2010 5th Advanced Satellite Multimedia Systems Conference and the 11th Signal Processing for Space Communications Workshop

(ASMA/SPSC 2010)

Cagliari, Italy
13 – 15 September 2010

Technical Program

Time	Astrea	Cyprea	Nautilus	Opalia
Tuesday, September 14				
09:00			*Opening Session*	
11:20	NC: *Network Coding*			AIS: *Automatic Identification System*
14:10	DTN: *Delay Tolerant Networks*	SAP1: *System Architecture & Performance I*		MC: *Modulation & Coding*
16:30	MBC: *Multibeam Communications*	SAP2: *System Architecture & Performance II*		EST: *Estimation & Synchronization Theory*
Wednesday, September 15				
09:00		*Spectrum Sharing in the Future (Panel)*		
11:20	NP: *Navigation & Positioning*	CC: *Cooperative Communications*		SP: *Signal Processing*
14:30	CT: *Communication Theory*	SBS: *S-Band Systems*		NetP: *Network Protocols*

Tuesday, September 14

09:00 - 11:00

Opening Session

11:20 - 12:40

AIS: Automatic Identification System

Advanced Receiver Design for Satellite-Based AIS Signal Detection
Paolo Burzigotti (European Space Agency ESA/ESTEC, The Netherlands); Alberto Ginesi (ESA/ESTEC, The Netherlands); Giulio Colavolpe (University of Parma, Italy)
pp. 1-8

European Enhanced Space-Based AIS System Study
Veronica De Perini (Carlo Gavazzi Space, Italy); Andrea Scorzolini (Telespazio, Italy); Elena Razzano (Carlo Gavazzi Space, Italy); Susana Mendes (Edisoft, Portugal); Pierluigi Fiori (Elman, Italy); Angelo Sorbo (Information Technology services, Italy); Giulio Colavolpe (University of Parma, Italy)
pp. 9-16

Space-Based Detection of AIS Signals
Frank te Hennepe (OHB-System AG, Germany); Rita Rinaldo (ESA, The Netherlands); Alberto Ginesi (ESA/ESTEC, The Netherlands); Carsten Tobehn (OHB-System AG, Germany); Matthias Wieser (OHB-System AG, Germany); Oystein Olsen (FFI, Norway); Oystein Helleren (FFI, Norway); Frode Storesund (Kongsberg Seatex AS, Norway); Remi Challamel (Thales Alenia Space France, France)
pp. 17-24

NC: Network Coding

A Comparison of Different Physical Layer Network Coding Techniques for the Satellite Environment

Francesco Rossetto (DLR (German Aerospace Center), Germany)
pp. 25-30

How Feasible is Network Coding in Current Satellite Systems?
Fausto Vieira (Universidade do Porto, Portugal); Saurabh Shintre (Instituto de Telecomunicações, India); Joao Barros (University of Porto, Portugal)
pp. 31-37

Queuing Aspects of Packet Coding Based Bidirectional Communication Over Satellite Channels
Angela Isabel Barbero (University of Valladolid, Spain); Øyvind Ytrehus (University of Bergen, Norway)
pp. 38-45

Joint Control of Delay and Packet Drop Rate in Satellite Systems Using Network Coding
Sameh Sorour (University of Toronto, Canada); Shahrokh Valaee (University of Toronto, Canada); Nader Alagha (European Space Agency, The Netherlands)
pp. 46-53

14:10 - 16:10

DTN: Delay Tolerant Networks

Fair Admission Control Model for Aircrafts Bundles Data Transmission for Delay Tolerant Networks
Haitham Cruickshank (University of Surrey, United Kingdom); Mohammad Alsiyabi (University of Surrey, United Kingdom)
pp. 54-61

Satellite Communications: From PEPs to DTN
Carlo Caini (University of Bologna, Italy); Rosario Firrincieli (University of Bologna, Italy); Haitham Cruickshank (University of Surrey, United Kingdom); Mario Marchese (DIST- University of Genoa, Italy)
pp. 62-67

A Protocol Design for Incorporating Erasure Codes Within CCSDS: the Case of DTN Protocol Architecture
Tomaso De Cola (German Aerospace Center (DLR), Germany)
pp. 68-73

