



ASD-EUROSPACE



**DASIA 2021**  
on line edition  
Sept. 21 • 22 • 23



09:15 Dasia 2021 Opening

**A1** Open exp. platform for S/C's' - chaired by Olivier Notebaert, Airbus Defence & Space SAS

09:30 **a** OPS-SAT in orbit - a technical rundown of this open experimentation platform - Presenter: Dominik Marszk - IMS Space Consultancy GmbH, Germany

10:00 **b** SPACEAPPS - an OPS-SAT experiment - Presenter: Hans Juergen Herpel - Airbus Defence and Space, Germany

**A2** High perf. Processing - chaired by Ali Zadeh, ESA/ESTEC

10:30 **a** GMVISION: co-processor for complex vision-based autonomous navigation in space - Presenter: Dragos Gogu, GMV Innovating Solutions SRL, Romania

11:00 **Presentation Break**

11:30 **b** High Performance Data Processor (HPDP) – A New Generation Space Processor in Demonstration - Presenters: Constantin Papadas - Integrated Systems Development SA (ISD SA), Greece & Tim Helfers - Airbus Defence and Space GmbH, Germany

12:00 **c** Expandable cots based OBC architecture with mass memory capabilities - Presenter: Jochen Rust, DSI Aerospace Technologie GmbH, Germany

**A3** High perf. Processing, rad. hard emphasized - chaired by Jean-Luc Poupat, Airbus Defence & Space SAS

12:30 **a** Compute Intensive Rad Tol Digital devices: Teledyne e2v vision and methodology to bring those parts to Space - Presenters: Thomas Guillemain, Mikael Ball, Teledyne e2v Semiconductors, France

13:00 **Presentation Break**

14:00 **b** Radiation performance of Quad ARM® Cortex® A72 1.8GHz and High density DDR4, and new use cases permitted - Presenters: Mikael Ball, Thomas Porchez, Teledyne e2v Semiconductors, France

14:30 **c** Microchip Rad Hard ARM SoC, MPU & MCU mixed signal solutions for space - Presenter: Nicolas Ganry - Microchip Aerospace & Defense, France

15:00 **d** Microchip Technology Enables System Solutions for Space Applications - Presenter: Nicolas Ganry - Microchip Aerospace & Defense, France

15:30 **Presentation Break**

**A4** High perf. rad hard FPGA's - chaired by Alexandre Mege, Airbus Defence & Space SAS

16:00 **a** Radiation hardened high-performance fpga comparison and benchmarking methodology - Presenter: Rubén Domingo Torrijos – GMV, Spain

16:30 **b** 3D Plus TMR NOR SPI modules as FPGA configuration memory - Presenter: Grégoire Pique, 3D Plus, France

17:00 **c** Evaluation and validation of European rad-hard Ng-Medium FPGA and its complementary SW tools - Presenter: Yanitsa Stoyanova - Airbus Defence and Space GmbH, Germany

17:30 **d** DAHLIA & NG-ULTRA, a very high performance system on chip for space applications - Presenter: Jean-Luc Poupat - Airbus Defence and Space SAS, France

09:15 Dasia 2021 Opening

**B1** Spacewire, spacefiber & optical transmission design and components - chaired by Patrick Comery, Ariane Group SAS

09:30 **a** Compact Impedance Matched Connectors for SpaceWire Links MicroMach® - Presenter: Stéphane Hermant, Axon' Cable France

10:00 **b** SpaceFibre – An Update - Presenter: Steve Parkes, STAR-Dundee, United Kingdom

10:30 **c** Testing SpaceFibre Interfaces and Systems - Presenters: Steve Parkes and Dave Gibson, STAR-Dundee, United Kingdom

11:00 **Presentation Break**

11:30 **d** Rugged Photonic Components for Spacecraft Free-Space-Optical Link Terminals - Presenters: Dr Ron Logan, Davinder Basuita, Glenair, USA & UK

