

CONFERENCE PROGRAM

Monday, October 15

08:00 - 09:00

Oakes Foyer

Registration

09:00 - 18:00

Oakes South

Colloquium: Satellite for 5G

Chair: Antonio Franchi, Telecommunications Future Projects, ESA, The Netherlands and Jean-Luc Agostini, Satellite Systems, MDA, Canada

PROGRAM

09:00 - 09:15 - Room Oakes South

Colloquium Opening

The Co-Chairs will welcome attendees and open the Colloquium.

09:15 - 10:15

Session 1: Satellite & 5G

S1-1 - 5G terrestrial and satellite with Barry Evans and Yogaratnam Rahulan at University of Surrey, 5G Innovation Centre

Barry and Yogaratnam will provide a review of 3GPP 5G release 15 and 16 for terrestrial systems and foreseen adaption for satellites.

S1-2 - Introduction to ESA 5G initiative with Antonio Franchi at European Space Agency

Antonio will give an overview of the ESA Satellite for 5G initiative, which is helping industry in delivering integrated terrestrial/satellite 5G solutions to support the digitalization of business and society.

10:15 - 10:30 - Coffee Break - Oakes Foyer

10:30 - 12:30

Session 2: From Use Cases to Architectures

Session 2 will address the main 5G Services and Use Cases and present views and status of activities from the 5G cellular world and the 5G satellite world, including consideration on hybrid 5G system architectures.

S2-1 - Overview of 5G Use cases with David Wessel at Huawei Canada Research Center.

David will depict 5G use cases addressing enhanced mobile broadband, machine communications and ultra-reliable and secure communication.

S2-2 - Satellite use cases and solutions for 5G with Dr. Konstantinos Liolis from SES

Konstantinos will present the most promising satellite use cases for 5G with focus on eMBB and mMTC usage scenarios. The presentation will also address GEO/MEO satellite solutions for 5G roll-out.

S2-3 - Satellite Constellations and 5G Services from OneWeb with Vikas Grover at OneWeb

The role of satellite constellation in delivering global 5G services.

S2-4 - 5G MNO with Ivo Maljevic from Telus

Ivo will depict 5G network rollout strategies. With an emphasis on how 5G devices can work on networks that are mostly based on the same infrastructure as 4G LTE networks and how the network will be moving toward radios and cores designed for 5G.

S2-5 - 5G in Japan with Naoto Kadowaki from NICT

Naoto will give us insights on the Japanese 5G on going demonstrations as well as International cooperation status.

Morning Q&A

The morning will conclude with a general Q&A open to All.

13:00 - 14:00 - Lunch Break - Oakes North

14:00 - 14:45

Session 3: Operators Panel

Session 3 will be an interactive panel among 5G cellular and satellite (GSO and NGSO) Operators, debating opportunities and challenges of delivering 5G Services.

5G will change the way networks are built and operated and will require new functional elements to manage complexity and scale. Operators will discuss the steps undertaken to prepare for the integration of these changes.

Panelist 1: I. Maljevic - Telus

Panelist 2: Vikas Grover - OneWeb

Panelist 3: O. Iqbal - Avanti

Panelist 4: R. Gopal - Hughes

Panelist 5: Pat McDougal - Inmarsat

14:45 - 15:30

Session 4: Industry Panel

Session 4 will be an interactive panel among 5G cellular and satellite Industry players, including network vendors and satellite prime manufacturers.

5G requires new equipment and technology to accommodate the user requirements and multiple use cases. Panelist will be invited to present their technology road maps in delivering network and user equipment fulfilling the demanding 5G needs in terms of size, flexibility and always lower capex.

Panelist 1: M. Murphy - Nokia

Panelist 2: D. Wessel - Huawei

Panelist 3: G. Shacham - SatixFy

Panelist 4: L. Murat - Ericsson

Panelist 5: G. Quiggle - iDirect

Panelist 6: J. Reed - CGI

15:30 - 16:00 - Coffee Break - Oakes Foyer

16:00 - 17:00

Session 5: Satellite Challenges in 5G and Way Forward

Session 5 will address 5G satellite challenges and opportunities, including standardization, regulation and spectrum, addressed by the following three speakers, followed by an interactive panel drawing concluding remarks.

S5-1 - Jennifer Manner, Senior Vice President Echostar

S5-2 - L. Montgomery, Wilkinson, Barker, Knauer, LLP

S5-3 - T. Stroup, President, Satellite Industry Association

Afternoon Q&A

The afternoon will conclude with a general Q&A open to All.

20:00 - 22:30

Joint Conference Chairs Dinner (by Invitation)

Tuesday, October 16

| | |
|---------------|---|
| 08:00 - 08:30 | Oakes Foyer Registration |
| 08:30 - 08:40 | Oakes South Opening Session: Welcome <i>Chair:</i> - Richard T. Gedney, ACT Co., USA (24th Ka and Broadband Communications Conference Co-Chair) - Nader Alagha, European Space Agency (ESA), the Netherlands and Daniel Gratton, Canadian Space Agency (CSA), Canada (36th ICSSC Co-Chairs) |
| 08:40 - 09:15 | Oakes South Keynote: Canada on Space by Iain Christie, Executive Vice President, Aerospace Industries Association of Canada |
| 09:15 - 10:30 | Oakes South Round Table: Commercial Space Applications: Can Private Enterprise Accommodate a New Deep space Network <i>Chair: Badri Younes, NASA HQ, USA</i> <p>The Panel will discuss the rapid technology revolution in satellite communications and how private enterprise may complement a role normally undertaken by government agencies, that of providing communications to manned and unmanned exploration and science missions. The continuation of the International Space Station (ISS) and the move to go back to the moon and beyond to Mars calls for a much enhanced near earth and deep space network, possibly as an extension of the terrestrial network. More and more space communications networks will be integrated with the terrestrial network, which calls into question what the government and private sector roles will be. This panel will discuss many aspects of space exploration communications, including the concept of the Deep Space Gateway as a communications node within an extensive laser and RF network, providing both long distance point to point and local Wi-Fi connectivity.</p> <p>Moderator: Badri Younes, NASA HQ, USA</p> <p>Panelists:</p> <ul style="list-style-type: none">- Les Deutsch, Deputy Director, Interplanetary Directorate, JPL, USA- Nader Alagha, ESA/ESTEC, The Netherlands- Daniel Gratton, Manager, Microwave & Communication, Canadian Space Agency (CSA), Canada- Matt Cosby, Director of Space Engineering, Goonhilly Earth Station Ltd., UK- Jim Schier, Chief Architect, SCA/NASA, USA |
| 10:30 - 11:00 | Coffee Break |
| 11:00 - 13:00 | Oakes South Plenary Panel 1: Optical Technology and Systems <i>Chair: Pete Vrotsos, ZIN Technologies, USA</i> <p>To build on the 24th Ka-band and 36th ICSSC Conference Plenary Session on Optical Technology and Systems, we are going to further explore the movement of optical communications technology from civil space technology infusion and demonstrations to commercial sitcom systems. Numerous companies are developing architectures and building spacecraft that will include optical communications in inter-satellite links and space to ground gateway services. This year's panel will include current operational systems, new systems that will be launched, traditional global service providers, large and small optical systems developers.</p> <p>Moderator: Pete Vrotsos, ZIN Technologies, USA</p> <p>Panelists:</p> |

Guy Baister, Thales Alenia Space, Switzerland
Chien Chen, Facebook, USA
Matthias Motzigemba, Tesat, Germany
Thomas Wood, LGS Innovations, USA
Tony Stajcer, Honeywell, Canada

13:00 - 14:30

Lunch Break

14:30 - 16:10

Oakes South

ICSSC 1: Multi-beam Satellite Systems

Chair: Tho Le-Ngoc, McGill University, Canada and David Burr, Comtech EF Data, United Kingdom

