

PROGRAMME

Tuesday 2 October

08:00 Registration desk open

08:40 Opening Presentation: *Franco Ongaro (ESA-ESTEC)*

Session 1 - Megaconstellations

Chairs: P. de Maagt, D. Mignolo

09:00 LeoSat and how to address the growing, global need for more, faster and secure data connectivity!

Holvoet A¹

¹*SVP Program Office - LEOSAT*

09:20 Megaconstellations: Will the Promise be Fulfilled?

Mowat J¹

¹*SES Networks*

09:40 OneWeb Satellite Constellation and Future Directions

Alexander D¹, Askijian A¹, Ladovaz M¹, Grossman J¹

¹*OneWeb*

10:00 Ka-band Smart Flat Panel user terminal for NGSO/GSO networks

Tiezzi F¹, Viganò M¹, Llorens del Rìo D¹, Vaccaro S¹, Rao A²

¹*Viasat*, ²*O3b Networks USA LLC*

10:20 Inmarsat Insights on Antenna Technologies: Enabling Past and Future Satcom Mobile Services

Mugnaini S¹

¹*Inmarsat Satellite Infrastructure and Advanced Payloads Team*

10:40 Antennas for Satellite Telecommunications Constellations: a key technology enabler

Re E¹

¹*ESA-ESTEC*

11:00 Coffee break

for the remainder of the workshop, the sessions will run in parallel

Session 2 – Active Antennas 1

Chairs: P. Lepeltier, P. Angeletti

Room: Newton 2

- 11:20 Answering the market pull with Active Antennas and the technology challenges
Amos S¹, Thomas G¹, McLaren S², Warburton A¹
¹Airbus, ²Airbus
- 11:40 Multibeam Antenna Architectures for Flexible Capacity Allocation
Hill J¹, Demers Y¹, Liang A¹, Amyotte E¹
¹MDA
- 12:00 Thermal Control Subsystem for High Power Active Antennas
Prado Montes P¹, Yarza A¹, Bourgeal S¹, Gregori de la Malla M², Pastor J²
¹Airbus Defence and Space, ²IberEspacio
- 12:20 Imaging Antenna Systems with improved scanning capabilities
Gatti N¹, Catalani A¹, Toso G²
¹Space Engineering SpA, ²ESA-ESTEC
- 12:40 High power amplification concepts and integration challenges of multibeam and reconfigurable antennas
Valenta V¹, I. Davies¹
¹ESA-ESTEC

Session 3 – Earth Observation 1

Chairs: C. Cappellin, L. Salghetti Drioli

Room: Newton 1

- 11:20 Antenna Similarity for Floor Error Reduction in Microwave Interferometry
Closa Soteras J¹, Zurita A¹, Olea A¹, Solana A¹, Herreros J¹, Martin Neira M², Corbella I³, Duran I³
¹Airbus Defence & Space, ²ESA-ESTEC, ³Polytechnic University of Catalonia
- 11:40 Design and Development of K and Ka Band Feed Chains for Micro- Wave Imager Radiometer Antenna
Maiarelli D¹, Pascale V¹, D'Agostina L¹, Salza G¹
¹Space Engineering S.p.A.
- 12:00 Multi-Feed-per-Beam Antenna Concept for High-Performance Passive Microwave Radiometers
Cappellin C¹, Rosenkrantz de Lasson J¹, Pontoppidan K¹, Skou N²,
¹TICRA, ²DTU-Space

12:20 GAIS: Geostationary Atmospheric Interferometric Sounder at 183 GHz
Emrich A¹, Embretsén J¹, Kempe K¹, Ryman E¹, de Maagt P²
¹Omnisys, ²ESA-ESTEC

12:40 Active antenna technologies based on Digital Beamforming for future spaceborne SAR missions
Adamiuk G¹, Ludwig M², Gabele M¹, Mössinger A¹
¹Airbus Defence and Space GmbH, ²ESA-ESTEC

13:00 Lunch Break

Session 4 – Active Antennas 2

Chairs: A. Montesano, N. Ayllon

Room: Newton 2

14:00 30 years of Agile Antennas design in Alcatel then Thales
Caille G¹
¹SEE Midi-Pyrenees, retired from Thales Alenia Space

14:20 Active and Reconfigurable Telecom Antenna at Thales Alenia Space
Lejay B¹, Vourch E¹
¹Thales Alenia Space France

14:40 Methods for Wideband Beamforming in Active Antennas
Thomas G¹, Amos S¹, Stirland S², Warburton A¹
¹Airbus, ²Airbus

15:00 Active Antennas: Key Enablers for Highly Flexible and Modular Telecom Payloads
Petrolati D¹
¹ESA-ESTEC

15:20 Optimum Design Verification/Test Architecture for Multi-channel Phased-array Antenna IC and TR Modules
Maehara H¹
¹Keysight Technologies Inc.

