IAF SPACE OPERATIONS SYMPOSIUM (B6)
Interactive Presentations - IAF SPACE OPERATIONS SYMPOSIUM (IP)

Author: Mr. Mário Pinto
Etamax Space GmbH, Germany

Mr. Berend Semke
Etamax Space GmbH, Germany
Mr. Eduardo Gomez
ESA, Germany
Mr. Jean-Christophe Berton
ESA, Germany
Mr. Alex Wagenblast
Etamax Space GmbH, Germany

BREAKTHROUGHS IN THE AUTOMATED TESTING USING MAN-MACHINE INTERFACE OF GROUND SEGMENT SOFTWARE

Abstract

The increasing demand for quicker continuous software deliveries urges the need for test automation. High level of efficiency and representativeness can be achieved by using modular automated tests that simulate the user activity in an operational environment. Moreover, the introduction of such tests in the integration, testing and maintenance phases of the systems engineering life cycle will decrease the costs and mitigate the risks taken by the missions to adopt the latest releases of the ground segment software.

This paper introduces the Automated Regression Testing Framework on the Man-Machine Interface (MMI) of the Ground Software Systems used by the European Space Agency and provides usage examples of such framework in the context of the ESOC integration and validation activities. These activities include: end to end testing testing at the Ground Segment Reference Facility of ESOC , where ground software components can be deployed and tested in a representative mission operations environment; EGOS-CC IV team activities, on which state of the art monitoring and control software is being integrated and tested; verification of the ESOCs generic ground infrastructure software operationally using functional and confidence tests. Furthermore, foreseen enhancements and follow-up activities regarding MMI testing will be addressed.

Automated MMI system level tests successfully identified regressions and new issues, providing a concrete sequence of user interactions necessary to replicate the software problems; thus becoming representative, and, in the long term, a profitable replacement of the traditional manual tests, which are more propitious to human error and not reusable.