#2812151 - Symbol Versus Block Level Precoding in Multi-Beam Satellite Systems

Farbod Kayhan, University of Luxembourg - Luxembourg

Nader Alagha, ESA/ESTEC - Netherland

Alireza Haqiqatnejad, University of Luxembourg - Luxembourg

Joel Grotz, SES - Luxembourg

#2812121 - HARDWARE DEMONSTRATION OF PRECODED COMMUNICATIONS IN MULTI-BEAM UHTS SYSTEMS

Jevgenij Krivochiza, University of Luxembourg - Luxembourg

Bjorn Ottersten, SnT, University of Luxembourg - Luxembourg

Symeon Chatzinotas, SnT, University of Luxembourg - Luxembourg

Stefano Andrenacci, SnT, University of Luxembourg - Luxembourg

Juan Duncan, SnT, University of Luxembourg - Luxembourg

#2812078 - On the Capacity of Asynchronous Cooperative NOMA in Multibeam Satellite Systems

Nazli Ahmad Khan Beigi, Concordia University - Canada

Mohammad Reza Soleymani, Concordia University - Canada

#2811982 - Overlapping Clustering for Beam-hopping Systems

Shigenori Tani, Mitsubishi Electric corporation - Japan

Shigeru Uchida, Mitsubishi Electric Corporatio - Japan

Atsushi Okamura, Mitsubishi Electric Corporatio - Japan

#2812147 - Adjacent Beams Resource Sharing to Serve Hot Spots: A Rate-Splitting Approach

Tomas Ramirez,atlanTTic Research Center - Spain

Adriano Pastore, CTTC - Spain

Nele Noels, DIGCOM research group - Belgium

Carlos Mosquera, AtlanTTic research center - Spain

Marius Caus, CTTC - Spain

Nader Alagha, ESA - The Netherlands

14:30 - 16:10

Hennepin South

Ka 1: Navigation 1

Chair: Marco Lisi, European Space Agency (ESA), The Netherlands

#2812145 - GNSS USER TECHNOLOGY: A RAPIDLY EVOLVING LANDSCAPE

Carmen Laura Martin Ruiz, GSA - Czech Republic

#2812095 - NAVIGATION PAYLOAD PATHFINDER: A MODULAR END TO END SYSTEM ENGINEERING TEST BED

Fabio Ciattaglia, Thales alenia Space Italia S.p.A - Italy

Giulia Putorti, Thales Alenia Space Italia SPA - Italy

David Pisanu, Thales Alenia Space Italia SPA - Italy

Simone Perugia, Thales Alenia Space Italia SPA - Italy

Daniele Finocchi, Thales Alenia Space Italia SPA - Italy

#2812118 - GALILEO OPERATIONS AND SERVICE DELIVERY

Lucy Licata, Telespazio / Spaceopal - Italy
Paolo Minciocchi, Spaceopal GmbH - Germany
Loredana Bruca, Spaceopal GmbH - Germany
Pierluigi Fedele, Spaceopal GmbH - Germany
Andre Bauerhin, Spaceopal GmbH - Germany
Celestino Aureli, Spaceopal GmbH - Germany

#2812052 - SARA: Search And Rescue Aid and Surveillance using High EGNSS Accuracy

Marco Nisi, Sistematica S.p.A. - Italy
Alberto Mennella, Topview s.r.l. - Italy
Lucjan Gucma, Maritime University of Szczeci - Poland
Bilal Muhammad, CTIF Section Aarhus University - Denmark

Hennepin North

14:30 - 16:10

ICSSC 2: Cognitive Communications and Propagation Channel Optimization

Chair: Barry Evans, University of Surrey, United Kingdom and Amane Miura, NICT, Japan

#2811981 - Time Correlation Used to Improve Time Diversity Gain of Rainfall Prediction

Peeramed Chodkaveekityada, KMITL - Thailand
Hajime Fukuchi, Tokyo Metropolitan University - Japan

#2812006 - PROTECTION OF THE TERRESTRIAL RADIO STATION FROM THE INTERFERENCE BY MARITIME EARTH STATION IN MOTION IN THE 28 GHZ BAND

Daesub Oh, ETRI - Korea, South
Jongmin Park, ETRI - Korea, South

#2812180 - RATELESS CODES FOR SATELLITE SYSTEMS OVER RAIN FADING CHANNELS

Sooyoung Kim, Chonbuk National University - Korea, South
Daesub Oh, ETRI - Korea
Meixiang Maehyang, Yangzhou University - China
Satya Chan, Chonbuk National University - Korea

#2812092 - Channel States Information based Spectrum Sensing Algorithm in Satellite Cognitive Communication Networks

Mingchuan Yang, Harbin Institute of Technology - China
Qing Guo, Harbin Institute of Technology - China
Weizhong Zhang, Harbin Institute of Technology - China

#2812117 - WIDEBAND NONLINEARITIES CORRECTION IN DIGITAL PAYLOADS CHANNELS WITH PARALLEL ARCHITECTURES

Giuseppe Tomasicchio, Thales Alenia Space Italia - ITALY
Pietro Monsurro, University of Rome La Sapienza - Italy
Guglielmo Lulli, Thales Alenia Space - Italy
Felice Rosato, Thales Alenia Space - Italy
Alessandro Trifiletti, University of Rome La Sapienza - Italy
Pasquale Tommasino, University of Rome La Sapienza - Italy

Peninsula

14:30 - 15:50

Ka 2: Ground Systems 1

Chair: Richard T. Gedney, ACT Co., USA

#2812005 - Performance Study of Frequency Assignment with Flexibility in High Throughput Satellites

Yuma Abe, NICT - Japan

Amane Miura, NICT - Japan
Mitsugu Okawa, NICT - Japan
Kazunori Okada, NICT - Japan
Morio Toyoshima, NICT - Japan

#2812055 - Linear W-Band Power Amplifier Development for HTS Ground Terminal Use

Richard Kowalczyk, L3 EDD - United States
Carter Armstrong, L3 EDD - United States

#2812065 - Enabling Technologies for Vehicular Dual HTS-5G Terminal Systems

Alessandro Modigliana, Satellite Applications Catapult - United Kingdom
Hisamatsu Nakano, Hosei University - Japan
Hengyi Zhou, Swansea University - UK
Arpan Pal, Swansea University - UK
Amit Mehta, Swansea University - UK
Angelos Goulianos, Satellite Applications Catapult - UK
Peter King, Satellite Applications Catapult - UK
Thanos Arampatzis, Satellite Applications Catapult - UK

#2812073 - The Study on the Allocation of Signalling Bursts for DVB-RCS/RCS2 Networks

Minsu Shin, ETRI - Korea, South
JoonGyu Ryu, ETRI - S.Korea

14:30 - 16:10

Salon A

16th BroadSky Workshop: 5G Covering Our Planet

Chair: Naoto Kadowaki, NICT, Japan

PROGRAM

14:30- 14:35

Opening Remarks
Naoto Kadowaki, NICT, Japan

14:35- 15:00

The Prospect of Satellite Communications and 5G Integration
Naoto Kadowaki, NICT, Japan

15:00- 15:40

Overview of SESs Innovation Activities on Satellite Integration into 5G
Konstantinos LIOLIS, SES, Luxembourg

15:40- 16:20

Research of how to leverage 5G in satellite applications
Christopher McLain, Panasonic Avionics Corporation, USA

16:10 - 16:30

Coffee Break

16:30 - 18:30

Oakes South

ICSSC 3: Flexible HTS Systems and Interference Mitigation Techniques

Chair: Tom Butash, Innovative Aerospace IS, USA

#2812074 - Modifications to Multi-beam Systems for DRRM

Liping Ai, George Washington University - United States
Harry Shaw, NASA - USA

**#2812054 - Adaptive Resources Allocation for Flexible Payload enabling VHTS systems:
Methodology and Architecture**

Flor Ortiz-Gomez, Universidad Politecnica de Madrid - Spain
Miguel Salas-Natera, UPM - Spain
Ramon Martinez Rodriguez-O, UPM - Spain
Salvador Landeros-Ayala, UNAM - Mexico