15:40 Performance Specification of Active Antennas Systems
Lisi M¹
¹ESA-ESTEC

Session 5 – Earth Observation 2

Chairs: E. Saenz, A. Ostergaard

Room: Newton 1

- 14:00 An overview of the European Earth Observation Missions Requiring Large Deployable Spaceborne Reflector Antennas
Angevain J.-C.¹, Fiorelli B.¹, Ihle A.¹, Rodrigues G.¹, Santiago-Prowald J.¹, Laberinti P.¹, Giulicchi L.¹, Torres R.¹
¹ESA-ESTEC
- 14:20 Piezoelectrically actuated tunable metasurfaces and antennas for Mm-wave and THz applications.
Feresidis A¹, Rabbani M¹, Churm J¹
¹University of Birmingham
- 14:40 SIW: Stratospheric Inferred Winds
Emrich A¹, Hammar A¹, Murtagh D¹, Ericsson P¹
¹Omnisys
- 15:00 SAR Antenna Array Configurations for Ka band Mission
Bekers D¹, Bolt R¹, Jacobs S¹, Monni S¹, Fortini D², Capece P², Toso G³
¹TNO, ²Thales Alenia Space, ³ESA-ESTEC
- 15:20 Exploiting grating lobes for interferometric SAR applications in Ka- band.
Calà E¹, Catalani A¹, Toso G², Angeletti P²
¹Space Engineering Spa, ²ESA-ESTEC
- 15:40 Software Defined Elemental Digital Phased Array Antenna for Automated Air Traffic Management
Bruckmeyer J¹, Garcia M², Dolan J², Landers S¹, Henderson P¹
¹Harris Corporation, ²Aireon LLC

16:00 Coffee break

Session 6 – Multifeed per Beam Antennas

Chairs: C. Hartwanger, J. Montero

Room: Newton 2

- 16:20 Compact Multi-Beam Forming Network for Satellite Communication antennas at Ka-band
Ushijima Y¹, Yukawa H¹, Nakajima H¹, Takikawa M¹, Yoneda N¹
¹Mitsubishi Electric Corporation
- 16:40 Ka Band Lossless BFN for Overlapped Subarrays Radiating Rect-shaped Pattern
Catalani A¹, Pascale V¹, Maggio F¹, Petrolati D², Toso G², Angeletti P²
¹Space Engineering Spa, ²ESA-ESTEC

- 17:00 Overlapped Passive Feed Arrays for Multiple Feed per Beam Antennas
Montero J¹, de Manuel N¹, Leal-Sevillano C¹, Iza V¹
¹*Tryo Aerospace*
- 17:20 High throughput satellite communication based on a single aperture antenna
Schobert D¹, Toso G¹, Angeletti P¹
¹*ESA-ESTEC*
- 17:40 Overlapping Planar DRAs Implementation via Gosper element retrofitting
Kaifas T¹, Babas D¹, Sahalos J²
¹*Department of Physics, Aristotle University of Thessaloniki,* ²*Department of Electrical & Computer Engineering, University of Nicosia*

Session 7 – Transmitarray Antennas

Chairs: M. Arrebola, M. van der Vorst

Room: Newton 1

- 16:20 Flexible transmit arrays for regional coverages in Ka-Band
Boettcher M¹, Nöldeke C², Klinkner S¹
¹*University of Stuttgart,* ²*Tesat-Spacecom GmbH & Co. KG*
- 16:40 Electronically-steerable transmitarray at Ka-band with 2 bits of phase quantization
Diaby F¹, Clemente A¹, Sauleau R², Pham K², Dussopt L¹
¹*CEA-Leti, Minatec Campus,* ²*Institut d'Électronique et de Télécommunications de Rennes (IETR), Université de Rennes 1*
- 17:00 Synthesis and experimental characterization of a single-feed quad-beam circularly-polarized transmitarray at Ka-band
Diaby F¹, Clemente A¹, Pham K², Sauleau R², Dussopt L¹
¹*CEA-Leti, Minatec Campus,* ²*Institut d'Électronique et de Télécommunications de Rennes (IETR), Université de Rennes 1*
- 17:20 New concept for multibeam antennas based on two cascaded Ka- band transmit-arrays
Matos S¹, Teixeira J¹, Costa J¹, Fernandes C^{1,2}, Naseri P³
¹*Instituto de Telecomunicações, Instituto Universitário de Lisboa (ISCTE-IUL),* ²*Instituto de Telecomunicações, Instituto Superior Técnico,* ³*University of Toronto*
- 17:40 Innovative Multibeam Dual-polarized Continuous Transverse Stub Antennas for Space Applications
Smierzchalski M¹, Foglia Manzillo F¹, Del Mastro M², Capet N³, Palacin B³, Sauleau R², Ettorre M²
¹*Formerly with Institute of Electronics and Telecommunications of Rennes, University of Rennes 1, now with CEA-LETI,* ²*Institute of Electronics and Telecommunications of Rennes, University of Rennes 1,* ³*Centre National d'Etudes Spatiales*

