



*Proceedings of the First
International Conference on*

Advanced Satellite Mobile Systems (ASMS 2003)

10-11 July 2003
Frascati, Italy

SP-541

July 2003

Proceedings of the First International Conference on

ASMS 2003
Advanced Satellite Mobile Systems

10 – 11 July 2003
Frascati, Italy

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The European Space Agency

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ASMS 2003

First International Conference on Advanced Satellite Mobile Systems
ESRIN, Frascati, Italy
10 – 11 July 2003

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Foreword

This, the first conference on Advanced Satellite Mobile Services, takes place two years after the creation of the Task Force of the same name, and as solicited by the EC and ESA.

In this time frame, using the available space segment, broadband services for mobile users are being rolled out by satellite operators in those frequency bands historically used by the fixed satellite services.

In addition, the mobile satellite industry is looking at the instigation of the UMTS service, with the scope to complement said service with an appropriate satellite component, which will also include broadcasting-type services.

Finally I would like to thank the contributors who, through their competence, diligence and comprehensive speeches have made this first Conference possible, in the hope that this Conference can become a regular feature for the forthcoming years.

Emanuele D'Andria
ASMS-TF Chairman

General Programme Overview

Thursday 10 July 2003

08:30	Registration
09:00	Opening and Introduction
09:30 – 11:10	Session 1: System Architecture
11:40 – 13:00	Session 2: Trials and Demonstrations
14:30 – 16:10	Session 3: Terminal Technology
16:30 – 17:30	Poster Session
19:30	Conference Dinner – Ristorante Cacciani, Frascati

Friday 11 July 2003

08:30 – 09:50	Session 4: Propagation and Interference
09:50 – 11:30	Session 5: Performance and Quality of Services
11:50 – 13:00	Session 6: S-UMTS
14:30 – 17:00	Panel Discussion

Saturday 12 July 2003

09:00 – 16:00	Technical Visit to Fucino (INMARSAT)
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Thursday 10 July 2003

Session 1: System Architecture

09:30 – 11:10

- | | | |
|-------|---|--|
| 09:30 | Midthassel, Rolv ¹ ; Loeillet, Christophe ² ; Sandberg, Jorgen ¹ & Harles, Guy ³
¹ ESA ESTEC, ² SES Global, ³ SES ASTRA | Mobile Ku-Band Receive Only System (1) |
| 09:50 | Werner, Markus ¹ ; Ratto Gómez, Daniel ¹ & Battaglia, Lorenzo ²
¹ DLR - German Aerospace Center, ² Astrium GmbH | Capacity and System Design Issues for Aeronautical Broadband Communications via Satellite (13) |
| 10:10 | Andersen, Bjørn Roger & Gangås, Odd
<i>Telenor Satellite Services</i> | A DVB/Inmarsat Hybrid Architecture for Asymmetrical Broadband Mobile Satellite Services (19) |
| 10:30 | Rodríguez, Carmen & Seseña, Julián
<i>Rose Communications</i> | Opportunities of Advanced Satellite Mobile Systems to Complement Return Channel Options for Broadcasting Systems (40) |
| 10:50 | Karabinis, Peter
<i>Mobile Satellite Ventures LP</i> | Recent Advances that May Revitalize Mobile Satellite Systems (20) |

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Session 2: Trials and Demonstrations

11:40 – 13:00

- | | | |
|-------|--|---|
| 11:40 | Del Sorbo, Filomena
<i>Telespazio S.p.A.</i> | Multimedia Services with QOS
Support in an Integrated Terrestrial
and Satellite UMTS Network:
The I ST VIRTUOUS Project (35) |
| 12:00 | Bove, Antonio ¹ ; Monteleone, Santino ² ;
Marucci, Franco ³ ; Carlomagno, Nicola ¹
& Di Trani, Fausto ¹
¹ <i>Elsacom S.p.A.</i> , ² <i>SPARVIERO</i> , ³ <i>ASI</i> | A Medium Data Rate Airborne
Solution Using Global
Starconstellation: The
S.P.A.R.V.I.E.R.O. System (39) |
| 12:20 | Di Fazio, A. ¹ & Vernucci, A. ²
¹ <i>Telespazio S.p.A.</i> , ² <i>Space Engineering S.p.A.</i> | GAUSS Project Trials Results (44) |
| 12:40 | Balletta, P. ¹ ; Biagini, M. ¹ ; Gallinaro, G. ²
& Vernucci, A. ²
¹ <i>Telespazio S.p.A.</i> , ² <i>Space Engineering S.p.A.</i> | The COMPOSE Project (46) |

