

SPACE OPERATIONS SYMPOSIUM (B6)  
Mission Operations, Validation, Simulation and Training (3)

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EXOMARS 2016 – SUPPORT TO MISSION PREPARATION AND EXECUTION

**Abstract**

The paper describes and details the support provided by Thales Alenia Space during the preparation and execution of the Exomars 2016 mission, including both the activities related to the Trace Gas Orbiter (TGO) and the Entry, descent and landing Demonstrator Module (EDM) operations. The preparation included the continuous exchange and interface between the main actors located in various and different European countries and playing a role in the mission: the European Space Agency (ESA), the European Space Operations Centre (ESOC), Thales Alenia Space Italia And Thales Alenia Space France (each one providing different capabilities and knowledge to the program with the shared aim to ensure the mission success).

Considering that the development phase of the Spacecraft was indeed shared between the two transnational entities of Thales Alenia Space, represented by the Turin and Cannes sites, each one mainly contributing to the design of a specific module of the complete assembly (the TGO developed in Cannes, and the EDM developed in Turin), besides the obvious co-operation required during the development of the interfaces between the two modules, an additional effort has been spent in order to ensure the proper cross training between TAS-I and TAS-F engineers on the characteristics of the module developed by each entity. The approach has been implemented in order to ensure, at the maximum possible extent, the proper support on console during real-time operations, having thus the opportunity to couple at each sub-system console 1 engineer primarily expert on TGO and 1 primarily on EDM. Thanks to the cross training, each console has been then manned in such a way that in case of unavailability of one of the two engineers, the other one would have been able to provide a minimum support without discontinuation of operations.

The paper will identify possible lessons learnt that can be useful if implemented in the development of new demanding projects, especially when shared within transnational entities and provides a description of the support provided during the first phase of the mission (Launch And Early Phase, LEOP).