

SPACE EXPLORATION SYMPOSIUM (A3)
Mars Exploration – Science, Instruments and Technologies (3B)

Author: Mrs. Diana Margheritis
Thales Alenia Space Italia, Italy, diana.margheritis@thalesalieniaspace.com

Mr. Maurizio Capuano
Thales Alenia Space Italia, Italy, maurizio.capuano@thalesalieniaspace.com

Mr. Enrico Andrea Nistico'
Thales Alenia Space Italia, Italy, enrico-andrea.nistico-somministrato@thalesalieniaspace.com

LAUNCH CAMPAIGN OF EXOMARS 2016 PLANETARY PROTECTION IMPLEMENTATION

Abstract

The ExoMars Programme is based on a broad cooperation between ESA and Roscosmos with some contributions from NASA consisting of two missions planned for launch in 2016 and 2018. The ExoMars 2016 mission is scheduled for launch in 2016 by a Roscosmos supplied Proton-M/Breeze-M rocket. The system consists of a Trace Gas Orbiter (TGO) which accommodate scientific instruments and an Entry Descent and Landing Demonstrator Module (EDM) and is scheduled to land in October 2016 in a non-special region of Mars. Thales Alenia Space Italy (TAS-I) is the ExoMars Industrial Prime Contractor and it is responsible of the Planetary Protection Implementation to ESA. Landing on Mars requires the implementation of a stringent Planetary Protection plan to ensure the level of bioburden contamination brought on Mars surface will comply with COSPAR regulation. This implementation covered all the aspects of the mission: design, manufacturing, integration, testing at satellite level, launch campaign and the orbital transfer phase from Earth to Mars. The project has been categorized by ESA as COSPAR Planetary Protection Category III for the Orbiter and Planetary Protection Category IVa for the EDM. Planetary Protection requirements are applied according to the mission category. Special precautions have been taken into account during the launch campaign, taking into account in detail all the ground phases until launch. Planetary Protection activities are in the final phases, with the satellite being demonstrated ready for flight. The proto-flight model is currently completing the launch campaign from Baikonur Cosmodrome in Kazakhstan.