

IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)  
Interactive Presentations - IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS  
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Author: Mr. Francois Maroquene-Froissart  
France, francois.maroquene-froissart@sirius-space.com

SIRIUS SPACE SERVICES: A SUSTAINABLE AND AFFORDABLE ACCESS TO SPACE WITH A  
RANGE OF MINI-LAUNCH VEHICLES

**Abstract**

NewSpace is turning to be a new era for the Space Market as SIRIUS SPACE SERVICES is initiating a new program and innovations to promote and democratise access to space for satellites less than 800 kg. It is not only a complete economic transformation but also a technological and human revolution. SIRIUS SPACE SERVICES is changing the economic philosophy to drive sustainability and affordability : Solutions must be found to preserve the environment.

There is a need to rethink entirely the life cycle of the SIRIUS range of mini-launch vehicles to guarantee a sustainable program development. It is necessary to consider environmental impact and carbon footprint for all development activities : Conception, raw material extraction and processing, test campaigns, qualification and transportation. As for the operational phase, the SIRIUS mini-launchers will be more ecological as it is possible to promote the use of bio and green propellants and aim for a no-debris policy via the development of 100

As much as sustainability has become highly important in the NewSpace industry, the first need on the space market for a SIRIUS mini-launcher is to be affordable for clients. To guarantee an affordable price, the use of COTS and non-space systems that can be qualified during the development phase is also highly recommended as it can drive cooperation with non-space industries and lower the development cost. To minimise the launch price for a mini-launcher, it is also recommended to aim for a fully reusable system, to lower costs and support sobriety and sustainability in the production phase.

With NewSpace's evolution, competitiveness has been increasing between the actors on the space market, and it is crucial to identify the main requirements for the development of SIRIUS mini-launchers. At SIRIUS SPACE SERVICES, the project development is inherent to the space market evolution and requirements : The company is focusing on conciliating the needs of the clients and low-cost rides with ecology and is proposing to submit an abstract on sustainability meeting with affordability. The presentation will be about proposing new methods of development at early stages for conception, production, tests and operations to guarantee the sustainability of all activities in the space sector.