**B2** Ethernet - chaired by Ralf Gerlich, BSSE, Germany

12:00 **a** Time-Triggered Equipment for Gateway - Design/Progress/Development Plan & Initial Test Results - Presenter: Matthias Mäke-Kail, TTTech Computertechnik AG, Austria

12:30 **b** Fault-Tolerant Computing Platform Enabled by Time-Triggered Ethernet - Presenter: Ivan Masar, TTTech Computertechnik AG, Austria

13:00 **Presentation Break**

14:00 **c** Opportunity for High Throughput Networking Technologies for Next Generation SatelliteOn-Board Networks - Presenter: Pierre-Julien Chainé, Airbus Defence & Space France

**B3** Communication: High rate downlink and TM&TC standards - Chaired by Rainer Gerlich, BSSE, Germany

14:30 **a** Distributed CFDP for High-Rate Data Downlink - Presenter: Felix Flentge, ESA/ESOC – Germany

15:30 **Presentation Break**

**B4** S/W system verification - chaired by Brice Dellandrea – Thales Alenia Space France

16:00 **a** Using formal methods to pre-qualify space-profile RTEMS - Presenter: Andrew Butterfield, Lero @ Trinity College Dublin, Ireland

16:30 **b** Sources of False Positives in Dynamic and Static Analysis and Counter Measures - Presenter Ralf Gerlich, BSSE, Germany

17:00 **c** MC/DC for Space: How to pragmatically comply with the MC/DC structural coverage requirement in space software - Presenters: Andoni Arregui, Thomas Wucher – GTD GmbH, Germany

**A5 Fault Detection in OBSW - chaired by Charles Galland, Eurospace**

- 09:30 **a** RISC-V Implementation or non-intrusive critical on-board software instrumentation -  
Presenter: Ivan Gamino, University of Alcalá, Spain
- 10:00 **b** LeonViP-MC: a LEON4 multicore virtual platform with fault-injection capabilities for space  
software design and verification - Presenter: Jonatan Sánchez, University of Alcalá, Spain

**A6 Communication protocols and deterministic Spacewire -  
chaired by Pierre Lionnet, Eurospace**

- 10:30 **a** Deterministic spacewire - Presenter: Barthélémy Attanasio, Thales Alenia Space, France
- 11:00 **Presentation Break**
- 11:30 **b** From Model-Based Avionics to Protocol Simulations (OSRA-ION) - Presenter: Barthélémy  
Attanasio, Thales Alenia Space, France

**A7 Data handling for EO - chaired by Steve Duncan, Thales Alenia Space UK**

- 12:00 **a** High-Performance Compute Board. COTS Acceleration for Earth Observation Applications  
- Presenter: Joaquin Espana Navarro - Cobham Gaisler AB, Sweden
- 12:30 **b** Design and Implementation of On-Board Ship Detection Algorithms using New Space  
Technologies - Presenter: Jamin Naghmouchi - Innovationsgesellschaft TU Braunschweig  
mbH, Germany
- 13:00 **Presentation Break**
- 14:00 **c** Preparing next generation FPGA Data Compressor in the frame of Hi-SIDE. High-Speed  
Integrated Satellite Data Systems for Leading EU Industry - Presenter: Alexandre Mege -  
Airbus Defence and Space SAS, France
- 14:30 **d** Modular and Interoperable Advanced Data Handling Architecture (ADHA) for Earth  
Observation (EO) Satellites - Presenter: Dario Pascucci- Thales Alenia Space Italy
- 15:00 **e** Advanced data handling architecture for EO satellites -  
Presenter: Julian Bozler- Airbus Defence & Space GmbH, Germany
- 15:30 **Presentation Break**
- 16:00 **f** Parallel lossless and near-lossless Compression for Multispectral and Hyperspectral  
Images Implementation and benchmarks on space Multicore architectures: - Presenter:  
Cosmin Stanciu - ENEA Romania

**A8 Reliable, portable and compact processing solutions - chaired  
by Olivier Notebaert, Airbus Defence & Space**

- 16:30 **a** De-RISC: Dependable Real-time RISC-V Infrastructure for Safety-critical  
Space and Avionics Computer Systems - Presenter: Paco Gómez Molinero - fentISS,  
Spain
- 17:00 **b** LEON5 and NOEL-V – Next Generation SPARC and Introduction of RISC-V Processor Models  
for Space Applications - Presenter: Magnus Hjort - Cobham Gaisler AB, Sweden

**B5 Avionics and data handling including validation and performance -  
chaired by Joachim Fuchs, ESA/ESTEC**

- 09:30 **a** Micro-launcher's Data Handling System Performance Evaluation -  
Presenter: Fernando Domínguez, GMV, SPS, Spain
- 10:00 **b** Avionics Test Bench for validation of complete avionics for micro-launchers -  
Presenter: Lorenzo Cercos Pita, GMV, Spain

- 10:30 **c** Microcontroller-based MEMS GYRO – presenter: Steve Duncan, Thales Alenia Space,  
United Kingdom
- 11:00 **Presentation Break**
- 11:30 **d** Smart and Scalable Satellite HighSpeed Processing Chain – S4Pro -  
Presenter: J. Naghmouchi, ITUBS, Germany

**B6 Avionics/controller systems for robotic missions, rovers &  
transportation - chaired by Mario Montagna, Thales Alenia Space Italy**

- 12:00 **a** A re-usable high reliability computer for autonomous missions - Presenter: Ruben  
Willems, QinetiQ Space nv, Belgium
- 12:30 **b** MMX Rover Centralized Onboard Software - Presenter: Gabriel Brusq, CNES, France
- 13:00 **Presentation Break**
- 14:00 **c** ExoMars On-Board Computer DM – An Integrated Avionics system to Reach Mars Surface  
- Presenter: Alfonso Gonzalo, Airbus Defence & Space – CRISA, Spain

**B7 Navigation - chaired by Ralf Gerlich, BSSE, Germany**

- 14:30 **a** Navigation camera optical unit elegant breadboard for space exploration - Presenter:  
Dragos Georgel Gogu, GMV Innovating Solutions SRL, Romania
- 15:00 **b** Validation process from models to HW avionics in the frame of HERA autonomous  
navigation - Presenter: Florin-Adrian Stancu, GMV Innovating Solutions SRL, Romania
- 15:30 **Presentation Break**

**B8 Simulation, development and operational support - chaired by  
Rainer Gerlich, BSSE, Germany**

- 16:00 **a** An End to End HW/SW Co-Design Methodology for Aerospace Applications Targeting  
Complex FPGAs - Presenter: Eric Jenn - IRT Saint-Exupéry, France & Polytechnique  
Montréal, Canada
- 16:30 **b** Towards model interoperability and multicore emulation: industrial return of  
experience and challenges in developing the next generation of simulators -  
Presenter: : Laura Pasquale Thales Alenia, Italy

**A9 Systems for complex applications including communication and RTOS constraints** - chaired by J. Lopez Trescastro, ESA/ESTEC

**09:30** **a** **GR716 Rad-Hard Microcontroller For Space Applications** - Presenter: Fredrik Johansson, Cobham Gaisler AB, Sweden

**10:00** **b** **Managing INFANTE's payload bay experiments using the AIR hypervisor** - Presenter: Daniel Silveira - GMVIS Skysoft, Portugal

**A10 Standard and modular reference processing solutions** - chaired by Hans-Jürgen Herpel, Airbus Defence & Space GmbH

**10:30** **a** **Approach for modularization and standardization of products** - Presenter: Jan Johansson - RUAG Space AB, Sweden

**11:00** **Presentation Break**

**11:30** **b** **Implementing an Executive Platform Software for Payloads in the space domain** - Presenter: Guillaume Pacini, CS Group, France

**12:00** **c** **Reference design and basic software for a single board computer based on GR740** - Presenter: Anandhavel Sakthivel - Cobham Gaisler AB, Sweden

**12:30** **Presentation Break**

**14:00** **d** **The impact of open standards on next generation data handling systems** - Presenter: Ran Qedar – SpiN, Germany

**14:30** **Chairman's conclusions**

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