#2812150 - Adaptive Onboard Compensation of Non-Linear HPAs and Imperfect Butler Matrices in MultiPort Amplifiers for High Throughput Satellites

Ovais Bin Usman, Universität Bundeswehr München - Germany
Gerhard Staude, University Bundeswehr Munich - Germany
Andreas Knopp, University Bundeswehr Munich - Germany

#2812001 - Distributed Precoding for Multiple Satellite Systems with Overlapping Coverage Areas

Bhavani Shankar Mysore, University of Luxembourg - Luxembourg
Sina Maleki, University of Luxembourg - Luxembourg
Vahid Joroughi, University of Luxembourg - Luxembourg
Joel Grotz, SES - Luxembourg
Symeon Chatzinotas, University of Luxembourg - Luxembourg
Bjorn Ottersten, University of Luxembourg - Luxembourg

#2812159 - Productized multicarrier predistortion total throughput gains around 20% over linearized channels in true customer use cases

Dieter Duyck, Newtec CY - Belgium
Hadi Gharibdoust, Newtec CY - Belgium
Dirk Breyngaert, Newtec CY - Belgium
Apostolos Mitakidis, Avanti Communications group - UK

#2812034 - A MITIGATION TECHNIQUE FOR ADJACENT CHANNEL INTERFERENCE IN COMMUNICATION SATELLITES

Leah Wang, Lockheed Martin Space Systems - United States

Hennepin South

16:30 - 18:10

Ka 3: Q/V Communication Experiments & Technologies I

Chair: Giuseppe Codispoti, Italian Space Agency (ASI), Italy and Juan Rivera Castro, ESA, the Netherlands

#2812079 - Space-Qualified VBand Receiver for Commercial Applications

James Sowers, SSL - United States
Hampton Chan, SSL - USA
Sung Park, SSL - USA
Thanh Tieu, SSL - United States

#2812084 - ASSESSMENT OF A GATEWAY SWITCHING ALGORITHM FOR Q/V-BAND SMART DIVERSITY SYSTEMS IN THE Q/V-LIFT PROJECT

Carlo Riva, Politecnico di Milano - Italy
Tommaso Rossi, University of Rome Tor Vergata - Italy
Giorgia Parca, Agenzia Spaziale Italiana - Italy
Roberto Nebuloni, CNR - Italy
Lorenzo Luini, Politecnico di Milano/CNIT - Italy
Mauro De Sanctis, University of Rome Tor Vergata - Italy
Giuseppe Codispoti, Agenzia Spaziale Italiana - Italy
Giandomenico Amendola, University of Calabria and CNIT - Italy
Antonio Petrolino, MBI - Italy

#2812090 - Aldo Paraboni Mission. How technology demonstrators and scientific activities pave the way for commercial SatCom Q/V band missions

Juan Rivera, European Space Agency - Netherlands
Philippe Sivac, European Space Agency - France
Antonio Martellucci, European Space Agency - Netherlands
Carlo Riva, Politecnico di Milano - Italy
Giuseppe Codispoti, ASI - Italy
Michael Schmidt, JOANNEUM RESEARCH - Austria
Alberto Pandolfi, Thales Alenia Space - Italy
Domenico de Bernardo, Space Engineering - Italy

#2812108 - THE NEW GENERATION OF VERY HIGH THROUGHPUT SATELLITE: Wide Band Ka, Q/V, Full Flexibility

Bernard Charrat, Thales Alenia Space - France
Jean-Michel Merour, Thales Alenia Space - France
Philippe Voisin, Thales Alenia Space - France
Jean-Benoit Laithier, Thales Alenia Space - France

#2812170 - A Novel high-performance V-Band GaN MMIC HPA for the QV-Lift project

Giorgia Parca, Italian space Agency - Italy
Giuseppe Valente, Italian Space Agency - Italy
Joel Moron, OMMIC - France
Giuseppe Codispoti, Italian Space Agency - Italy
George Goussetis, Heriott Watt University - UK
Manuel Sigler, ERZIA - Spain
Giandomenico Amendola, CNIT-University of Calabria - Italy

Hennepin North

16:30 - 18:10

ICSSC 4: New Satellite System Architectures and Components

Chair: Chandra Kudsia, University of Waterloo, Canada and Liping Ai, George Washington University, USA

#2812067 - Novel RF Architectures and Technologies for VSAT

Fabrizio De Paolis, European Space Agency - United Kingdom
Vaclav Valenta, European Space Agency - Netherlands
Enrico Lia, European Space Agency - Netherlands
Petar Jankovic, European Space Agency - Netherlands

#2812173 - A MODULAR ARCHITECTURE FOR LOW COST PHASED ARRAY ANTENNA SYSTEM FOR KA-BAND MOBILE SATELLITE COMMUNICATION

Wael Abdel-Wahab, University of Waterloo - Canada
Safieddin Safavi-Naeini, University of Waterloo - Canada
Mohsen Raeiszadeh, University of Waterloo - Canada
Ardeshir Palizban, University of Waterloo - Canada
Mohammad Nezhad-Ahmadi, University of Waterloo - Canada
Ahmad Ehsandar, University of Waterloo - Canada
Ehsan Ealian, University of Waterloo - Canada
Hussam Al-Saedi, University of Waterloo - Canada
G. Chen, University of Waterloo - Canada
N. Ghafarian, University of Waterloo - Canada
H. El-Sawaf, University of Waterloo - Canada

#2812174 - A COTS-BASED SOFTWARE-DEFINED COMMUNICATION SYSTEM PLATFORM AND APPLICATIONS IN LEO

Thomas Magesacher, Cesium Astro - United States
Jamal Haque, Honeywell - United States

Shey Sabripour, CesiumAstro - United States

Andrew Csizmar, Honeywell - United States

#2812154 - V-BAND LOW-NOISE AMPLIFIER MODULE FOR HIGH THROUGHPUT SATELLITE APPLICATIONS

Leonardo Pantoli, University of LAquila - Italy

Francesco Vitulli, Thales Alenia Space - Italy

Andrea Suriani, Thales Alenia Space - Italy

Giorgio Leuzzi, University of LAquila - Italy

Alessandro Barigelli, Thales Alenia Space - Italy

#2812186 - Satellite Payload Design for Cislunar Communications

Francisco De Pablos Martin, RHEA System BV - Netherlands

Vladimir Lemos, ESA - Netherlands

David Gomez Otero, ESA - United Kingdom

Francisco Javier De Pablos Martin, ESA - United Kingdom

Octavio Camino, ESA - United Kingdom

Xavier Geneste, ESA - United Kingdom

Tomas Navarro, ESA - United Kingdom

Peninsula

16:30 - 18:30

Ka 4: Ground Systems 2

Chair: Avi Freedman, SatixFy, Israel

#2812119 - Ground Segment Ready for Very High Throughput Satellites

Bruno ROGER, Thales Alenia Space - France

Olivier MAILLET, ThalesAleniaSpace - France

Bruno ROGER, ThalesAleniaSpace - France

Cyrille Blossé, Thales Alenia Space - France

Eric Boulanger, Thales Alenia Space - France

Marc Huan, Thales Alenia Space - France

Michael Van Eerdewegh, Thales Alenia Space - France

#2812191 - Design, Implementation and Operational Considerations For Large Q/V-band Gateway Antennas