18:00 Poster Session & Welcome Reception

Wednesday 3 October

Session 8 – Multibeam Antenna Technology 1

Chairs: A. Abunjaileh, P. Gabellini

Room: Newton 2

- 09:00 Multiple-Spot Reflector Antenna for High Throughput Satellites with high Demands on Carrier-to-Interference Ratio
Sommer A¹, Schinagl-Weiß A¹, Hartwanger C¹, Kilian M¹, Schneider M¹
¹Airbus Defence and Space GmbH
- 09:20 Ka-band Multibeam Antennas for Mobile Broadband Satellite Applications: the evolution of GlobalXpress.
Mugnaini S¹, Howell A¹, Fabre J²
¹Inmarsat Ltd, ²Thales Alenia Space
- 09:40 Multibeam Antenna for Ka-Band Payloads
Baggen R¹, Holzwarth S¹
¹IMST
- 10:00 Recent Feed Chain Developments for Ka-Band Multispot Beam Antennas at AIRBUS
Kohl P¹, Reiche E¹, Hong U¹, Gehring R¹
¹Airbus Defence and Space GmbH
- 10:20 An enabling technology for use in direct radiating array antennas
Thompson A¹, Thompson M¹
¹Eureco Technologies Ltd
- 10:40 4-port broadband OMT for multibeam applications
Menargues E¹, Garcia-Vigueras M², Capdevila S¹, Debogovic T¹, Dimitriades A¹, Mosig J³, Skrivervik A³, de Rijk E¹
¹SWISSto12, ²Institut d'Électronique et de Télécommunications de Rennes, ³École Polytechnique Fédérale de Lausanne

Session 9: Advanced Modelling and Algorithms for Multibeam Antennas

Chairs: E. Jorgensen, A. Capozzoli

Room: Newton 1

- 09:00 64 Element Active Array as Focal Plane Array Feed for Reflector Antennas at 28 GHz
van den Biggelaar T¹, Al-Rawi A¹, Johannsen U¹, Smolders B¹
¹Eindhoven University of Technology
- 09:20 Advanced modelling-based methodology for evaluation and design of large reflector antennas for space applications - state-of-the-art and collaborative research perspective
Celuch M¹, Gwarek W¹, Olszewska-Placha M¹
¹QWED Sp. z o.o.

- 09:40 Aperture Partitioning for the Effective Design of Antennas with a Subarray Architecture
Capozzoli A¹, Curcio C¹, D'Elia G¹, Liseno A¹
¹Universita' Di Napoli Federico II
- 10:00 Fast Deterministic Synthesis of Reconfigurable Continuous Sources and Their Discretization into Isophoric Sparse-Ring Arrays
Isernia T^{1,3}, Morabito A^{1,3}, Nicolaci P^{1,2}
¹University Of Reggio Calabria, ²Space Engineering S.p.A., ³Consorzio Nazionale Interuniversitario per le Telecomunicazioni
- 10:20 RF Design Tool for End-to-End Optimization of High-Performance Multibeam Antenna Systems
Jorgensen E¹, Vesterdal N¹, Zhou M¹, Meincke P¹, Borries O¹, Palvig M¹, Rubæk T¹, Simeoni M², Toso G²
¹TICRA, ²ESA-ESTEC
- 10:40 A perspective of Singular Value Optimization in antenna characterization
Capozzoli A¹, Curcio C¹, Liseno A¹
¹Universita' Di Napoli Federico II

