

HUMAN SPACE ENDEAVOURS SYMPOSIUM (B3)
ISS Utilisation (3)

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NODE 2, NODE 3 AND CUPOLA AFTER MORE THAN ONE YEAR OF ON ORBIT OPERATIONS

Abstract

Node 2, Node 3 and Cupola are now operational with the International Space Station (ISS) since their assembly and activation during the 10A (Node 2) and 20A (Node 3 and Cupola) missions occurred in October 2007 and February 2010 respectively.

These complex elements provide the ISS with specific new functionalities, basically all the life support and crew support functions as well as the enhanced capabilities associated to visibility and robotics. The arrival of Node 3 in particular allowed for major reconfiguration of the living spaces on board the space station, while Cupola brought an unprecedented point of view for the ISS robotics operations.

Thales Alenia Space-Italy (TAS-I), as part of Industrial Operations Team (IOT) is involved in the utilization phase for Sustaining Engineering of Node 2, Node 3 and Cupola in a unique experience, including the real time support during mission of visiting vehicles to Node 2, as well as support to reconfiguration activities, troubleshooting and performance evaluation.

Node 2 , Node 3 and Cupola are ESA-NASA Barter elements, therefore are now NASA property. Even if NASA is the responsible of their operations, a Sustaining Engineering agreement is in place between the two space agencies , which defines the rules and procedures for the ESA involvement and responsibilities in the sustaining engineering support to NASA.

This paper describes the relevant aspects of the European sustaining engineering support to the Node 2 Node 3 and Cupola operations and shares the lessons learned derived by this experience, for the benefit of new development projects and the following phases of utilization.