Fred Vinezeano, CPI Antenna Division - United States

Joe Tolleson, CPI Antenna Systems Division - United States

#2812140 - Beam Hopping - Utilization Performance Analysis

Avi Freedman, SatixFy - Israel

#2812152 - Direct Spectrum Division Transmission IP core for Satellite Communications and Broadcasting

Fumihito Yamashita, NTT Corporation - Japan

Koichi Harada, NTT Corporation - Japan

#2812183 - Improving Satcom on the Move Performance

John Fischer, Spectracom - United States

#2812219 - Ka- and V-band HPA Developments Driven by VHTS System Requirements

Heidi Thelander, Comtech Xicom Technology - United States

Kevin Kirkpatrick, Comtech Xicom Technology - US

Mark Schmeichel, Comtech Xicom Technology - US

16:30 - 18:10

Salon A

16th BroadSky Workshop: One More Asset for the 5th Generation 5G Covering Our Planet (contd)

Chair: Naoto Kadowaki, NICT, Japan

PROGRAM (contd)

16:40- 17:15

Beam-steerable flat panel antenna for conformal Ka-band satellite terminal
Yifan (Ivan) Wang, EM Solutions, Australia

17:15- 18:10

AESA for Ka band Satellite Communication
Hiroyuki Joba, Mitsubishi Electric, Japan

18:10- 18:20

Closing Remarks
Naoto Kadowaki, NICT, Japan

19:00 - 21:00

Joint Conference Welcome Cocktail Reception

Wednesday, October 17

| | |
|---------------|---|
| 08:00 - 08:30 | Oakes Foyer Registration |
| 08:30 - 10:30 | Oakes South Plenary Panel 2: Emerging New Markets in Aviation, Mobility and Autonomy <i>Chair: Marco Lisi, European Space Agency (ESA), The Netherlands</i> Rapid new uses of airspace coupled with recent advances in autonomy will change the nature of how people live and work. The growth of the civilian drone services (Unmanned or Remotely Piloted Aircraft Systems, UAS, RPAS) took market analysts totally by surprise. Coupled with the tremendous research taking place in autonomy and its applications to self-driving cars and drone operations could cause an exciting new opportunity for satellites. Come hear what is happening in these growth fields. Moderator: Marco Lisi, European Space Agency (ESA), The Netherlands Panelists: - Nader Alagha, European Space Agency (ESA), The Netherlands - Marco Brancati, Telespazio, Italy - Flavio Sbardellati, European GNSS Agency, Czech Republic - James Kimery, Director of Marketing, National Instruments, USA - Peter Mabson, President, Chief Executive Officer and Director, Exact Earth, Canada |
| 08:30 - 10:30 | Salon A 5th General Assembly Aldo Paraboni Experimenters Group <i>Chair: Carlo Riva, Polytechnic of Milan, Italy</i> |
| 10:30 - 11:00 | <i>Coffee Break</i> |
| 11:00 - 12:00 | Oakes South ICSSC 5: High Speed Optical Communications and Feeder Links <i>Chair: Rajeev Gopal, Hughes Network Systems, USA and Mingchuan Yang, Harbin Institute of Technology, China</i> #2812081 - Alphasat, Sentinel-1A/B, Sentinel-2A/B, and EDRS Paving the Way for Systematic Optical Data Transfer for Earth Observation Missions Edoardo Benzi, ESA - Netherlands Betlem Rosich, ESA - ESRIN - Italy Ian Shurmer, ESA - ESOC - Germany Thomas Marynowski, TESAT Spacecom GmbH & Co.KG - Germany Mark James, Inmarsat plc - UK Franco Marchese, ESA - ESOC - Germany Olivier Colin, ESA - ESRIN - Italy Francesca Cipollini, ESA - ESRIN - Italy #2812125 - Diversity Architectures for High Data Rate Ground-to-Satellite Optical and EHF Links Rajeev Gopal, Hughes Network Systems, LLC - United States #2812011 - Research and development approach to realize flexible optical ground network operations for effective data downlink from space to ground Tatsuya Mukai, JAXA - Japan Tomohiro Araki, JAXA - Japan Yoshihisa Takayama, Tokai University - Japan |

11:00 - 12:20

Hennepin South

Ka 5: Protocols

Chair: Mike Cascone, CPI, USA

#2812072 - A Proposed Framework for High-Throughput Satellite Capacity Calculations Standardization

Marc Bjorkman, Lockheed Martin Space - United States

Charles Voboril, Lockheed Martin - United States

#2812088 - Wide-band satellite transmission experiment with 21-GHz band broadcasting satellite in NHK STRL OPEN HOUSE 2018

Yoichi Suzuki, NHK Science & Technology Research Labora - Japan

Osamu Yamazaki, B-SAT - Japan

Shoji Tanaka, NHK - Japan

Susumu Nakazawa, NHK - Japan

Masafumi Nagasaka, NHK - Japan

Masaaki Kojima, NHK - Japan

Yuki Koizumi, NHK - Japan

Atsushi Iwasaki, NHK - Japan

Hisashi Sujikai, NHK - Japan

#2812110 - Over-the-Air Operation of Mobile and Multicast Linear Precoding for a Multi-Spot-Beam Mobile Satellite Service

Thomas Kolb, Fraunhofer IIS - Germany

Bastien Hamet, Fraunhofer IIS - Germany

Christian Rohde, Fraunhofer IIS - Germany

Florian Leschka, Fraunhofer IIS - Germany

Pavan Bhave, Inmarsat - England

Miriam Ugarte, Inmarsat - England

Adam Liddell, Inmarsat - England

#2812112 - A NEW HIGHLY SPREAD SPECTRUM SLOTTED BURST (H3SB) PROTOCOL FOR SATCOM APPLICATIONS

Marco Andrenacci, MBI S.r.L. - Italy

Fritz Schurig, Eutelsat S.A. - France

Alessandro Le Pera, Eutelsat S.A. - France

Ivan Chesi, MBI S.r.L. - Italy

Hennepin North

11:00 - 12:00

ICSSC 6: VHF Data Exchange System

Chair: Nader Alagha, European Space Agency (ESA), The Netherlands

#2812167 - The new VHF Data Exchange System (VDES) and Norsat-2 satellite test results

Hans Haugli, Space Norway - Norway

Anders Bjornevik, Kongsberg Seatex - Norway

Lars Loge, Statsat - Norway

Torkild Eriksen, FFI - Norway

Lars-Erling Braten, FFI - Norway

Stig Erik Christiansen, Kongsberg Seatex - Norway

Nader Alagha, ESA/ESTEC - Netherlands

#2812020 - ON THE VHF RADIO CHANNEL FOR THE DATA EXCHANGE SYSTEM VIA SATELLITE (VDE-SAT); EXPERIMENTAL RESULTS FROM THE NORSAT-2 SATELLITE EXPERIMENT

Lars Braten, FFI - Norway

Hans-Christian Haugli, Space Norway - Norway
Lars Loge, Space Norway - Norway
Torkild Eriksen, FFI - Norway
Anders Bjornevik, Kongsberg Seatex - Norway
Andreas Nordmo Skauen, FFI - Norway

#2812109 - Field trials of the VHF data exchange system (VDES) satellite downlink component

Iago Gomez, GRADIANT - Spain
Francisco Valdes, Egatel - Spain
Javier Taibo, Egatel - Spain
Jorge El Malek, Gradiant - Spain
Brais Ares, Gradiant - Spain
Nader Alagha, European Space Agency - Netherlands

Peninsula

11:00 - 12:20

Ka 6: Optical Communications 1

Chair: Naoto Kadowaki, NICT, Japan

#2812224 - A Flight Demonstration Photonic Payload for up to Q/V-Band implemented in a satellite Ka-Band hosted payload aimed at Broadband High Throughput Satel