11:00 Coffee break

Session 10 – Multibeam Antenna Technology 2

Chairs: E. Amyotte, J.C. Angevain

Room: Newton 2

- 11:20 Design and Qualification of Ku-Band Radiating Chains for Receive Active Array Antenna of Flexible Telecommunication Satellites
Pascale V¹, Maiarelli D¹, D'Agristina L¹, Gatti N¹
¹Space Engineering S.p.A.
- 11:40 RF Analysis tool for complex multibeam antenna architectures
Bueno M¹, Orgaz L¹, Sanz Á¹, García V¹
¹Airbus Defence and Space, S.A.U.
- 12:00 Analytical Modelling for Evaluating Coupling Between Satellite Active Antennas
Abunjaileh A¹, Webster P¹, Stirland S¹
¹Airbus
- 12:20 Power-Pooling Beam-Forming Synthesis for Increased Performance Efficiency of Active Transmit Array Antennas
Di Palma L. ¹, Gabellini P. ¹
¹Space Engineering S.p.A.

12:40 Reconfigurable Multi-matrix Linear and Planar Arrays
Roederer A¹, Yarovoy A¹
¹Delft University of Technology

Session 11 – Science and Navigation

Chairs: A. Gonzalez, L. Rolo

Room: Newton 1

11:20 Design of a reconfigurable array of monopoles for the Netherlands China Low-frequency Explorer (NCLE)
Arts M¹, Prinsloo D¹, Ruiter M¹, Boonstra A¹
¹ASTRON

11:40 Novel concept of multibeam integrated heterodyne receiver for radio astronomy and related technological development
Gonzalez A¹, Shan W¹, Kojima T¹, Uzawa Y¹, Iguchi S¹
¹National Astronomical Observatory of Japan

12:00 High-Performance GNSS Antenna for CubeSats
Popugaev A¹, Wansch R¹
¹Fraunhofer IIS

12:20 The Multiple Access Testbed for Research in Innovative Communications Systems (MATRICS)
Nessel J¹, Downey J¹, Niederhaus C¹
¹NASA Glenn Research Center

12:40 The Inflective Wire Antenna Arrays
Sengor T¹
¹Yildiz Technical University (Emeritus, Formerly)

13:00 Lunch break

Session 12 – Lens Antennas 1

Chairs: O. Quevedo Teruel, J. Galdeano

Room: Newton 2

14:00 EHF Waveguide Rotman Lens for Reconfigurable SATCOM
Maybell M¹, Hardie G²
¹Planet Earth Communications, ²Microwave Consulting Service

14:20 Photonic True Time Delay Beamforming in Next Generation Satellites
Rotman R¹, Tur M²
¹Elta Industries IAI, ²Tel Aviv University

- 14:40 Recent ESA-ESTEC R&D on Rotman Lenses
Hrubó G¹, Jankovic P¹, Galdeano J¹, Toso G¹, Angeletti P¹
¹ESA-ESTEC
- 15:00 Continuous parallel plate waveguide shaped delay lens-like beamformers for future high performance multiple beam space antennas
Doucet F¹, Fonseca N², Girard E³, Legay H³, Sauleau R¹
¹IETR (Institut d'Electronique et des Télécommunications de Rennes), ²ESA-ESTEC, ³Research and Development Department, Thales Alenia Space
- 15:20 A Ka band active aperiodic constrained lens antenna for multibeam applications
Ruggerini G¹, Nicolaci P¹, Toso G², Angeletti P²
¹Space Engineering S.p.a, ²ESA-ESTEC

Session 13 – Ground Telecom 1

Chairs: M.C. Vigano', F. De Paolis

Room: Newton 1

- 14:00 Multi-beam/Multi-band Aeronautical Antenna
Rao A¹, Chatterjee A¹, Payne J¹, Trujillo J¹
¹SES
- 14:20 Optimization of Radiation Patterns using a Biquadratic Programming Method in a Ka-band Phased-Array with a Reduced Number of Phase Control Bits
Bolado A¹, Llorens del Río D¹, Gómez-Alcalá R², Zapata J³, Rubio J², Klefenz F¹
¹ViaSat Antenna Systems SA, ²Escuela Politécnica de Cáceres, Universidad de Extremadura, ³ETSIT, UPM
- 14:40 Multi-Beam Ground Planar Antenna for MEOSAR application
Ruiz S¹, Pellón A², Golubicic Z², Cvetkovic Z¹, Montesinos I², Ciaurriz M², Finker R¹
¹Celestia technologies Group, ²TTI
- 15:00 Design and characterisation of an L band electronically steered antenna embedded within the wing of a remotely piloted aircraft
Barnard J¹
¹Barnard Microsystems Limited
- 15:20 On the Radiation Properties of Skewed Stacked Dipoles Arrays
Yepes C^{1,2}, van Schelven R¹, Cavallo D¹, Gandini E², Monni S², van Vliet F², Neto A¹
¹Delft University of Technology, ²TNO Defense, Safety and Security

