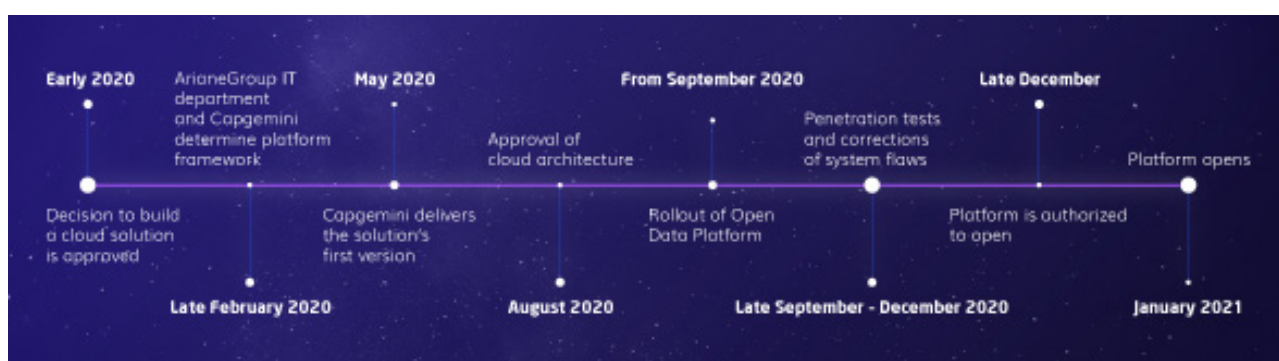# SESAME:
An Open Data Platform in the cloud era

Inaugurated last January, the SESAME Open Data Platform represents a major innovation for ArianeGroup and heralds a promising future of collaboration within the European space industry. How did this project come about ? What steps did it require ? Let's take a closer look at a small revolution that is poised for great things.

A drive to share

For the past several years, ArianeGroup has been committed to digital transformation. The SESAME project, however, signals the willingness of European space companies to create new collaborative ways of working and to reduce costs, in particular through data science.

In recognition of their initiative, the consortium of French space agency CNES, Ariane-Group and its partners received funding from the European Union's H2020 research and innovation program. SESAME focuses on use of artificial intelligence to collect and analyze diverse data in order to control and improve the assembly of Ariane 6 tanks, and to optimize management of logistics resources at the European spaceport in French Guiana. It includes, among other projects, the creation of a collaborative platform on which space industry actors can share information and work together, even remotely.

In early 2020, as part of the SESAME project, Capgemini began studying how to develop an Open Data Platform. They promptly delivered a completely novel solution in the August of the same year.

Early 2020	ArianeGroup IT department and Capgemini determine platform framework	May 2020		From September 2020	Penetration tests and corrections of system flaws	Late December	
Decision to build a cloud solution is approved		Capgemini delivers the solution's first version	Approval of cloud architecture	Rollout of Open Data Platform	Platform is authorized to open		Platform opens
	Late February 2020		August 2020	Late September - December 2020			January 2021

SESAME: The cloud is key to efficiency

The project initially consisted of a specific server in ArianeGroup's data center. It became evident, however, that such a solution lacked sufficient security and access control to Ariane servers, which host sensitive data. As the idea of a cloud solution emerged, the COVID crisis accelerated the decision-making process, and the concept seemed to be an obvious choice. To ensure project continuity, it was paramount to rapidly develop a collaborative tool that SESAME project teams across Europe could use remotely.

The platform is designed as a space that brings together industrial, academic and IT expertise, where raw data and algorithms can be shared, and above all, as a means to facilitate communication between teams and ensure streamlined operations.

It focuses on two key objectives:
- Data life cycle management, from data acquisition (capture of metrics from manufacturing robots) to usage;
- Logistics resource optimization, by ensuring that everyone has access to tools in order to optimally monitor and use equipment.

Open Data Platform : demonstration of European expertise

In essence, the SESAME project is based on the joint effort of the best and brightest individuals towards a common goal. The open data platform is a perfect illustration of such a concept. Originally assigned to Capgemini, the project took shape as a result of close collaboration between their teams and those at ArianeGroup's IT department. It entailed several brainstorming and design workshops to envision the future platform.

By working hand in hand, Capgemini and ArianeGroup were able to move beyond differences in work cultures. Working on such a major cybersecurity project was a first for Capgemini. It meant adjustments for ArianeGroup as well: the idea of sharing data on a public space would never previously have been countenanced by the company. Both entities were nevertheless able to go the extra mile to design an extraordinary and highly efficient tool in record time. It took Capgemini just a year to put together a cloud solution that fully complied with ArianeGroup's security requirements.

Cybersecurity and sovereignty: core concerns

One of the project's main challenges undoubtedly pertained to cybersecurity. Despite the platform's collaborative nature, it was necessary to protect the integrity of the stored data by setting up several security mechanisms. Capgemini established robust identification systems, ensured the prevention of information leaks during log-ins and data transfers, and addressed any risks of remote data breaches.

Data independence and sovereignty were also key project concerns. As a result, French cloud computing company OVH was chosen as platform host, and Dataiku, a French start-up, for its DSS. The idea behind this was to ensure exemption from the Cloud Act and the USA Patriot Act, but also to promote European know-how.

With the platform launch, the SESAME project teams will be able to work together even more efficiently. There is more, however, to the project's added value. The collaborative space could very well acquire greater significance in the future. A first in the European space industry, the thoroughly secure collaborative data tool is likely to inspire other applications at ArianeGroup. This type of platform could also facilitate communication between European companies in a single ultra-secure ecosystem. This cloud solution could be a bridge to a collaborative European future.