

31st AIAA International Communications Satellite Systems Conference

(ICSSC-2013)

**Florence, Italy
15-17 October 2013**

ISBN: 978-1-62993-432-7

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

The contents of this work are copyrighted and additional reproduction in whole or in part are expressly prohibited without the prior written permission of the Publisher or copyright holder. The resale of the entire proceeding as received from CURRAN is permitted.

For reprint permission, please contact AIAA's Business Manager, Technical Papers. Contact by phone at 703-264-7500; fax at 703-264-7551 or by mail at 1801 Alexander Bell Drive, Reston, VA 20191, USA.

TABLE OF CONTENTS

DVB-S2 EVOLUTIONS I

DVB-SX: THE EVOLUTION OF THE (SATELLITE SYSTEM) SPECIES	1
<i>Alberto Morello</i>	
DVB-CID: THE NOVEL DVB STANDARD FOR SATELLITE CARRIER IDENTIFICATION	7
<i>Vittoria Mignone, Bruno Sacco, Ulrik De Bie, Daniel Delaruelle, Louis Dubin</i>	
EXPLORING FASTER-THAN-NYQUIST FOR SATELLITE DIRECT BROADCASTING	16
<i>Nghia Pham, John B. Anderson, Fredrik Rusek, Jean-Marie Freixe, Antoine Bonnaud</i>	
OPTIMAL CONSTELLATIONS FOR THE PRAGMATIC RECEIVER IN THE DVB-S2 STANDARD	27
<i>Farbod Kayhan, Guido Montorsi</i>	
SPECTRAL EFFICIENCY OF TIME-FREQUENCY-PACKED NONLINEAR SATELLITE SYSTEMS	36
<i>Giulio Colavolpe, Andrea Modenini, Amina Piemontese, Nader Alagha</i>	

HIGH-CAPACITY BROADBAND SATELLITE SYSTEMS, SERVICES, AND TECHNOLOGIES I

INNOVATIVE SYSTEM ARCHITECTURE TO REACH THE TERABIT/S SATELLITE	45
<i>Patricia Inigo</i>	
PERFORMANCE OF AN ALTERNATIVE SSPA-BASED PAYLOAD FOR NEXT GENERATION BROADBAND MULTI-SPOT BEAM SYSTEMS	53
<i>Martina Angelone, Alberto Ginesi</i>	
HIGH THROUGHPUT SATELLITES: AN ANALYTICAL APPROACH	61
<i>Hector Fenech, Sonya Amos, Alessia Tomatis, Viphakone Soumpholphakdy</i>	
FRACTIONAL FREQUENCY REUSE IN FIXED BROADBAND HIGH THROUGHPUT SATELLITE SYSTEMS	80
<i>Oriol Vidal, Cyrille Moreau, Stephane Mourgues, Benjamin Ros, Eric Alberty</i>	

SATELLITE-AIDED LOCALIZATION SYSTEMS, TECHNOLOGIES, AND APPLICATIONS

SOFTWARE-DEFINED RADIO LTE POSITIONING RECEIVER TOWARDS FUTURE HYBRID LOCALIZATION SYSTEMS	89
<i>Jose A. Del Peral-Rosado, Jose A. Lopez-Salcedo, Gonzalo Seco-Granados, Francesca Zanier, Paolo Crosta, Rigas Ioannides, Massimo Crisci</i>	
GALILEO/GPS MASS MARKET RECEIVERS: TRACKING ALGORITHMS ANALYSIS AND PERFORMANCE	100
<i>Paolo Crosta, Nicola U. Linty</i>	
MULTI-DIRECTIONAL OVER THE AIR TESTBED FOR ROBUSTNESS TESTING OF GNSS RECEIVERS AGAINST JAMMERS AND SPOOFERS	114
<i>Gregor Siegert, Giovanni Del Galdo, Franziska Klier, Johannes Mahr, Günter Rohmer, Alexander Rügamer, Markus Landmann</i>	
SIGNAL-LEVEL INTEGRITY MONITORING METRIC FOR ROBUST GNSS RECEIVERS	129
<i>Juan M. Parro, Jose A. Lopez-Salcedo, Rigas Ioannides, Massimo Crisci</i>	
CODE SMOOTHING FOR BOC AMBIGUITY MITIGATION	139
<i>Moisés Navarro-Gallardo, Gonzalo Seco-Granados, Gustavo López-Risueño, Massimo Crisci</i>	

FLEXIBLE SATELLITE RESOURCE ALLOCATION ARCHITECTURES, DESIGN TOOLS, AND TECHNOLOGIES I

NEEDS FOR BANDWIDTH RECONFIGURABLE FILTER NETWORKS FOR SPACE APPLICATION	150
<i>Christoph Ernst, Piero Angeletti, Fabrizio De Paolis</i>	

SOFTWARE TOOLS FOR MULTIBEAM PAYLOADS	159
<i>Nathalie Metzger, Piero Gabellini</i>	
IRREGULAR BEAM SIZES AND NON-UNIFORM BANDWIDTH ALLOCATION IN HTS	169
<i>Barry G. Evans, Paul T. Thompson, Argyrios Kyrgiazos</i>	
DYNAMIC RESOURCE ALLOCATION FOR A FUTURE SATELLITE SYSTEM EMPLOYING AN SS-TDMA PAYLOAD	177
<i>Barry G. Evans, Paul T. Thompson, Argyrios Kyrgiazos</i>	

NEXT GENERATION L/S/K-BAND GEO/MEO/LEO MOBILE SATELLITE SYSTEMS, SERVICES, TECHNOLOGIES I

DESIGNING SATELLITES FOR THE BROADBAND AERO MARKET	184
<i>Christopher McLain, Sunil Panthi, Janet King</i>	
THE EXCONNECT BROADBAND AERONAUTICAL SERVICE	192
<i>Sunil Panthi, Janet King, Christopher McLain</i>	
DISTRIBUTED GROUND-BASED BEAMFORMING	200
<i>Zhen Gao, Wen Pan, Ming Zhao, Umehira Masahiro, Jing Wang</i>	
INLINE INTERFERENCE MITIGATION TECHNIQUES FOR SPECTRAL COEXISTENCE OF GEO AND NGE0 SATELLITES	208
<i>Shree Krishna Sharma, Symeon Chatzinotas, Gerald Schlueter, Bjorn Ottersten</i>	

SATELLITE BUS TECHNOLOGIES

DESIGN OF NEXT-GENERATION ALL-ELECTRIC TELECOMMUNICATION SATELLITES	220
<i>Atri Dutta, Paola Libraro, N Jeremy Kasdin, Edgar Choueiri, Philippe Fracken</i>	
THE CANX-4&5 INTERSATELLITE LINK (ISL): AN ENABLING SATELLITE-TO-SATELLITE TRANSCEIVER DESIGN FOR INTRA-CONSTELLATION COMMUNICATIONS	231
<i>Grant Bonin</i>	
HYBRID PROPULSION SYSTEM FOR SATELLITE	238
<i>Loredana Sollazzo, Sergio Pica, Gerardo Spera, Silvia Occhigrossi, Shila Shojaee, Anna Notarantonio</i>	

NOVEL SPACE SYSTEM DESIGN ASPECTS

LOW-DIMENSIONAL BEAMFORMING DESIGN IN SECURE SATELLITE COMMUNICATIONS	246
<i>Zhongjian Liu, Chen Chen, Xiaoning Zhang, Haige Xiang</i>	
AUTOMATION OF PAYLOAD MANAGEMENT OPERATIONS	256
<i>Francisco Javier De Pablos Martín</i>	
SPACE MISSIONS CYBERSECURITY MODELLING	264
<i>Julio Vivero</i>	

ICSSC POSTER SESSION

A SIMPLIFIED MODEL FOR POWER AMPLIFIERS IN LEO SATELLITE COMMUNICATION SYSTEM	272
<i>He Sun, Wenhua Chen, Zhen Gao, Silong Zhang, Ming Zhao</i>	

ADVANCED FIXED SATELLITE SYSTEMS, SERVICES, AND TECHNOLOGIES

DIGITAL PREDISTORTION FEASIBILITY STUDIES FOR MULTICARRIER SATELLITE COMMUNICATION SYSTEMS	277
<i>Noel Kelly, Anding Zhu, Thomas J. Brazil</i>	
IMPROVING DECODING PERFORMANCE OF DVB-S2 TRANSMISSION ON A NONLINEAR CHANNEL	290
<i>Chenguang Xu, John Peng, Stephen G. Wilson, Tingjun Xie</i>	

TWO-WAY (SAME-FREQUENCY) RELAYING: INFORMATION RATES AND DVB-S2 PERFORMANCE	296
<i>John Peng, Chenguang Xu, Stephen G. Wilson, Tingjun Xie</i>	
EXPERIMENTAL EVALUATION OF A POLY-POLARIZATION MULTIPLEXING SYSTEM WITH TIMING/FREQUENCY RECOVERY FOR SATELLITE COMMUNICATIONS	301
<i>Julian Webber, Masanori Yofune, Kazuto Yano, Hiroshi Ban, Kiyoshi Kobayashi</i>	

ANTENNA TECHNOLOGIES

EXPERIMENTAL VERIFICATION OF HIGH GAIN ESV EMPLOYING DISTRIBUTED ARRAY ANTENNA TECHNOLOGY	313
<i>Kouhei Suzuki, Yoshinori Suzuki, Takashi Hirose, Takatoshi Sugiyama</i>	
A STUDY OF LARGE REFLECTOR ANTENNA MOUNTED ON COMMUNICATION SATELLITE FOR SATELLITE /TERRESTRIAL MOBILE COMMUNICATION SYSTEM	323
<i>Teruaki Orihara, Yoshiyuki Fujino, Amane Miura, Hiroyuki Tsuji</i>	
DEVELOPMENT OF LONG DEPLOYABLE DIPOLE ANTENNAS FOR SOUNDER RADARS IN THALESALENIASPACE-ITALIA	332
<i>Rocco Raffaele Trento, Paolo Nischese, Alberto Meschini, Roberto Mizzoni, Davide Scarozza, Giuseppe Mascolo, Mirco Zaccariotto, Carlo Bettanini, Stefano Debei, Gianluigi Baldesi</i>	

SATELLITE BROADBAND SYSTEMS AND TECHNOLOGIES

AMERHIS BROADBAND HIGHLY EFFICIENT SOLUTIONS FOR ADVANCED SERVICES	342
<i>Carla Salas, Isaac Moreno, Ana Solano, Ana Jalón, Ana Yun Garcia</i>	
EVALUATION OF DVB-S2 PERFORMANCE ON AN EXPERIMENTAL KA-BAND SATELLITE LINK IN THE UK	350
<i>Leshan Uggalla, Jon Eastment, Ifiok Otung</i>	
FEASIBILITY STUDY OF A VEGA LAUNCHED LOW THRUST GEOSTATIONARY COMMUNICATION SATELLITE	361
<i>Paolo Gaudenzi, Gilbert Fanchini</i>	
DESIGN OF ON-BOARD COMPONENTS FOR 21GHZ-BAND BROADCASTING SATELLITE USING ARRAY-FED REFLECTOR ANTENNA	374
<i>Kamei Masashi</i>	
PARTIAL DECODE-AND-FORWARD OF LDPC CODES FOR ON-BOARD PROCESSING SATELLITE PLATFORM	384
<i>Hang Li, Zhen Gao, Wen Pan, Ming Zhao, Jing Wang</i>	
FUTURE OPPORTUNITIES FOR NEXT GENERATION OBP ENHANCED SATELLITE PAYLOADS	391
<i>Ana Yun Garcia, Juan Manuel Rodriguez Bejarano, Ignacio Jimenez, Josep Prat</i>	

DVB-S2 EVOLUTIONS II

BANDWIDTH OPTIMIZATION FOR SATELLITE DIGITAL BROADCASTING	400
<i>Stefano Cioni, Giulio Colavolpe, Christoph Ernst, Alberto Ginesi</i>	
REDUCTION OF OUT-OF-BAND POWER IN SC-OFDM SYSTEMS	408
<i>Fumihiko Hasegawa, Masatsugu Higashinaka, Akihiro Okazaki, Fumio Ishizu, Damien Castelain, Loïc Brunel, David Mottier</i>	
LOCATION-ADAPTIVE NETWORK-CODED VIDEO TRANSMISSION FOR IMPROVED QUALITY-OF-EXPERIENCE	418
<i>Smrati Gupta, Maria Angeles Vazquez Castro</i>	

COMMUNICATIONS PROTOCOLS AND NETWORKS

AN INTELLIGENT SATELLITE MULTICAST AND CACHING OVERLAY FOR CDNS TO IMPROVE PERFORMANCE IN VIDEO APPLICATIONS	428
<i>Christopher G. Brinton, Ehsan Aryafar, Steve Corda, Stan Russo, Ramiro Reinoso, Mung Chiang</i>	
LATENCY ANALYSIS OF REAL-TIME WEB PROTOCOLS OVER A SATELLITE LINK	437
<i>Matteo Collina, Alessandro Vanelli-Coralli, Carlo Caini, Giovanni E. Corazza, Raffaello Secchi</i>	

QOE DRIVEN ADAPTIVE VIDEO WITH OVERLAPPING NETWORK CODING FOR BEST EFFORT ERASURE SATELLITE LINKS	445
<i>María Alejandra Pimentel-Niño, Paresh Saxena, Maria Angeles Vazquez Castro</i>	

PROPAGATION 2

MINIMUM-REDUNDANCY LINK-LAYER CODE DESIGN FOR THE RAILROAD SATELLITE CHANNEL	455
<i>Valentin Savin, Lam Pham Sy, Nghia Pham, David Declercq</i>	
SPACE-TIME CHANNEL MODEL FOR THE ANALYSIS OF LEO TO GROUND KA BAND DATA DOWNLOAD LINKS. PRESENTATION OF THE MODEL AND APPLICATIONS	464
<i>Nicolas Jeamin, Laurent Castanet, Frédéric Lacoste</i>	

ADVANCES IN SATELLITE PAYLOAD ARCHITECTURES AND EQUIPMENT I

OVERVIEW OF PAYLOAD/SYSTEM SIMULATION TOOLS AT ESA.....	473
<i>Felice M. Vanin, Piero Angeletti, Salvatore D'Addio, Juan Lizarraga, Francesc Coromina</i>	
NEW ANALOG PREDISTORTION LINEARIZER FOR KU-BAND TWTA ALLOWING 1GHZ INSTANTANEOUS WIDE-BAND SATELLITE OPERATION	486
<i>Jean-Francois Villemazet, Hissa Yahy, Jean-Claude Azzara, Annaick Carlier, Jean Maynard, Geoffroy Soubercaze-Pun, Francis Gizard, Eva Maria Gonzalez Esteban, Philippe Voisin</i>	
SPARSE ARRAYS FOR SATCOM APPLICATIONS	495
<i>Piero Angeletti, Giovanni Toso</i>	
MULTICARRIER PASSIVE INTER-MODULATION PREDICTION FROM 2-CARRIER MEASUREMENTS	499
<i>Jacques Sombrin, Isabelle Albert, Geoffroy Soubercaze-Pun</i>	

HIGH-CAPACITY BROADBAND SATELLITE SYSTEMS, SERVICES, AND TECHNOLOGIES

HIGHLY EFFICIENT BROADBAND TRANSMISSION SYSTEM	508
<i>Masayoshi Tanaka</i>	
PERFORMANCE EVALUATION OF ENHANCED POLY-POLARIZATION MULTIPLEXING SCHEME FOR SATELLITE COMMUNICATIONS	518
<i>Masanori Yofune, Julian Webber, Kazuto Yano, Hiroshi Ban, Kiyoshi Kobayashi</i>	
CODE DESIGN FOR FRAME-HEADERS IN ADAPTIVE CODING AND MODULATION SYSTEMS	526
<i>Farbod Kayhan, Guido Montorsi</i>	
ON DISTRIBUTED RESOURCE ALLOCATION IN FULLY MESHED SATELLITE NETWORKS	535
<i>Andreas Wolf, Hartmut Brandt, Rainer Hildinger, Stefan Lipp</i>	

FLEXIBLE SATELLITE RESOURCE ALLOCATION ARCHITECTURES, DESIGN TOOLS, AND TECHNOLOGIES II

BANDPASS FILTER WITH IN-ORBIT RECONFIGURABLE BANDWIDTH.....	545
<i>Nikolas Sidiropoulos, Lorenzo Scialino, Antonio Morini, Giuseppe Venanzoni, Petronilo Martin Iglesias, Christoph Ernst</i>	
WIDEBAND KU-BAND MPA DEMONSTRATOR	552
<i>Eva Maria Gonzalez Esteban, Bertrand Onillon, Aline Briand, Philippe Voisin</i>	
PROSPECTION OF RECONFIGURATION CAPABILITIES USING SPACE QUALIFIED SRAM-BASED FPGAS FOR A SATELLITE COMMUNICATIONS APPLICATION	561
<i>Filip Veljkovic, Javier Mora, Teresa Riesgo, Luis Berrojo Valero, Raúl Regada Sánchez, Ángel Álvaro Sánchez, Eduardo De La Torre</i>	
KA BAND COMMUNICATION RECEIVER BANKS WITH CENTRALIZED LO AND POWER SUPPLY	573
<i>Andrea Suriani, Francesco Barletta, Paolo Colucci, Roberto Guerrucci, Paolo Ranieri, Giulio Massimo Perusini, Giovanni King Pace</i>	

OPTICAL COMMUNICATIONS TECHNIQUES AND TECHNOLOGIES

PERFORMANCE EVOLUTION OF PAYLOAD DATA TELEMETRY FOR EARTH OBSERVATION LEO SATELLITES	578
<i>Massimo Bertinelli, Pantelis-Daniel Arapoglou, Alberto Ginesi</i>	
TERRESTRIAL FREE-SPACE OPTICAL COMMUNICATIONS NETWORK FOR FUTURE AIRBORNE AND SATELLITE-BASED OPTICAL COMMUNICATIONS PROJECTS	585
<i>Morio Toyoshima, Hideki Takenaka, Yoshisada Koyama, Yoshihisa Takayama, Hiroo Kunimori, Toshihiro Kubooka, Kenji Suzuki, Shinich Yamamoto, Shinich Taira, Hiroyuki Tsuji, Isao Nakazawa, Maki Akioka</i>	
COMPARISON OF BB84 AND S09 QUANTUM KEY DISTRIBUTION PROTOCOLS IN SPACE-SPACE LINKS	592
<i>Mate Galambos, Laszlo Bacsardi, Sandor Imre</i>	

ADVANCES IN EARTH TERMINALS AND STATIONS ARCHITECTURES AND EQUIPMENT

A MULTIBAND MILITARY COMMUNICATION ANTENNA	597
<i>Mario Caron, Reza Chaharmir, Jafar Shaker, Aldo Petosa</i>	
SOTM TERMINAL TESTING UNDER REAL-WORLD CONDITIONS	606
<i>Gregor Siegert, Giovanni Del Galdo, Florian Raschke, Markus Landmann, Gerold Jaeger-Waldau</i>	
ENHANCEMENTS FOR THE BROADBAND SATELLITE NETWORK ARCHITECTURE	615
<i>Ratna Winduratna, Christophe Coutand, Hans Peter Lexow, Helge Fanebust</i>	
SENSITIVITY ANALYSIS OF MULTICARRIER DIGITAL PRE-DISTORTION/EQUALIZATION TECHNIQUES FOR NON-LINEAR SATELLITE CHANNELS	623
<i>Roberto Piazza, Efrain Zenteno, Daniel Rönnow, Konstantinos Liolis, Frank Zimmer, Michael Grasslin, Stefano Cioni, Bhavani Shankar</i>	
PERFORMANCE COMPARISON OF ANTENNA DE-POINTING ESTIMATION METHODS FOR SOTM TERMINAL TESTING	639
<i>Mostafa Alazab, Giovanni Del Galdo, Florian Raschke, Gregor Siegert, Markus Landmann</i>	

ADVANCES IN SATELLITE PAYLOAD ARCHITECTURES AND EQUIPMENT II

CHALLENGES IN THE DESIGN OF NEXT GENERATION KA-BAND OMUX FOR SPACE APPLICATIONS	650
<i>Fabrizio De Paolis, Christoph Ernst</i>	
DESIGN OF HIGH POWER COAXIAL FILTERS FOR SATELLITE ANTENNAS AND PAYLOADS	656
<i>Davide Maiarelli, Roberto Mizzoni</i>	
DUAL-POLARIZATION DIRECTIONAL COUPLERS FOR BEAMFORMING APPLICATIONS	663
<i>Antonio Morini, Marco Baldelli, Giuseppe Venanzoni, Nikolas Sidiropoulos, Alfredo Catalani, Piero Angeletti, Daniele Petrolati</i>	
DEVELOPMENT OF A LIQUID CRYSTAL POLYMER RECEIVER MODULE AT KA-BAND FOR SPACE APPLICATIONS	668
<i>Anh-Vu H. Pham, Manish A. Mamidanna</i>	
CHARACTERISATION OF NONLINEARITY AND INTERMODULATION DISTORTION IN C-& KU-BAND SATELLITE TRANSPONDERS	675
<i>Ifiok Otung</i>	
COMPACT BANDPASS FILTERS FOR SPACE APPLICATIONS BASED ON TM MODE DIELECTRIC RESONATORS	685
<i>Luca Pelliccia, Fabrizio Cacciamani, Roberto Sorrentino, Fabrizio De Paolis, Felice M. Vanin</i>	

HYBRID SATELLITE/TERRESTRIAL MOBILE SYSTEMS AND TECHNIQUES

R&D STATUS OF SATELLITE/TERRESTRIAL INTEGRATED MOBILE COMMUNICATION SYSTEM	692
<i>Amane Miura, Yoshiyuki Fujino, Teruaki Oriyasa, Hiroyuki Tsuji, Kazunori Okada, Maki Akioka, Morio Toyoshima</i>	

FREQUENCY SHARING BETWEEN SATELLITE AND TERRESTRIAL IN THE 2GHZ MSS BAND.....	701
<i>Adegbenga Awoseyila, Barry G. Evans, Hee Wook Kim</i>	

NEXT GENERATION L/S/K-BAND GEO/MEO/LEO MOBILE SATELLITE SYSTEMS, SERVICES, AND TECHNIQUES II

OPEN LOOP ADAPTIVE CODING AND MODULATION FOR MOBILE SATELLITE RETURN LINKS.....	715
<i>Jesus Arnau, Carlos Mosquera</i>	
LOW DATA RATE AND HIGH DATA RATE TECHNOLOGIES FOR NEXT GENERATION BGAN	727
<i>Ammar Khan, Paul Febyre, Panos Fines</i>	
HELICOPTER PROPAGATION EFFECTS AND COUNTERMEASURES FOR RELIABLE BANDWIDTH EFFICIENT COMMUNICATIONS VIA SATELLITE	734
<i>Ammar Khan, Paul Febyre, Panos Fines, Katerina Christofylaki</i>	
TIMING AND FREQUENCY SYNCHRONISATION FOR MULTIUSER DETECTION ON THE RETURN LINK OF INTERACTIVE MOBILE SATELLITE NETWORKS	742
<i>Zohair Abu-Shaban, Bhavani Shankar, Dimitrios Christopoulos, Pantelis-Daniel Arapoglou</i>	

DIGITAL PAYLOAD ARCHITECTURE, TECHNOLOGIES, AND EQUIPMENT

A DIGITAL REVISITATION OF ANALOG BEAM-FORMING TECHNIQUES FOR SATELLITE MULTIBEAM ANTENNAS	752
<i>Piero Angeletti, Marco Lisi</i>	
EFFICIENT COEFFICIENT STORE IN DECOMPOSED DFT/FFT ARCHITECTURES FOR ON-BOARD PROCESSORS	758
<i>Adem Coskun, Sevket Cetinsel, Izzet Kale, Richard C. Morling, Robert Hughes, Stephen Brown, Piero Angeletti</i>	
HALFBAND IIR FILTER ALTERNATIVES FOR ON-BOARD DIGITAL CHANNELISATION	765
<i>Adem Coskun, Izzet Kale, Richard C. Morling, Robert Hughes, Stephen Brown, Piero Angeletti</i>	
DATA PROCESSING FOR BROADBAND RELAY SATELLITE NETWORKS - DIGITAL ARCHITECTURE AND PERFORMANCE EVALUATION	774
<i>Bernd Friedrichs</i>	
A NOVEL DEMUX/MUX METHOD FOR FLEXIBLE DIGITAL CHANNELIZERS USING HALF BAND FILTERS	788
<i>Akinori Fujimura, Futaba Ejima</i>	

HIGH-CAPACITY BROADBAND SATELLITE SYSTEMS, SERVICES, AND TECHNOLOGIES

LINEAR PRECODING PERFORMANCE ANALYSIS IN A BROADBAND SATELLITE SYSTEM WITH A 2-COLOR DUAL-POLARIZATION REUSE SCHEME	798
<i>Oriol Vidal, Jérôme Lacan, Jose Radzik, Eric Alberty, Patricia Inigo</i>	
LINEAR PRECODING IN MULTIBEAM SATCOMS: PRACTICAL CONSTRAINTS	806
<i>Dimitrios Christopoulos, Pantelis-Daniel Arapoglou, Symeon Chatzinotas</i>	
ON GROUND BEAM FORMING AND MULTI USER DETECTION PROOF OF CONCEPT	815
<i>Claudio Campa, Eugenio Rossini, Paolo Altamura, Aldo Masci, Stefano Andrenacci, Elisabetta Primo, Rosalba Suffritti, Stefano Cioni, Piero Angeletti, Jerome Tronc</i>	
NETWORK-CODING-BASED GATEWAY HANDOVER SCHEME FOR TERABIT SATELLITE NETWORKS.....	825
<i>Muhammad Muhammad, Giovanni Giambene, Tomaso De Cola, Matteo Berioli, Nader Alagha</i>	

ADVANCED DATA RELAY AND BACKBONE SYSTEMS, AND TECHNOLOGIES

HYBRID OPTICAL/RF PAYLOADS FOR CURRENT AND FUTURE DATALINK APPLICATIONS	837
<i>Wolfram Luetke</i>	

NET-CENTRIC INFORMATION ARCHITECTURE FOR SATELLITE-BASED SENSING	850
<i>Rajeev Gopal, Charles H. Cynamon</i>	

PAYLOAD AND GROUND SEGMENT TECHNOLOGIES FOR KA, Q/V, AND W-BAND

EHF LNAs AND RECEIVERS FOR PRESENT Q BAND DUAL USE COMMUNICATIONS AND FUTURE V BAND COMMERCIAL MISSIONS.....	859
<i>Andrea Suriani, Roberto Guerrucci, Paolo Ranieri, Alberto Pandolfi, Francesco Vitulli, Mauro Seghettini, Jean-Christophe Cayrou</i>	

RESOURCE ALLOCATION AND USER SCHEDULING FOR A MULTIBEAM SATELLITE WITH SIGNAL PATH DIVERSITY	867
<i>Jihwan Choi, Changhee Joo</i>	

NEXT GENERATION L/S/K-BAND GEO/MEO/LEO MOBILE SATELLITE SYSTEMS, SERVICES, AND TECHNOLOGIES

DESIGN OF AN HYBRID GROUND/SPACE ARCHITECTURE BASED ON INDIVIDUAL ON-BOARD ANTENNA POWER OPTIMIZATION FOR THE FORWARD LINK OF A MULTI-BEAM BROADBAND SATELLITE SYSTEM.....	875
<i>Vahid Jorroughi, Miguel Ángel Vázquez, Ana Isabel Perez Neira</i>	

LINK BUDGET FOR VOIP IN LTE-BASED GEO SATELLITE MOBILE COMMUNICATION SYSTEMS	885
<i>Zhen Gao, Masahiro Umehira, Wen Pan, Ming Zhao, Jing Wang</i>	

FORWARD LINK INTERFERENCE MITIGATION IN MOBILE INTERACTIVE SATELLITE SYSTEMS	894
<i>Miguel Ángel Vázquez, Giuseppe Cocco, Pol Henarejos, Ana Perez-Neira</i>	

Author Index