15:40 Coffee break

Session 14 – Lens Antennas 2

Chairs: M. Garcia Viguera, G. Toso

Room: Newton 2

16:00 Design of (multibeam) artificial dielectrics based lenses via inverse scattering techniques
Isernia T¹, Palmeri R¹

¹*Università Mediterranea Di Reggio Calabria*

16:20 Fully-metallic Luneburg lenses for Satellite Communications

Quevedo-Teruel O¹

¹*Kth Royal Institute of Technology*

16:40 Innovative multibeam antennas based on planar arrays

Angeletti P¹, Toso G¹

¹*ESA/ESTEC*

17:00 Evolution of the Rotman Lens: a Case Study of Ingenuity

Rotman, R.

17:20 Rotman Lens Technology Milestones

Maybell, M.

Session 15 – Reflector Technology

Chairs: J.C. Angevain, D. Trenta

Room: Newton 1

16:00 A MODULAR APPROACH FOR VERSATILE ANTENNA DEPLOYMENT BOOMS

Robroek M¹, Kroon M¹

¹*Airbus Defence and Space Netherlands*

16:20 A Multibeam Q/V-band Reflector for Terabit Satellite Applications

Reichmann O¹, Proietti Zolla P¹, Lori M¹, Würfl T¹, Triberti F¹, K. Pfeiffer E¹, Ihle A², Schöppinger C³, Noeldeke C⁴

¹*HPS GmbH*, ²*ESA/ESTEC*, ³*INVENT GmbH*, ⁴*Tesat-Spacecom GmbH & Co. KG*

16:40 Mesh based reflector surfaces

Lori M¹

¹*HPS GmbH*

17:00 Deployable Selectable Sub-Reflector Antenna in satellite lateral deck configuration (SSRA)

Cartaillac E¹, David J¹, Brossier J¹, Fabries C¹, Giraudeau C¹, Laporte E¹, Medici D¹, Lorenzo J¹, Dutto V², Romier M³

¹*Thales Alenia Space*, ²*ESA-ESTEC*, ³*CNES*

17:20 Large Deployable Spaceborne Reflector Antennas in Europe: state of the art and perspectives

Angevain JC¹, Ihle A¹, Rodrigues G¹, Santiago-Prowald J¹

¹*ESA-ESTEC*

Thursday 4 October

Session 16 – Reconfigurable Phased Array Antennas based on Liquid Crystals, Varactors Diodes and Electrochromic Materials

Chairs: R. Baggen, P. Rinous

Room: Newton 2

- 09:00 A Low-cost, Flat, Electronically steerable Array Antenna for New Massive NGE0 Constellations Ground Terminals and future 5G
Weickhmann C¹, Mehmood A¹, Olcen A¹, Sun Y¹, Jakoby R²
¹ALCAN Systems GmbH, ²TU Darmstadt, IMP
- 09:20 Low Profile Phased Array with Hybrid Digital/Liquid Crystal Phase Shifters for Mobile Ka-band SATCOM
Martorelli V¹, Giordanengo G⁴, Sozio V⁴, Martini E², Caminita F², Minatti G², Ferraro A⁶, Bandinelli M¹, Maci S³, Vecchi G⁵, Beccherelli R⁶, Toso G⁷
¹Ingegneria dei Sistemi S.p.A., ²Wave-Up, ³Information Engineering Department, University of Siena, ⁴Istituto Superiore Mario Boella (ISMB), ⁵Politecnico di Torino, ⁶CNR Institute for Microelectronics and Microsystems, ⁷ESA-ESTEC
- 09:40 Study of reconfigurable leaky wave antennas based on Liquid Crystals for continuous beam scanning with a single control
Martini E¹, Pavone S³, Albani M³, Martorelli V², Giordanengo G⁴, Sozio V⁴, Vecchi G⁵, Maci S³, Bandinelli M², Beccherelli R⁶, Ferraro A⁶, Toso, G⁷
¹Wave Up Srl, ²Ingegneria dei Sistemi (IDS), ³University of Siena, ⁴Istituto Superiore Mario Boella, ⁵Politecnico di Torino, ⁶CNR - Istituto per la Microelettronica e Microsistemi, ⁷ESA-ESTEC
- 10:00 LC-based reconfigurable metasurface antennas for SOTM user terminals
Martini E¹, Minatti G¹, Caminita F¹, Martorelli V², Bandinelli M², Giordanengo G⁴, Sozio V⁴, Vecchi G⁵, Maci S³, Toso G⁷, Beccherelli R⁶, Ferraro A⁶
¹Wave Up Srl, ²Ingegneria dei Sistemi (IDS), ³University of Siena, ⁴Istituto Superiore Mario Boella, ⁵Politecnico di Torino, ⁶CNR - Istituto per la Microelettronica e Microsistemi, ⁷ESA-ESTEC
- 10:20 Reconfigurable Antennas Demonstrators Using Varactors Technology
Baracco J¹, Ratajczak P², Toso G³
¹MARDEL, ²ORANGE LABS, ³ESA-ESTEC
- 10:40 Electrochromic Material for Reconfigurable Antenna Applications
Bulja S¹, Norooziarab M¹, Cahill R², Kopf R³
¹Nokia Bell Labs, ²The Institute of Electronics, Communications and Information Technology (ECIT), Queen's University Belfast, ³Nokia Bell Labs