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Session 3: Terminal Technology

14:30 – 16:10

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|-------|--|---|
| 14:30 | Vazquez, Javier; Pearson, Robert & Driscoll, Barry
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| 14:50 | Morosi, Simone; Del Re, Enrico; Fantacci, Romano & Rufolo, Paola
<i>University of Florence</i> | Turbo Parallel Interference Cancellation for CDMA Satellite Communications (6) |
| 15:10 | Levissianos, Argyris; Metaxas, Georgios; Dimitriou, Nikos & Polydoros, Andreas
<i>IASA -University of Athens</i> | Layered Coding for Satellite and Terrestrial Multipath Correlated Fading Channels (12) |
| 15:30 | Theodoridis, Sergios; Theodoridis, Sergios; Dalakas, Vassilis; Kofidis, Eleftherios & Kopsinis, Yannis
<i>University of Athens</i> | A Novel Efficient Cluster-Based Maximum-Likelihood Sequence Equalizer for Satellite Channels (27) |
| 15:50 | Tiezzi, F. ¹ ; Vaccaro, S. ¹ ; Grzegorzczak, T. ¹ & Moser, J. ²
¹ JAST Antenna Systems, ² LEMA-EPFL | Design of Multiband Multibeam Conformal Antennas for Multimedia Mobile Satellite Receivers (45) |

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University of Bologna

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Universita' di Firenze

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¹University of Bologna, ²Technical University of Berlin

GAUSS Market Analysis for Integrated Satellite Communication and Navigation Location Based Services (P15)

Di Fazio, A.¹ & Dricot, F.²
¹Telespazio S.p.A., ²EC-INFOS

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SSGMCE

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¹University of Rome "Tor Vergata", ²University of California Los Angeles

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¹National Technical University of Athens, ²Ministry of Transportation and Communications

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De Blasi, Mario¹; Ciccacese, Giovanni²; Patrono, Luigi² & Tomasicchio, Giuseppe³
¹Faculty of Engineering, University of Lecce, ²University of Lecce, ³Alenia Spazio

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Inzerilli, Tiziano¹ & Montozzi, Simone²

¹University of Rome "La Sapienza", ²DIS

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Universita di Roma "La Sapienza"

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¹University of Bradford, ²DLR - German Aerospace Centre

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¹Integrasys S.A., ²Telespazio, ³L'Aquila University, ⁴Aachen University,

⁵Space Engineering, ⁶Ericsson Hellas

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| 8:50 | Milas, Vasilis; Koletta, Maria & Constantinou, Philip
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| 09:10 | Emmelmann, Marc ¹ ; Brandt, Hartmut ¹ ; Bischl, Hermann ² & Scalise, Sandro ²
<i>¹Fraunhofer FOKUS, ²German Aerospace Agency (DLR)</i> | An Access Protocol for Mobile Satellite Users with Reduced Link Margins and Contention Propability (23) |
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- 9:50 Pecorella, Tommaso¹; Chiti, Francesco²; Fantacci, Romano²; Giacomelli, Luca¹; Poggese Marco¹ & Poggianti, Federico
¹CNIT Florence Research Unit, ²University of Florence - DET
An Improved Dynamic Bandwidth Allocation Scheme Based on Traffic Prediction for DVB-RCS Systems (10)
- 10:10 Impemba, Ernesto & Inzerilli, Tiziano
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- 10:30 Sánchez, José Manuel¹; Albani, Mirko²; Arbib, Claudio³; Servilio, Mara³; Oh, Seoung-Hoon⁴; Loeis, George⁵ Del Sorbo, Filomena⁶; Lombardi, Giuseppe⁶; Giralda, Arnoldo⁷
¹Integrasys S.A., ²Space Engineering S.p.A., ³ Università di L'Aquila, ⁴Aachen University, ⁵National Technical University of Athens, ⁶University of Rome "La Sapienza", ⁷Telespazio S.p.A.
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J.¹; Vernucci, A.³ & Widmer, H.²
¹ Skysoft, ² Ascom, ³ Space Engineering
S.p.A, ⁴ ESA/ESTEC, ⁵ Telespazio S.p.A. Via-Satellite Trials of W-CDMA
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¹ Fraunhofer FOKUS, ² University of
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Angelou Evangelos³ & Evans, Barry¹
¹ CCSR, University of Surrey, ² Alcatel
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Merkourios² & Henrio, Pierre³
¹ Space Hellas S.A., ² CCSR, University of
Surrey, ³ Alcatel Space Admission and Preventive Load
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