A DTN-Oriented Protocol Design for Satellite Based Architectures
Cesare Roseti (University of Rome "Tor Vergata", Italy); Michele Luglio (Univ. of Rome Tor Vergata - Dip. Ing. Elettronica, Italy); Tomaso De Cola (German Aerospace Center (DLR), Germany)
pp. 74-80

Where Does Transport Layer Fit Into Space DTN Architecture?
Giorgos Papastergiou (Democritus University of Thrace, Greece); Christos V. Samaras (Democritus University of Thrace, Greece); Vassilis Tsaoussidis (Democritus University of Thrace, Greece)
pp. 81-88

Endpoint Discovery and Contact Graph Routing in Space and Terrestrial DTNs
Stephen Farrell (Trinity College Dublin, Ireland)
pp. 89-93

MC: Modulation & Coding

LTE and WiMAX Satellite Systems: Improving FEC Performance Using Split Multicode Transmission
Adegbenga Awoseyila (University of Surrey, United Kingdom); Barry Evans (University of Surrey, Italy)
pp. 94-97

Adaptive Coding and Modulation for Return Satellite Links Using Binary Turbo Coding
Stewart Crozier (Communications Research Centre, Canada); Ron Kerr (Communications Research Centre Canada, Canada); John Lodge (Communications Research Centre (CRC), Canada)
pp. 98-105

Improving the Spectral Efficiency of FDM-CPM Systems Through Packing and Multiuser Processing
Amina Piemontese (University of Parma, Italy); Nicolò Mazzali (University of Parma, Italy); Giulio Colavolpe

(University of Parma, Italy)
pp. 106-113

HD Video Broadcasting Using Scalable Video Coding Combined with DVB-S2 Variable Coding and Modulation

Patricia Inigo (EADS Astrium, France); Shpend Mirta (Fraunhofer Heinrich Hertz Institute, Germany); Cédric Le Guern (Assystem, France); Jérome Tronc (EADS Astrium, France); Thomas Schierl (HHI, Germany); Cyrille Moreau (Astrium Satellites, Germany); Thomas Wiegand (Fraunhofer Institute for Telecommunications - Heinrich-Hertz-Institute, Germany)
pp. 114-121

On the Performance of Moderate-Length Non-Binary LDPC Codes for Space Communications

Laura Costantini (University of Bologna, Italy); Balazs Matuz (German Aerospace Center (DLR), Germany); Gianluigi Liva (DLR (German Aerospace Center), Germany); Enrico Paolini (DEIS, WiLAB, University of Bologna, Italy); Marco Chiani (University of Bologna, Italy)
pp. 122-126

Optimizing Cross Layer Coding Redundancy in Slow Fading Channels

Marco Papaleo (University of Bologna, Italy); Valeria Petrini (University of Bologna, Italy); Rosario Firrincieli (University of Bologna, Italy); Alessandro Vanelli-Coralli (University of Bologna, Italy); Giovanni Emanuele Corazza (University of Bologna, Italy)
pp. 127-134

SAP1: System Architecture & Performance I

Multi-User Detection for Inmarsat's BGAN System

Michael Moher (Space-TIme DSP, Canada)
pp. 135-140

Satellite Delivery of Next Generation Broadband Access to the UK

Graham Peters (Avanti Communications Ltd, United Kingdom)
pp. 141-146

Creating the Next Generation DVB-RCS Satellite Communication & Applications

Harald Skinnemoen (AnsuR Technologies, Norway)
pp. 147-154

New Frontiers for the Mobile Satellite Interactive Services

Eros Feltrin (Eutelsat SA, France); Elisabeth Weller (Eutelsat SA, France)
pp. 155-161

SatCom Systems in the Context of Future Internet-Enabled Smart Infrastructures

Nicolas Chuberre (Thales Alenia Space, France); Mauro Piccinni (Thales Alenia Space, Italy); Jean-François Boutillon (Thales Alenia Space, France); Angel Alvaro Sanchez (Thales Alenia Space, Spain); Juan Manuel Rodriguez Bejarano (Thales Alenia Space, Spain); Konstantinos P Liolis (Space Hellas S.A., Greece)
pp. 162-168

