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RADIOCOMMUNICATIONS PROFESSIONNELLES EN LARGE BANDE (PMR)

DGA Intelligence technique et économique
ANGOULEME

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- **COMPENDEX PLUS (COPLUS)** : Base concernant les sciences de l'ingénieur. Notices en anglais d'articles de périodiques, de communications de congrès, de colloques, etc. Base produite par Elsevier.
- **INSPEC** : Base relative à l'électricité, l'électronique, l'automatique, l'informatique, la physique, etc. Notices en anglais. Base produite par l'Institution of Electrical Engineers (IEE) du Royaume-Uni.
- **NTIS** (National Technical Information Service) : Base concernant les rapports de recherche d'organismes contractants du gouvernement américain (DOD, DOE, DARPA, NASA ...). Notices en anglais. Base produite par le ministère du commerce des Etats- Unis.
- **AEROCSA** (Aerospace Database) : Base concernant l'aéronautique, l'astronautique, le spatial, ainsi que sur les technologies associées. Notices en anglais. Base produite par Cambridge Scientific Abstracts (CSA).
- **ENGCSA** : Base sur l'ingénierie dans les nouvelles technologies, le génie civil, l'environnement, les séismes, la mécanique et le transport. Notices en anglais. Base produite par Cambridge Scientific Abstracts (CSA).
- **MATCSA** : Base sur l'industrie de l'aluminium, la céramique, le cuivre, la corrosion, les matériaux techniques, le soudage. Notices en anglais. Base produite par Cambridge Scientific Abstracts (CSA).
- **MATERIALS BUSINESS FILE (MATBUS)** : Base concernant les aspects financiers et économiques des métaux et des matériaux non métalliques. Notices en anglais. Base produite par Cambridge Scientific Abstracts (CSA).
- **METADEX** : Base concernant les matériaux et la métallurgie. Notices en anglais. Base produite par Cambridge Scientific Abstracts (CSA).
- **TECHCSA** : Base sur les systèmes d'information, les communications, l'électronique, la supraconductivité et l'état solide. Notices en anglais. Base produite par Cambridge Scientific Abstracts (CSA).

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Critical Communications

Stone, A.

document en anglais

When the Cold Springs Fire tore through 528 acres of Boulder County CO, Director of Emergency Management Mike Chard took to social media. They had to evacuate 1,700 people and put 20,000 more people on pre-evacuation notice, so our public information officers started putting out tweets. It was road closures, evacuation areas, shelter locations, he says. Everyone's got a smart phone, so this is a great way to stay connected at a time when people are worried and need to know what's going on. For security professionals and government officials, natural disasters and emergency events - from hurricanes to wildfires to active shooters - set a high communications bar. Here, Stone considers best practices for leveraging Twitter, Facebook, et al for mass notifications, and also explore some of the challenges inherent in using publicly-sourced information to guide emergency response.

Mots clés : Software; Hurricanes; Closures; Emergency preparedness; Smartphones; Evacuations & rescues; Social networks; Natural disasters; Emergency management; Unified messaging; Emergency response; Wildfires; Water mains; Public officials; Evacuation; Digital media; Boulder County Colorado; Madison, James (1751-1836); Los Angeles California

Feature, Security ;BNP Media, 2401 W. Big Beaver Rd., Suite 700, Troy, 48084, United States ;VOL. 56; NO. 1; PP. 30-31; DP. 01 Jan 2019

(COPLUS) E2018-4906207924

Critical Communications Over Mobile Operators' Networks: 5G Use Cases Enabled by Licensed Spectrum Sharing, Network Slicing and QoS Control

Hoyhtya M.; Suomalainen J.; Hoppari M.; Kujanpaa K.; Trung Ngo K.; Lahetkangas K.; Posti H.; Kippola T.; Heikkila M.; Maki J.; Savunen T.

document en anglais

2013 IEEE. Commercial mobile operators' networks will be used for public safety communications due to demand for wireless broadband services, new applications, and smart devices. Existing dedicated professional mobile radio networks, such as terrestrial trunked radio, Tetrapol, and project 25, are based on narrowband technologies and hence their data bandwidth is limited. This paper studies how critical communications needed, e.g., by ambulance personnel, rescue squads, and law enforcement agencies can be implemented over a 5G network. The most important technology enablers are described and test network architectures used in our project given. We focus on two different use cases. First, how to enable priority communications over a commercial mobile network. Second, how to create rapidly deployable networks for emergency and tactical operations. Tests done with the implemented systems in real networks show that both approaches are very promising for future critical users. Techniques such as network slicing and licensed shared access provide means to support mission critical applications in any environment.

Mots clés : 5G mobile communication systems*; Accident prevention; Mobile telecommunication systems; Network architecture; Quality of service ;3GPP; Delays; Mission critical systems; Mission-critical communication; Mobile communications; Network slicing; Public safety

Journal Article, IEEE Access ;Institute of Electrical and Electronics Engineers Inc. ;VOL. 6; PP. 73572-73582; 27 Ref.; DP. January 2018; Copyright 2019 Elsevier B.V., All rights reserved.

VTT Technical Research Centre of Finland Ltd., Oulu, 90571, Finland VTT Technical Research Centre of Finland Ltd.

(COPLUS) E2019-0206368731

New Compact Antenna Diversity with a Fully Integrated Microwave Circuit for Automotive Satellite Radio Reception

Senega S.; Nassar A.; Lindenmeier S.; Rober J.; Weigel R.; Heuer C.

document en anglais

2018 European Microwave Association - EuMA. A compact antenna diversity system with a new integrated circuit is presented for automotive reception of satellite digital audio radio service (SDARS) at 2.3 GHz. For a scan-phase antenna diversity with switching and phase alignment of up to three antenna paths, the integrated circuit includes RF switches, phase-alignment and signal combining as well as the frequency conversion for level detection. This is the first integrated circuit for SDARS scan-phase antenna diversity, which includes all the diversity functions except for level detection and digital signal processing. With the

integrated circuit with a package size of only 9 mm by 9 mm a compact hardware demonstrator is realized. The diversity circuit is independent of the radio and offers the same interface to the radio as a conventional single antenna. In laboratory measurements characteristic values of the RF signal paths like gain and variable phase shift are determined. In addition, the new compact diversity circuit is also evaluated in a real fading scenario on a single side mirror of the test vehicle showing a significant reduction of audio mutes by the diversity system compared to single antenna reception.

Mots clés : Satellite antennas*; Digital integrated circuits; Digital radio; Digital signal processing; Diversity reception; Fading (radio); Microwave antennas; Microwave circuits; Microwave integrated circuits; Microwaves; Mobile radio systems; Optical testing; Radio equipment; Receiving antennas; Timing circuits ;Analog-digital integrated circuits; Characteristic value; Digital audio radio services; Diversity function; Diversity systems; Hardware demonstrator; Laboratory measurements; Land mobile radio equipment ;711; 713.4; 714.2; 716; 716.3; 741.3

Conference Proceeding Conference Paper, EuMIC 2018 - 2018 13th European Microwave Integrated Circuits Conference ;Institute of Electrical and Electronics Engineers Inc. ;PP. 369-372; 13 Ref.; DP. November 2018; Copyright 2019 Elsevier B.V., All rights reserved.

13th European Microwave Integrated Circuits Conference, EuMIC 2018 Madrid, Spain 2018/09/24-2018/09/25

Universitat der Bundeswehr Munchen, Institute of High Frequency Technology and Mobile Communication, Germany Universitat der Bundeswehr Munchen, Institute of High Frequency Technology and Mobile Communication

(COPLUS) E2019-0306374169

New Compact Antenna Diversity with a Fully Integrated Microwave Circuit for Automotive Satellite Radio Reception

Senega S.; Nassar A.; Weigel R.; Lindenmeier S.; Rober J.; Heuert C.

document en anglais

2018 European Microwave Association. A compact antenna diversity system with a new integrated circuit is presented for automotive reception of satellite digital audio radio services (SDARS) a2.3 GHz. For a scan-phase antenna diversity with switching and phase alignment of up to three antenna paths, the integrated circuit includes RF switches, phase-alignment and signal combining as well as the frequency conversion for level detection. This is the first integrated circuit for SDARS scan-phase antenna diversity, which includes all the diversity functions except for level detection and digital signal processing. With the integrated circuit with a package size of only 9 mm by 9 mm a compact hardware demonstrator is realized. The diversity circuit is independent of the radio and offers the same interface to the radio as a conventional single antenna. In laboratory measurements characteristic values of the RF signal paths like gain and variable phase shift are determined. In addition, the new compact diversity circuit is also evaluated in a real fading scenario on a single side mirror of the test vehicle showing a significant reduction of audio mutes by the diversity system compared to single antenna reception.

Mots clés : Satellite antennas*; Digital integrated circuits; Digital radio; Digital signal processing; Diversity reception; Fading (radio); Microwave antennas; Microwave circuits; Microwaves; Mobile radio systems; Optical testing; Radio equipment; Receiving antennas; Timing circuits ;Analog-digital integrated circuits; Characteristic value; Digital audio radio services; Diversity function; Diversity systems; Hardware demonstrator; Laboratory measurements; Land mobile radio equipment ;711; 713.4; 714.2; 716; 716.3; 741.3

Conference Proceeding Conference Paper, 2018 48th European Microwave Conference, EuMC 2018 ;Institute of Electrical and Electronics Engineers Inc. ;PP. 1337-1340; 13 Ref.; DP. November 2018; Copyright 2019 Elsevier B.V., All rights reserved.

48th European Microwave Conference, EuMC 2018 Madrid, Spain 2018/09/25-2018/09/27

Institute of High Frequency Technology and Mobile Communication, Universitt der Bundeswehr Mnchen, Ger Institute of High Frequency Technology and Mobile Communication, Universitt der Bundeswehr Mn

(COPLUS) E2019-0306394643

Architecture and Routing Protocols for Airborne Internet Access

Numani A.; Nawaz S.J.; Javed M.A.

document en anglais

2018 IEEE. The passengers traveling in aircrafts demand for internet connectivity to effectively utilize their precious inflight time. Provision of internet services to airborne users at the samcost and of the same speed, it is being provided to the home users, is a critical challenge for the research community. In this regard,

various solutions have been recently proposed in the literature, which involve satellite based solutions, direct Ground Station (GS) link based solutions, and mesh network based solutions etc. In this paper, inspired from land-mobile radio cellular networks, a new architecture for Airborne Internet Access (AIA) is proposed. Computer simulations are performed to evaluate the proposed architecture, while various routing algorithms are implemented and a thorough performance evaluation is conducted. Mean End-to-End (E2E) packet delay is used as performance metric in the presented analysis. Routing algorithms from two diverse classes of routing algorithms are selected for the analysis, viz: topology based and position based routing algorithms. In a scenario, when transmit message length is 1000 bytes, transmitter bit rate is 10 Mbps, communication range of nodes restricted to 10 km, velocity of aircrafts' mobility up to 250 m/s, and direction of motion of the aircrafts drawn from uniform distribution; the Ad-hoc On-demand Distance Vector Routing (AODV) algorithm is observed to outperform the Greedy Perimeter Stateless Routing (GPSR) algorithm in terms of mean E2E delay. Moreover, effect of various network and physical parameters on the network performance is observed and various useful conclusions are drawn. The conducted analysis is useful in selection of appropriate routing algorithm for appropriate network conditions.

Mots clés : Network architecture*; Ad hoc networks; Aircraft; MESH networking; Mobile radio systems; Network routing; Routing protocols ;Ad hoc On demand Distance Vector routing; Air-to-ground communications; Greedy perimeter stateless routing; Network-based solutions; Performance evaluations; Position-based routing; Proposed architectures; Routing ;652.1; 716.3; 722; 723

Conference Proceeding Conference Paper, 2018 IEEE International Conference on Consumer Electronics - Asia, ICCE-Asia 2018 ;Institute of Electrical and Electronics Engineers Inc. ;13 Ref.; DP. November 2018; Copyright 2019 Elsevier B.V., All rights reserved.

2018 IEEE International Conference on Consumer Electronics - Asia, ICCE-Asia 2018 JeJu, South Korea 2018/06/24-2018/06/26

Department of Electrical Engineering, COMSATS Institute of Information Technology, Islamabad, Pakistan Department of Electrical Engineering, COMSATS Institute of Information Technology

(COPLUS) E2019-0406408749

An Analysis of the Spatial-Temporal Variability of the Near Field Components in the Proximity of a TETRA Portable Terminal

Helbet R.; Bechet A.C.; Stratakis D.; Bechet P.; Miclaus S.

document en anglais

2018 IEEE. The paper is focused on the electromagnetic exposure assessment in the proximity of a Terrestrial Trunked Radio (TETRA) terminal. For the first time distinct measurements of the electric field component (E) and of the magnetic field component (H) are presented in the distance range 8-20 cm. The results show that the E-field component has a greater prevalence on the exposure. Maximum values of 100% for E, and 17% for H component respectively were encountered in the near field of the terminal, if compared to the occupational limits given in the ICNIRP protective guidelines.

Mots clés : Mobile radio systems*; Electric fields ;E-field; Electric field components; Electromagnetic exposure; H field strength; Magnetic field components; Near fields; Real time measurements; Terrestrial Trunked Radio ;701.1; 716.3

Conference Proceeding Conference Paper, EPE 2018 - Proceedings of the 2018 10th International Conference and Expositions on Electrical And Power Engineering ;Institute of Electrical and Electronics Engineers Inc. ;PP. 149-153; 20 Ref.; DP. December 2018; Copyright 2019 Elsevier B.V., All rights reserved.

10th International Conference and Expositions on Electrical And Power Engineering, EPE 2018 Iasi, Romania 2018/10/18-2018/10/19

Department of Electromagnetism and Measurements, Technical University of Cluj Napoca, Cluj Napoca, Romania Department of Electromagnetism and Measurements, Technical University of Cluj Napoca

(COPLUS) E2019-0406410732

Pricing private LTE and 5G radio licenses on 3.5 GHz

Kokkinen H.; Kokkinen T.; Yrjola S.; Engelberg J.

document en anglais

2019, ICST Institute for Computer Sciences, Social Informatics and Telecommunications Engineering. The interest in private LTE and private 5G radio licenses is increasing along the IMT frequency bands, higher frequencies, new spectrum assignments, and demand for wireless industrial communication. This paper studies the private LTE and 5G license pricing using Finland as an example. The methods for pricing are the actual block license-based frequency fee pricing,

Administrative Incentive Pricing (AIP), device based Private Mobile Radio pricing, and the device-based pricing of the Netherlands. The study shows that the selection of the pricing mechanism greatly impacts the license prices. Spectrum policy and regulation can be the trigger for novel private network ecosystem creation through creation of simple authorization processes to reduce the cost and minimize the complexity of use of spectrum for private LTE. In particular, provision of clear rules and guidance for spectrum valuation and pricing for the national regulator itself, as well as for the stakeholders wanting to supply and operate private LTE was found essential in reducing the cost and minimizing the complexity of private LTE spectrum use.

Mots clés : 5G mobile communication systems*; Cognitive radio; Complex networks; Cost reduction; Mobile telecommunication systems; Mobile telecommunication systems; Wireless networks ;Mobile communication market; Private networks; Regulation; Spectrum pricing; Spectrum sharing ;716.3; 722

Book Series Conference Paper, Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, LNICST; Cognitive Radio Oriented Wireless Networks - 13th EAI International Conference, ; CROWNCOM 2018, Proceedings ;Springer Verlag ;VOL. 261; PP. 133-142; 26 Ref.; DP. January 2019; Copyright 2019 Elsevier B.V., All rights reserved.

13th EAI International Conference on Cognitive Radio Oriented Wireless Networks, CROWNCOM 2018 Ghent, Belgium 2018/09/18-2018/09/20

Fairspectrum Oy, Otakaari 5, Espoo, 02150, Finland Fairspectrum Oy

(INSPEC) I-19-8830406

Peer-to-peer Detection of DoS Attacks on City-Scale IoT Mesh Networks

Rausch M.J.; Krishna V.B.; Peng Gu ; Chandra R.; Feddersen B.; Fawaz A.; Sanders W.H.

document en anglais

Wireless IoT mesh networks are being widely deployed for use in applications such as operational technology networks in power grids, city-scale surveillance, and monitoring. The benefits of such networks, which may include mission critical communications, can be undermined by an adversary who launches denial-of-service (DoS) attacks on them. In this paper, we present a peer-to-peer approach to detecting and localizing such adversaries by leveraging the topology of the mesh network. In doing so, we make three main contributions. First, we present insights from a preliminary implementation on a standards-based IoT platform used in real smart meter deployments. Second, we propose an optimal choice of peers that can help detect a jammed node, while minimizing the risk that the peers themselves are jammed. Finally, we present a tool to help generate datasets of city-scale IoT mesh topologies for simulation studies.

Mots clés : Computer network security; Internet of Things; Jamming; Power grids; Wireless mesh networks ;City-scale IoT mesh topologies; Smart meter deployments; Standards-based IoT platform; Denial-of-service attacks; Mission critical communications; City-scale surveillance; Power grids; Wireless IoT mesh networks; DoS attacks; Peer-to-peer detection ;B6210L; B6250; C5620; C6130S <20>Copyright-2019,-The-Institution-of-Engineer ing-and-Technology

Conference Paper ;Practical, 2018 IEEE International Conference on Communications, Control, and Computing Technologies for Smart Grids (SmartGridComm) ;IEEE; Piscataway, NJ; USA ;PP. 6 pp.; 16 Ref.; DP. 2018

2018 IEEE International Conference on Communications, Control, and Computing Technologies for Smart Grids (SmartGridComm) Aalborg; Denmark 29-31 Oct. 2018

Inf. Trust Inst., Univ. of Illinois, Urbana, IL, USA

(INSPEC) I-19-8850095

Towards Real-Time Smart City Communications using Software Defined Wireless Mesh Networking

Hakiri A.; Gokhale A.

document en anglais

Effective management and provisioning of communication resources is as important in meeting the real-time requirements of smart city cyber physical systems (CPS) as managing computation resources is. The communication infrastructure in Smart cities often involves wireless mesh networks (WMNs). However, enforcing distributed and consistent control in WMNs is challenging since individual routers of a WMN maintain only local knowledge about each of its neighbors, which reflects only a partial visibility of the overall network and hence results in suboptimal resource management decisions. When WMNs must utilize emerging technologies, such as time-sensitive networking (TSN) for the most critical communication needs, e.g., controlling traffic and pedestrian lights, these challenges are further complicated. An attractive solution is to adopt Software Defined Networking (SDN), which offers a centralized, up-to-date view of the

entire network by refactoring the wireless protocols into control and forwarding decisions. This paper presents ongoing work to overcome the key challenges and support the end-to-end real-time requirements of smart city CPS applications.

Mots clés : Cyber-physical systems; Distributed control; Protocols; Resource allocation; Smart cities; Software defined networking; Software radio; Telecommunication network routing; Telecommunication traffic; Wireless mesh networks ;WMN; Smart city communications; Software defined wireless mesh networking; SDN; TSN; Distributed control; Smart city CPS applications; End-to-end real-time requirements; Wireless protocols; Critical communication; Time-sensitive networking; Suboptimal resource management decisions; Individual routers; Enforcing distributed control; Communication infrastructure; Computation resources; Smart city cyber physical systems; Communication resources ;B6250; B6150M; B6150P; B6210L; C5620; C1340B; C3370G; C3370H; C5640
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Conference Paper ;Practical, 2018 IEEE Real-Time Systems Symposium (RTSS) ;IEEE Computer Society; Los Alamitos, CA; Tunisia ;PP. 177-80; 10 Ref.; DP. 2018

2018 IEEE Real-Time Systems Symposium (RTSS) Nashville, TN; USA 11-14 Dec. 2018

SYSCOM ENIT, Univ. of Carthage, Carthage, Tunisia

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