Organisers
Petronilo Martin-Iglesias, European Space Agency
Cesar Miquel-Espaňa, European Space Agency
Jaione Galdeano, European Space Agency

Abstract
Additive Manufacturing (AM) has the potential to change how future space products are designed, integrated and operated. This technology is considered already as a strategic technology approach for space applications. AM will enable design for performance, mass optimization and easy design changes while also massively reducing the design/manufacturing/assembly cycle/costs as well as providing an environmentally friendly alternative to conventional machining. AM is also considered as key enabling technology for miniaturisation of complex small systems.

AM can be considered a breakthrough technology for the development of RF hardware. The use of this process allows the manufacture of RF hardware to achieve enhanced performance. RF, thermal and mechanical performance can be improved by using the additional design freedom provided by AM.

The assessment of different AM approaches for RF hardware has already started and will consider the whole process chain, including design, material supply, processing, post processing, qualification and verification, and standardisation. This assessment exercise is helping to identify already those AM approaches (materials, designs, processing, etc.) best suited for the manufacturing of RF hardware.

However, the goal of AM is not to replace well known and consolidated manufacturing approaches such as milling, but to exploit the additional freedom for advanced designs. This workshop will be focused in three main aspects related to the use of AM for the manufacturing of RF hardware.

The first part will introduce the AM process and review its features. The suitability of AM for the space sector will be also addressed. In the second part, the impact of AM in satellite systems will be presented followed by the third part where some manufacturing approaches and real examples will be presented by companies and universities.