AmerHis Next Generation Global IP Services in the Space

Ana Yun (Thales Alenia Space España, Spain); Isaac Moreno (Thales Alenia Space, Spain); Juan Manuel Rodriguez Bejarano (Thales Alenia Space, Spain); Oriol Casas (Thales Alenia Space Espana, Spain); Ana Jalon (Thales Alenia Space Espana, Spain); Ana Solano Ros (Thales Alenia Space, Spain); Borja de la Cuesta (Thales Alenia Space, Spain); Carla Salas (Thales Alenia Space, Spain); Ignacio Jimenez Lopez-Guarch (Thales Alenia Space Espana, Spain); Eduardo Rodriguez Perez (Thales Alenia Space Espana, Spain)
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16:30 - 18:30

EST: Estimation & Synchronization Theory

Code-Aware Joint Estimation of Carrier Phase and SNR for Linear Modulation Schemes

Michael Bergmann (Graz University of Technology, Austria); Wilfried Gappmair (Graz University of Technology, Austria); Harald Schlemmer (Joanneum Research, Austria); Otto Koudelka (Graz University of Technology,

MBC: Multibeam Communications

Beam Hopping in Multi-Beam Broadband Satellite Systems: System Simulation and Performance Comparison with Non-Hopped Systems

Javad Anzalchi (EADS Astrium, United Kingdom); Alan Couchman (EADS Astrium, United Kingdom); Piero Gabellini (Space Engineering S.p.a., Italy); Gennaro Gallinaro (Space Engineering S.p.A., Italy); Luciano D' Agristina (Space Engineering SpA, Italy); Nader Alagha (European Space Agency, The Netherlands); Piero Angeletti (European Space Agency, The Netherlands)
pp. 248-255

SAP2: System Architecture & Performance II

Analysis of Interference Issues in Integrated Satellite and Terrestrial Mobile Systems

Vincent Deslandes (EADS Astrium, France); Jérome Tronc (EADS Astrium, France); Andre-Luc Beylot (ENSEEIHT, France)
pp. 256-261

Portable Satellite Backhauling Solution for Emergency Communications

Angels Via Estrem (TriaGnoSys GmbH, Germany); Markus Werner (TriaGnoSys GmbH, Germany)
pp. 262-269

An Automated Fire Detection and Alerting Application Based on Satellite and Wireless Communications

Konstantinos P Liolis (Space Hellas S.A., Greece); Spiros Pantazis (Space Hellas SA, Greece); Vasilis Gennatos (Space Hellas SA, Greece); Socrates Costicoglou (Space Hellas SA, Greece); Ilias Andrikopoulos (Space Hellas S.A., Greece)
pp. 270-277

A Satellite Based System for Managing Crises Scenarios: the E-SPONDER Perspective

Maurizio Casoni (University of Modena and Reggio Emilia, Italy); Giorgio Calarco (University of Modena and Reggio Emilia, Italy); Alessandro Paganelli (University of Modena and Reggio Emilia, Italy); Dimitris Vassiliadis (Exodus S.A., Greece); Michal Wódczak (Telcordia Technologies, Inc., Poland)
pp. 278-285

Overview of Platine Emulation Testbed and Its Utilization to Support DVB-RCS/S2 Evolutions

Cédric Baudoin (Thales Alenia Space, France)
pp. 286-293

Satellite-Based Fully Distributed Mesh Hybrid Networking Technology DVB-S2/RCS-WiMAX for RRD Areas

Alexander Markhasin (Siberian State University of Telecommunications and Information Science, Russia)
pp. 294-300

Wednesday, September 15

09:00 - 11:00

Spectrum Sharing in the Future (Panel)

11:20 - 13:00

CC: Cooperative Communications

Resource Allocation Mechanisms in Satellite Cooperative Systems

Rosalba Suffritti (University of Florence, Italy); Luca Simone Ronga (CNIT, Italy); Enrico Del Re (University of Florence, Italy)
pp. 301-308

Cooperative Satellite To Land Mobile Gap-Filler-Less Interactive System Architecture

Giuseppe Cocco (CTTC, Spain); Christian Ibars (Centre Tecnologic de Telecomunicacions de Catalunya - CTTC, Spain); Oscar Del Rio (ESTEC TOS-ETC, European Space Agency, The Netherlands)
pp. 309-314