Session 17 – Advanced Manufacturing Techniques & Technologies 1

Chairs: E. Menargues, P. Martin Iglesias

Room: Newton 1

09:00 Ultralight CFRP Horns

Lori M¹

¹HPS GmbH

09:20 Additive Manufacturing and Thermoplastic RF Antenna components for Telecommunications Satellites

Cailloce Y¹, Hourlay P¹, Lebrun F¹, Nadarassin M¹, Palacin B², Romain C²

¹Thales Alenia Space, ²CNES

09:40 24 GHz Additive Manufactured Antenna in Mixed Material Technology

Yepes C^{1,2}, Gandini E², Monni S², van Dijk R², Bruning F³, Maalderink H³, van Vliet F²

¹Delft University Of Technology, ²TNO Defense, Safety and Security, ³AMSYSTEMS Center/TNO

10:00 Low-Loss Metal Additive Manufactured Waveguides for Satellite Constellations

Menargues E¹, Debogovic T¹, Capdevila S¹, Dimitriades A¹, Garcia- Viguera M², Hoerni D¹, Billod M¹, de Rijk E¹

¹SWISSto12, ²Institut d'Électronique et de Télécommunications de Rennes

10:20 Additive Manufacturing of K/Ka/Q/V-band Feed-Horns

Pevevini O¹, Addamo G¹, Paonessa F¹, Virone G¹, Calignano F², Manfredi D³

¹CNR-IEIT, ²Politecnico di Torino, ³Italian Institute of Technology

10:40 Ferrite Technology Overview at Thales Alenia Space

Lejay B¹, Vourch E¹

¹Thales Alenia Space France

11:00 Coffee break

Session 18 – Ground Telecom 2

Chairs: J. Kmieciak, N. Fonseca

Room: Newton 2

11:20 Autopeaking residential terminal based on shape-memory polymers

Gimersky M¹, Gorski P¹, Viagano M¹, Zarate J², Shea H²

¹ViaSat Antenna System SA, ²EPFL - École polytechnique fédérale de Lausanne

11:40 Beam Scanning Slot Arrays with Electromechanical Reconfigurability

Ghasemi A¹, Laurin J¹

¹École Polytechnique De Montréal

12:00 Retrodirective Ka-Band SATCOM Antenna Practical Considerations

Buchanan N¹, van der Vorst M²

¹Queen's University Belfast, ²ESA-ESTEC

12:20 Recent Phased Array Developments for In-Flight Connectivity
Karas A¹, Lesur B¹, LOHOU A¹, CHAIMBAULT D¹, MELLE C¹, THEVENOT M², MENUDIER C², LINTIGNAT J², MONEDIERE T², JARRY B²
¹Zodiac Data Systems, ²XLIM (Limoges University)

12:40 Ku-Band Self-Diplexing Phased Array Antenna for Mobile Satellite Communications
Pereira M¹, Sikri D¹, Cohen M¹
¹SatixFy

Session 19 – Reflectarray Antennas 1

Chairs: R. Sauleau, M. Zhou

Room: Newton 1

11:20 Analytical Modeling of Polarizing Screens: from Meander-Line Gratings to 3D Metallic Cells
García Viguera M¹, Molero C¹
¹IETR- INSA Rennes

11:40 New satellite antenna concept by using reflectarray
Makino S¹
¹Kanazawa Institute Of Technology

