



**RADIO  
SOLUTIONS 2017**



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**NEDAP, GROENLO, THE NETHERLANDS**

**ALPHABETICAL  
LIST OF  
RS2017  
SPEAKERS**





Pieter Bregman has been with KPN Netherlands since 1999, he started as a Systems Engineer responsible for the design and test of IP network services delivered to multinationals and SMEs. Since 2010 Pieter has been an Internet of Things (IoT) Solution Engineer for KPN Mobile, consulting and technical innovator on low power wide area (LPWA) network. Accelerating new customers to use new Low Power Long Range (LoRa) network and NB-IoT/CatM in full stack, providing technical support on LoRa protocol, embedded firmware, connectivity, cloud and application support. Pre-sales and consultancy in m2m: mobile aspects, process and integration with customer environment. Answering Machine-to-Machine connectivity RFI/RFPs in verticals: Utilities, Point of Sale and Automotive. Responsible for creating solution designs for KPN M2M Corporate clients. Including mobile, IP/VPN network and datacenter.

Providing presentations and training to customers on M2M/IoE/Lora proposition and Cisco (Jasper) control center.

Technical project manager of proof of concepts (setting up acceptance criteria, monitoring on budget and planning). Internal projects contain: HLR swap, local breakout, alternative roaming provider and end-2-end fleet management proposition. Set up test and certification process for M2M modules. Responsible for expanding M2M proposition with value added services: locate, business intelligence and M2M service optimization.

Expertise: Telecom standards (3GPP, ETSI), design, innovation, product management, programming, solution architecture, integration, testing, training.

Technologies : Mobile (2G, 3G, 4G, Lora), Domotica.

### **Pieter's Presentation:**

LoRa is a Low Power Wide Area Network specification intended for wireless battery operated Things in a regional, national or global network. LoRa targets key requirements of Internet of Things such as secure bi-directional communication, mobility and localization services. The LoRa specification provides seamless interoperability among smart Things without the need of complex local installations and gives back the freedom to the user, developer, businesses enabling the roll out of Internet of Things.

With LoRa entire cities or countries can be covered with a few base stations, no longer requiring the upfront rollout and maintenance of thousands of nodes as in traditional mesh networking. This has made IoT possible now, with minimal infrastructure investment.

# MICHAEL DERBY

## DAY 2 PRESENTATION 3



Michael Derby is the senior regulatory engineer and Director of ACB in Europe; a worldwide radio certification specialist. He is a TCB for the FCC, an FCB for Industry Canada and a Notified Body for the EMC, R&TTE and RE Directives. Michael is the Chairman of the TCB Council and therefore responsible for industry guidance and education with regard to the FCC and IC requirements. He is an active member of the REDCA, which is the RE Directive Notified Body group; and has been closely involved with tracking the development of the RE Directive (RED). He is also the Secretary of the EMC Test Lab Association. Within ACB, Michael is responsible for ACB's product certifications, manufacturer guidance and training activities. Michael's past experience includes product development, testing and certification for test laboratories and manufacture

### Michael's Presentation:

#### ISED Certification of Radio Devices:

A summary of radio certification requirements in Canada and a look at some of the most recent changes affecting radio product manufacturers; including manufacturers and installers of radio modules. The presentation will look at some recent changes in ISED Specification Standards; product testing requirements and manufacturer responsibilities; and requirements for reporting information about the products to ISED.

# DAVID DONACHIE

## DAY 2 PRESENTATION 2

David Donachie



David Donachie is an engineer and is responsible for managing the regulations in the UK that govern the use of SRD. This involves seeking out new and innovative ways to allow greater sharing of the radio spectrum. David has been with Ofcom since its formation in 2003. Before that he spent 7 years with the UK military as a radio technician and 7 years in the private sector as a radio systems engineer. He has been involved in the work of various regulatory committees at European level, including in the EU, CEPT and ETSI. In 2014 he advised the UK government's negotiating team on the Radio Equipment Directive as it went through the EU legislative procedure in the Council and the Parliament.

