

# 8<sup>th</sup> International Workshop on ON-BOARD PAYLOAD DATA COMPRESSION

28-30 September 2022  
Athens - Greece



## SPACE

## Onboard payload data processing and autonomous workflows

AIX is a hybrid space ecosystem composed of an ever-expanding satellite constellation and a ground cloud-based facility enabling new mission operational concepts which will open up a wide range of opportunities for diverse stakeholders to flourish.

AIX customers can rely on at-the-edge and cloud-based EO services providing insights and information ready for their core processes, making business more efficient and effective.

AIX marketplace provides a plethora of apps that can be deployed, configured, purchased and exploited by the AIX user community.

### Design innovative & disruptive EO services:

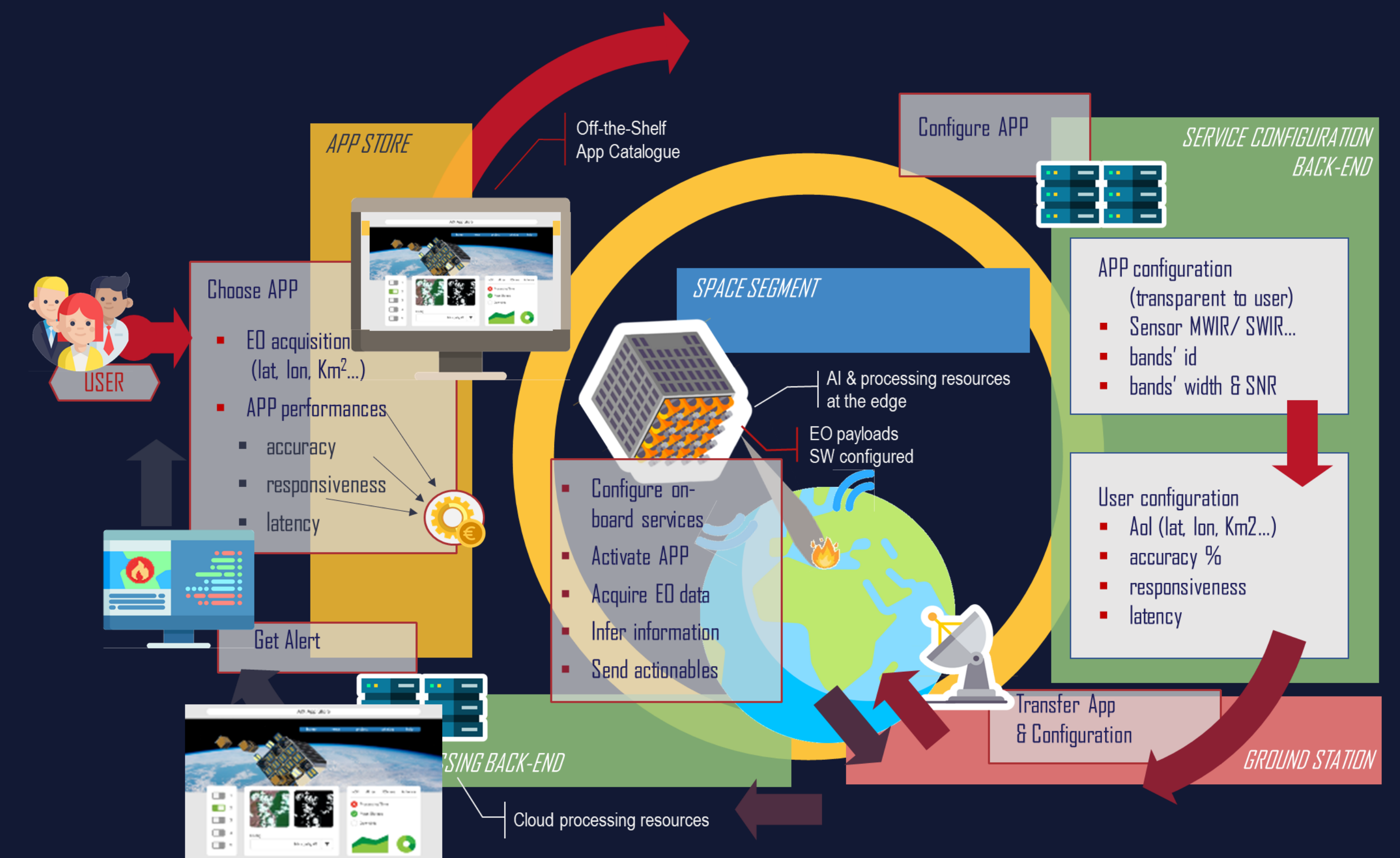
- Use and process satellite data just after sensing – at the space edge – by using all the AIX blockchain-based HW and SW onboard resources
- Experiment and develop efficient data processing workflows
- Produce timely and accurate information that customers need and at a price, they can sustain.

### Perform fast and effect IOD/IOV campaigns:

- Integrate HW & SW components onboard of AIX ecosystem

### Become a shareholder of the AIX ecosystem:

- Purchase enabling HW and SW technologies, integrate them on your own satellites and become part of the AIX federated constellation
- Embed your space technologies, sensors, memories, radios, on our constellation, to be used by all the AIX customers
- Deploy your apps on the AIX market place.



