

SYMPOSIUM ON BUILDING BLOCKS FOR FUTURE SPACE EXPLORATION AND
DEVELOPMENT (D3)

Space Technology and System Management Practices and Tools (4)

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MEASURING INNOVATION: FUTURE ITALIAN TELECOMMUNICATION SYSTEMS

Abstract

Future communication satellites will require matching new demanding needs as well as developing new technologies. By forecasting possible scenarios where these parameters can match, it is possible to plan and develop effective and innovative satellites, able to provide the proper services at the right time. When it comes to designing a new communication satellite, the optimization of resources should be the major driver in selecting the most adequate technologies. Thus, building innovative and effective satellites gets through to the definition of a set of technological issues to be improved, to better meet the upcoming user requirements.

In this framework, measuring the innovation can be the defining parameter to draw the roadmap for future satellites, developing new key technologies, or making the available ones more efficient. Innovation can be measured by comparing how much we do get (output) from a satellite or a technology, to how much we do pay for it (input). If a satellite gets a higher output given the same input as another satellite, then it has a positive sign in the innovation metrics. Since several parameters can be considered as input or output, defining the right pair is seminal to set the development direction.

This paper focuses on possible innovation definitions and it applies them to the orbiting geostationary communication satellites. Thanks to a well populated database, containing all satellites launched and developed between 2000 and 2011, we calculate the parameters to be taken into account to define several innovation metrics. Innovation will be considered from different points of view: end users, service providers, owners, manufacturers. In addition, we will focus on institutional satellite services, and the Italian satellite Sigma will be analysed.

How is Italy moving toward an innovating communication satellite? In particular, by using the innovation metrics is it possible to define the requirements for the future Sigma generations.