											
F-35 Gen III helmet mounted display system			●								
Joint Helmet Mounted Cueing System (JHMCS) (F-15, F-16, F/A-18)										●	
Pro Line Fusion integrated avionics system					●						
<b>Integrated systems</b>											
Common range integrated instrumentation system (CRIIS)				●		●				●	
<b>Navigation and targeting systems</b>											
GPS receivers (DAGR, DIGAR, NavFire, Polaris)							●				
ATHENA integrated flight control system											
FIRESTORM integrated targeting system											●
<b>Electronic systems</b>											
Transponders (TPR-901, TDR-94-94D)											
Antenna control unit											

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Sales stable in 2016, at \$5.26bn (€4.75bn), with Government Systems (+1%) and Information Management Services (+6%) compensating for difficulties in Commercial Systems (-2%).
- ▶ Renewed growth in defence activities, helped by U.S. government orders and exports (including border surveillance systems).
- ▶ Continuing diversification into civil sector with acquisition of B/E Aerospace for \$8.6bn (€7.8bn) in April 2017 and Pulse.Aero (UK) in January 2017 (group headcount now 30,000, vs. 19,000 in 2016).
- ▶ Company acquired by U.S. group UTC in September 2017 for estimated \$30bn (€25.2bn); deal scheduled to close in second half 2018.

### Home market

- ▶ 63% of sales from home market in 2016 (+4%), half of which relating to orders from government customers (directly or indirectly via subcontracts).
- ▶ Systems integrator and equipment supplier, strategic partner for major U.S. primes, particularly Boeing and Lockheed Martin, on C-17, E-6B, F/A-18E/F, F-22, F-35, CH-47F, KC-10 and KC-46A programmes.
- ▶ In training systems, awarded contract in March 2017 with partner Leonardo-DRS for development of encrypted training solution for U.S. Navy and USMC (Tactical Combat Training System Increment II).
- ▶ Following preselection in March 2016, along with GD and Harris Corp., for Phase 1 of U.S. Army's Handheld, Manpack and Small Form Factor (HMS) programme (future contract for around 60,000 radios over 10 years), successful qualification testing in November 2016 (30 AN/PRC-162 software-defined radios tested).

### Export markets

- ▶ Export sales relatively flat in 2016, at \$1.97bn (€1.78bn), representing 37% of sales; aims to achieve 50% of sales outside home market in 2018.
- ▶ Well positioned in Europe (France, Germany, UK, Italy and Spain), Canada and Asia-Pacific (China, Japan, South Korea, Singapore, India, Australia), as well as in Africa/Middle East (UAE, Saudi Arabia) and Latin America (Brazil, Argentina, Mexico and Peru).
- ▶ Has reinforced its presence in Middle East by doubling personnel in UAE by end-2017 and by signing a cooperation agreement with Taqnia Defense (Saudi Arabia) in avionics sector.
- ▶ In Brazil, partnership with Embraer affiliates Savis and Bradar formed in April 2017 (joint force target designation system).
- ▶ Selected by Pakistan Air Force in March 2017 for avionics modernisation on 11 C-130Es and five C-130Bs, and by Chile for P-3 Orion in November 2016.

### Technology and Innovation

- ▶ Total R&D budget of \$973m (€879m) in 2016, i.e. 17.6% of sales.





## BUSINESS AREAS

Engine manufacturer, systems integrator

- ▶ Aircraft engines
- ▶ Helicopter engines
- ▶ Gas turbine, submarine nuclear propulsion
- ▶ Distributed generation system

## GOVERNANCE

Chairman Ian Davis  
 Chief Executive Officer Warren East  
 Chief Financial Officer Stephen Daintith

## KEY FIGURES (Fiscal year ended: 31.12.2016)\*

€ millions	2013	2014	2015	2016
Revenue	17 240	17 040	18 909	18 249
Δ (%) [€]**	20,40%	-6,19%	-0,08%	8,96%
Defence (%)	24%	23%	23%	25%
Export (%)	89%	88%	87%	88%
Operating profit/loss	1 741	1 724	2 065	54
Operating Margin	10,10%	10,12%	10,92%	0,29%
Net profit/loss	1 624	72	116	-4 920
Order book	85 897	94 587	104 093	108 740
Employees	55 200	54 100	50 500	79 900

\* Variation based on the revenue in local currency.  
 See €/£ exchange rates p.7

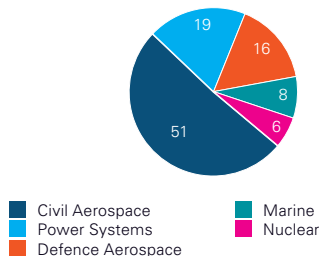
## OWNERSHIP STRUCTURE

Symbol	RR
Listed on	LSE
Market Cap (M£)	17 237

Major Shareholders (as of 30.06.2017)

Capital Research & Management Co.	3,93%
Harbor Capital Advisors Inc.	3,07%
Vanguard Group Inc.	2,01%
Baillie Gifford Overseas Ltd	2,32%

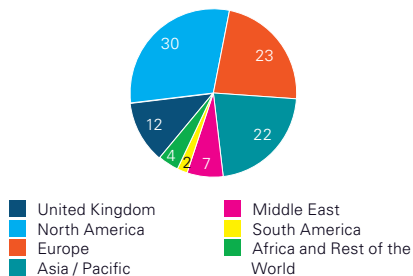
## REVENUE BY BUSINESS LINE (%)



## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
AirTanker Holdings Ltd	20%	United Kingdom
EUROJET Turbo GmbH	33%	Germany
EPI Europrop International GmbH	28%	Germany
LHTEC	50%	U.S.
MTU Turbomeca Rolls-Royce GmbH	33,3%	Germany

## REVENUE BY REGION (%)



## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Safran	MTU Aero	Avio Aero*	ITP	Pratt & Whitney***	Honeywell	Standard Aero	Naval Aero	Jiangsu A-Star***	Embraer
<b>Aircraft engines</b>										
RB199 (Tornado)		●	●							
EJ200 (Eurofighter)		●	●	●						
LiftSystem (F-35B)					●					
Adour (BAE Hawk AJT)	●									
TP400-D6 (A400M)	●	●		●						
T56 and AE2100 (C-130)							●			
AE3007 (RQ-4A/B, EMB145 AEW&C)										●
<b>Helicopter engines</b>										
MTR390-E (Tiger)	●	●		●						
CTS800 (Dhruv, A129, UH-1Y, AW159 Wildcat)						●				
AE1107 (V-22 Osprey)							●			
M250 (OH-58D, AH-6, RQ-8A)									●	
<b>UAS propulsion</b>										
AE3007 (RQ-4 Global Hawk et MQ-4C Triton)										
FCAS Demonstrator (engine)	●									
<b>Gas turbine, nuclear propulsion</b>										
MT30 gas turbine (Queen Elizabeth-class aircraft carriers, T26-class frigates)										
WR-21 gas turbine (T45-class destroyers)							●			
PWR-2 (Astute and Vanguard-class submarines) and PWR-3 plant (Successor programme)								●		

\* General Electric \*\* UTC \*\*\* formerly DCNS

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ After sharp drop in 2014 (-6.2%) and flat 2015, sales took off again in 2016 (+9%), reaching £14.9bn (£18.3bn), thanks to solid performance in aerospace and nuclear sectors.
- ▶ Continuing internal rationalisation aimed at reducing costs by £400m (~ €496m) over the period 2014-2018, with acceleration of Marine division restructuring in December 2016 (800 jobs cut, in addition to 1,000 jobs eliminated in 2016).
- ▶ Start of construction of new UK facility (investment of £150m, ~ €174m) as part of effort to double civil engine production rates.
- ▶ Agreement signed with Aviall in June 2017, making the Boeing subsidiary sole supplier and distributor of spares worldwide for all military models of the AE turboprop family (including AE 2100 for C-130J, C-27J and Shinmaywa US-2; AE 1107C for V-22 Osprey; and AE 3007 for Global Hawk UAV).
- ▶ Announced at Farnborough Air Show in July 2016 that it was acquiring full ownership of ITP (Spain), in which it previously held 46.9% stake, by buying out share owned by Sener (53.1%).

### Home market

- ▶ UK market now generating only 12% of group sales, well below revenue from the other side of the Atlantic (North America 30%).
- ▶ Position as national leader on military naval turbines and engines consolidated following launch of Type 26 frigate programme (construction of lead ship started in July 2017), which will be equipped with MT30 gas turbines (first turbine delivered to prime contractor BAE Systems in April 2017).
- ▶ Work continuing on modification of WR-21 turbines on Type 45 destroyers (following technical problems detected in 2015).
- ▶ Competences maintained in marine nuclear propulsion systems thanks to 10-year framework agreement (SEPP) signed in 2013, followed by initial contracts for future Successor ballistic missile submarines (first metal cut in October 2016).
- ▶ In combat aircraft engines, Typhoon support centre opened at RAF Lossiemouth in June 2017, and agreement with UTC (Pratt & Whitney) signed in mid-2016 covering F-135 engine and LiftSystem support for future RAF F-35Bs.

### Export markets

- ▶ UExtensive international operations, particularly in U.S. and Asia-Pacific.
- ▶ Responding to "Make in India" policy, reinforced R&D centre in Bangalore (from 200 to 700 engineers by end-2017), opened new Defence Service Delivery Centre (SDC) in April 2017 and signed agreement with GRSE shipyard for assembly of MTU 4000 diesel engines.
- ▶ In U.S., first half of 2017 marked by several major services and logistics support contracts (KC-130Js for USMC and Kuwait, USMC and USAF V-22s, U.S. Navy T-45s, and USAF C130Js) for a total amount of over €1bn (~ €920m).
- ▶ MT30 selected by South Korea for future Daegu-class frigates in May 2017, following selection by Italian Navy in March 2016 (for future multi-purpose amphibious vessel).

