# Table of Contents

**Preface** .................................................................................................................................................. viii

**Organizing Committee** ......................................................................................................................... x

**Reviewers** ............................................................................................................................................. xii

## SPACOMM 1: Signal Processing and Telecommunications

Time-of-Arrival Estimation by Means of SAGE for IR-UWB in the Presence of Pulse Overlap ................................................................. 1  
*Frederik Vanhaverbeke, Marc Moeneclaey, and Yong Liang Guan*

Cooperative Deep Space Communications at Ka Band: Outage Performance Analysis ................................................................. 5  
*Pantelis-Daniel Arapoglou, Athanasios Panagopoulos, and Massimo Bertinelli*

Ka-Band Multi-port Power Amplifier Calibration Experiment and Results .................................................. 11  
*Zhiwen Zhu, Xinping Huang, and Mario Caron*

Analysis of Filter Parameter Influence on Communication Quality Using LabVIEW ........................................... 15  
*Bačić Iva and Malarić Krešimir*

Advanced Fine-Acquisition Scheme for E5a Signal on Galileo Giove-B .................................................... 21  
*Inone Joo, SeungHyun Choi, JaeHyun Kim, Cheonsig Sin, and Sanguk Lee*

## SPACOMM 2: Antenna/Radar Signal Processing

SiGe BiCMOS Chip Sets for Use in an X-Band Multi-function Chip ................................................................. 25  
*Jin-Cheol Jeong and In-Bok Yom*

Solar Paddle Antenna Mounted on Pico-Satellite "KUKAI" for Amateur Radio Communication .................................................. 31  
*Masahiro Nohmi, Katsumi Oi, Satoshi Takuma, and Masaaki Ogawa*
A Band-Notched UWB Microstrip Antenna with a Resonance Back C-Shaped Ring
Seyed M.R. Razavizadeh

Low-Power Baseband Folded Gilbert Cell Mixer for Frequency-Domain A/D Converter in 0.18 μm CMOS
Mohamed Zebdi, Daniel Massicotte, and Christian Jesus B. Fayomi

SPACOMM 3: Satellite and Space Communications I
A New Channel Assignment Strategy for Low Earth Orbit Mobile Satellite Systems
Lei Zheng and Ying Wang

Performance Analysis of Threshold Call Admission Policy for Multi-class Traffic in Low Earth Orbit Mobile Satellite Systems
Zhipeng Wang, Dimitrios Makrakis, and Hussein T. Mouftah

Design of a Multi-mission Satellite Ground Station for Education and Research
Michael Fischer and Arpad L. Scholtz

Routing and Scalability Issues for Multi-layered Satellite-HAPs Networks
Pasquale Pace and Gianluca Aloi

SPACOMM 4: Satellite and Space Communications II
How is SCTP Able to Compete with TCP on a QoS-Aware Satellite Network?
Lionel Bertaux, Thierry Gayraud, and Pascal Berthou

Enhancing Multimedia Experience in Satellite Communication Systems with AQM-Based Traffic Controllers
Romain Delpoux, Pascal Berthou, Frédéric Gouaisbaut, and Yann Labit

Self Encoded Spread Spectrum Communication with FH-MFSK
Stephen F. Fahey and Lim Nguyen

On the Capacity of 3-D Space-Time Correlated HAP-MIMO Channels
Emmanouel T. Michailidis and Athanasios G. Kanatas

SPACOMM 5: Satellite and Space Communications III
Constrained Capacities of DVB-S2 Constellations in Log-Normal Channels at Ka Band
Scott Enserink and Michael P. Fitz

Constrained Capacities in Log-Normal Channels with Site Diversity at Ka Band
Scott Enserink and Michael P. Fitz

Characterizing DSN System Frequency Stability with Spacecraft Tracking Data
Timothy Pham, Richard Machuzak, and Alina Bedrossian

Market-Based Bandwidth Allocation for Broadband Satellite Communication Networks
Stavroula Vassaki, Athanasios D. Panagopoulos, Philip Constantinou, and Maria Angeles Vázquez-Castro
SPACOMM 6: Satellite and Space Communications IV

Performance Study of eXtended Satellite Transport Protocol over Satellite Networks

Maria-Mihaela Burlacu, Joséphine Kohlenberg, Hacene Zidani, and Pascal Lorenz

Simulation Model Applied to IP Protocols and Satellite Communications

Juan C. Martínez, Leandro de Haro, and Ana González

Operational Performance of the Context-Aware Broker (CAB): A Communication and Management System for Delay-Tolerant Networks (DTNs)

Cathryn Peoples, Gerard Parr, Bryan Scotney, and Adrian Moore

Introduction to Multi Attribute Decision Making-Based Application Layer Joint Coding for Image Transmission over Deep Space Channels

Igor Bisio, Fabio Lavagetto, and Mario Marchese

SPACOMM 7: Satellite/Space Communications-Based Applications

Simulation of Local User Terminal Implementation for Low Earth Orbiting (LEO) Search and Rescue Satellites

Shkelzen Cakaj, Mickey Fitzmaurice, Jesse Reich, and Eric Foster

Network Centric Systems for Space Applications

Sergio Montenegro, Vladimir Petrovic, and Gunter Schoof

Inquiry-Based Bluetooth Indoor Positioning via RSSI Probability Distributions

Ling Pei, Ruizhi Chen, Jingbin Liu, Tomi Tenhunen, Heidi Kuusniemi, and Yuwei Chen

On Mean Visibility Time of Non-repeating Satellite Orbits with Finite Sensor Range

Zoltán Katona

Author Index