### **David's Presentation:**

**900 MHz – alignment with the rest of the world:**

**Some years ago the UK changed its regulations to allow SRD to access 900 MHz spectrum. This lines up with the rest of the world. What is now needed is the rest of Europe to change so the full benefits can be realised.”**

Dr. Simon Dunkley



**Dr. Simon Dunkley is Director, Regulations and Standards in Europe, for Silver Spring Networks & Low Power Radio Association (LPRA) Council Member (CEPT/ECC LoU Partner)**

**Dr Dunkley is European Regulatory Director for Silver Spring Networks Ltd, and has worked in the company's London office since 2011. Simon is actively engaged in both CEPT SE24/SRD/MG and ETSI TG28 and was closely involved with studies to investigate the release of the 870/915MHz band; indeed his contribution to the utility community for this work was recognized in him being named one of the '40 Most Influential People in European Smart Grid' in 2015 by Metering and Smart Energy International. Simon was educated in the respective Physics departments of London's Imperial College and the University of Cambridge.**

## **Simon's Presentation:**

**WiSUN: a proven solution delivering ubiquitous connectivity :**

**WiSUN is a global standard for the delivery of radio mesh networks in utility network and is based in IEEE802.15.4g. Mesh networks are a proven way to achieve greater than 99% connectivity to devices in hard to reach locations providing a cost-effective way to deliver smart metering and smart grid networks. This talk will describe the technology highlighting its strengths and comparing its key parameters with similar technologies on the market..**



Bruno Espinosa is the Deputy Director of the European Communications Office, ECO, which is the permanent office of the CEPT and its committees, in particular the ECC (Electronic Communications Committee).

Through its previous position within the French radiocommunications agency (ANFR) and through its current position at the ECO since 2012, Bruno Espinosa has been involved in many projects within the ECC including some dealing with Short Range Devices and relevant for today's workshop.

### **Bruno's Presentation:**

The presentation intends to provide an overview of the European regulatory framework for SRDs. It will in particular describe the main deliverables, in particular Recommendation 70-03, and activities relevant to spectrum for SRDs. The latest developments in the UHF band will be highlighted together with the relevant considerations regarding the EC framework for SRDs. The last part of the presentation will explain how stakeholders can get valuable information on the spectrum use in Europe through the EFIS database with a special focus on the EFIS implementation of Recommendation 70-03 and the corresponding national conditions for SRD usage.



Danny Haak is nowadays responsible for Nedap's cloud-based stock management solution 'ID Cloud'. Developing product vision and strategy, setting up a roadmap and translating into requirements together with the development team. Building strategic partnerships to create a whole product. Working together with our business development team and customers to learn about our their' challenges and use this to improve the product and support our clients with advice.

Before managing the growing RFID development team that scaled along with the customer projects we did. First deployments included multi-hundred stores roll-outs in several European countries with major retailers. We also made sure that the systems operated in real-life environments and based on customer feedback and experience we refined the products towards being world leading. Also developed RFID readers that are being used in retail stores. Worked on both embedded software (firmware), iOS apps as well as in optimizing the radio link.

### **Danny's Presentation:**

**2017: The Year of RFID in Retail :**

For years RFID has been a promising technology in retail. Today we have long passed the hype cycle, and there have been a significant number of large adoptions world wide. However, RFID in retail is still no mainstream technology. This presentation will explain how retailers use RFID technology. Besides, it will open a window on technology developments that will happen in the next few years and how they will impact adoption rates.

Jacques Hulshof



Jacques Hulshof is a Compliance Engineer with the N.V. Nederlandsche Apparatenfabriek Nedap. The role entails evaluating products developed by Nedap for compliance with Rules and Regulations for in principle all countries around the world. Part of the job is also having these systems approved in the relevant countries.

**Areas of Expertise:** conformity assessment, international product certification, product testing, telecommunications, electromagnetic compatibility, product safety, human exposure. Jacques has worked as an engineer in the field of compliance testing and product certification since 1985.

Jacques visits standardization groups on regular basis as there are: ETSI TG34, ETSI TG28, ECO SE24, ECO SRD/MG, CNC TC106 WG2\_WG15.

Jacques started his working career with Philips and stayed there for 7 years: 3.5 years in Philips Nat Lab and 3.5 years in the Ceramic capacitors factory. After that 3 years in Quality department of Nedap.

### Jacques' presentation:

#### Human Exposure Assessment and RFID systems :

Exposure to electromagnetic fields is not a new phenomenon. However, during the 20th century, environmental exposure to man-made electromagnetic fields has been steadily increasing as growing electricity demand, ever-advancing technologies and changes in social behaviour have created more and more artificial sources. Everyone is exposed to a complex mix of weak electric and magnetic fields, both at home and at work, from the generation and transmission of electricity, domestic appliances and industrial equipment, to telecommunications and broadcasting.

