

IAF SYMPOSIUM ON INTEGRATED APPLICATIONS (B5)
Satellite Commercial Applications (3)

Author: Mr. Francesco Morsillo
Sitael Spa, Italy, francesco.morsillo@sitael.com

Mr. Alessandro Avanzi
Sitael Spa, Italy, alessandro.avanzi@sitael.com

Mr. Alberto Corbelli
Sitael Spa, Italy, alberto.corbelli@sitael.com

Mr. Davide Cinarelli
Sitael Spa, Italy, davide.cinarelli@sitael.com

Mr. Valentino Fabbri
Sitael Spa, Italy, valentino.fabbri@sitael.com

Mr. Daniele Filippetto
Sitael Spa, Italy, daniele.filippetto@sitael.com

Mr. Gilles Mariotti
Sitael Spa, Italy, gilles.mariotti@sitael.com

Mr. Nicola Melega
Sitael Spa, Italy, nicola.melega@sitael.com

Mr. Gianni Pellegrini
Sitael Spa, Italy, gianni.pellegrini@sitael.com

Dr. Pierpaolo Pergola
Sitael Spa, Italy, pierpaolo.pergola@sitael.com

Ms. Beatrice Sabbatinelli
Sitael Spa, Italy, beatrice.sabbatinelli@sitael.com

Mr. Leonardo Amoruso
Planetek Italia, Italy, amoruso@planetek.it

Dr. Luca Cinquepalmi
Planetek Italia, Italy, cinquepalmi@planetek.it

Dr. Cristoforo Abbattista
Planetek Italia, Italy, abbattista@planetek.it

Mr. Giovanni Cucinella
IMT, Italy, giovanni.cucinella@imtsrl.it

Mr. Andrea Negri
IMT Srl, Italy, andrea.negri@imtsrl.it

Mr. Giuseppe Martinotti
Scuola di Ingegneria Aerospaziale, Italy, martinotti.giuseppe@gmail.com

Mr. Vincenzo Stanzione
Sitael Spa, Italy, vincenzo.stanzione@sitael.com

Dr. Marco MOLINA
Sitael Spa, Italy, marco.molina@sitael.com

Mr. Fabio Nichele
Politecnico di Torino, Italy, fabio.nichele@polito.it

Abstract

The satellite market is constantly requiring capability improvement in two opposite directions: the need for higher reliability and higher performances services/technologies and, on the other hand, the reduction of the overall development costs and the minimization of the qualification process duration. The natural connection between these two opposite requirements lies in offering the opportunity to demonstrate newly proposed technologies directly in the space environment: there is a need for a dedicated service able of providing regular, sustainable, cost-effective and responsive In-Orbit Demonstration and In-Orbit Validation (IOD/IOV).

Despite the number of flight opportunities that are currently available, an IOD/IOV service that satisfies the specific technical, budgetary and programmatic requirements at an acceptable risk for the technology is currently missing in the European space market.

Under the ESA ARTES Pioneer initiative, SITAEL set up a fully Italian team (SITAEL, Planetek, IMT, Tyvak) with the aim to provide a regular and cost-effective solution for IOD/IOV needs in the form of the end-to-end service named STRIVING. Able to leverage on a multitude of different satellite platforms ranging from 3U cubesats up to 200kg small satellites, the STRIVING service also includes (multi) P/L integration, spacecraft manufacturing and testing, launch, ground segment and operations, data delivery, covering a wide range of use cases: from new Telecom technologies demonstration to innovative Earth Observation strategies, from cutting-edge ground segment solutions to new or future downstream services.

STRIVING goal is to reduce the time-to-market, overcoming the lack of funds for specific development phases and, at the same time, to demonstrate key performances and reliability of the candidate technologies and services.

The paper describes the innovation introduced by the STRIVING service merging into an integrated infrastructure all activities needed to plan, organise, schedule and execute an IOD/IOV mission. The end user will only be responsible for the demonstration and validation of the proposed technology or service, while STRIVING selects the most suitable combination of S/C platforms, communication interfaces, launch services and ground segment resulting in the most efficient and cost-effective IOD/IOV opportunity.