

Table of Contents

Preface	v
<hr/>	
Chapter I. Trends of Communications and Navigation System Integration	
<hr/>	
Network Centric Operations: The Role of Satellite Communications	3
<i>P. Finocchio</i>	
Comparison and Integration of GPS and SAR Data	19
<i>M. Calamia, G. Franceschetti, R. Lanari, F. Casu, M. Manzo</i>	
Integration of Navigation and Communication for Location and Context Aware RRM	25
<i>E. Cianca, M. De Sanctis, G. Araniti, A. Molinaro, A. Iera, M. Torrisi, M. Ruggieri</i>	
Convergence of Networks: An Aerospace-Friendly Strategic Vision	41
<i>R. Prasad, M. Ruggieri</i>	
The Monitor Project: A GNSS Based Platform for Land Monitoring and Civil Engineering Applications	51
<i>G. Graglia, R. Muscinelli, G. Manzoni, M. Barbarella, W. Roberts</i>	
The Galileo C-Band Uplink for Integrity and Navigation Data	63
<i>L. Castellano, S. Bouchired, M. Marinelli, I. Walters, E. Yau</i>	

A GPS/EGNOS Local Element Integrated with the VHF Communication Infrastructure Under Development in the POP-ART Project	81
<i>F. Dominici, A. Defina, P. Mulassano, E. Loehnert, V. Bruneti, E. Guyader</i>	
Optical Intersatellite Links Made Easier and Affordable by Precision 3D Spacecraft Localization via GPS/GNSS Constellations	93
<i>G. Perrotta</i>	
<hr/> Chapter II. Navigation Satellite Technologies <hr/>	
A Satellite for the Galileo Mission	109
<i>J.C. Chiarini, C. Mathew, H.P. Honold, D. Smith</i>	
Galileo Rubidium Standard and Passive Hydrogen Maser – Current Status and New Development	133
<i>F. Droz, P. Mosset, G. Barmaverain, P. Rochat, Q. Wang, M. Belloni, L. Mattioni, U. Schmidt, T. Pike, F. Emma, P. Waller, G. Gatti</i>	
China-Europe Co-Operation Agreements for Navigation: SART and LRR Developments	141
<i>F. Emma, R.G. Prieto, J. Franz, D. Hurd, H. Ding, Y. Sun, G. Peng, C. Janrong</i>	
The Impact of the Galileo Signal in Space in the Acquisition System	151
<i>D. Borio, M. Fantino, L. Lo Presti</i>	
The Aalborg GPS Software Defined Radio Receiver	169
<i>K. Borre</i>	
Ephemeris Interpolation Techniques for Assisted GNSS Services	185
<i>M. Iubatti, M. Villanti, A. Vanelli-Coralli, G.E. Corazza, S. Corazza</i>	
GNSS Based Attitude Determination Systems for High Altitude Platforms	199
<i>L. Boccia, G. Amendola, G. Di Massa</i>	

Galileo IOV System Initialization and LCVTT Technique Exploitation	211
<i>M. Gotta, F. Gottifredi, S. Piazza, D. Cretoni, P.F. Lombardo, E. Detoma</i>	
Impact of Atmosphere Turbulence on Satellite Navigation Signals	231
<i>P. Høeg, R. Prasad, K. Borre</i>	
GIOVE-A SIS Experimentation and Receiver Validation: Laboratory Activities at ESTEC	241
<i>M. Spelat, M. Crisci, M. Hollreiser, M. Falcone</i>	
Overview of Galileo Receivers	259
<i>S. Di Girolamo, M. Marinelli, F. Palamidessi, F. Luongo, M. Hollreiser</i>	
Performance Assessment of the TurboDLL for Satellite Navigation Receivers	273
<i>F. Dovis, M. Pini, P. Mulassano</i>	
Analysis of GNSS Signals using the Robert C. Byrd Green Bank Telescope	283
<i>M. Pini, D.M. Akos</i>	
First Results on Acquisition and Tracking of the GIOVE-A Signal-in-Space	291
<i>F. Dovis, M. Pini, A. Tomatis</i>	
Precise Time Technology for Galileo 2006 TIWDC	303
<i>R. Zanello, M. Mascarello, E. Detoma</i>	
GIRASOLE Receiver Development for Safety of Life Applications	313
<i>L. Marradi, L. Foglia, G. Franzoni, A. Albanese, S. Di Raimondo, V. Gabaglio</i>	
Galileo Performance Verification in IOV Phase	329
<i>M. Gotta, F. Martinino, S. Piazza, F. Lo Zito, E. Breeuwer</i>	
Different Acquisition Algorithms for the Galileo L1 Signal with BOC(1,1) Modulation	341
<i>R. Campana, F. Gottifredi, V. Valle, P.F. Lombardo</i>	