### Technology and Innovation

- ▶ Gross R&D investments of £1.3bn (~ €1.5bn) in 2016.



**BUSINESS AREAS**

Platform manufacturer and systems integrator

- ▶ Aviation (fuselage sections, equipment)
- ▶ Defence (land systems, simulation, C4I systems)
- ▶ Ammotec (small-caliber ammunition)
- ▶ Space (structures, equipment)
- ▶ Aerostructures

**GOVERNANCE**

Chairman of the Supervisory Board	H.-P. Schwald
Chief Executive Officer	U. Breitmeier
Chief Financial Officer	U. Kiener

**KEY FIGURES** (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	1 423	1 466	1 633	1 704
Δ (%) [CHF]*	0,63%	1,66%	-2,08%	6,54%
Defence (%)	44%	43%	45%	43%
Export (%)	61%	63%	62%	63%
Operating profit/loss	93	95	128	139
Operating Margin	6,56%	6,46%	7,86%	8,13%
Net profit/loss	76	69	110	106
Order book	1 145	1 139	1 271	1 449
Employees	8 241	8 114	8 163	8 734

\* Variation based on the revenue in local currency. See €/CHF exchange rates p.7

**OWNERSHIP STRUCTURE**

Symbol

Listed on

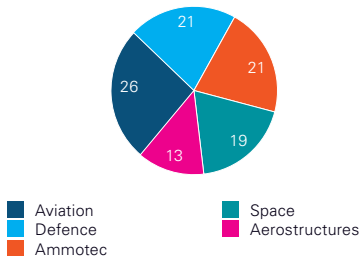
Non Listed Company

Market Cap (M CHF)

Major Shareholders (as of 30.06.2017)

Federal authorities of the Swiss Confederation	100%
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**REVENUE BY BUSINESS LINE (%)**

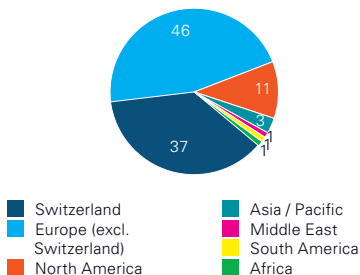


**MAIN JOINT VENTURES AND ASSOCIATES**

Name	%	Country
RUAG Aviation Malaysia Sdn Bhd	65%	Malaysia
Nitrochemie AG	49%	Switzerland
RUAG Simulation Company LLC	49%	UAE
Arianespace	3,49%*	France

\* 2,67% via RUAG Schweiz AG et 0,82% via RUAG Space AB.

**REVENUE BY REGION (%)**



## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	HAL	General Dynamics	United Launch Alliance	Rheinmetall Defence	Saab AB	KMW*	Dassault Aviation	BAL Systems	Airbus	Safran	IAI
<b>Aviation</b>											
Dornier 228NG aircraft	●										
HALO high altitude and long range research aircraft	●										
ADS 95 Ranger tactical UAS											●
NEURON UCAV demonstrator (weapons interface unit)						●					
OPATS laser-based automatic landing system for UAS											
ISSYS-Pod integrated self-protection system				●							
Flight simulators (F/A-18 SHOTS, PC-7 FS, MISIM ADS 95 Ranger)											
<b>Land systems</b>											
COBRA 120mm mortar system	●										
IFV 2000 infantry fighting vehicle							●				
Leopard 2 MBT upgrade package (Pz 87 Leo)			●		●						
AEV3 KODIAK armoured engineer vehicle			●								
SidePRO-LASSO passive side protection											
VERO UGV	●									●	
<b>C4ISR</b>											
POLYCOM security radio network								●			
<b>Space systems</b>											
Launcher fairings		●						●			

\* KNDS

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Sales up 6.5% to €1.7bn, thanks to a good performance across the board, with exception of Aviation branch, and favourable prospects for 2017 (led by civil market and exports).
- ▶ A decade marked by strong progress in civil sector, which represented 57% of sales in 2016, vs. 36% in 2014.
- ▶ Several partial privatisation options under discussion between Federal Department of Defence, Civil Protection and Sport (DDPS), RUAG Board and Federal Department of Finance (DFF), for presentation to Federal Council in 2017.
- ▶ RUAG's Defence division emerging from a difficult period of internal restructuring, showing its ambitions in cybersecurity sector with acquisition of Clearswift (UK) in December 2016 and creation of a dedicated BU in January 2017 (230 employees in Switzerland, UK, Germany, U.S., Australia and Japan).
- ▶ Small-calibre ammunition activities (RUAG Ammotec) still broadly oriented towards civil applications (Hunting and Sports segment), following acquisition of Glaser Handels AG and Turfer di Turelli Luica & C., and purchase of remaining 60% of Gyttorp (April 2017), Scandinavia's leading producer of shot shells.
- ▶ Consolidation and refocusing of space business, illustrated by sale of activities relating to scientific instruments and optical communication to Thales Alenia Space (TAS) in July 2016, acquisition of HTS (Germany) in May 2016 and construction of two production facilities in U.S. and an additional facility in Sweden (doubling capacities of RUAG Space Sweden).

### Home market

- ▶ Leader on Swiss defence market (37% of sales in 2016), performs licence production of equipment purchased by DDPS (its biggest customer) from foreign suppliers.
- ▶ BODLUV MR (ground-based mid-range air defence) programme officially suspended by head of DDPS following report by group of experts on next combat aircraft submitted in May 2017.
- ▶ In May 2016, successful first firing tests of RUAG Defence Cobra 120mm mortar system mounted on GDELS Piranha 3+ 8x8 platform selected by Swiss Army for Carrier Mortar programme (potential acquisition of 32 Cobra systems between 2018 and 2022).

### Export markets

- ▶ 63% of sales from exports in 2016, mainly Europe (46%) and, to a lesser extent, North America (11%) and Asia-Pacific (4%).
- ▶ RUAG Defence France teamed with Thales on Cerbere programme (training centres representative of battlefield with after-action review function); contract awarded in December 2016.
- ▶ Creation of an office in Malaysia as part of ongoing development of its presence in Southeast Asia region, particularly in MRO sector (civil and military helicopters and regional transport aircraft).
- ▶ Part of Australian consortium that won 2016 call for bids from F-35 Joint Program Office for MRO of all F-35s in Asia-Pacific region. From 2025 onwards, RUAG Aviation Australia will be responsible for maintenance of several components (valves, auxiliary power system, landing gear components, and pneumatic and hydraulic systems).

### Technology and Innovation

- ▶ Strong increase in R&D budget in 2016, +17%, to CHF171m (~ €159m), or 9.2% of sales.



**BUSINESS AREAS**

Platform manufacturer and systems integrator

- ▶ Military aerospace
- ▶ Naval platform and systems
- ▶ Missile systems and weapon systems
- ▶ Defence electronics
- ▶ C4I and early warning system
- ▶ Security and integrated solutions
- ▶ Simulation

**GOVERNANCE**

Chairman of the Board      Marcus Wallenberg  
 President and CEO      Håkan Buskhe  
 Chief Financial Officer      Magnus Örnberg

**OWNERSHIP STRUCTURE**

Symbol      SAAB B  
 Listed on      Nasdaq OMX Stockholm  
 Market Cap (M SEK)      41 172

**Major Shareholders (as of 31.03.2017)**

Investor AB      30,00%  
 Knut och Alice Wallenbergs Stiftelse      8,70%  
 SwedenBank Robur Funds      4,80%

**MAIN JOINT VENTURES AND ASSOCIATES**

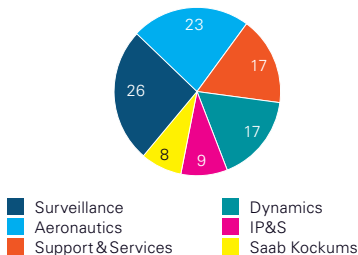
Name	%	Country
Akaer Engenharia	25%	Brazil
Taurus Systems GmbH	33%	Germany
Gripen International KB	50%	Sweden
Saab Grintek Technologies Ltd	70%	South Africa
Fortis Marine Solutions Pte Ltd	49%	Singapore

**KEY FIGURES** (Fiscal year ended: 31.12.2016)

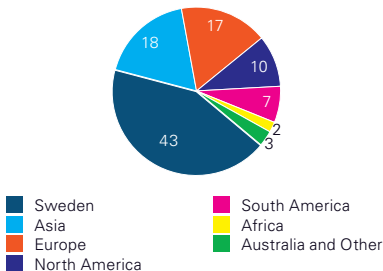
€ millions	2013	2014	2015	2016
Revenue	2 745	2 586	2 907	3 024
Δ (%) /SEK*	-1,08%	-0,94%	15,55%	5,32%
Defence (%)	81%	79%	82%	83%
Export (%)	59%	55%	58%	57%
Operating profit/loss	155	182	203	190
Operating Margin	5,66%	7,05%	6,99%	6,28%
Net profit/loss	86	128	150	124
Order book	6 578	6 401	12 387	11 265
Employees	14 140	14 716	14 685	15 465

\* Variation based on the revenue in local currency. See €/SEK exchange rates p. 7.

**REVENUE BY BUSINESS LINE (%)**



**REVENUE BY REGION (%)**



MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	BAE Systems	Thales	Leonardo	RUAG	Dassault Aviation	MBDA	Embraer	Bombardier	Diehl Defence	UMS Aero AG	Denel
<b>Military aircraft</b>											
Gripen fighter	●	●	●			●					●
Saab 2000 ERIEYE / GlobaEye AEW&C and Swordfish MPA						●	●				
Skeldar VTOL UAS									●		
NEURON UCAV demonstrator (main fuselage, landing gear doors, avionics, fuel system)				●							
<b>Missile systems, weapon and artillery systems</b>											
AT4 man-portable anti-armour weapons											
RBS-70NG VHSORAD system								●			
RBS-15 Mk3 anti-ship missile system								●			
IRIS-T air-to-air missile								●			
METEOR beyond visual range air-to-air missile					●						
Taurus KEPD 350 modular stand-off weapon system for precision strikes					●						
<b>Defence and security solutions</b>											
Giraffe (AMB, 4A, 8A, 1X) radar											
Type A26-class submarines											
<b>Defence electronics</b>											
BOL advanced countermeasure dispenser	●										
IDAS integrated defensive aids system			●								



## STRATEGIC HIGHLIGHTS

## Business trends

- ▶ Sales up 5.32%, to SEK28.6bn (~ €3bn), helped by performance of Kockums (+25%), Dynamics (+23%) and Aeronautics (+14%) with activities supported by Gripen, GlobalEye and A26 programmes.
- ▶ Order book broke through €11bn barrier two years ago.
- ▶ As of January 2016, new organisation based on five business areas (Aeronautics, Dynamics, Surveillance, Support & Services, and Industrial Products & Services). Security & Defence Solutions business area formally dissolved (activities redistributed).
- ▶ Following seven acquisition/investment operations during FY2015, three new operations between August 2016 and January 2017, with the acquisition of Phareos (maritime traffic management) and Denmark-based Nordic Defence Industries (autonomous systems), and increased stake in Akaer of Brazil (from 10% to 25%).
- ▶ In C4ISR segment, renewed product lines in radars (Sea Giraffe 1X integrated on coastal patrol ship), ISR systems (new GlobalEye AEW&C offering) and maritime surveillance (Swordfish MPA available on Bombardier Q400 and Global 6000 jet).
- ▶ Launch of new cybersecurity subsidiary, Hyker Security (communications security), set up through Saab Ventures, in June 2016.

## Home market

- ▶ Home market (43% of sales in 2016) pivotal for the group, particularly in combat aircraft and military naval activities.
- ▶ In military aircraft, new contracts from FMV in 2016 and 2017 for maintenance of Gripen aircraft in service, Gripen C/D IFF system upgrade and supply of helmet-mounted display (HMD) for Gripen E (first deliveries in 2019).
- ▶ In naval sector, Gävle-class corvette upgrade contract (2017-2020) awarded in June 2017, and development and production contract for new Torpedo Integration System (TIS) for future A-26 submarines, Visby-class corvettes and Gotland-class submarines awarded in December 2016.
- ▶ New-generation anti-ship missile programme (for Gripen E combat aircraft and Visby-class corvettes) launched by FMV in March 2017 with award of NOK3.2bn (€349m) development and production contract (2017-2026) in partnership with Diehl Defence (Germany), extending collaboration started with RBS15 missiles.

## Export markets

- ▶ 57% of sales from exports in 2016, now well balanced between Asia, Americas and Europe (strong sales in Surveillance and Dynamics business areas).
- ▶ In Europe, well positioned in UK, France (Roquette NG contract), Germany, Finland, Denmark (inauguration of advanced communication system production facility in Sønderborg in August 2016), Netherlands, Croatia and, more recently, Poland (partnership with PGZ/Mesko for RBS15 Mk3 missile maintenance, selection of PGZ/Polish Nauta ship repair yard to build ship platform for future signals intelligence vessel for Swedish Navy).
- ▶ Positive outlook in U.S. (T-X trainer project, radar systems) and India (IDAS system maintenance).

## Technology and Innovation

- ▶ R&D spending increased 8.8%, to NOK7.4bn (€784m), in 2016.

## BUSINESS AREAS

Engine manufacturer, systems integrator/equipment supplier

- ▶ Engines (aircraft, satellite, missile)
- ▶ Aerospace equipment and systems
- ▶ Optronics, avionics, navigation systems, defence electronics and critical software

## GOVERNANCE

Chairman of the Board  
Chief Executive Officer  
Chief Financial Officer

Ross McInnes  
Philippe Petitcolin  
Bernard Delpit

## OWNERSHIP STRUCTURE

Symbol	SAF
Listed on	NYSE Euronext Paris
Market Cap (M€)	33 696

Major Shareholders (as of 30.06.2017)

French State	14,00%
Employees	7,70%
Treasury Shares	1,90%

## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
ArianeGroup	50%	France
Sofradir	50%	France
EPI EuroProp International GmbH	28%	Germany
Roxel	50%	France
CFM International	50%	France / U.S.
Optrolead	50%	France

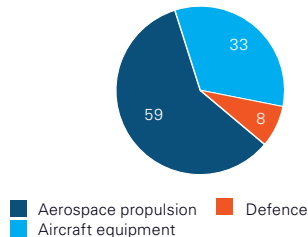
## KEY FIGURES (Fiscal year ended: 31.12.2016)\*

€ millions	2013	2014	2015	2016
Revenue	14 158	15 355	15 536	15 781
Δ (%)	3,99%	8,45%	1,18%	1,58%
Defence (%)	20%	20%	20%	20%
Export (%)	78%	79%	76%	79%
Operating profit/loss	1 469	1 962	1 601	2 386
Operating Margin	10,38%	12,90%	10,31%	15,12%
Net profit/loss	1 415	1 313	1 532	1 861
Order book	55 397	63 754	58 718	62 320
Employees**	66 289	68 945	61 420	57 542

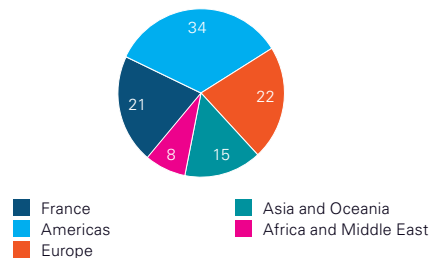
\* 2015 Figures restated.

\*\* In 2015 and 2016, excluding Security business (divested in 2017).

## REVENUE BY BUSINESS LINE (%)



## REVENUE BY REGION (%)



MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Rolls-Royce	MTU Aero Engines	ITP	MBDA	HAL	General Electric	Ecaelys	Thales	AVIC
<b>Aircraft engines</b>									
M88-2 E4 (Rafale)									
TP400-D6 (A400M)	●	●	●						
RTM322 family (NH-90, AW101, AH Mk.1)									
Ardiden family					●				●
MTR390 and MTR390-E (Tiger)	●	●	●						
<b>Space propulsion</b>									
Plasma propulsion (PPS 1350-G, PPS 1350-E, PPS5000, TMA)									
<b>Missile propulsion</b>									
TR60-30 (SCALP/Storm Shadow)				●					
TR50 (MdCN)				●					
<b>Navigation systems and optronics</b>									
Series 30 SMS optronic surveillance masts (Suffren-class submarine)									
SIGMA 40 XP inertial navigation system									
Euroflir 410 ultra-long-range electro-optical system							●		
<b>Missile systems and weapon systems</b>									
IR seekers (MICA air-to-air and VL, Mistral, AASM, FASGW(H)/ANL)				●					
Air-to-ground modular weapon (AASM) "Hammer"				●					
<b>UAS</b>									
Patroller tactical UAS							●		
FCAS demonstrator (engine)	●								

## STRATEGIC HIGHLIGHTS

## Business trends

- ▶ Group sales up slightly (+1.6%) in 2016, to €15.8bn, on the back of aerospace equipment sales (+4%); bright outlook for 2017, thanks to €62.3bn order book.
- ▶ €705m in industrial investments in 2016 in facilities in France (new Safran Electronics & Defense R&D centre at Eragny, construction of future infrastructure for Safran Ceramics at Le Haillan and adaptation work at Gennevilliers, Evry-Corbeil and Le Creusot) and abroad (new production facilities in Poland and Mexico and extensions in Morocco and U.S.).
- ▶ Closed sale of identity and security business in May 2017 and detection business (Morpho Detection LLC) in April 2017 to Advent International and Smiths Group, respectively; ongoing discussions with Hexcel for divestment of Structil (Vert-Le-Petit facility, 70 employees).
- ▶ After several months of discussions, agreement signed with Zodiac Aerospace at end of May 2017 on terms for combination of the two companies (tender offer by Safran for Zodiac Aerospace shares).
- ▶ Acquisition of French SME ISEI, a specialist in helicopter flight data management, in June 2017 and investments through Safran Corporate Ventures in start-ups Cailabs (light shaping technologies), Safety Line (big data analysis for air transport) and Diota (augmented reality for industry), as well as in Kalray, European leader in new-generation microprocessors.
- ▶ In launcher sector, ArianeGroup, JV jointly owned with Airbus, fully operational since June 2016.

## Home market

- ▶ New order for modular air-to-surface weapons ("Block 4" AASM) awarded by DGA at end of December 2016 (first deliveries in 2019).
- ▶ In nuclear deterrent sector, contract awarded for development and construction of improved version of SGN global navigation system for Le Triomphant-class ballistic missile submarines (January 2017). In space sector, selection of SpaceNaute navigation system (HRG technology) by ArianeGroup for future Ariane 6 launcher (November 2016).
- ▶ On Tiger programme, additional order for 18 new STRIX optronic sights awarded by OCCAR in June 2017.
- ▶ Patroller selected for SDT tactical UAV programme, with contract awarded by DGA on 5th April 2016 (14 systems to replace Sperwer UAVs).

## Export markets

- ▶ Broadly focused on exports (79% of sales in 2016), mainly in Americas (34%), Europe (22%, not including France), Asia & Oceania (15%) and Africa/Middle East (8%).
- ▶ Major U.S. Army contract award in March 2017 for LTLM II night vision and laser designator systems (five years, €281m, production by U.S. subsidiary Optics 1).
- ▶ Consolidation of activities in South Korea, following selection of Arriel engines to equip LCH and LAH helicopters in 2016 and signature of strategic partnership with Hanwha in mid-2017.
- ▶ New support contracts for RTM322 on NH90 (Germany, NAHEMA Agency), Arrius 2B2Plus and Arriel 2E on H135 and H145 (UK) and TP400 on A400M (Malaysia).

## Technology and Innovation

- ▶ Decline in R&D financing in 2016 (-11.8%), to €1.7bn (€1.1bn internally funded RTD, €602m in external financing).



## BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Aerospace (ST Aerospace)
- ▶ Defence electronics and space (ST Electronics)
- ▶ Land (ST Kinetics)
- ▶ Naval (ST Marine)

## GOVERNANCE

Chairman of the Board  
President and CEO  
Chief Financial Officer

C. S. Kwa  
V. Chong Sy Feng  
C. Foo

## KEY FIGURES (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	3 991	3 887	4 153	4 375
Δ (%) / (SGD\$)*	3,97%	-1,49%	-3,13%	5,50%
Defence (%)	38%	39%	36%	35%
Export (%)**	42%	42%	38%	41%
Operating profit/loss	405	330	335	308
Operating Margin	10,15%	8,49%	8,05%	7,05%
Net profit/loss	356	319	349	323
Order book	7 580	7 784	7 589	7 615
Employees	22 837	22 671	22 388	21 584

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

\*\* Home market = Asia.

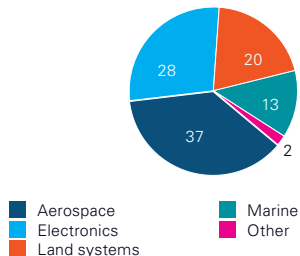
## OWNERSHIP STRUCTURE

Symbol	S63
Listed on	SGX
Market Cap (M SGD\$)	11 757

### Major Shareholders (as of 31.12.2016)

Temasek Holdings Pte Ltd	49,99%
Citibank Nameinees Singapore Pte Ltd	10,45%
DBS Nameinees Pte Ltd	9,99%
DBSN Services Pte Ltd	5,69%

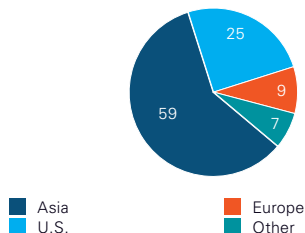
## REVENUE BY BUSINESS LINE (%)



## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
EFW	55%	Germany
Timoney Holdings Ltd	27,68%	Ireland
Turbine Overhaul Services	49%	Singapore
ST Electronics (Satellite Systems)	51%	Singapore
First Response Marine	50%	Singapore

## REVENUE BY REGION (%)



## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Lockheed Martin	DSO	Orbital ATK	Saab Kockums	SAC	Otokar	Elbit Systems	Leonardo	General Dynamics	Thales	SatixFy
<b>Aerospace</b>											
F-16 fighter aircraft MRO and modernization	●										
C-130/L100 Hercules transport aircraft MRO and modernization	●										
Skyblade IV tactical UAS		●									
Skyblade III and 360 tactical UAS		●									
<b>Electronics, cyber and space</b>											
VSAT terminals (Agilis family, Agilis HALE UAV)											●
ACMS advanced combat man system											
STellar DLink digital data link system											
TeLEOS-1 earth observation satellite		●									
SS-100 100kg class micro-satellite system			●		●						
DigiSAFE cybersecurity solution											
<b>Land systems</b>											
8x8 Terrex AV-81, Terrex 2 and Terrex 3 armored vehicles					●	●	●				
Bronco NG all-terrain tracked carrier								●			
Pegasus 155mm 39 calibre lightweight howitzer											
40mm ammunitions								●		●	
<b>Naval systems</b>											
LMV-class offshore patrol vessels				●				●		●	
Ambassador IV-class fast missile craft	●							●			

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ After two consecutive years of decline, sales up 5.5% in 2016, at \$SGD6.68bn (€4.38bn), helped by the performance of Aerospace (+19%) and Electronics (+10%), which compensated for poor results in Marine (-12%) and Land Systems (-7%).
- ▶ In the civil aeronautical sector, the company has a world-class presence in MRO and VSAT terminals, along with strong ambitions in engine leasing and conversion (increased its stake in Elbe Flugzeugwerke, a JV with Airbus DS GmbH, to 55%).
- ▶ Defence business represents 35% of group sales, a share that has dropped slightly over the past two years.
- ▶ Rationalisation plan launched in 2016 to reinforce intra-group synergies, particularly in the Electronics division (merger of entities and subsidiaries) and in engineering management (creation of ST Engineering Management Services).
- ▶ Expanded cyber offering, with a position in the Smart Cities segment (acquisition of SP Telecommunications in May 2017) and the launch by ST Electronics of new integrated solutions (in May 2016).
- ▶ Renewed product offering in land-based armaments (NewGen version of the Bronco all-terrain tracked carrier, new versions of the Terrex AV-81 8x8 armoured vehicle, BMCR assault rifle, ARIELE soldier system) and in the naval sector (Vanguard-type family of surface ships).

### Home market

- ▶ Leading supplier of the national armed forces and the primary beneficiary of the SAF 2030 plan to modernise the equipment of the Navy, Army and Air Force.
- ▶ Development of space activities, reflecting Singapore's ambitions in this sector, with the successful launch of Singapore's first satellite, TeLEOS-1, on 16th December 2015 and the partnership signed in February 2017 with the Defence Science & Technology Agency (DSTA) concerning the TeLEOS-2 programme.
- ▶ New milestones in the Littoral Mission Vessel (LMV) programme (8 ships ordered in 2013), with the launch of the lead ship in July 2015, start of production of the second unit in April 2016, followed by the 3rd and 4th units in October 2016 and March 2017, respectively.
- ▶ In the Land systems sector, Singapore ministry of defence awarded a contract in March 2017 for production of a new generation of armoured combat vehicles to replace the Ultra M113 (first deliveries in 2019).

### Export markets

- ▶ In 2016, export sales (mostly in Asia, followed by the U.S.) represented 41% of group sales.
- ▶ Successful penetration of U.S. defence market through acquisitions and cooperation agreements with GD (40mm HV Airburst ammunition) and SAIC (16 Terrex 2 prototypes delivered in 2016 under the ACV 1.1 programme).
- ▶ Multiple ammunition contracts in 2016 (Latin America and Middle East).
- ▶ Reinforced presence in Saudi Arabia with the creation of the ZHR Marine joint venture with Zamil Group and Raytheon (August 2016) and the creation of a defence electronics subsidiary (February 2017).

### Technology and Innovation

- ▶ R&D financing reached \$SGD109m (€71m) in 2016, i.e. 1.6% of sales.



## BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Military and commercial helicopters (Bell Helicopter)
- ▶ Military aircraft and business jets (Textron Aviation)
- ▶ Defence and security systems (Textron Systems and TRU Simulation + Training)
- ▶ Industrial products (Kautex, EZ-GO, Greenlee, Jacobsen)
- ▶ Finance

## GOVERNANCE

Chairman and CEO  
Chief Financial Officer

Scott C. Donnelly  
Frank T. Connor

## OWNERSHIP STRUCTURE

Symbol	TXT
Listed on	NYSE
Market Cap (M\$)	12 987

Major Shareholders (as of 30.06.2017)

T. Rowe Price Associates Inc.	13,82%
Vanguard Group Inc.	9,09%
Capital Research Global Investors	6,75%
State Street Corp.	4,28%

## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
CESSNA-AVIC Aircraft (Zhuhai) Co., Ltd	N/A	China
CESSNA-AVIC Aircraft (Shijiazhuang) Co., Ltd	N/A	China
Textron Airland LLC	50%	U.S.
TFS/Tri-Star Co., Ltd	80%	Taiwan

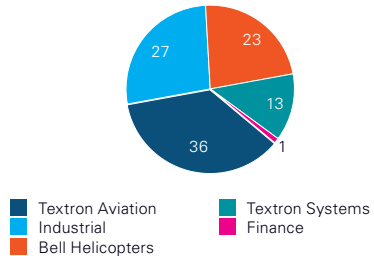
## KEY FIGURES (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	9 114	10 446	12 098	12 456
Δ (%) [\$]*	-1,09%	14,66%	-3,28%	2,72%
Defence (%)	35%	34%	31%	32%
Export (%)	38%	37%	38%	38%
Operating profit/loss**	507	642	875	791
Operating Margin	5,57%	6,15%	7,23%	6,35%
Net profit/loss	375	452	628	869
Order book	7 435	8 037	7 775	7 819
Employees	32 000	34 000	35 000	36 000

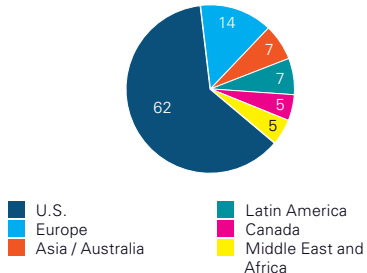
\* Variation based on the revenue in local currency.  
See €/£ exchange rates p.7.

\*\* Income from continuing operations before income taxes.

## REVENUE BY BUSINESS LINE (%)



## REVENUE BY REGION (%)





## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Boeing	Lockheed Martin	FHI	AirLand	Pilatus	AIDC	Rheinmetall Defence	L3 Technologies*	Rolls-Royce	Orbital ATK	Alcoa	Thales
<b>Bell Helicopter (helicopters)</b>												
V-22 Osprey tiltrotor aircraft	●											
V-280 Valor tiltrotor aircraft demonstrator		●										
UH-1 Huey helicopter			●		●							
AH-1Z Viper combat helicopter			●									
<b>Textron Aviation (CESSNA, Beechcraft)</b>												
T-6 Texan II military trainer					●							
AT-6B Texan II light attack aircraft		●			●							
<b>Textron Systems (manned and unmanned aircraft)</b>												
Shadow and Night Warden tactical UAS												
Aerosonde small UAS												
Scorpion ISR/strike aircraft				●								●
<b>Textron Systems (land and naval systems)</b>												
4x4 Commando armoured vehicle							●					
Motor Lifeboat (MLB)												
Ship-to-Shore Connector (SSC)							●	●		●		
<b>Textron Systems (defence systems and ammunitions)</b>												
Battlehawk squad-level loitering munition												
SPIDER smart networked land mine system									●			
FURY precision guided weapon												●

\* formerly L3 Communications

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Sales up 2.7%, to \$13.79bn (€12.46bn), helped by Textron Systems (+15%), Industrial (+7%) and Textron Aviation (+2%), compensating for difficulties at Bell Helicopter (-6%) on the civil market (114 units delivered in 2016, vs. 175 in 2015).
- ▶ As of 2015, restructured into five business segments (Bell Helicopter, Textron Systems, Industrial, Textron Aviation and Finance), following several external growth operations in aeronautics (acquisition of Beechcraft in March 2014) and simulation (acquisition of Mechtronix and Opinicus).
- ▶ Drone offering consolidated with introduction of Nightwarden tactical drone in June 2017, following inauguration of new autonomous system maintenance and training facility in Blackstone in May 2016.

### Home market

- ▶ Highly dependent on domestic orders, which accounted for 62% of sales in 2016 (25% for government alone, not including FMS), mainly in military sector (particularly for Textron Systems and Bell Helicopter).
- ▶ Further deliveries of flagship V-22 Osprey military tiltrotors (produced in cooperation with Boeing) to USMC and USAF. Programme represented 36% of Bell Helicopter sales in 2016.
- ▶ Scorpion and AT-6 Wolverine proposed for future OA-X programme to replace A-10 fleet (200 aircraft to be ordered through 2022) in competition with A-29 Super Tucano (Embraer teamed with Sierra Nevada Corp.).
- ▶ One of two suppliers selected to compete for Mid-Endurance Unmanned Aircraft Systems (MEUAS) III task orders for U.S. Special Operations Command (USSOCOM) in June 2017; Aerosonde system eligible to compete for sea-based missions on U.S. Navy ships, following NAVAIR contract in July 2017.

### Export markets

- ▶ Exports accounted for 38% of sales in 2016, mainly to Europe (14%), Asia/Australia (7%) and Latin America (7%).
- ▶ Cooperation moves in Asia/Australia, particularly in Japan (partnership with FHI, sale of five V-22s), India (with TASL in aeronautical sector and Quantum Simulators in simulation), Indonesia (with PT Dirgantara) and Australia (with BAE Systems Australia).
- ▶ Australia seen as strategic export target (local subsidiary renamed Textron Systems Australia Pty Ltd in August 2016), particularly in drones (possible VTOL variant of RQ-7 Shadow) and military helicopters.
- ▶ Launch of Aerosonde HQ drone on export market in 4Q16, and potential opportunities emerging for Scorpion (Saudi Arabia).

### Technology and Innovation

- ▶ Internally funded R&D down 13%, to \$677m (€612m).
- ▶ First flight of production-standard version of Scorpion light attack/ISR/training twinjet in December 2016, two months after aircraft successfully completed weapons capability exercise (but decided not to compete for T-X trainer programme).
- ▶ Launched ground test phase of V-280 Valor tiltrotor in second half of 2017 and completed development of Fury precision-guided weapon (in cooperation with Thales) and G-CLAW in October 2016.

## 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)

## GOVERNANCE

Chairman and CEO

Patrice Caine

Chief Financial Officer

Pascal Bouchiat

## KEY FIGURES (Fiscal year ended: 31.12.2016)\*

€ millions	2013	2014	2015	2016
Revenue	12 698	12 974	14 063	14 885
Δ (%)	-10,31%	2,17%	8,40%	5,85%
Defence (%)	51%	50%	50%	50%
Export (%)	72%	74%	76%	76%
Operating profit/loss	1 011	985	1 216	1 354
Operating Margin	7,96%	7,59%	8,65%	9,10%
Net profit/loss	573	714	765	946
Order book	24 469	27 285	32 292	33 530
Employees	59 467	60 781	62 194	64 071

\* Figures restated.

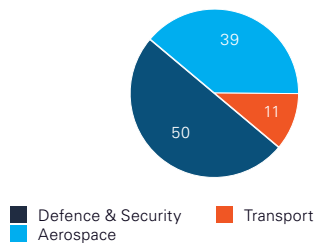
## OWNERSHIP STRUCTURE

Symbol	HO
Listed on	NYSE Euronext
Market Cap (M€)	20 120

Major Shareholders (as of 30.06.2017)

French State	25,77%
Dassault Aviation	24,71%
Employees	2,51%
Thales	0,39%

## REVENUE BY BUSINESS LINE (%)

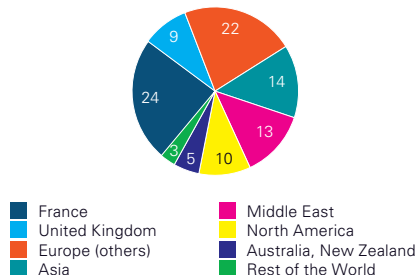


## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Naval Group*	35%	France
Thales Alenia Space	67%	France
Sofradir	50%	France
Telespazio S.p.A.	33%	Italy
Electronica S.p.A.	33%	Italy
Air Tanker Holdings Ltd	13%	United Kingdom
Diehl Aerospace GmbH	49%	Germany

\* formerly DCNS

## REVENUE BY REGION (%)



## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Elbit Systems	MBDA	Dassault Aviation	Naval Group*	BAE Systems
<b>Combat systems and electronics</b>					
TACTICOS combat management system					
SPECTRA electronic warfare suite		●			
RBE-2 AESA radar		●			
Damocles laser designation pod					
TopOwl and Scorpion helmet mounted display					
<b>Mission and surveillance systems</b>					
CONTACT and SYNAPS software defined radio					
Watchkeeper Wk450 tactical UAS	●				
<b>Radar and sonar systems</b>					
Ground Master (200 and 400) radar					
2076 and S-CUBE submarine sonar suite			●	●	
<b>Missile, weapon systems, ammunition</b>					
LLR 81mm and RT 120 mm mortars					
Induction rocket systems (including laser-guided rocket)					
EM seekers		●			
Future surface-to-air family of missiles (FSAF)		●			
<b>Military vehicles</b>					
4x4 HAWKEI and MRAP BUSHMASTER					
<b>Cybersecurity</b>					
Military information security (TEOREM, ELIPS-SD, CYBELS, ECHINOPS, TCE21)					
nShield Connect HSM					

\* formerly DCNS

## STRATEGIC HIGHLIGHTS

## Business trends

- ▶ Sales up 5.8% in 2016, to €14.9bn, helped by growth in Aerospace (+7.9%) and, to a lesser extent, Defence & Security (+43%) and Transportation (+5.5%).
- ▶ After booking record orders in 2015 (€18.9bn), another solid performance in 2016 (€16.5bn) and outlook of around €14bn for 2017.
- ▶ A number of businesses sold or being sold: identity management business bought by Imprimerie Nationale Group (agreement in March 2017) and ticketing business, comprising revenue collection solutions and road tolling and car park management systems (negotiations with Latour Capital broken off in May 2017).
- ▶ In the cybersecurity sector, following acquisition of Vormetric in October 2015, another step forward with the acquisition of Guavus (U.S.) in April 2017, a leader in real-time big data processing and analytics, and development of joint solutions with strategic partners Microsoft ("bring your own key" technology, CYRIS encryption solution for SharePoint) and Cisco (information system security for National Infrastructure operators).

## Home market

- ▶ Home market generated 24% of sales in 2016, stable vs. previous year.
- ▶ Tender based on Spy Ranger (in partnership with Aviation Design and Merio) selected in December 2016 for SMDR reconnaissance mini-UAV (to replace French Army DRAC), €104m contract awarded by DGA in December 2016 (firm order for 35 systems out of planned total of 70, first deliveries in 2019).
- ▶ In logistics management sector, major contract awarded in April 2017 with SIMMAD for integration of optimised supply chain covering procurement of aeronautical consumable items for French Forces (LORCA programme; max. €977m over 10 years).
- ▶ CERBERE contract awarded end-2016, in partnership with RUAG Defence France, to modernise French Army live combat training centre instrumentation.
- ▶ Involved in French SLAM-F programme, part of Franco-British maritime mine countermeasures programme (MMCM), which officially entered production phase in October 2016 (first prototypes delivered in 2019: Thales to supply T-SAS towed sonar and SAMDIS antenna).

## Export markets

- ▶ 76% of sales from exports, thanks to successful presence in Europe (UK, Netherlands) and Australia, and strategic focus on markets in Latin America (Brazil), Middle East (Saudi Arabia, UAE, Qatar, Oman, Egypt), Asia (India, China, Malaysia and Singapore) and North America.
- ▶ Fifth Cybersecurity Operation Centre (CSOC) opened in Hong Kong in May 2017, and cybersecurity training centre opened in Belgium in June (planned recruitment of 400 people worldwide in this sector).
- ▶ In addition to orders links to sales of Rafale in India, Egypt and Qatar, new contracts awarded in Middle East (tactical radios), UK (towed sonar for Type 26 frigates and update of Type 23 communications systems, Royal Navy air traffic control system), Denmark (CWI transmitters) and Australia (sonar systems for Collins submarines).

## Technology and Innovation

- ▶ €741m in internally funded R&D in 2016, a 5% increase.



## BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Manned space systems
- ▶ Space transport
- ▶ BUS/Satellite platform
- ▶ Ground control segment
- ▶ Electronics, propulsion systems, recovery systems
- ▶ Payloads

## GOVERNANCE

Chairman and CEO

Jean-Loïc Galle

Chief Financial Officer

Ervard Decourcelle

## KEY FIGURES (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	~2 100	~2 100	~2 100	~2 400
$\Delta$ (%)	=	=	=	14,29%
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 profit/loss	N/A	N/A	N/A	N/A
Order book	N/A	~2 200	N/A	N/A
Employees	~7 500	~7 500	~7 500	7 980

## CAPITAL STRUCTURE

Symbol

Listed on

Non Listed Company

Market Cap (M€)

Major Shareholders (as of 30.06.2017)

Thales

66,66%

Leonardo

33,33%

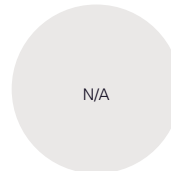
## REVENUE BY BUSINESS LINE (%)



## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Pyxalis	15,53%	France
Airstar Aerospace	8,61%	France
Altec SpA	63,75%	Italy
RASCOMSTAR QAF	12,36%	Mauritius
Universum Space Technologies	40%	Russia

## REVENUE BY REGION (%)



## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Airbus	OHB Group	Visiona TE	Indra Sistemas	Leonardo	Thales	Safran	Orbital ATK
<b>BUS/Satellite platform</b>								
Spacebus NEO (Syracuse 4)	●					●	●	
Proteus (Göktürk 1) and ELiTeBus (Iridium-NEXT)						●		●
<b>Payloads</b>								
Sensor electronics units (SAR-Lupe)		●				●		
<b>Communications satellite</b>								
SGDC geostationary defence and strategic communications satellite			●			●		
<b>Manned space systems and space transport</b>								
ATV (Automated Transfer Vehicle) cargo vessel			●					
<b>Earth observation</b>								
Cosmo-SkyMed 2G dual radar observation system					●	●		
CSO satellite (optical instrument)	●							
Meteosat3G satellite		●				●		
<b>Satellite navigation systems</b>								
GALILEO	●	●				●		
EGNOS		●		●	●	●		
<b>Propulsion systems</b>								
XPS subsystems (plasma propulsion system)							●	

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ One of European and worldwide leaders in Earth observation and telecommunication systems, satellites, instruments and platforms, space infrastructure and navigation systems.
- ▶ Completed acquisition of RUAG (Switzerland) opto-electronics business line in November 2016, consolidating competences in scientific satellite instruments and equipment for optical communications in space.
- ▶ To resolve technological issues on Stratobus HAPS (High Altitude Platform System) autonomous stratospheric airship project (launched in 2015), decided in June 2017 to take minority stake in French SME Airstar Aerospace (specialist in airships and flexible structures).
- ▶ New Industry 4.0 facility created at Hasselt (Belgium) in May 2017, dedicated to automated manufacturing of photovoltaic assemblies (PVA).

### Home market

- ▶ In military sector, historical supplier of ultra-secure telecommunications systems, observation systems and high-resolution optical and radar payloads.
- ▶ In data collection by satellite segment, awarded contract by French space agency CNES in May 2017 to supply Argos Neo instrument for Angels nano-satellite demonstrator.
- ▶ Two new contracts signed in December 2016 with European Space Agency (ESA) and European GNSS Agency (GSA), respectively covering engineering services for development of Galileo infrastructure and support for beginning of Galileo operational services (for total of €180m over 2017-2020).
- ▶ On COSMO-SkyMed Second Generation (CSG), programme completion contract signed with Italian Space Agency ASI in November 2016 (€77m).
- ▶ On Copernicus programme, contract from ESA for construction of Sentinel-3C and D environmental surveillance satellites in February 2016 (€450m), following contract for Sentinel-1C and D in December 2015 (€402m).

### Export markets

- ▶ A partnership signed with Telespazio and Spaceflight, an American company working in high-resolution Earth observation and revisit, in particular with a minority investment in Spaceflight and the creation of an industrial joint venture between Thales Alenia Space and Spaceflight.
- ▶ As part of SGDC contract in Brazil, delivery of first dual-use telecommunications satellite to prime contractor VISIONA Tecnologia Espacial in December 2016 (launched in May 2017 by ArianeGroup).
- ▶ TAS Spain awarded ESA contract at end of 2016 for preliminary technological development of thermal infrared imaging instrument (consortium with TAS France, Kampf Telescope Optics, Leonardo and Sener) and start of cooperation with Sener aimed at making the latter into national champion in optical observation instruments.

### Technology and Innovation

- ▶ Creation of Optical Systems and Spaceborne Instrumentation laboratory in partnership with Marseille Astrophysics Laboratory (a joint CNRS/Aix-Marseille University research unit), inaugurated in July 2017.





## BUSINESS AREAS

Platform manufacturer and systems integrator

Subsidiary of Thyssenkrupp AG

- ▶ Surface ships
- ▶ Submarines
- ▶ Equipment and maintenance

## KEY FIGURES (Fiscal year ended: 30.09.2016)

€ millions	2012-13	2013-14	2014-15	2015-16
Revenue	1 334	1 743	~1 700	~1 600
Δ (%)	12,38%	30,66%	-2,47%	-5,88%
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 profit/loss	N/A	N/A	N/A	N/A
Order Intake	364	1 479	N/A	N/A
Employees	3 800	3 300	~3 200	~3 200

## GOVERNANCE

Chief Executive Officer

Chief Financial Officer

Dr P. Feldhaus

E. Müller

## OWNERSHIP STRUCTURE\*

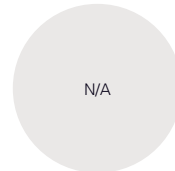
Symbol	TKA
Listed on	XETRA
Market Cap (M€)	14 460

Major Shareholders (as of 30.06.2017)

AKBH Foundation	23,03%
Cevian Capital	15,08%
Franklin Mutual Advisers LLC	2,38%
Vanguard Group Inc.	1,72%

\* Thyssenkrupp AG

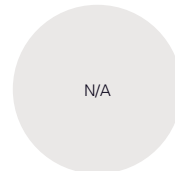
## REVENUE BY BUSINESS LINE (%)



## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
ThyssenKrupp Marin Sistem Gemi Sanayi ve Ticaret A.S.	60%	Turkey
MTG Marinetechnik GmbH	49%	Germany
Lisnave-Estaleiros Navais S.A.	20%	Portugal

## REVENUE BY REGION (%)



## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Diehl Defence	Roketsan	Lürssen Defence	Fincantieri	DSME	ST Engineering	Kongsberg	Hyundai	Heavy Industries	Göçuk Shipyard	Siemens
<b>Conventionally-powered attack submarines</b>											
HDW Class 209/1400mod				•					•		
HDW Class 210mod											
HDW Class 212A			•								
HDW Class type 214				•			•	•			
Type-218SG					•						
<b>Surface ships</b>											
Bohm+Voss Class F125 frigates		•									
Bohm+Voss Class MEKO (frigates, corvettes, and offshore patrol vessels)									•		
Blohm+Voss Class 130 corvettes		•									
BERLIN Class combat support ships		•									
<b>Equipment</b>											
IDAS missile system	•	•				•					
HABETaS rescue system											
HDW fuel cell AIP system										•	
Torpedo Countermeasures (TCM)											
Composite structures											
<b>Services</b>											
VISTIS training based on simulation											

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Sales down for second year in a row, at €1.6bn (-5.9%), but growth expected to resume in next financial year due to new export contracts (e.g. Norway and Singapore).
- ▶ Bought out Airbus' 49% stake in electronics specialist Atlas Elektronik in April 2017, now 100% subsidiary.

### Home market

- ▶ Surface ships business highly dependent on German Navy programmes, e.g. F125 frigates, currently nearing completion (fourth and final unit christened in May 2017) and K130 corvettes, with new order for five ships awarded to ARGE K130 consortium (TKMS, Lürssen and Privinvest subsidiary German Naval Yards Kiel with a share of 15%) in June 2017.
- ▶ Bid submitted in mid-2016 in partnership with Lürssen for MKS 180 multi-mission ship programme, scheduled to replace Type 143 fast attack ships and F123 frigates from 2023 onwards (announcement in February 2017 of planned increase to six ships, vs. four initially; decision expected end-2017).

### Export markets

- ▶ Renewal and extension of export offering, with presentation of Type 218SG and 216 submarine designs and, in surface ship sector, MEKO 600 frigate and CSL Light Frigate and, at the top end, MEKO A-400 (8,000t).
- ▶ Relatively dynamic on world export markets for submarines, with Singapore's announcement of an order for two additional Type 218SG submarines (May 2017), delivery of first of four Type 209/1400 submarines ordered by Egypt (April 2017) and Israel's planned acquisition of three new boats (October 2016).
- ▶ Prospects also in India with P751 programme launched in July 2017 for planned acquisition of six submarines equipped with AIP systems (RFI sent to six competitors), and in Indonesia in partnership with STM, Turkey (LoI signed by the two companies in May 2017).
- ▶ In Europe, competition to acquire four submarines to replace Ula-class submarines terminated in February 2017 by Norwegian authorities, who now favour strategic partnership with Germany (based on shared costs for acquisition, development, logistics and operations), to be formalised in 2019 by signature of intergovernmental agreement followed by resumption of negotiations with TKMS.
- ▶ JV created with Kongsberg (Norway) and Atlas Elektronik in March 2017, specialised in combat systems for submarines.
- ▶ In surface ship segment, second MEKO A-200 frigate delivered to Algerian Navy in May 2017 (two units ordered in 2012) and an order for four MEKO A-100 corvettes by Israel in August 2015 (entry into service in 2020).
- ▶ Partnership signed with Denel in March 2017 to assist the latter with modernisation and maintenance work on South African fleet (three Heroine-class submarines and four Valour-class frigates).

### Technology and Innovation

- ▶ Main areas of research: air-independent propulsion systems using lithium-ion batteries, communication systems and signature reduction.



## BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Military aircraft and helicopters
- ▶ Aerostructures
- ▶ UAS (MALE, VTOL, target drone)
- ▶ Observation satellites

## GOVERNANCE

Chairman of the Board  
President and CEO  
Chief Financial Officer

Pr Dr O. Borat  
Dr T. Kotil  
S. Korkem

## KEY FIGURES (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015	2016
Revenue	687	753	1 174	1 445
$\Delta$ (%) / \$/€*	9,58%	9,67%	~30%	~23%
Defence (%)	86%	85%	N/A	~67%
Export (%)	~69%	~70%	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 profit/loss	N/A	N/A	N/A	N/A
Order book	N/A	N/A	N/A	N/A
Employees	4 515	4 633	N/A	N/A

\*2015 and 2016 Revenue: CEO statement to the Press.

\*\* Variation based on the revenue in local currency.  
See €/€ exchange rates p.7.

## OWNERSHIP STRUCTURE

Symbol

Listed on

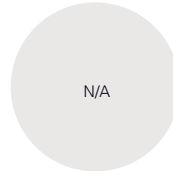
Non Listed Company

Market Cap (M TRY)

Major Shareholders (as of 30.06.2017)

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

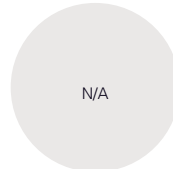
## REVENUE BY BUSINESS LINE (%)



## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
TEI	50,52%	Turkey
Airbus Military	5,6%	Spain
ESDAS	1%	Turkey
TCI Cabin Interior	50%	Turkey

## REVENUE BY REGION (%)



# TURKISH AEROSPACE INDUSTRIES (TAI)

## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	Airbus	Lockheed Martin	Boeing	Microtecnica	Aselsan	Thales	TUBITAK	Leonardo	TEI
<b>Aerostructures</b>									
Fuselage sections and spoilers (A400M)	●								
Center fuselage (F-35 A)		●							
Stabilator, tail cone and tail rotor pylon (UH-60 / MH-60)		●							
<b>Military aircraft</b>									
F-16 fighter aircraft (built under licence)		●							
Hürkus basic trainer and light attack aircraft			●	●					
C-130 transport aircraft modernization (ERCIYES programme)		●							
B737 AEW&C SDCA system modernization (Peace Eagle programme)			●						
C-235 transport aircraft and systems integration (MELTEM II programme) (built under licence)	●				●				
ATR-72 maritime patrol aircraft (MELTEM III programme) (built under licence)	●							●	
<b>Helicopters</b>									
T-70 (10t) utility helicopter (built under licence)		●			●				●
T-129 attack helicopter					●			●	
<b>UAS</b>									
ANKA MALE UAS					●				
R-300 VTOL UAS (Sivrisinek)									
<b>Observation satellites</b>									
GÖKTÜRK-1						●		●	
GÖKTÜRK-2							●		
GÖKTÜRK-3					●		●		

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Group sales of \$1.6bn (€1.4bn) in 2016, helped by aeronautical equipment and aerostructures production; target of \$1.9bn (€1.6bn) in 2017.
- ▶ Historically defence-oriented (67% of sales in 2016), currently diversifying into civil aeronautics sector with objective to double sales.
- ▶ Reinforcement of sites on home territory, in Ankara and particularly in Istanbul (in July 2017, inauguration of technology park that will employ 250 engineers).
- ▶ Strategy to deploy activities (mainly civil) internationally and move up the value chain, illustrated in Germany by creation of a subsidiary in Hamburg and acquisition of Grunewald Stade GmbH in July 2016 (divestment by Grunewald family).
- ▶ Strong ambitions in space sector, symbolised by satellite development (Göktürk-2 launched in 2012 and Göktürk-3 to be delivered in 2019) and creation of space system integration and test centre.

### Home market

- ▶ Turkey's leading defence company, historical major partner for foreign suppliers, in charge of licence production/upgrade of aircraft acquired by the Turkish armed forces.
- ▶ In view of technical and industrial challenges associated with TF-X combat aircraft programme (first flight scheduled for 2023), Ministry of Defence selected BAE Systems as partner for TAI (€116m assistance contract awarded in May 2017, following Heads of Agreement for development and production signed in January 2017); potential participation of Pakistan.
- ▶ In helicopter turbines, development contract awarded in partnership with GE Aviation (via TUSAS Engine Industries-TEI JV) for a propulsion system (1,400shp) for Turkish Utility Helicopter Programme (TUHP, in cooperation with Lockheed Martin).
- ▶ Delivery of first centre fuselage for Turkey's first F-35A to Lockheed-Martin in July 2017 and signature of agreement between TEI and Turkish authorities in March 2017 to establish an engine assembly and test facility for Turkish F-35As and a regional F135 engine support centre (following approval by U.S. DoD at end of 2014).

### Export markets

- ▶ Principal beneficiary of new export promotion and support plan launched by SSM (Turkish Undersecretariat for Defence Industries) in March 2017 (target \$2bn sales by 2018, i.e. €1.7bn).
- ▶ Export prospects in Pakistan due to closer cooperative relations between the two countries (e.g. promotion of T-129 attack helicopter, in competition with Changhe Z-10).
- ▶ Closer cooperation with PTDI (Indonesia) in civil aeronautical sector (design and development of N245 regional aircraft) and, ultimately, in aerostructures and autonomous systems (in latter sector, two agreements signed in May 2017 with DRB-HICOM Defense Technologies, Deftech, of Malaysia, and Antonov of Ukraine).

### Technology and Innovation

- ▶ Demonstrator for ANKA armed MALE drone tested in 2017.
- ▶ First prototype of T625 multi-role helicopter presented in June 2017.



# UNITED AIRCRAFT CORPORATION (UAC)

## BUSINESS AREAS

Platform manufacturer and systems integrator

- ▶ Fighter aircraft (MiG, Sukhoi)
- ▶ Trainer aircraft (Yakovlev)
- ▶ Strategic bomber (Tupolev)
- ▶ Transport and special purpose aircraft (Antonov, Beriev, Ilyushin)
- ▶ Unmanned aircraft system

## GOVERNANCE

Chairman of the Board  
President  
Chief Financial Officer

Denis Manturov  
Yury B. Slyusar  
Alexey Demidov

## KEY FIGURES (Fiscal year ended: 31.12.2016)

€ millions	2013	2014	2015*	2016
Revenue	5 198	5 781	5 085	5 623
Δ (%)/[RUB]**	28,68%	33,84%	17,52%	20,46%
Defence (%)	71%	78%	71%***	81%
Export (%)	35%	19%	N/A	N/A
Operating profit/loss	27	83	-1 020	151
Operating Margin	0,52%	1,43%	-20,05%	2,69%
Net profit/loss	-319	-268	-1 615	-60
Order book	25 895	19 020	N/A	N/A
Employees	93 950	98 000	96 545	96 787

\* 2015 Figures restated.

\*\* Variation based on the revenue in local currency.

See €/RUB exchange rates p.7.

\*\*\* Based on the number of aircraft delivered.

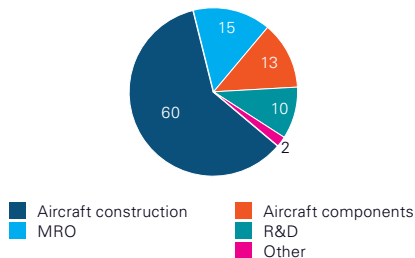
## OWNERSHIP STRUCTURE

Symbol	UNAC
Listed on	CJSC MICEX
Market Cap (M RUB)	288 830

Major Shareholders (as of 30.06.2017)

Federal Agency for State Property Management	91,20%
VneshecoNamebank	5,10%

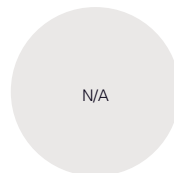
## REVENUE BY BUSINESS LINE (%)



## MAIN JOINT VENTURES AND ASSOCIATES

Name	%	Country
Multirole Transport Aircraft (MTA)	48%	India
Indo-Russian Aviation Ltd	31%	India
JSC « Sukhoi »	85,36%	Russia
JSC RAC « MiG »	69,97%	Russia
PJSC « Irkut »	85,89%	Russia

## REVENUE BY REGION (%)



# UNITED AIRCRAFT CORPORATION (UAC)

## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	NADJ (Malaysia)	NPO Saturn	HAL	Klimov	Aviastar	TAPC	Kapo	Kuznetsov	SOKOL	Omsk Engine	TsAGI
<b>Transport and special purpose aircraft</b>											
Ilyushin Il-76 airlifter/tanker						●					
Beriev Be-200 multipurpose amphibious aircraft											
Multipurpose Transport Aircraft (MTA)		●		●							
<b>Strategic bomber</b>											
Tupolev Tu-160						●	●				
Tupolev Tu-95							●				
<b>Trainer aircraft</b>											
Yak-130								●	●		
<b>Fighter aircraft</b>											
MiG-29	●			●							●
MiG-35 / 35D				●							
Sukhoi Su-25											
Sukhoi Su-30MK	●	●									
Sukhoi Su-27SK	●										
Sukhoi Su-35	●										
Sukhoi Su-57 (T-50 PAK-FA/FGFA)	●	●									



## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Strong increase in sales in 2016 (+20.5% in one year) for fourth year running, to RUB417bn (~ €5.6bn), boosted by aircraft production and twofold increase in sales of aeronautical equipment.
- ▶ Historically dependent on defence market but now pursuing strategy to diversify into civil aerospace sector (revised global sales target of RUB700bn, or €11.14bn, by 2035, including 45% from civil business).
- ▶ Russian government strategy to make UAC a credible competitor for Boeing and Airbus, supported by a €15bn investment plan over 10 years.
- ▶ Russian fighter builder MiG now a fully owned subsidiary following Federal Property Management Agency's sale of its 50.3% stake (UAC 49.7%) in September 2016.
- ▶ Plans to renew combat aircraft product offering by 2025, with launch of upgraded versions of Su-34M, Su-35C and Su-30, and market entry of MiG-35C, PAK-FA and a remotely piloted combat aircraft.