- App Store
  - The operational constellation, equipped with EO sensors and computational resources
  - Algorithms library
  - App ready for deployment and activation on-board on-demand
- Autonomous workflows & Information driven activations
  - M2M blockchain secured interfaces
  - E2E (transparent) infrastructure,
    - MO Services SW framework

## AIX a service-based approach

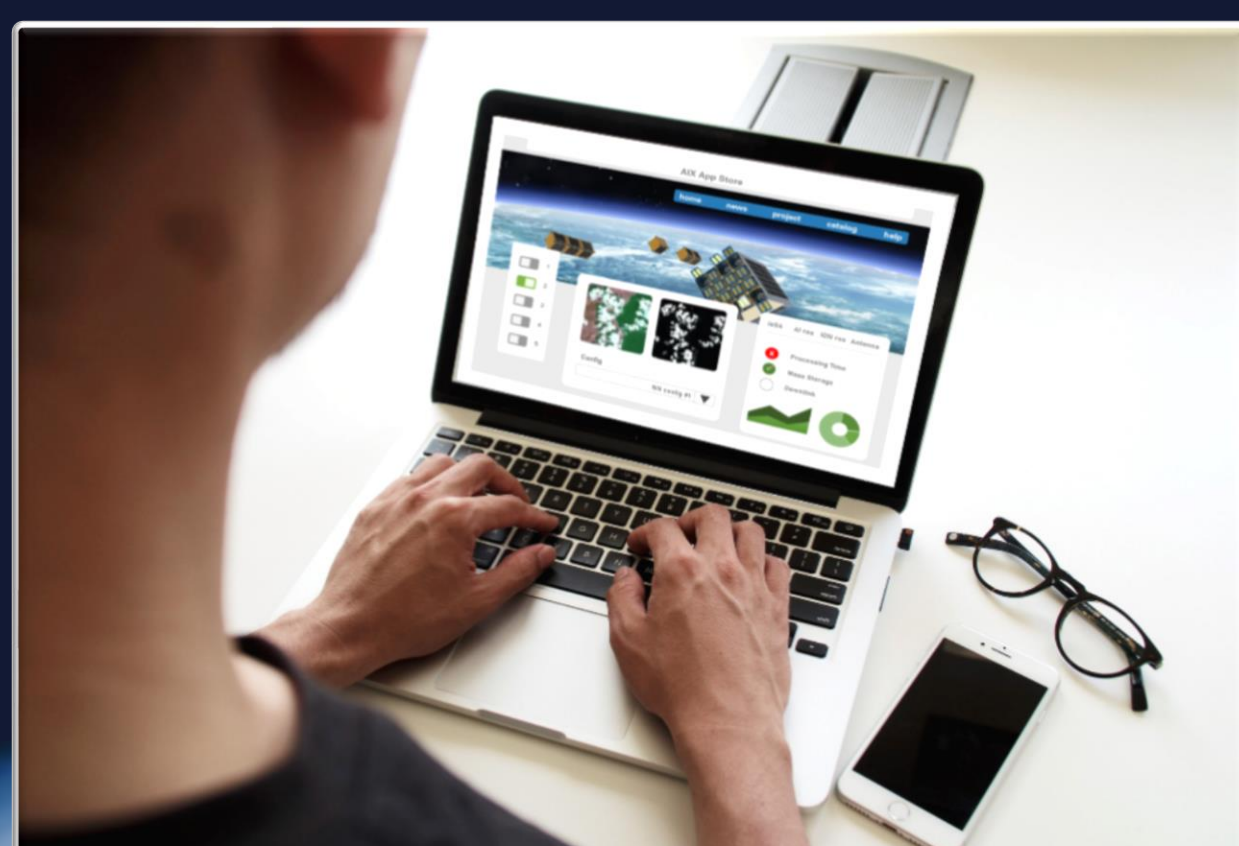
**AIX-Box** is a space-grade high-performance computing platform with an accelerator device intended for Machine/Deep Learning, plus an integrated HW security ring (an independent controller equipped with its Blockchain powered SW), plus a software framework enabling the onboard services intended for the other sub-systems and payloads.

**AIX-App DevKit** is the free SW development kit intended for the implementation of applications that are based on the framework and that can be run on any **AIX-Box**. It includes also the SW development kit, with a set of ready-made applications, and the tools allowing the development of new ones. This will enable the “app-store” selling model.

**AIX-IOD** is a set of services available on-board to support the development, testing and verification of third party's embarked payloads and science algorithms. The services are based on the usage of the spacecraft resources whose usage can be dynamically negotiated on-board thanks to Blockchain.

**AIX-On-The-Edge:** a set of services à la carte available on the “app store”. Services will include EO target scheduling, data acquisition, processing (actionable info extraction), and downlink. They can be combined to build custom applications.

Ready-made applications (e.g. a fire detection and warning service) will be available on the store.



AIX-express is an ESA InCubed activity jointly developed by:

