Paper ID: 66277
oral

28th IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS (B4)
Small Earth Observation Missions (4)

Author: Mr. Vincenzo Stanzione
Sitael Spa, Italy

Mr. Giovanni De Amicis
Thales Alenia Space Italia (TAS-I), Italy
Dr. Marco Molina
Sitael Spa, Italy
Mr. Vincenzo Pulcino
ASI - Italian Space Agency, Italy
Mr. Luigi Ansalone
ASI - Italian Space Agency, Italy
Mrs. Enrica Calà
Airbus Defence and Space, Italy
Mr. Maurizio Materassi
Leonardo S.p.A., Italy
Mrs. Viviana Arciuli
Sitael Spa, Italy
Mr. Giovanni Tuccio
Sitael Spa, Italy

PLT-1 SAR MISSION - PLATINO MULTI-MISSION PLATFORM APPROACHING FIRST FLIGHT

Abstract

The paper presents the development status of PLATiNO platform and its first SAR mission (namely PLT-1), after design phase completion and during its system qualification phase. PLATiNO is an Italian Space Agency (ASI) program, led by the industrial consortium composed by SITAEL, Thales Alenia Space - Italia, Leonardo and Airbus- Italia. PLATiNO platform is a new all-electric small platform product in the mini-satellites class with total mass in the range of 200-350 kg (S/C launch mass), designed to be compatible with a wide range of applications (multi-applicability feature). The platform design aspects and state-of-art technological solutions (i.e. electric propulsion for V-LEO orbits, mini-CMG for fast re-pointing, ISL for formation flying/constellations, high data rate active antenna for EO Data management) are strictly linked to the multi-purpose feature in order to provide a standard product compatible with several payloads/missions (EO – SAR, Optical – TLC – Science). PLATiNO platform consolidated (CDR) design is presented, with a focus on each subsystem (Thermo-structure, Power System, Avionics, Electric Propulsion, Communications), showing the main performances and multi-mission capabilities (Platform-to-Payload I/F, solar array configurations, optional equipment). It is also presented the upcoming first mission PLT-1, a high resolution SAR mission, based on Thales Alenia Space small-SAR, that will fly by end of 2022. PLT-1 SAR mission is composed by two different phases: the first phase (1 year) with a Bistatic mission with COSMO-Skymed and COSMO-SG at 600km altitude, the second phase (1.5 years, after 6 months re-positioning) with a Monostatic mission at 400km. PLT-1 SAR satellite will operate both in Stripmap and Spotlight modes, providing up to 5