### Home market

- ▶ "Monopolistic" position on Russian military aircraft market. Defence Ministry orders accounted for 43% of sales in 2016 (vs. 47% in 2015).
- ▶ New milestones for MiG-35 programme in first half of 2017, with start of flight testing and announcement of production contract award in 2018.
- ▶ Following inaugural flight of Yak-152 light trainer (September 2016), announcement of an upcoming order for three aircraft (April 2017) and start of full-scale production by end of year.
- ▶ Also expected during 2017, initial flight testing of Il-78M-90A in-flight refuelling aircraft, which is claimed by manufacturer to have good export prospects.

### Export markets

- ▶ Implementation of military aircraft export promotion programme for 2016-2019 following agreement signed with Russian export agency Rosboronexport in July 2016.
- ▶ India still group's leading export customer and strategic partner in combat aircraft and helicopters (T-50 PAK-FA/FGFA programme, licence production by HAL of 200 Ka-226T helicopters and modernisation of Su-30MKI fleet), despite abandonment of joint MTA multi-role transport aircraft project.
- ▶ First four Su-35s delivered to China in December 2016 out of 24 ordered in November 2015 (first export customer for the aircraft, announcement of possible future contract with Indonesia).
- ▶ Ambitions in Middle East, illustrated by announcement at IDEX 2017 exhibition of an intergovernmental agreement between Russia and UAE for development of a 5th generation combat aircraft (derived from MiG-29) and potential sale of Su-35.

### Technology and Innovation

- ▶ UR&D financing of RUB77.29bn (€1.04bn), or 18.5% of sales in 2016.



## BUSINESS AREAS

Conglomerate. Systems integrator/equipment supplier

- ▶ Engines (commercial and military aircraft and helicopters), auxiliary power units
- ▶ ISR systems and communication systems
- ▶ Aerostructures and aircraft equipment (actuation systems, electric systems, landing gear, wheels & brakes, engine components and propeller systems)

## GOVERNANCE

Chairman and CEO  
Chief Financial Officer

G. J. Hayes  
A. Johri

## OWNERSHIP STRUCTURE

Symbol	UTX
Listed on	NYSE
Market Cap (M\$)	94 407

Major Shareholders (as of 30.06.2017)

State Street Corp.	11,77
Vanguard Group Inc.	6,74
Fidelity Management and Research Co.	2,04
Morgan Stanley Smith Barney LLC	1,77

## MAIN JOINT VENTURES AND ASSOCIATES

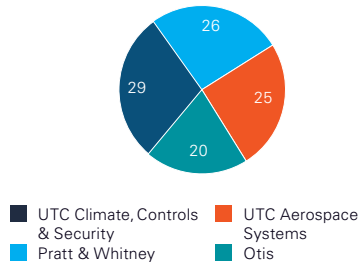
Name	%	Country
Advanced Turbine Engine Company LLC	50%	U.S.
Engine Alliance LLC	50%	U.S.
International Aero Engines AG	61%	Switzerland

## KEY FIGURES (Fiscal year ended: 31.12.2016)

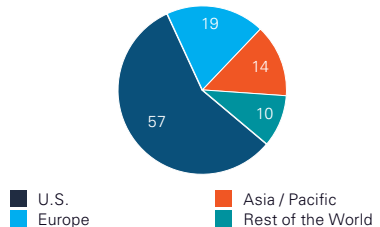
€ millions	2014	2015	2015	2016
Revenue	42 617	43 583	50 561	51 715
Δ (%) /\$)*	10,76%	2,30%	-3,11%	2,04%
Defence (%)	13%	13%	12%	12%
Export (%)	64%	62%	60%	60%
Operating profit/loss	6 437	7 221	6 571	7 383
Operating Margin	15,10%	16,57%	13,00%	14,28%
Net profit/loss	4 258	4 985	7 180	4 902
Order book	50 932	58 009	69 022	85 699
Employees	212 400	211 500	197 200	201 600

\* Variation based on the revenue in local currency.  
See €/€ exchange rates p.7.

## REVENUE BY BUSINESS LINE (%)



## REVENUE BY REGION (%)



# UNITED TECHNOLOGY CORPORATION (UTC)

## MAIN PROGRAMMES, COOPERATIONS AND EXPORT PARTNERSHIPS

	GKN	Honeywell	Magellan	Rolls-Royce	MTU Aero Engines	Woodward	Avio Aero*	Cobham	IHI
<b>Military aircraft engines</b>									
F135 (F-35)	●		●	●		●	●	●	●
F100 (F-16, F-15, X-47B)	●								●
F119-PW-100 (F-22)	●					●		●	
F117-PW-100 (C-17 Globemaster III)					●		●		
PW4062 (KC-46A, KC-767)		●	●						
PT6A (EMB-314, AT-6, PC-9, PC-21, HeronTP)		●	●			●			
PW100/150 (ATR-42/72, C-29)									
<b>Commercial and military helicopter engines</b>									
HPW3000 (AH-64, UH-60)									
PW200 (EC135, AW109, Bell 427, S-76D)		●							
<b>Auxiliary power units</b>									
APU (V-22, CH-53K, UH-60, CH-47, F-16, A400M, KC-390)									
<b>Equipment and systems</b>									
SYERS-2, SYERS-3, DB-110, MS-177 multispectral imagery sensors									
TERPROM digital terrain system									
Landing gear (F-15, C-17 Globemaster III, AH-64E Apache)									
Wheels & brakes (F-15, C-130)									
Propeller systems** (A400M)									

\* General Electric

\*\* Made by Ratier-Figeac (subsidiary of Airbus)

## STRATEGIC HIGHLIGHTS

### Business trends

- ▶ Group sales up 2% in 2016, to \$57.2bn (€51.7bn), thanks to revenue growth at engine-maker Pratt & Whitney (+6%, to \$14.9bn, or €13.46bn) and systems and components division Aerospace Systems (+3%, to \$14.5bn, or €13.1bn).
- ▶ In September 2017, agreement with U.S. systems integrator/equipment supplier Rockwell Collins under which UTC is acquiring the latter for an estimated \$30bn (€25.2bn); deal due to be completed in second half 2018.
- ▶ Continuing to modernise industrial facilities, including, at UTC Aerospace Systems, extension of facility in Foley (Alabama), creation of Materials and Process Engineering laboratory in Windsor Locks (Connecticut) and opening of composites centre of excellence at Banbury (UK); and, at Pratt & Whitney, extension of Columbus (Georgia) facility to meet demand for military (F135) and civil (PW1000G) engines.

### Home market

- ▶ U.S. market generated 57% of sales in 2016, slightly more than in recent years.
- ▶ In ISR sensors, new MS-177 long-range multi-spectral imaging sensor successfully tested on RQ-4G Global Hawk in April 2017; MS-177 also integrated into USAF Distributed Common Ground System (DCGS) via contract awarded to Lockheed Martin in July 2016.
- ▶ In second half of 2016, double success for Honeywell/P&W joint venture ATEC, awarded development contract for Future Vertical Lift propulsion system for next-generation military helicopters, and preliminary design review for improved turbine engine for U.S. Army AH-64s and UH-60s.
- ▶ Steady ramp-up of F135 engine production (target 200 units per year by 2020), symbolised by award of LRIP 9 and 10 contracts (cumulative total of 165 engines for \$2.9bn, or €2.6bn) in April and July 2016, and continuation in parallel of development work on a more powerful version of the engine (Adaptive Engine Transition Program).
- ▶ Major success with selection by USAF as engine supplier for future B-21 strategic bomber in March 2016 (prime contractor Northrop Grumman).

### Export markets

- ▶ In military engines, export presence to date limited to engines on platforms nearing end of lifecycle (F-15, F-16, C-17). Situation will change in medium and long term thanks to sales of flagship F135 (F-35) and PW4062 engines (KC-46A).
- ▶ P&W consolidating presence in Asia (opened GTF engine fan blade and component production facility in Singapore and training centre in India, extension of Chengdu site and creation of five MRO centres in China).
- ▶ New success for TERPROM terrain referenced navigation system, selected by Pilatus Aircraft Ltd. (Switzerland) in June 2016 for PC-21 new-generation trainers for Australian Defence Force.

### Technology and Innovation

- ▶ Internally funded R&D spending of \$2.3bn (€2.1bn), i.e. 4.1% of sales in 2016.
- ▶ R&D partnership agreements signed with Northrop Grumman on technologies of the future (June 2017), with Ophir Corporation on next generation of laser air data systems (July 2017) and with GKN/Fokker Technologies for development of integrated electrical systems for more electric aircraft (July 2016).

PROJECT TEAM (Defence & Industry Department, FRS)

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FRS

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Aerotradsuction, FRS

PRINTING & CONVERSION

SGA/SPAC

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NOVEMBER 2017

DGA institutional website [www.defense.gouv.fr/dga](http://www.defense.gouv.fr/dga)

State public procurement portal [www.achats.defense.gouv.fr](http://www.achats.defense.gouv.fr)

The armaments portal [www.ixarm.com](http://www.ixarm.com)

French Defence Procurement Agency (DGA)

Strategy Directorate

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