Performance Assessment Based on Field Measurements of Mobile Satellite Services Over Hybrid Networks in

NP: Navigation & Positioning

SP: Signal Processing

Yongxiang Ruan (University of New Mexico, USA); Sudharman K Jayaweera (University of New Mexico, USA); Carlos Mosquera (Universidad de Vigo, Spain)
pp. 389-394

3-D Gaussian Scatter Density Propagation Model Employing a Directional Antenna At BS

Junaid Nawaz Syed (Muhammad Ali Jinnah Univeristy, Islamabad, Pakistan); Mohammad N Patwary (Staffordshire University, Stafford, United Kingdom); Noor M. Khan (Mohammad Ali Jinnah University, Islamabad, Pakistan); Hongnian Yu (Staffordshire University, Stafford, United Kingdom)
pp. 395-400

14:30 - 16:50

CT: Communication Theory

Direct Spectrum Division Transmission for Highly Efficient Satellite Communications

Jun-ichi Abe (Nippon Telegraph and Telephone Corporation, Japan); Fumihiro Yamashita (NTT corporation, Japan); Kiyoshi Kobayashi (NTT Acces Network Service Systems Laboratories, NTT Corporation, Japan)
pp. 401-406

Optimized APSK Bit Allocation for Satellite Communications

Antonio Angioi (University of Cagliari, Italy); Marco Lixia (University of Cagliari, Italy); Maurizio Murroni (University of Cagliari, Italy)
pp. 407-412

Prediction of Performance of the DVB-SH System Relying on Mutual Information

Caroline Amiot-Bazile (CNES, France); Chauvet Wilfried (Telecommunications for Space and Aeronautics, France); Jerome Lacan (ISAE, France)
pp. 413-420

Uniform Circular Arrays: the Key to Optimum Channel Capacity in Mobile MIMO Satellite Links

Vito Dantona (Universität der Bundeswehr München, Germany); Robert T Schwarz (Fed. Office of the Bundeswehr for Information Technology, Germany); Andreas Knopp (Fed. Office of the Bundeswehr for Information Technology, Germany); Berthold Lankl (Munich University of the German Armed Forces (Bundeswehr), Germany)
pp. 421-428

Use of Adaptive Coding and Modulation for Aeronautical Communications

Katia Leconte (Thales Alenia Space, France); Nicolas Van Wambeke (Thales Alenia Space, France); Hugo Gonzalez Perez (CNES, France)
pp. 429-435

Rotation Invariant Subcarrier Mapping: a Novel Technique Enabling Quasi-Constant OFDM Envelope

Stefano Rosati (University of Bologna, Italy); Enzo Alberto Candreva (University of Bologna, Italy); Giovanni Emanuele Corazza (University of Bologna, Italy)
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A Tighter Upper Bound on the Error Probability of Signals in White Gaussian Noise

Enzo Alberto Candreva (University of Bologna, Italy); Giovanni Corazza (University of Bologna, Italy)
pp. 444-448

NetP: Network Protocols

Overhead Estimation of Selected Protocols for File Transfer

Muhammad Muhammad (DLR (German Aerospace Center), Germany); Matteo Berioli (German Aerospace Center (DLR), Germany)
pp. 449-454

Performance of Database Synchronization Algorithms Via Satellite

Chen Tang (DLR, Germany); Anton Donner (German Aerospace Center (DLR), Germany); Javier Mulero Chaves (DLR, Germany); Muhammad Muhammad (DLR (German Aerospace Center), Germany)
pp. 455-461

SBS: S-Band Systems

Center (DLR), Germany); Gennaro Gallinaro (Space Engineering S.p.A., Italy); Marco Breiling (Fraunhofer IIS, Germany); Joan Manuel Cebrian (Indra Espacio, Spain); Marco Andrenacci (MBI, Italy); Rita Rinaldo (ESA, The Netherlands); Oscar Del Rio (ESTEC TOS-ETC, European Space Agency, The Netherlands); Daniele V. Finocchiaro (Eutelsat S.A., France); Gerald Schlüter (SES Astra, Luxemburg)