Rabindra (Rob) Singh, SSL - United States

#2811983 - Satellite- Aircraft Internet Laser Communication

Paul Christopher, PFC Associates - United States

#2812010 - Confirmation of propagation direction of uplink beam in ground-to-satellite laser transmission

Yoshihisa Takayama, Tokai University - Japan

#2812102 - Expanding Optical Communication Capabilities

Patricia Martin Pimentel, Tesat Spacecom - Germany
Robert Mahn, Tesat Spacecom - Germany
Michael Lutzer, German Aerospace Center (DLR) - Germany
Nils Hoepcke, Tesat Spacecom - Germany
Frank Heine, Tesat Spacecom - Germany
Rolf Meyer, German Aerospace Center (DLR) - Germany
Karen Saucke, Tesat Spacecom - Germany
T. Marynowski, Tesat Spacecom - Germany

Salon A

11:00 - 12:20

5th General Assembly Aldo Paraboni Experimenters Group

Chair: Carlo Riva, Polytechnic of Milan, Italy

12:20 - 14:00

2018 Lunch Break - ICSSC Communications Award to John Baras - Speech by Michael Rack, MDA, Canada

14:00 - 15:40

Oakes South

ICSSC 7: Mobile Satellite Systems and Bandwidth Efficient Techniques

Chair: Farbod Kayan, University of Luxembourg and Daniel Gratton, Canadian Space agency (CSA), Canada

#2812132 - Mobility Enhancement for Digital Video Broadcast Networks via Satellite

Burak Unal, University of South Wales - United Kingdom
Ifiok Otung, University of South Wales - United Kingdom
Nicholas Avlonitis, University of South Wales - United Kingdom
Ashraf Ali, University of South Wales - United Kingdom

#2812044 - SYSTEM LEVEL MODELING OF DVB-S2X IN HIGH THROUGHPUT SATELLITE SYSTEM

Jani Puttonen, Magister Solutions Ltd - Finland
Lauri Sormunen, Magister Solutions Ltd. - Finland
Janne Kurjenniemi, Magister Solutions Ltd. - Finland

#2811990 - Demonstration of Autonomous Bandwidth Allocation Scheme using SC-FDMA subcarrier switching

Daisuke Goto, NTT - Japan
Fumihiko Yamashita, NTT - Japan

#2812043 - Robust initial access technique of spread spectrum based on DVB-RCS2 standard for mobile application

Pansoo Kim, ETRI - Korea, South
Joon-Gyu Ryu, ETRI - Korea, South
Deock-Gil Oh, ETRI - Korea, South
In-Ki Lee, ETRI - Korea, South

#2812162 - Beam-Hopping Over-The-Air Tests using DVB-S2X Super-Framing

Christian Röhde, Fraunhofer IIS - Germany
Achim Trutschel-Stefan, WORK Microwave - Germany
Rainer Wansch, Fraunhofer IIS - Germany
Gerhard Micker, WORK Microwave - Germany
Laurent Roux, Eutelsat - France
Hector Fenech, Eutelsat - France
Eros Feltrin, Eutelsat - France
Nader Alagha, ESA - The Netherlands

Hennepin South

Ka 7: HTS Satellite Systems and Technologies

Chair: Tom Butash, Innovative Aerospace IS, USA

#2812007 - On preliminary design of bandwidth-on-demand high throughput satellite communications system technology

Amane Miura, NICT - Japan
Kazuyoshi Kawasaki, NICT - Japan
Yuichi Kawamoto, Tohoku University - Japan
Nei Kato, Tohoku University - Japan
Arimasa Kanasashi, Mitsubishi Electric Corp. - Japan
Tomoshige Kan, NICT - Japan
Yoshio Inasawa, Mitsubishi Electric Corp. - Japan
Nobuyoshi Horie, Mitsubishi Electric Corp. - Japan
Yuma Abe, NICT - Japan
Eihisa Morikawa, NICT - Japan
Naoto Yoshimura, NICT - Japan
Takashi Takahashi, NICT - Japan
Mitsugu Okawa, NICT - Japan
Teruaki Orikasa, NICT - Japan
Kazunori Okada, NICT - Japan
Masaki Sato, NICT - Japan
Shiniki Kozono, NICT - Japan
Takuya Okura, NICT - Japan
Morio Toyoshima, NICT - Japan
Hiroki Nishiyama, Tohoku University - Japan

14:00 - 15:40

Toshiyasu Tsunoda, Mitsubishi Electric Corp. - Japan
Masaaki Kusano, Mitsubishi Electric Corp. - Japan
Hitomi Ono, Mitsubishi Electric Corp. - Japan

#2812012 - USE OF REINFORCEMENT AND SUPERVISED LEARNING FOR FMT DECISION BASED ON FORECASTED VALUES OF SNR

Charilaos Kourogorgas, STFC RAL Space - United Kingdom
Spiros Ventouras, STFCRAL Space - UK
Apostolos Papafragkakis, NTUAECE School - Greece
Athanasios Panagopoulos, NTUAECE School - Greece

#2812035 - STATUS OF SOLID-STATE POWER AMPLIFIERS FOR SPACE-BASED COMMUNICATIONS AND REMOTE SENSING

Naresh Deo, QuinStar Technology - United States

#2812049 - RECENT ADVANCEMENT OF PASSIVE COMPONENTS FOR HTS MULTI-PORT POWER AMPLIFIERS

Antonio Panariello, COM DEV (dba Honeywell) - Canada
Mostafa Ismail, COM DEV (dba Honeywell) - Canada
Bahram Yassini, COMDEV (dba Honeywell) - Canada
Tony Stajcer, COM DEV (dba Honeywell) - Canada

#2812115 - Research Tasks and Plan for the R&D project

Eiichi Sakai, MITSUBISHI ELECTRIC CO - Japan
Hitomi Ono, Mitsubishi Electric Co. - Japan
Terumi Sunaga, Mitsubishi Electric Co. - Japan
Masaaki Kusano, Mitsubishi Electric Co. - Japan
Arimasa Kanasashi, Mitsubishi Electric Co. - Japan
Yoshio Inasawa, Mitsubishi Electric Co. - Japan
Nobuyoshi Horie, Mitsubishi Electric Co. - Japan
Toshiyasu Tsunoda, Mitsubishi Electric Co. - Japan

Hennepin North

Ka 8: Navigation 2

Chair: Flavio Sbardellati, European GNSS Agency, Czech Republic

#2812153 - Interference Threats to Satellite-Based Positioning and Navigation Systems - Impact and Potential Countermeasures

Sarang Thombre, Finnish Geospatial Research Institute - Finland
Michael Pattinson, Nottingham Scientific Ltd. - United Kingdom
M. Zahidul. H. Bhuiyan, Finnish Geospatial Res. Inst. - Finland

#2812098 - TESTING GALILEO PERFORMANCES OF GIS COMMERCIAL RECEIVERS IN DIFFERENT OPERATIONAL ENVIRONMENTS

Massimo Eleuteri, Thales Alenia Space Italia - Italy
Simone Perugia, Thales Alenia Space Italia - Italy
Jacopo Capolicchio, Thales Alenia Space Italia - Italy

#2812134 - Communication BRLOS to Support RPAS Mobility

Marco Brancati, Telespazio - Italy
Dario Rapisardi, Telespazio - Italy
Roberto Melchiorri, Telespazio - Italy
Marco Ferrari, Telespazio - Italy
Antonio Ceccarelli, Telespazio - Italy

#2812179 - ROAD RESURFACING USING INDUSTRY 4.0 PRINCIPLES

14:00 - 15:20

Vitezslav Obr, Exact Control System a.s. - Czech Republic
Filip Sroubek, UTIA - Czech Republic
Michal Sorel, UTIA - Czech Republic
Marek Prikryl, Exact Control System a.s. - Czech Republic
Petr Pokorny, Exact Control System a.s. - Czech Republic
Martin Langer, CVUT - Czech Republic
Pavel Hrubes, CVUT - Czech Republic
Josef Zak, CVUT - Czech Republic

