

# Aerospace @ GAIA-X

## Executive White Paper

*To: Members of GAIA-X AISBL*

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### **WHY IS AEROSPACE IMPORTANT TO GAIA-X?**

Being an information rich industry, **the European aerospace industry relies on intensive collaboration processes and data flows** and appears naturally as a case for increasing demands for cloud-based services. On top, intellectual property and security of the information is key to the survival of companies. SMEs are lagging behind mainly due to (the lack of) skills required for the implementation and operation of such technologies, as well as the complexity to cope with the security requirement of each OEMs, the complex regulations and processes in the aerospace industry. Therefore, we need to speed up in order to catch up with other industries.

It is critical for the European aerospace industries to

- get organized among industry participants to define, design and support implementation of such sovereign cloud services;
- foster data sharing among stakeholders and across industries;
- facilitate collaboration along program lifecycles.

In addition, any new European aerospace program (Ariane launchers, satellite systems, sustainable aircraft carbon-neutral solutions, eVTOLs, UAVs, future ATM/UTM systems, systems of systems, autonomous flight management, etc.) urgently requires **multi-tier collaboration mechanisms** among many stakeholders that will **guarantee a trusted, regulated and security-certified cloud environment** and services exempt **from extra-territoriality regulation**. Such a sovereign data space is also critical for the defense activities and European or multi-national programs such as the FCAS program. In this context, cybersecurity must be considered an indispensable prerequisite for any European data sovereignty effort such as GAIA-X.

### **WHY IS GAIA-X IMPORTANT TO AEROSPACE?**

**GAIA-X is a key initiative that both German BDLI and French GIFAS fully support** (see Appendix A). GAIA-X and European ambitions are fully aligned with the aerospace business requirements and needs. GAIA-X requires policy support in order to recognize the imperative of co-funding such a data space as no individual actor has the financial power to invest into such data space individually. **Both national associations are recommending GAIA-X to support the creation of an *Aerospace Data Space* that would enrich *Industry 4.0 and/or Mobility Data Space* with aerospace-specific security, compliance and sovereignty features.** Fundamental governance questions that still remain open and need to be answered to make GAIA-X beneficial for the European aerospace industry touch upon data ownership (IP), risk-sharing, responsibilities that come along with data collection and sharing. Harmonization/Interoperability with other data infrastructures will be also key for suppliers with customers outside of Europe.

### **HOW CAN AEROSPACE BENEFIT FROM GAIA-X?**

- Trusted document exchange and co-edition
- Interoperability for co-design and technical as well as quality data of aerospace programs with partners
- Facilitate distributed data models to streamline trusted sharing of massive data amounts for AI-driven analysis to support the development of next generation cockpit, navigation systems and more autonomous aircraft
- Co-design of product and systems and of their manufacturing and operation systems to more cost efficiently respond to customer needs and increase win ratios
- High performance computing required for ubiquitous modeling & simulation
- Trustful collaboration with supply chain and logistics in order to reduce expediting cost by optimizing across the entire value chain and address constraints early
- Aircraft or program assembly, with integrated planning and quality process to reduce access inventory of rework cost
- Reduce effort and time for certification process, continuous airworthiness and safety management over extensively long product lifecycles
- Optimized aircraft operation & maintenance, repair and overhaul with trusted data sharing of in-service operational data, flight and fleet operations
- Allow new business models for suppliers to monetize on their manufacturing and quality information
- Facilitate shorter innovation cycles through digital collaboration and determination of most effective time for introduction
- Separation of data collection and data usage to allow for cooperation among different business models and enhanced trust in cloud services
- Improve export control process through collective efforts in order to streamline export management for dual use systems and equipment
- Trusted Identity management as a key foundation for all the other use cases, and the basis of cyber security.

For the further development of an Aerospace Data Space, the working groups are orchestrating the use cases depending on their contribution to the dataspace:

- **Foundational:** illustrating the mandatory properties and functionalities (business models) that the Aerospace Data Space shall provide for the different stakeholders to engage their trust and participation.
- **Growth:** where the aerospace community expects big gains in terms of value & competitiveness - mid and longer term.
- **Shared:** where aerospace will act more as key contributors to other ecosystems, such as Industry 4.0 and Mobility e.g. As an opportunity and offer to other GAIA-X eco-systems to take advantage of the global and massive outreach of aerospace supply chains across its lifecycle/usages and of its impact on people and goods movements across the globe.

## Appendix A - WG Participants

In order to structure the Aerospace User Group, two working groups have been established with joint coordination with BDLI and GIFAS.

BDLI (Germany)	GIFAS (France)	Italy
AIRBUS	AIRBUS	LEONARDO
AIRBUS DEFENCE & SPACE	AIRBUS DEFENCE & SPACE	
AIRBUS HELICOPTERS	AIRBUS HELICOPTERS	
AUTOFLUG	ARIANE GROUP	
DIEHL AVIATION	BOOSTAEROSPACE	
HENSOLDT	DASSAULT AVIATION	
LUFTHANSA TECHNIK	LIEBHERR	
LIEBHERR	MBDA-SYSTEMS FRANCE	
MBDA-SYSTEMS GERMANY	SAFRAN	
MTU AERO ENGINES	THALES	
PREMIUM AEROTEC		
SAP		