

27th IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS (B4)
Generic Technologies for Small/Micro Platforms (6A)

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

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

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

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

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

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

STRIVING – THE FASTEST ROUTE TO IN-ORBIT VALIDATION

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. Innovative technologies are spreading throughout the world, encouraged by the availability of venture capital and the commercial opportunities enabled by Small Satellite based services. All of these have in common a paradigm at the base of the Space Economy concept: “responsive, cost-effective and sustainable innovation”.

Starting from this principle, SITAEL, Planetek, IMT and Tyvak, together with ESA and ASI in the framework of the ESA ARTES Pioneer initiative, developed STRIVING, the end-to-end In-Orbit Demonstration/In-Orbit Validation service available to both private and public entities wishing to validate their innovative technologies. 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.

Officially presented to the Space ecosystem at IAC2019, STRIVING reduces the time-to-market, overcoming the lack of funds for specific development phases and, at the same time, demonstrating key performances and reliability of the candidate technologies and services.

The paper describes the latest functionalities included in the standard STRIVING service, focusing on the higher standardization level achieved not only at service level but also at satellite level, both on the micro-satellite segment (75kg) and on the mini-satellite (200kg) segment. The maiden mission planned for beginning 2022 has now a frozen configuration, that will be presented in detail describing the technologies being validated, the validation strategy, the selected satellite platform and the ground infrastructure.