14:00 - 15:20

Peninsula

Ka 9: Special Topics

Chair: Arduino Patacchini, ARPASAT, France

#2812030 - How Public Private Partnerships Enable NASA Future Space Communications

Kul Bhasin, Comsat Architects - United States
Nang Pham, NASA Glenn Research Center - United States
James Stegeman, NASA Glenn Research Center - United States

#2812086 - SATELLITE SYSTEMS AND LARGE SPACE INFRASTRUCTURES: A SERVICE AND THROUGH-LIFE PERSPECTIVE

Marco Lisi, European Space Agency - Netherlands

#2812206 - Multi-Level Data Security for Resilient Space Communication Architectures

Lisa Happel, NGC - United States
Suzanna LaMar, Northrop Grumman Systems Corp - USA

#2812164 - Satellite Broadband Bonding Technology

Genshe Chen, Intelligent Fusion Technology, Inc - United States
Khanh Pham, AFRL/RVSW - United States
Xin Tian, Intelligent Fusion Technology, Inc - United States
Nichole Sullivan, Intelligent Fusion Technology, Inc - United States
Dan Shen, Intelligent Fusion Technology, Inc. - United States
James Lyke, AFRL/RV - United States
Tianxiang Liu, Intelligent Fusion Technology, Inc - United States
Yi Li, Intelligent Fusion Technology, Inc - United States
Erik Blasch, AFOSR - United States
Wenhao Xiong, Intelligent Fusion Technology - United States
Yiran Xu, Intelligent Fusion Technology - United States

15:40 - 16:10

Coffee Break

16:10 - 17:10

Oakes South

Ka 10: Small Satellite Systems and Technologies

Chair: Denise Ponchak, NASA Glenn Research Center, USA

#2812041 - Architecture of a Cubesat based W-band channel measurements system

Michael Schmidt, Joanneum Research - Austria
Tuomas Tikka, Reaktor Space Lab - Finland
Jussi Saily, VTT - Finland
Markus Roesch, Fraunhofer IAF - Germany
Benjamin Schoch, University of Stuttgart - Germany
Luis Cupido, LCT - Portugal

#2812070 - Composite Inflatable Antennas for Small-Satellites and Backup Communication

Jekan Thangavelautham, Univ. of Arizona - SpaceTREx - United States

Aman Chandra, Univ. of Arizona, SpaceTREx - US

Alessandra Babuscia, NASA JPL - United States

#2812131 - APPLICATION-SPECIFIC TRANSMITTERS FOR SMALL SATELLITES FOR DATA COMMUNICATION AND REMOTE SENSING

Naresh Deo, QuinStar Technology - United States

Hennepin South

16:10 - 17:30

ICSSC 8: Transmitter and Modem Technologies

Chair: Nafiz Karabudak, Lockheed Martin, USA and Glyn Thomas, Airbus Defence and Space, United Kingdom

#2812113 - MAXIMIZING DATA THROUGHPUT IN EARTH OBSERVATION SATELLITE TO GROUND TRANSMISSION BY EMPLOYING A FLEXIBLE HIGH DATA RATE TRANSMITTER

Philipp Wertz, Tesat Spacecom - Germany

Franz-Josef Hagmanns, Tesat-Spacecom GmbH & Co. KG - Germany

Marcus Kiessling, Tesat-Spacecom GmbH & Co. KG - Germany

#2812013 - Implementation of a Machine Learning Based Modulation Scheme in GNURadio for Over-the-Air Packet Communications

Mathew McCaskey, Comsat Architects - United States

Austin Feydt, Comsat Architects - United States

Robert Corrigan, Comsat Architects - United States

Kul Bhasin, Comsat Architects - United States

David Chelmins, NASA Glenn Research Center - United States

#2812169 - An efficiency comparison between timeslicing and multi-carrier transmission for linearized HTS transponders

Dieter Duyck, Newtec CY - Belgium

Jon Vandenbruaene, Newtec CY - Belgium

Frederik Simoens, Newtec CY - Belgium

Michiel Mertens, Newtec CY - Belgium

Dirk Breyngaert, Newtec CY - Belgium

#2812143 - Advances in EM modeling and numeric techniques for the analysis of high power breakdown in microwave structures for space applications

Chandra Kudisia, University of Waterloo - Canada

Hennepin North

16:10 - 18:10

Ka 11: HTS Onboard Processing, Payload Architectures and Technologies

Chair: Peter Garland, MDA Corp., Canada

#2811989 - DEVELOPMENT OF SPREAD SPECTRUM COMMAND RECEIVER FOR COMMERCIAL COMMUNICATION SATELLITES

Hideto Okada, NEC Space Technologies, Ltd. - Japan

Tatsuya Shiino, NEC Space Technologies - Japan

Chihiro Sakakibara, NEC Space Technologies - Japan

Shunsuke Okada, NEC Space Technologies - Japan

Masanobu Ohtake, NEC Space Technologies - Japan

Mitsuhiro Nakadai, JAXA - Japan

Masanobu Yajima, JAXA - Japan

Chihaya Kato, JAXA - Japan

#2812024 - The Benefits of Beam Hopping using Ferrite Switches for Very High Throughput Satellites (VHTS)

Colin McLaren, Honeywell - United Kingdom
Joe Wells, Honeywell - UK
Tony Stajcer, Honeywell - Canada

#2812060 - On-board signal processing platform

Bart Desoete, Antwerp Space - Belgium
Nicolas Huot, Antwerp Space - Belgium

#2812063 - – A Flexible, Ultra-High Throughput Communications Satellite Payload Architecture with Full Visible Earth Coverage

Jeffrey Freedman, RKF ENGINEERING - United States
Erik Halvorson, Kythera Software - United States
David Anderson, SEAKR Engineering, Inc - USA

#2812116 - Investigation of the Framing Structure on High-speed Ka-band VCM system for Earth Observation Satellites

Chihaya Kato, Japan Aerospace Exploration Agency - Japan
Mitsuhiro NAKADAI, JAXA - Japan
Masanobu YAJIMA, JAXA - Japan

#2812208 - Regenerative Payload - Chip and Architecture

Gil Shacham, SatixFy - United States

Peninsula

Ka 12: Q/V Propagation

Chair: Carlo Riva, Polytechnic of Milan, Italy

#2812038 - ALPHASAT SITE DIVERSITY EXPERIMENT AT Q BAND IN AUSTRIA AND HUNGARY

Felix Cuervo, JOANNEUM RESEARCH - Austria
Michael Schoenhuber, JOANNEUM RESEARCH - Austria
Michael Schmidt, JOANNEUM RESEARCH - Austria
Juan Rivera Castro, European Space Agency - The Netherlands
Antonio Martellucci, European Space Agency - The Netherlands
Laszlo Csurgai-Horvath, Budapest University of Technol - Hungary

#2812042 - CONSIDERING SCINTILLATION EFFECTS IN Q/V-BAND WITH ADAPTIVE CODING AND MODULATION

Michael Schmidt, Joanneum Research - Austria
Eveline Greschitz, JOANNEUM RESEARCH - Austria
Johannes Ebert, JOANNEUM RESEARCH - Austria
Juan Castro, ESA - Netherlands

#2812045 - Alphasat Propagation Experiment in Graz: Detailed Event Analysis

Joel Flavio, Joanneum Research - Austria
Michael Schmidt, JOANNEUM RESEARCH - Austria
Antonio Martellucci, ESA - The Netherlands
Felix Cuervo, JOANNEUM RESEARCH - Austria
Juan Castro, ESA - The Netherlands

