

EDHPC 2023 - European Data Handling & Data Processing Conference

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**European Data Handling &
Data Processing Conference for Space**

2 - 6 October 2023 | Juan-Les-Pins | France



Monday, October 2, 2023 - Friday, October 6, 2023

Topics

Satellite End-to-end Data Handling and Processing Architectures

On-Board Data Processing Architectures

On-Board Data Handling Architectures

ADHA - Advanced Data Handling Architecture

Reconfigurable Data System Architectures

Distributed Processing Architectures

Distributed Computing of Data and Signal Processing

Signal Processing Chain Architecture

Reference Designs for Platform, Optical & RF Payloads Data Systems

On-Board Computer (OBC) Unit, Remote Terminal Unit, Mass Memory unit, Instrument Control Unit

High Performance Hardware Data and Signal Processing unit/module

High Throughput Electronics for Payloads like Radar back-ends, Radiometer Back-ends, Telecom Processors, Payload Front End Electronics

Use of Digital and Mixed-signal Components in OBC / OBDP and in Data/Signal Processing Systems (Reference Designs)

Multicore Processors, GPUs, FPGAs, DSPs, Memories, Full Custom Processor ICs, SoC, SiP, DAC, ADC

Use of COTS in OBC / OBDP and Signal Processing Systems

Selection, Radiation Test Results, Mitigation Techniques in Designs, Software Defined Radios

Validation & Verification, Testing, Qualification, Simulation, Modelling of Complex Systems

Buses, Networks & Protocols

Protocol Developments

SpaceWire, SpaceFibre, CAN-Bus, Ethernet, MIL-STD-1553, and Other Protocols

Validation & verification

Simulation Suites, Test equipment, Approaches, and Standards

Components

Embedded Interfaces in Processors/FPGAs, Switches, Routers, SerDes, (optical) Transceiver, Connectors, Harness

Wireless Technology

OBDP (On-Board Data and Signal Processing)

Device Benchmarks

Multicore Processors, GPUs, FPGAs

Developments in On-Board Data Processing Frameworks, Architectures and Building Blocks

Parallel Processing Frameworks (OpenMP, OpenCL), Hardware Acceleration of Processing Tasks, Heterogeneous Processing Systems, FPGA IP and HLS

On-Board Data Processing Algorithms and Implementations

Multi- and Hyperspectral image Processing, Synthetic Aperture Radar (SAR) Processing, Radio Interferometer Processing, Visual Navigation, Data Reduction, Other On-Board Processing Applications

On-Board Signal Processing Algorithms and Implementations

RF applications such as SDR, 5G/6G gNb, AIS, ADS-B, Beamforming, Modem, PNT, Positioning, SAR, DSP IP cores, FPGA IP (DSP cores, ...) and HLS

AI and Machine Learning for On-Board Data Processing

Data Analysis (classification, segmentation, selection), Datasets for Training of On-Board AI, Efficient Neural Networks, Software Tools and FPGA IP for Machine Learning Inference, Fault-tolerance in Deep Learning Algorithms, Applications for RF Payloads and Instruments, like

Signal Intelligence, Anomaly Detection, Spectrum Allocation, Cognitive radar

Validation & Verification