Chapter III. Satellite Navigation: Perspectives and Applications	
Galileo: Current Status, Prospects and Applications	355
<i>V. Ashkenazi</i>	
The Galileo Test Range	361
<i>G. Lancia, M. Manca, F. Rodriguez, F. Gottifredi</i>	
Perspective of Galileo in Geophysical Monitoring: The Geocalnet Project	369
<i>M. Chersich, M. Fermi, M.C. de Lacy, A.J. Gil, M. Osmo, R. Sabadini, B. Stopar</i>	
Common-View Technique Application: An Italian Use Case . .	387
<i>E. Varriale, M. Gotta, F. Gottifredi, F. Lo Zito</i>	
MARKAB: A Toolset to Analyze EGNOS SBAS Signal in Space for Civil Aviation	401
<i>N. Caccioppoli, A. Pacifico, V. Nastro</i>	
Hybridization of GNSS Receivers with INS Systems for Terrestrial Applications in Airport Environment	417
<i>G. Casale, P. De Marco, R. Fantacci, S. Menci</i>	
W Band Multi Application Payload for Space and Multiplanetary Missions	431
<i>V. Dainelli, G. Giannantoni, M. Muscinelli</i>	
GNSS Bit-True Signal Simulator. <i>A Test Bed for Receivers and Applications</i>	447
<i>C. Cosenza, Q. Morante, S. Corvo, F. Gottifredi</i>	
RUNE (Railway User Navigation Equipment): Architecture & Tests	461
<i>L. Marradi, A. Albanese, S. Di Raimondo</i>	
GPS, Galileo and the Future of High Precision Services: An Interoperability Point of View	481
<i>R. Capua</i>	
GNSS ATC Interface	495
<i>G. Del Duca, C. Rinaldi, C. Pezzella, A. Di Salvo, S. Chini, M. Crocione, V. Di Francesco, L. Pighetti, S. Quaglieri</i>	

Chapter IV. Advanced Satellite Communications Systems & Services	
Advanced Satellite Communication Systems & Services	513
<i>S. Verma</i>	
QOS-Constrained MOP-Based Bandwidth Allocation Over Space Networks	517
<i>I. Bisio, M. Marchese</i>	
Carrier Pairing, a Technique for Increasing Interactive Satellite Systems Capacity. An Assessment of its Applicability to Different System Architectures	535
<i>G. Gallinaro, R. Rinaldo, A. Vernucci</i>	
Reconfigurability for Satellite Terminals: Feasibility and Convenience	553
<i>L.S. Ronga, E. Del Re</i>	
Link Cooperation Technique for DVB-S2 Downlink Reception with Mobile Terminals	561
<i>L.S. Ronga, E. Del Re, F. Gandon</i>	
Broadband Mobile Satellite Services: The Ku-band Revolution	573
<i>A. Arcidiacono, D. Finocchiaro, S. Grazzini</i>	
Flower Constellations for Telemedicine Services	589
<i>M. De Sanctis, T. Rossi, M. Lucente, M. Ruggieri, C. Bruccoleri, D. Mortari, D. Izzo</i>	
Analysis of the Robustness of Filtered Multitone Modulation Schemes Over Satellite Channels	599
<i>A.M. Tonello, F. Pecile</i>	
VeRT Prototype Architecture and First Trials Campaign Results	613
<i>V. Artibani, G. Graglia, G. Guarino</i>	

Chapter V. Perspectives in Satellite Communications	
ISI – The Integral SatCom Initiative Towards FP7	629
<i>G.E. Corazza</i>	
Diversity Reception Over Correlated Ricean Fading Satellite Channels	633
<i>P.S. Bithas, P.T. Mathiopoulos</i>	
Application of Long Erasure Codes and ARQ Schemes for Achieving High Data Transfer Performance Over Long Delay Networks	643
<i>T. de Cola, H. Ernst, M. Marchese</i>	
Interconnection of Laboratory Equipment via Satellite and Space Links: Investigating the Performance of Software Platforms for the Management of Measurement Instrumentation	657
<i>L. Berruti, F. Davoli, S. Vignola, S. Zappatore</i>	
A Common Representation of QoS Levels for Resource Allocation in Hybrid Satellite/Terrestrial Networks	667
<i>L. Rosati, G. Reali</i>	
Broadband Satellite Communication in EHF Band	685
<i>F. Provenzale, M. Tripodi, D.A. Vasconi</i>	
Iterative Demapping and Decoding for DVB-S2 Communications	703
<i>S. Morosi, R. Fantacci, E. Del Re, R. Suffritti</i>	
New Perspectives in the WAVE W-Band Satellite Project	717
<i>A. Jebril, M. Lucente, T. Rossi, M. Ruggieri, S. Morosi</i>	
HAP-LEO Link Communication Systems Based on Optical Technology	727
<i>S. Betti, V. Carrozzo, E. Duca, F. Teodori</i>	
Integrated Broadband Wireless Network	741
<i>M. Celidonio, D. Di Zenobio, G. Nicolai</i>	
Unscented Filtering for LEO Satellite Orbit Determination	751
<i>S. Lagrasta</i>	
Index	765



<http://www.springer.com/978-0-387-47522-6>

Satellite Communications and Navigation Systems

(Eds.) E. Del Re; M. Ruggieri

2008, XVI, 768 p., Hardcover

ISBN: 978-0-387-47522-6