16:10 - 17:10

20:30 - 23:00

Joint Conference Dinner

Thursday, October 18

08:30 - 09:50

Oakes South

ICSSC 9: 5G and Satellite Network Integration

Chair: Jonathan Rodriguez, Institute of Communications of Aveiro (IT), Portugal

#2812083 - 5G TECHNOLOGIES FOR A COMMUNICATIONS AND NAVIGATION INTEGRATED INFRASTRUCTURE ON MOON AND MARS

Marco Lisi, European Space Agency - Netherlands

Andrea Modenini, ESA - Netherlands

Pietro Giordano, ESA - Netherlands

#2812144 - Efficient 5G Edge Caching over Satellite

Thang X. Vu, University of Luxembourg - Luxembourg

Satyanarayana Vuppala, SnT - University of Luxembourg - Luxembourg

Nicola Maturo, University of Luxembourg - Luxembourg

Joel Grotz, SES Engineering - Luxembourg

Symeon Chatzinotas, SnT - University of Luxembourg - Luxembourg

#2812037 - From use cases for satellite backhaul in 5G to business modelling

Simon Watts, Avanti Communications - United Kingdom

Marlies Van der Wee, imec - Belgium

Salvador Diazsendra, BT - United Kingdom

Kostantinos Liolis, SES - Luxembourg

08:30 - 09:50

Hennepin South

Ka 13: Antennas 1

Chair: Rob Singh, SSL, USA

#2812210 - DBF ASIC Measurement Results and Application

Divaydeep Sikri, Satixfy UK Ltd - United Kingdom

Cetin Altan, SatixFy Ltd. - United Kingdom

#2812009 - Ka-band Phased Array Fed Reflector Antenna Composed of A Small Number of Feed Elements

Akira Akaishi, AstroTerrace - Japan

Hisanori Tsuji, AstroTerrace - JAPAN

Satomi Tanaka, AstroTerrace - JAPAN

Amane Miura, NICT - Japan

Teruaki Orikasa, NICT - Japan

#2812032 - Adaptive Phase Tracking for Beamforming Phased Array Feeder in Ka-Band Multi-Beam Satellite Communications Payload

Seong-Mo Moon, ETRI - Korea, South

In-Bok Yom, ETRI - South Korea

So-Hyeon Yun, ETRI - Korea, South

Dong-Pil Chang, ETRI - South Korea

#2812082 - PERFORMANCE SPECIFICATION AND VERIFICATION OF ACTIVE ANTENNAS FOR SATELLITE COMMUNICATIONS

Marco Lisi, European Space Agency - Netherlands

08:30 - 09:50

Hennepin North

Ka 14: Propagation I

Chair: James Nessel, NASA GRC, USA

#2811986 - Rain Fade Prediction using a Gaussian Mixture Model

Kufre-Mfon Ekerete, University of South Wales - United Kingdom

Ifiok Otung, University of South Wales - United Kingdom

Judith Jeffery, STFC Rutherford Appleton Laboratory - United Kingdom

Francis Hunt, University of South Wales - United Kingdom

Jonathan Rodriguez, Instituto de Telecomunicações - Portugal

#2812106 - A Flight Experiment of Ka Band Satellite Communications for Measuring Attenuation Characteristics by Clouds

Tomoshige Kan, NICT - Japan

Hiroyuki Tsuji, NICT - Japan

Takuya Okura, NICT - Japan

Takashi Takahashi, NICT - Japan

Morio Toyoshima, NICT - Japan

#2812128 - Two Years of Atmospheric Measurements in Edinburgh, Scotland

Michael Zemba, NASA - United States

James Nessel, NASA - USA

George Goussetis, Heriot-Watt University - United Kingdom

Nicholas Sia, NASA - United States

#2812129 - Results from One Year of Ka-band Beacon Measurements at Svalbard

James Nessel, NASA Glenn Research Center - United States

Torgeir Prytz, KSAT - Norway

Antonio Martellucci, ESA - Netherlands

Xavier Boulanger, ONERA - France

Laurent Castanet, ONERA - France

Peninsula

Ka 15: Navigation 3

Chair: Sarang Thombre, Finnish Geospatial Research Institute, Finland

#2812085 - GNSS SYSTEMS AND RECEIVERS EVOLUTION: THE RUSH FOR HIGHER POSITIONING ACCURACY

Marco Lisi, European Space Agency - Netherlands

#2812149 - Tlc bundled solutions to support railways services development

Antonio Ceccarelli, Telespazio - Italy

Marco Ferrari, Telespazio - Italy

Alissa Ioannone, Telespazio - Italy

Fabio Fiano, Telespazio - Italy

Marco Brancati, Telespazio - Italy

#2812177 - Iris with IOC : The Space based Solution for Air Traffic Management Communications

Stefano La Barbera, Thales Alenia Space - Italy

Roberto Winkler, Thales Alenia Space - Italy

Luca Pighetti, Thales Alenia Space - Italy

Alessia Miglietta, Thales Alenia Space - Italy

Paolo Conforto, Thales Alenia Space - Italy

#2812189 - INTEGRITY, THE KEY ENABLER FOR FUTURE MARITIME APPLICATIONS

Ana Cezon Moro, GMV - Spain

Gines Moreno, GMV - España

Ana Cezon, GMV - España

Miguel Azaola, GMV - España

08:30 - 09:50

10:20 - 11:20

Oakes South**ICSSC 10: Satellite Networks Design Challenges and Applications***Chair: Denise Ponchak, NASA Glenn Research Center, USA and Tony Stajcer, Honeywell, Canada***#2812104 - Capacity Enhancement and Interference Management for Interactive Satellite Networks**

Nazli Ahmad Khan Beigi, Concordia University - Canada

Wuchen Tang, University of British Columbia - Canada

Ali Shoamanesh, Telesat Canada - Canada

Mohammad Reza Soleymani, Concordia University - Canada

Victor Leung, University of British Columbia - Canada

Hossein Ghaneharian, Telesat Canada - Canada

#2812089 - Resource allocation challenges in satellite LTE networks

Dilip Gokhale, Lockheed Martin - United States

Suresh Iyer, Lockheed Martin - USA

#2812127 - VLEO Satellites- A New Earth Observation Spacecraft Systems commercial and Business Model

Sam Dakka, University Of Nottingham - United Kingdom

#2812158 - Towards the Internet for Space: bringing cloud computing to space systems

Simone Briatore, Skoltech - Russia

Alessandro Golkar, Skoltech - Russia

Nicola Garzaniti, Skoltech - Russia

10:20 - 12:00

Hennepin South**Ka 16: Antennas 2***Chair: Glyn Thomas, Airbus Defence and Space, United Kingdom***#2811984 - TIME DOMAIN ANALYSIS AND GATING PROCESS OF THE SYSTEMATIC ERRORS MEASUREMENTS FOR PHASED ARRAY SATELLITE ANTENNAS**

Takuya Okura, Space Communications Laboratory, NICT - Japan

Amane Miura, NICT - Japan

Teruaki Orikasa, NICT - Japan

Shinji Semba, Axis Corp. - Japan

#2812142 - Rational Choice of HPAs for Satellite Uplink

Mike Cascone, CPI - United States

#2812156 - NOVEL ANTENNA PRODUCTS AT MDA: Deployable Pallet and Ka/Q/V-BAND FEEDCHAIN