This presentation is dealing with Human Exposure Assessment from RFID systems operating on 134 KHz, 13.56 MHz, 865-868 MHz and 2.45 GHz.

The standards that is referenced is the EN 62369-1

# NICK HOOPER

## DAY 1 PRESENTATION 1



Nick Hooper is currently leading the UL VS Wireless Inspection and Certification team in Europe. He is also the RED CA Chairman

Nick graduated from Queen Mary College, University of London with a BSc in Electronic Engineering, recently completed a PGDip in electronic engineering at the University of Surrey and has worked in the electronics industry for more than 36 years. He has worked for UL (Previous RFI) in the UK for the last 25 years and currently leads the wireless Inspection (ISO 17020) and Certification (ISO 17065) team. During his career he: was an Aircraft and Avionic Engineer in the armed forces, ran FCC listed test sites for two different companies, worked as a Tempest equipment designer and test engineer, performed wireless equipment tests on a wide variety of equipment, and now conducts wireless equipment assessments. He is a member of many ETSI working groups, helping to draft standards for Wireless products. The RED CA is the Compliance Association for the Radio Equipment Directive Notified Bodies, [redca.eu](http://redca.eu).

### **Nick's Presentation:**

Nick will be discussing the latest information on the implementation of the Radio Equipment Directive RE-D.

# JULIUS KNAPP

## DAY 2 PRESENTATION 4



Julius Knapp

*Julius Knapp has been with the FCC for 42 years and has served as the Chief of the FCC's Office of Engineering and Technology (OET) since 2006. OET is the Commission's primary resource for engineering expertise and provides technical support to the Chairman, Commissioners and FCC Bureaus and Offices.*

*He received the FCC's Silver and Gold Medal Awards for distinguished service at the Commission as well as the Presidential Distinguished Rank Award for exceptional achievement in the career Senior Executive Service. Mr. Knapp has been the recipient of the Eugene C. Bowler award for exceptional professionalism and dedication to public service; the Federal Communications Bar Association Excellence in Government Service Award; the WCAI Government Leadership award; the National Spectrum Management Association Fellow Award; and the Association of Federal Communications Consulting Engineers E. Noel Luddy Award.*

*Mr. Knapp is a Life Member of the IEEE. He received a Bachelor's degree in electrical engineering from the City College of New York in 1974.*

### **Julius' Presentation:**

TBA



Frank Leferink has been with THALES in Hengelo, The Netherlands since 1984 and is now the Technical Authority EMC. He is responsible for the EMC activities for the development of new radar systems and naval platforms. He is also the Manager of Excellence on EMC of the THALES Group (65.000 employees), with over 100 EMC engineers spread over Europe, Asia, Australia and North-America, and 15 EMC laboratories. In 2003 he was appointed as (part-time, full research) professor, Chair for EMC at the University of Twente. The position is sponsored by THALES. Nine PhD researchers, a senior researcher and several master students are currently active in the EMC group. He published over 300 papers in peer reviewed journals and conferences, and owns 5 patents. Prof. dr. Leferink is chair of the IEEE EMC Benelux Chapter, member of the TPC Asia-Pacific EMC, a member of the ISC EMC Europe, and associate editor of the IEEE Transactions on EMC.

## Frank's presentation:

**Interfered technology: a radiant future.**

Already in 1892 the first law for ElectroMagnetic Compatibility (EMC) was published, and although a huge number of standards and regulations came into force in the last two decades, the number and impact of EM Interference (EMI) is still increasing; A standard is a compromise, and often published after the technology has been introduced. A main cause of EMI is therefore the introduction of new technologies. An example of new technology is the much faster switching power electronics, using gallium nitride components, causing interference at much higher frequencies and resulting in new and unexpected failures in other systems than before. But also the introduction of novel wireless systems is creating unexpected interference. An example is the use of 4G IMT (international mobile telephone) systems causing interference in air traffic control radars. The new European Radio Equipment Directive (RED) contains therefore new requirements for co-existence and thus selectivity of wireless systems, including receivers.

(Also the lack of requirements, for instance in the 2-150kHz range, creates (new) interference issue between existing and novel electronic products. Many interference cases have been published, but the deadlock in setting a limit for Power Line Telecommunication for Mains Communication Systems in the 2-150kHz, to enable Smart Grids, is a striking example of revolutionary EMI problems.)

In this presentation we will discuss several interference cases, and based on this we will have an eye on possible upcoming EMI issues.



**Erik van Maanen**

Erik van Maanen was born in Leiden the Netherlands and studied Electronics in Leiden and The Hague. He served in the Dutch military from mid-1985 till the end of 1986 as a radio telegraphist.

From 1988 to 1992 he worked as a Technical Consultant at the Delft University of Technology · Central Electronics Department (CED). He was responsible for the design and maintenance of dedicated computer systems and networks for measurement and instrumentation.

In 1992 he started working for the radio Communications Agency in The Netherlands as a Signal analysis and monitoring specialist. During this time he was co-designer of the first European countrywide monitoring network. He also designed several measurement methods that found their way in ITU recommendations and reports such as the ITU methods on noise measurements.

He represented The Netherland in ITU SG1 WP1C, was chapter coordinator for the ITU spectrum monitoring handbook and wrote the chapter on signal analysis.

Since 2005 he works for the spectrum management department the radio Communications Agency representing the Netherlands in ETSI ERM and several subgroups, in ITU SG1, in ECC SRDMG and WGSE. These groups perform spectrum engineering studies in which he participates, he also writes or participates in writing the associated technical study reports. He is working in a small group of specialists answering complex technical questions for the agency on a daily basis. He is also one of the contacts for industry on license exempt radio regulation and standardization.

## **Erik's Presentation:**

“Spectrum Demand for IoT” gives a brief overview and the conclusions of 4 research projects commissioned and funded by the Radio Communications Agency Netherlands with the subject IoT or directly related to IoT.

The reports related to the projects are named:

“Societal Impact of Wireless Revolution in the Netherlands and Possible Measures”

“Research into the license exempt spectrum of The Netherlands “

“IoT Applications, trends and potential impact on radio spectrum”

“Internet of Things spectrum utilisation and monitoring”

The conclusions of these reports are partly used to determine the long term spectrum strategy of the agency, to take a position in international consultations and to verify the current spectrum management practices of the agency on the topic of SRD's and license exempt IoT.

# JOSEF PREISHUBER-PFLÜGL DAY 1 PRESENTATION 7



Josef Preishuber-Pflügl, Vice-Chairman ETSI ERM TG34, Convener ISO/IEC JTC1 SC31/WG4

EVP, CTO and Business RFID+NFC of CISC Semiconductor GmbH ([www.cisc.at](http://www.cisc.at)) joined the company in 2003.

Starting on 125 kHz reader concepts Josef Preishuber-Pflügl got involved in Radio Frequency Identification (RFID) in 1995 in his master thesis when finishing the Graz University of Technology in Austria with the degree of a Diplom-Ingenieur (Master of Science) in Telematik (Telecommunications and Informatics). He worked in several areas of RFID engineering and product management for system design, reader and tag development covering all frequencies of passive RFID at Philips Semiconductors Gratkorn, Austria. In particular this was the development of a fully integrated 125 kHz reader ASIC based on his demodulator patent, as well as the first worldwide fully integrated 13.56 MHz reader ASIC. In respect to tags he developed several 13.56 MHz ASICs, and full tag designs, before he moved into product management where he led the development of Philips' first UHF product: the UCODE HSL, a tag ASIC according ISO/IEC 18000-4 and ISO/IEC 18000-6.

He is active participant in RFID standardization since 2000 in several standardization groups in the ISO/IEC JTC1/SC31 and GS1 EPCglobal area. Currently, he is convener of the ISO/IEC JTC1 SC31 WG4/SG6 for RFID performance+conformance, which is responsible for ISO/IEC 18046 and ISO/IEC 18047, convener of the Austrian standardization groups responsible for Information technology and AIDC+RFID. In 2014 and 2015 he was convener ISO/IEC JTC1 SC31 WG7 for RFID security, which has been merged into ISO/IEC JTC1 SC31 WG4 Radio Communications, where he became convener in early 2016 and merged the responsibilities of RFID, RTLS and RFID Security into this group.

Furthermore, he is project editor for the ISO/IEC 18000-63 and did work on the amendment for type C, which is the EPCglobal UHF Class 1 Generation 2 integration into this ISO standard. At this time this work in continued as work on ISO/IEC 18000-63REV1 to accommodate EPC Gen2V2, now also known as RAIN RFID. Since May 2008 he is also vice-chairman of ETSI ERM TG34 for RFID.

Under his leadership CISC joined the EPCglobal Inc. in 2004, where he has been deeply involved in the EPCglobal work as co-chair of SB JRG (Sensor and Battery Joint Requirements Group), HACET (Hardware Action group ad hoc advisory Committee to ETSI) and is HAG (Hardware Action Group) representative in the ARC (Architecture Review Committee). He served as co-chair of the GS1 EPCglobal UHF Air Interface Group addressing final amendments of the air interface standards and conformance test requirements until the group was abandoned. Inside CISC he set-up the RFID+NFC business with its major activities in RFID+NFC system design and RFID+NFC testing. The major focus in RFID system design is to support product and system design with simulation and measurement tools. This includes a full simulation environment for EPCglobal UHF Class 1 Generation 2 based application considering protocol, identification software and detailed RF aspects. Currently, the core product CISC RFID Xplorer ([www.cisc.at/xplorer](http://www.cisc.at/xplorer)) is available as product to support all available ISO/IEC and GS1 EPCglobal test standards to support both testing and design of products and applications.

CISC Semiconductor GmbH is an international oriented and highly awarded company that provides competitive and innovative products and technology for RFID and NFC testing, as well as for design and verification of heterogeneous networked embedded microelectronic systems.

CISC Semiconductor was founded in 1999 and is 100% privately owned. The company is managed by an international team of highest skilled experts. Our headquarters office is based in Klagenfurt, Austria. Since 2007 we operate an R&D office in Graz, Austria. In 2012 we founded our 100% subsidiary CISC Semiconductor Corp. in Mountain View (CA), USA.

## Josef's Presentation:

UHF RFID in Europe has a lively history with a very positive development over the last 15 years. Will this positive development continue, become a stable situation or spiral downwards? This session addresses the development and the current situation including the issues about competing band user. Furthermore, it will look into future developments

# PIETER ROBBERN

## DAY 2 PRESENTATION 5



Pieter Robben

Pieter Robben has been an Application Review Engineer with the American Certification Body, Inc. since May 2012. The role entails evaluating applications submitted to ACB for compliance with Rules and Regulations. Areas of Expertise: conformity assessment, international product certification, product testing, telecommunications, electromagnetic compatibility, product safety. Mr Robben has worked as an engineer and technical consultant in the field of compliance testing and product certification since 1990. Mr Robben is a TCB for the FCC, an FCB for Industry Canada, an RCB for Japan and a Notified Body for the R&TTE and EMC Directives. He is well known in the European community as past chairman of the R&TTECA. Pieter has been working with MIC matters since the inauguration of the Japan-EU Mutual Recognition Arrangement. Pieter's past experience includes EMC, Radio and Safety testing and certification for test laboratories and manufacturers.

### Pieter's Presentation:

This presentation contains an overview of the Japanese Radio Law and provides a brief introduction of the certification process for Japan for low power devices and other types of transmitters. The presentation also provides an overview of the requirements for transmitters operating below 30 MHz and the associated certification process where applicable. Information about the documents required to obtain certification for Japan is provided, labelling information is provided and "modular approvals" are clarified. Also some common mistakes and oversights, regarding issues which are specific for Japan, are being discussed in the presentation.

# MICHAEL SHARPE

## DAY 1 PRESENTATION 3



Michael Sharpe is presently the Director of Technical Strategy at ETSI, responsible for reviewing the ETSI's technical activities to advise on priorities for current work and to identify emerging opportunities. In support of this, he is responsible for liaison with key regulatory bodies and partner standards bodies at the National, European and Global level.

Michael Sharpe received his PhD from the University of Essex in the UK. Since then, he has worked at BBC Television, Ford Motor Company and the UK Radiocommunications Agency before joining ETSI in 1999 as network and datacenter.

### Michael's Presentation:

Michael Sharpe will provide an overview of the impact of the Radio Equipment Directive, concentrating on the new elements that affect short-range devices. In particular he will address the new requirements on radio receivers, the extension of scope to equipment operating below 9 kHz and radio determination equipment. He will also address the new EMC requirements, in particular for "smart" equipment where connectivity is introduced into existing product designs.