12:00 Design of Parabolic Reflectarray for Multibeam Satellite Antennas in Ka Band
Encinar J¹, Martinez-de-Rioja D¹, Florencio R¹, Pino A², Rodriguez- Vaqueiro Y², Gonzalez-Valdes B², Toso G³
¹Universidad Politecnica De Madrid, ²Universidade de Vigo, ³ESA-ESTEC

12:20 Efficient Analysis and Optimization of Reflectarray Antennas for Satellite Telecommunication Missions
Prado D², Arrebola M¹, López-Fernández J¹, Pino M¹, Goussetis G², Encinar J³
¹Universidad De Oviedo, ²Heriot-Watt University, ³Universidad Politécnica de Madrid

12:40 Curved Reflectarrays for Future Multiple Beam Antenna Applications in Ka-band
Zhou M¹, Sørensen S¹, Brand Y², Toso G³
¹TICRA, ²MDA Corporation, ³ESA-ESTEC

13:00 Lunch break

Session 20 – Ground Telecom 3

Chairs: S. Monni, M. Simeoni

Room: Newton 2

- 14:00 Development of a versatile Antenna Control Unit for airborne mobile terminals
Ferrarotti A¹, Bellaveglia G¹, Colasante A¹, Pistoni A¹, Spina A¹
¹Space Engineering S.p.A
- 14:20 Towards an optimal trade-off of functional requirements against size, power and cost for Phased Array ASICs
Vahdati A¹, Voshaar G¹, Klumperink E², Klatser P¹, Tangenberg J¹, Bult B¹, Hoeven A¹
¹Bruco Integrated Circuits B.V., ²University of Twente
- 14:40 Development of a Broadband Integrated Microwave Photonic Beamformer for Ka-Band Phased Array Antennas
Roeloffzen C¹, Visscher I¹, Taddei C¹, Hoekman M¹, Wevers L¹, Grootjans R¹, Kapteijn P¹, Geskus D¹, Alippi A¹, Dekker R¹, Oldenbeuving R¹, Epping J¹, Timens R¹, Leinse A¹, van Dijk P¹, Heideman R¹
¹Lionix International
- 15:00 A Planar 6-15 GHz Connected Slot Array with Very Wide Scan Capability
Cavallo D¹, Syed W¹, Neto A¹
¹Delft University of Technology
- 15:20 Low-Profile dome antenna for on-craft satellite communications
Gandini E¹, Silvestri F¹, Benini A², Gerini G¹, Martini E², Maci S², Vigano M³, Toso G⁴, Monni S¹
¹TNO, ²University of Siena, ³Viasat, ⁴ESA-ESTEC

Session 21 – Reflectarray Antennas 2

Chairs: J. Encinar, D. Schobert

Room: Newton 1

- 14:00 Multi-Spot Beam Reflectarray to Generate Four Adjacent Beams per Feed for Satellite Antennas in Ka-band
Martinez-de-Rioja D¹, Martinez-de-Rioja E¹, Encinar J¹, Pino A², Rodriguez-Vaqueiro Y², Gonzalez-Valdes B², Toso G³
¹Universidad Politécnica de Madrid, ²Universidad de Vigo, ³ESA-ESTEC
- 14:20 Design and Analysis of a Bifocal Dual Reflectarray with Parabolic Main Surface as Multibeam Antenna
Pino A¹, Rodriguez-Vaqueiro Y¹, Martines-de-Rioja E², Encinar J², Rubiños O¹, González-Valdés B¹, Arias M¹, Toso G³
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- 14:40 Comparison of a Reflector-Based vs. Reflectarray-Based Ka-Band Multibeam Antenna System
Tienda C¹, Katsounaros A¹, Stirland S¹
¹*Airbus Defense and Space, Stevenage, UK*
- 15:00 Multi-beam Reflector Antenna at Ku-Band Comprising a Wire Grid Sub-Reflector and a Polarizing Main Reflector
Mercader Pellicer S¹, Rigobello F¹, Goussetis G¹, Bresciani D², Legay H², Fonseca N³
¹*Institute of Sensors and Signals and Systems, Heriot-watt University,* ²*Research and Technology Department, Thales Alenia Space,* ³*ESA-ESTEC*
- 15:20 Bifocal antennas based on single aperture reflectarrays
Toso G¹, Angeletti P¹
¹*ESA-ESTEC*
- 15:45 Closing Ceremony**

Poster Session

- P1 Innovative Multiple Beam Antennas Based on Reflectarrays for Very High Throughput Satellite Applications
Martinez-de-Rioja E¹, Encinar J¹, Pino A², Rodriguez-Vaqueiro Y², Gonzalez-Valdes B², Toso G³
¹Universidad Politécnica de Madrid, ²Universidad de Vigo, ³ESA-ESTEC
- P2 In orbit Test (IOT) verification results of the ELSA antenna on board of Hispasat AG1
Echeveste J¹, Montesano A¹, Peña D¹, Arenas S¹, Bustamante M¹, Herrera I¹, de la Fuente L¹
¹Airbus, Defence and Space
- P3 34 GHz rectangular leaky-wave choke antenna with distinct secant squared radiation pattern
Kuznetsov M¹, McDermott A¹, Scott P¹, Anagnostou D¹, Mateo-Segura C¹
¹Heriot Watt University
- P4 Frequency Reconfigurable Single-Polarized Reflectarray using Phase Change Materials
Rigobello F¹, Mercader Pellicer S², Goussetis G², Capobianco A¹, Anagnostou D²
¹University of Padova, ²Heriot Watt University
- P5 Tightly Packed Stacked Arrays for Satellite Applications at 14 and 35 GHz
Shrestha R¹, Anagnostou D²
¹South Dakota School of Mines, ²Heriot Watt University
- P6 Concept Description of a New Self-Dependent Geolocalisation System and the Role of its Relevant Design Parameters
Pacheco Loeches F¹, Montesano Benito A¹
¹Airbus Defence and Space
- P7 Ku-band geolocalization system test verification in planar near-field test range
Mora-Cuevas J¹, Pacheco F², Montesano A²
¹TTI/Airbus, ²Airbus Defense and Space
- P8 Reflector antennas characterization with numerically enhanced measurements
Ciorba L², Giordanengo G¹, Righero M¹, Vecchi G²
¹Istituto Superiore Mario Boella (ISMB), ²Politecnico di Torino
- P9 Ladybug: a Directional Coupler with 3 Inputs & 3 Outputs Square Waveguide Dual-Polarization Ports
Morini A¹, Baldelli M¹, Angeletti P², Petrolati D², Toso G², Venanzoni G¹
¹Università Politecnica delle Marche, ²ESA-ESTEC
- P10 Performance Analysis and Validation of On-Ground Beam-Forming for Mobile Satellite Applications
Cioni S¹, Angeletti P¹
¹ESA-ESTEC

- P11 Compact Antenna Array for Limited Field of View Applications
Maximidis R¹, Caratelli D², Toso G³, Smolders B¹
¹Eindhoven University of Technology, ²The Antenna Company, ³ESA-ESTEC
- P12 GEROS–ISS reflectometry multi-beam antenna
Monjas F¹
¹Airbus Defence and Space Spain
- P13 A Miniaturized L-band Circular polarized PIFA Array for ADS-B Mission on CubeSats
Aliakbarian H¹, Tanhaei F¹
¹Kn Toosi Univ. Of Technology
- P14 Ka-band Metal-Only Transmitarrays for Low-Cost Satcom Terminals
Pham K¹, Sauleau R¹, Fourn E¹, Diaby F², Clemente A², Dussopt L²
¹Institute of Electronics and Telecommunications of Rennes, ²CEA- LETI, Minatec Campus
- P15 Measuring the Focal Field of Reflector Antennas at 90 GHz
Al-Rawi A¹, Smolders A¹
¹Eindhoven University of Technology
- P16 Multibeam Array Antenna for Lunar Deep Space Gateway
Garcia Q¹, Gil M¹, Trastoy A¹, Perellon M¹, Caceres F¹
¹Airbus Defence and Space
- P17 Small Wire Grid SOLANT Designed on a 3U CubeSat for S-band Inter-Satellite Links
Tanhaei F, Aliakbarian H
¹K.N. Toosi Univ. Of Technology
- P18 Design of Hybrid Slot-Fed Dielectric Resonator Antenna Arrays for 5G Wireless Communications in K Band
Al-rawi A¹, Smolders B¹, Keyrouz S², Caratelli D²
¹Eindhoven University of Technology, ²The Antenna Company
- P19 Assessment of FETI DDM methodologies for the simulation of High Gain Ka-Band Transmit arrays
Barka A¹, Matos S^{2,3}, Costa J^{2,3}, Fernandes C²
¹ONERA, ²Instituto de Telecomunicacoes, Instituto Superior Tecnico, (IT/IST), ³Instituto Universitario de Lisboa, (ISCTE-IUL)