Karim Glatre, MDA, a Maxar Technologies Company - Canada

David Huet, MDA, a Maxar Technologies Company - Canada

Jasmin McFadden, MDA, a Maxar Technologies Company - Canada

Louis Hildebrand, MDA, a Maxar Technologies Company - Canada

Yann Galipeau, MDA, a Maxar Technologies Company - Canada

Eric Amyotte, MDA, a Maxar Technologies Company - Canada

#2812157 - Active Antennas for vHTS Satellites

Sonya Amos, Airbus Defence and Space - United Kingdom

Andrew Warburton, Airbus Defence & Space - UK

Glyn Thomas, Airbus Defence & Space - UK

#2812166 - High Frequency Mesh for Ka-Band Through V-Band Reflectors

Greg Apotsos, Harris Corporation - United States

10:20 - 11:40

Hennepin North

Ka 17: Satellites and 5G

Chair: Marco Brancati, Telespazio, Italy

#2812036 - 5G NEW RADIO AND FIXED SATELLITE SERVICES CO-EXISTANCE IN MM-WAVE BAND

Barry Evans, University of Surrey - United Kingdom

Abdelrahim Mohamed, University of Surrey - United Kingdom

Shamsuddeen Mikail, University of Bello - Nigeria

#2812100 - SATIS5 SOLUTION: A COMPREHENSIVE PRACTICAL VALIDATION OF THE SATELLITE USE CASES IN 5G

Marius Corici, Fraunhofer FOKUS Institute - Germany

Konstantinos Liolis, SES - Luxemburg

Jan Koernicke, Newtech Communications GMBH - Germany

Adam Kapovits, Eurescom GmbH - Germany

Ilie Gheorghe-Pop, Fraunhofer FOKUS Institute - Germany

Alexander Geurtz, SES - Luxemburg

Stefan Covaci, TU Berlin - Germany

Frank Burkhardt, Fraunhofer IIS - Germany

Eleonora Cau, Fraunhofer FOKUS Institute - Germany

Christos Politis, SES - Luxembourg

Florian Voelk, Bundeswehr University of Munich - Germany

#2812135 - Satellite in 5G Standardization

Marco Brancati, Telespazio - Italy

Antonio Ceccarelli, Telespazio - Italy

Marco Ferrari, Telespazio - Italy

Giuliano Marcelli, Telespazio - Italy

#2812148 - Time distribution using Galileo GNSS time reference sources and its application to 5G

Marco Brancati, Telespazio - Italy

Alessandro Vizzarri, University of Rome tor Vergata - Italy

Franco Vatalaro, University of Rome Tor Vergata - Italy

Franco Mazzenga, University of Rome Tor Vergata - Italy

Gianfranco Ciccarella, Telespazio - Italy

Carlo Albanese, Telespazio - Italy

10:20 - 11:20

Peninsula

Ka 18: LEO Systems

Chair: Mario Caron, Former CRC, Canada

#2812111 - PRACTICAL CONSIDERATIONS FOR SYTEM-LEVEL SIMULATORS OF UNB IoT DEVICES OVER LEO SATELLITES

Joan Bas, CTTC - Spain

Ana Neira, CTTC - Spain

Marius Lopez, CTTC - Spain

Joan Botella, CTTC - Spain

Luis Botana, CTTC - Spain

Juan Pedro Alameda, Inmarsat - United Kingdom

#2812047 - Ka-band LEO-LEO ISL for small satellites

Massimo Cuzzola, Antwerp Space - Belgium

**#2812207 - LEO CONSTELLATION FOR BROADBAND APPLICATIONS SYSTEM DESIGN
CONSIDERATIONS**

David Gazelle, SatixFy - Israel

12:00 - 13:30

Lunch Break

13:30 - 15:00

Oakes South

ICSSC 11: Advances in Tunable Filters and Photonics Tutorial

Chair: Ifiok Otung, University of South Wales, United Kingdom and George Haddad, NASA, USA

#2812071 - Advances in Tunable Filters for Satellite and Wireless systems

Chandra Kudsia, University of Waterloo - Canada

Raafat Mansour, University of Waterloo - Canada

#2812205 - Photonics:Systems Design, Performance and Applications

Allen Katz, LLST/LP LLC and College of New Jersey - United States

John MacDonald, Linear Photonics - United States

13:30 - 14:30

Hennepin South

Ka 19: Earth Observation

Chair: Richard Reinhart, NASA GRC, UDS

#2812040 - Satellite Communication for an enhanced flood forecasting System

Michael Schmidt, Joanneum Research - Austria

Volker Schumacher, ESA - UK

Friedrich Woelfelmaier, ZAMG - Austria

Michael Bergmann, Eutelsat - France

Patrick Niederhold, JOANNEUM RESEARCH - Austria

#2812077 - Low-power/ high-power SPACE qualified RADAR TWTs For earth observation

Ernst Bosch, Thales Germany GmbH - Germany

Philip Birtel, Thales Germany - Germany

Jochim Daeubler, Thales Germany - Germany

#2812097 - Earth Observation Data at the service of Integrated Maritime Surveillance: the EUCISE2020 project

Patrizia Sacco, Italian Space Agency - Italy

Giuseppe Codispoti, Italian Space Agency - Italy

Carolina Matarazzi, Italian Space Agency - Italy

13:30 - 14:50

Hennepin North

Ka 20: Optical Communications 2

Chair: Pete Vrotsos, ZIN Technologies, USA

#2812114 - Optical Inter Satellite Links for broadband networks

Matthias Motzigemba, Tesat Spacecom - Germany

Herwig Zech, TESAT Spacecom - Germany

Philipp Biller, TESAT Spacecom - Germany

#2812122 - Optical Relay for Future NASA Geosynchronous Orbiting Satellite for High Data Rate Links to NASA User Missions

Kul Bhasin, Comsat Architects - United States

Joseph Warner, Comsat Architects - United States

Steven Oleson, NASA Glenn Research Center - United States

James Stegeman, NASA Glenn Research Center - United States

Nang Pham, NASA Glenn Research Center - United States

Jared Early, Comsat Architects - United States

#2812223 - A Ka-Band Single String Photonic Payload Flight Demonstrator for Broadband High Throughput Satellite Systems and an In Orbit Demonstrator of Optical R

Rabindra (Rob) Singh, SSL - United States

#2812175 - Modular Optical Transceiver for LEO Constellations, GEO Downlinks, and Deep Space

Alan Scott, Honeywell International - Canada

Danya Hudson, Honeywell - Canada

Hugh Podmore, Honeywell - Canada

Weiguo Chen, Honeywell - Canada

Alexander Beaton, Honeywell - Canada

15:00 - 15:20

Coffee Break

15:20 - 17:20

Oakes South

Plenary Panel 3: Disruptive Change

Chair: Chris Hoeber, CFH Engineering, USA

For the third straight year, we will examine the disruptive forces that are reshaping the space communications ecosystem. First came the HTS spacecraft, which disrupted the satellite bandwidth pricing models, and created (temporary?) excess capacity. Then came the LEO systems, which disrupted the satellite procurement and manufacturing models. In the past year, SpaceX and Telesat launched prototype spacecraft; OneWeb constellation manufacturing moved forward, and the Telesat constellation procurement is underway. On top of these seismic changes, last year's panel identified the rollout of Wireless 5G as something that the industry ignores at its own peril, and predicted that to survive, new manufacturing/service alignments would come into being. So as not to be left behind, manufacturers will have to create a new future, rather than wait for RFPs. Have we made progress in the past year?

Moderator: Chris Hoeber, CFH Engineering, USA

Panelists:

- Mark Dankberg, Chairman & CEO, ViaSat, USA
- Greg Edlund, VP RF Payload Center of Excellence, Lockheed Martin Space Systems, USA
- Barry Evans, Professor, University of Surrey, UK
- Rajeev Gopal, Senior Technical Director, Advanced Systems, Defense & Intelligence Systems, Hughes Network Systems, USA
- Michel Forest, Director of Engineering, Telesat, Canada
- Alessandro Le Pera, R&D Manager and Advanced Payload Manager, Eutelsat, France
- Rob Singh, Vice President Business Development, Solutions Architect, SSL, US
- Glyn Thomas, Payload Lead Engineer, Airbus Defence and Space, United Kingdom

17:40 - 17:50

Oakes South

Closing :

Chair: