



DASIA 2024



May 28 - 29 - 30

OPATIJA

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MAY 28 - 30

Please click on the references of presentations to check the slots

<u>Schedule</u>	<u>May 28</u>	<u>May 29</u>	<u>May 30</u>
<u>9:00 - 12:45</u>	<u>Software</u> A01 A03 A06 A14	<u>Exhibitor/sponsor pitches</u>	<u>Data Handling</u> A19 A20 A25 A26
	<u>Coffee break</u>		<u>Coffee break</u>
	<u>Software</u> A15 A16 A21	<u>Networking opportunities</u>	<u>Data Handling</u> A27 A29 A35
<u>12:45 - 14:15</u>	<u>Lunch</u>	<u>Lunch</u>	<u>Lunch</u>
<u>14:15 - 18:00</u>	<u>Software</u> A30 A36 A37 A40	<u>Advances in processing</u> A04 A08 A09	<u>Avionics</u> A02 A11 A12 A22
	<u>Coffee break</u>	<u>Coffee break</u>	<u>Conference closure</u>
	<u>COTS</u> A07 A18 A33	<u>Data bus</u> A05 A13 A31	<u>Advances in processing</u> A10 A17 A41
<u>20:00 - 23:00</u>		<u>Gala Dinner</u> including a 3 hours open bar	<u>DASIA Programme Committee Meeting</u> (PC members only)

<u>Event locations</u>	
 Plenary room	 Exhibitors space
 Parallel sessions	 Restaurant



MAY 28

SOFTWARE - chaired by (TBC)

- A01 **From simulation environment to onboard computer: journey of an autcoded algorithm**
Thomas Delmas*, Frédéric Viaud, Jonathan Serrand - CNES, France - *Presenter
- A03 **Delay tolerant network - compatibility with different DTN simulation tool**
Barthelemy Attanasio, Elisa Ballatore*, Alexandre Giglio, Pierre Dandré - Thales Alenia Space France - *Presenter
- A06 **SSLA: A standardized and reusable software framework for avionics and space applications**
Miguel López, Alba Rozas*, Jesús Zurera, Rafael Polonio, Sergio Ramírez - SENER Aeroespacial, S.A., Spain - *Presenter
- A14 **The Software Architecture Powering DRAGO: a flight-proven SWIR Camera**
David Rodríguez*, Carlos Colodro, Samuel Sordo, Ignacio Sidrach, Xana Delpueyo, Luis Guirado, Gara Ramos, Álex Oscoz - Instituto de Astrofísica de Canarias, Spain - *Presenter

CB1 Coffee Break

- A15 **A Versatile Object-Oriented Software Bus for Embedded Data Handling Applications**
Thomas Hülsing* - Airbus Defence and Space, Germany - *Presenter
- A16 **Data Coverage Verification for ECSS Category A Software**
Andoni Arregui* - GTD GmbH, Germany - *Presenter
- A21 **Twins4Space: An Enhanced Software Architecture for a Decentralized SpaceWire Network in Modular Spacecraft**
Sven Wente*, Stefan Lindörfer, Sergio Montenegro - Julius-Maximilians Universität Würzburg - Germany - *Presenter

L11 Lunch

- A30 **Engineering and Assessing Cybersecurity for Space Systems**
Pedro Sousa, João Cunha - Polytechnic Institute of Coimbra, Nuno Silva* - Critical Software SA, Portugal - *Presenter
- A36 **The Euclid High Gain Antenna Control Logic Verification, Validation and In-Flight Operation**
F. Simeoni*, S. Vidano, M. Saponara, C. Rosso, E. Maiorano - Thales Alenia Space Italy - *Presenter
- A37 **Conversational Automated Program Repair for ARM Assembly Code using LLMs**
João Gomes*, Daniel Silveira, Tiago Jorge GMV - Lisbon, Portugal - *Presenter
- A40 **Deploying Promela/Spin-Based test generation on RTEMS: a progress report**
Andrew Butterfield* - Lero - the Irish Software Research Centre, Trinity College Dublin, Ireland - *Presenter

CB2 Coffee Break

COTS SOLUTIONS - chaired by (TBC)

- A07 **The Integrated Avionics Unit. Architecture and Case Studies of Scalable Performance**
Evan Helmeid*, Michael Pütz, Philippe Ries - LuxSpace Sàrl, Luxembourg, Tim Due, Mohammad Amin Vaklifard, Armin Dekorsy - ANT, University of Bremen, Germany, Christopher Baumgartner - NXP Semiconductors Germany GmbH, Germany, Jochen Rust - Hamburg University of Applied Sciences, Germany. - *Presenter
- A18 **Enhancing High-Demand Computer Vision: Leveraging COTS Components for Acceleration and Robustness Through AI Integration**
A. Scarciglia*, A. Bongiovanni, M. Lapolla, A. Merlo - Thales Alenia Space, Turin, Italy - *Presenter
- A33 **Rapid Prototyping Tools: From evaluation kits to a comprehensive software environment**
Simon Dumortier* - Microchip France - *Presenter

DATA BUS - chaired by (TBC)

- A05 **What is the solution to Higher Data Rates and Savings?**
Torsten Moellers* - Glenair GmbH, Germany - *Presenter
- A13 **Lossless HKTm Compression for File-based Operations**
Johannes Lieder* - Airbus Defence and Space, Germany - *Presenter
- A31 **Distributed Real-Time Applications Based on Time-Triggered Ethernet Made Easy**
Ivan Masar*, Thomas Maier - TTTech Computertechnik AG, Austria - *Presenter



MAY 29

PIT1 Exhibitor/Sponsor Pitches

CB3 Coffee Break

NWK Networking opportunities

LU2 Lunch

ADVANCES IN PROCESSING - chaired by (TBC)

- A04 **Memory management unit for hardware-assisted dynamic reallocation in on-board satellite systems**
Borja Losa*, Pablo Parra, Antonio Da Silva, Óscar R. Polo, J. Ignacio García, Agustín Martínez, Jonatan Sánchez, Sebastián Sánchez - Space Research Group, Universidad de Alcalá, Spain, David Guzmán - NASA Goddard Space Flight Center, USA - *Presenter
- A08 **Architectural Design of a High-Performance. ML-Based Processing Platform for 5G NTN**
Maïke Taddiken* - DSI Aerospace GmbH, Germany - *Presenter
- A09 **64 Gbit Radiation Intelligent Memory Stack for Data Handling applications**
Jeanne Tongbong, Jérôme Salles* - 3D PLUS, France - *Presenter

AVIONICS - chaired by (TBC)

- A02 **Platform On-board Software Maintenance for the BepiColombo Mission to Mercury 2018-2024**
Christoph Steiger*, Ignacio Clerigo - ESA/ESOC, Germany, Tiago Costa, Jessica Hopkins- LSE Space GmbH (c/o ESA/ESOC), Germany, Susanne Fugger - Airbus Defence and Space, Germany, Alvaro de Luna - Airbus Defence and Space, France - Presenter*
- A11 **OBC-Ultra, the rad-hard NG-Ultra-based On Board Computer for future applications**
Adrien Comolet-Tirman, Régis Temperman, Estelle Danard, Jean Déqué - Airbus Defence and Space, France - Presenter: tbc
- A12 **Modular Avionics for Habitable Habitats – Software Architecture**
Mauro De Francesco* - Thales Alenia Space Italy - *Presenter
- A22 **Systolic Arrays on Payload Processing Unit**
Ioannis Katelouzos, Kostas Makris, Mateusz Mroczkowski, Tilemachos Tsiapras, Constantin Papadas* - Integrated Systems Development (ISD), Greece Antonios Paschalis, Nektarios Kranitis - National and Kapodistrian University of Athens, Greece, Tim Helfers, Patrick Gest, Richard Wiest - Airbus Defence and Space GmbH, Germany - *Presenter

CB4 Coffee Break

ADVANCES IN PROCESSING - chaired by (TBC)

- A10 **High Throughput Optical Network Regenerative Switch Demonstrator (HyRES)**
Tim Helfers*, Marcel Hammerl - Airbus Defence and Space GmbH, Germany, Robert Hughes - Airbus Defence and Space Ltd, United Kingdom - *Presenter
- A17 **A new software approach to execute AI/ML Inference for High-Reliability applications on Space Qualifiable Hardware**
Pablo Ghigliano*, Guillermo Sarabia, Mandar Harshe - Klepsydra Technologies, Switzerland - *Presenter
- A41 **Architecture Design of a High-Performance Mass Memory Module for small Satellite platforms**
Maïke Taddiken*, Daniel Smith, Andre Schafer, Ole Bischoff - DSI Aerospace GmbH, Germany - *Presenter

AVIONICS - chaired by (TBC)

- A23 **Modular Avionic architecture for pressurized modules**
Federico Alves Felio*, Thales Alenia Space Italia - *Presenter
- A24 **Avionics Stack for Atmos Space Cargo Mission using MAGIC-CubeSat**
Saish Sridharan*, Ran Qedar - Space Products and Innovation GmbH, Germany, Jeffrey Hendrikse, Diego Carbal - Atmos Space Cargo GmbH, Germany - *Presenter
- A28 **Exploring interoperability of space-qualified fibre optic transceivers**
Nick Kabawa*, Keith Wilcox - University of Dundee, School of Science and Engineering, United Kingdom
Steve Parkes - STAR-Dundee Ltd., United Kingdom - *Presenter

GALA DINNER



MAY 30

DATA HANDLING - chaired by (TBC)

- A19 **Applying Machine Learning Techniques for Optical Relative Navigation in Planetary Missions. An in-orbit-demonstration in OPS-SAT** Alfredo Escalante Lopez - Student Member, IEEE, Pablo Ghigolino Klepsydra Technologies, Switzerland, Manuel Sanjurjo Rivo - UG3M, Spain - **Presenter: tbc**
- A20 **On-board Cloud Detection using Deep Neural Networks for Earth Observation Downlink Reduction. An In-orbit-demonstration Case Study**
Jannis Wolf, Dr Leonidas Kosmidis - Barcelona Supercomputing Center (BSC), Spain Pablo Ghigolino*, Mandar Harshe - Klepsydra Technologies, Switzerland - ***Presenter**
- A25 **Advanced Data Handling Architecture (ADHA) status and its benefits**
Julian Bozler* - Airbus Defence and Space GmbH, Germany, tbd - European Space Agency Noordwijk, The Netherlands - ***Presenter**
- A26 **ADHA On-board Computer Module (OBCM)**
Kostas Marinis - ESA, The Netherlands, Dario Pascucci, Ketty De Mattia - Thales Alenia Space Italy - **Presenter: tbc**

CBS Coffee Break

DATA HANDLING - chaired by (TBC)

- A27 **Star-ultra single-lane router: an eleven-port routing switch for test and development of spacefibre systems** Dave Gibson*, Andrew MacLennan, Chris McClements, Stuart Mills, Stephen Mudie, Steve Parkes Alan Spark - STAR- Dundee Ltd, United Kingdom, Marti Farras Casas, Albert Ferrer Florit, Alberto Gonzalez Villafranca - STAR-Barcelona SL, Spain - ***Presenter**
- A29 **AI-based Formalization of Textual Requirements**
Dr. Rainer Gerlich - Dr. Rainer Gerlich System and Software Engineering (GSSE), Germany, Prof. Dr. Ralf Gerlich - Furtwangen University, Faculty Computer Sciences Germany, Dr. Ingo Schoolmann, Martin Schorfmann, DHB Digital Services GmbH (DHB-DS), Germany - **Presenter: tbc**
- A35 **Artificial Intelligence for Earth Observation**
Olivier Cambon* - Airbus Defence and Space, France - ***Presenter**

LU3 Lunch

- A34 **Satellite Highly Interactive Visual & Analytics (SHIVA) a tool for Spacecraft Telemetry Analysis – the Euclid Case**
A. Amelio*, C. Tribbia, A. Bosco - Thales Alenia Space Italy, G. Racca - ESA/ESTEC, The Netherlands - ***Presenter**
- A38 **The WBS-VIII FFT-Based Spectrometer and Instrument Interfacing with SpaceFibre**
Steve Parkes*, Martin Dunstan, Dave Gibson, Andrew MacLennan, Chris McClements, Blair Winton, Pete Scott, Jamie Riach, Neil Purves, Keith Carruthers, Ray Manston - STAR-Dundee, Dundee, United Kingdom, Marti Farras Casas, Albert Ferrer Florit, Alberto Gonzalez Villafranca - STAR-Barcelona SL, Spain - ***Presenter**
- A39 **Evaluation of CCSDS 121.0-B-3 Lossless Data Compression mapping on Versal AI Engines,**
Marc-Philipp Paarmann*, Ertan Göklü, Buse Ustaoglu, Christian Spindeldreier, Maik Taddiken, Jochen Rust, Ole Bischoff, Harald Michalik - DSI Aerospace GmbH, Germany - ***Presenter**

CC Closing Speech DASIA PC Chair

PCM **DASIA Programme Committee Meeting** DASIA PC Members



LOCATION

AMBASADOR hotel

Feliksa Peršića 5, 51410 Opatija

Phone number: +385 51 743 333

<https://mailchi.mp/katarina-line.hr/dasia-2024>



LIBURNIA
HOTELS & VILLAS

REGISTRATION

Advance

An electronic registration form is accessible via <https://docs.google.com/forms/d/e/1FAIpQLSe31F9ylhHYlt3bAhh060UpW3-H3YxJDnfWzldDgZvkbN2RkQ/viewform> or contact us at dasia@eurospace.org
Send the filled in form to Eurospace before May 13th, 2024.
This applies both to participants and to the booking of stands.

On site

The Conference Secretariat will open in the morning on May 28th, 2024 at 8:00 for late conference registration, for arrival registration and handout of conference material.

CONFERENCE FEES

Participants

A **Conference fee of 940 €** is requested from all participants, including speakers and chairmen. This fee will include lunches, coffee breaks, gala dinner and handling of proceedings.

Students are kindly asked to contact Eurospace before making any registration at dasia@eurospace.org

Exhibitors

The fee for an **Exhibitor Display** is **2 500 €** and includes one attendance fee for the Conference. Additional conference registration fees are offered at discount price: 25% for the first additional 2 registrations, and 50% after that.

Sponsors

Sponsor packages are available at: dasia@eurospace.org

PAYMENT

Cheque

French banks only: in Euro to the order of EUROSPACE payable in a French Bank to be sent to: **EUROSPACE, 22 rue du Quatre Septembre 75002 Paris.**

Cash

In Euro at the conference.

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Charges on bank orders shall be borne by the sender



HOTEL RESERVATION

A block reservation has been made at special conference rates at Ambassador hotel

Participants are strongly advised to book their room as soon as possible.

CANCELLATION

Refunds of 50% will be made if a written request is received **before April 28 2024, at the latest.**

No refunds will be made for cancellations received **after this date**, but substitutions will be possible.

LANGUAGES

English will be the working language of the Conference. The time allocated for each presentation will include a discussion at the end

PAYMENT & BANK FACILITIES

Travel and exchange arrangements can be made by the Concierge of the Hotel.

An ATM is available within the hotel.

PROCEEDINGS

Until **1st of July 2024** authors will have the opportunity to convert their abstract into a final paper to be provided at dasia@eurospace.org.

In addition the presentation prepared for the conference is very welcome.

Those documents will be provided to participants from July 15th upon request.



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Chairman

Mr. Pierre Lionnet
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