

SPACE OPERATIONS SYMPOSIUM (B6)
New Operations Concepts and Commercial Space Operations (2)

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TAK - TELE ASSISTANCE KIT

Abstract

The Need The exploitation of complex integrated systems based in far and inhospitable locations (e.g. Space Station, Satellite on Orbit Maintenance) requires the support of a distributed net composed of productive units, integration facilities, operation sites and maintenance teams. In general unforeseen faults or behaviours of systems may require expert technicians to travel to the remote site in order to understand and resolve the problem. The cost is not only related to the travel, but mainly related to the Time To Repair, with program and mission critical aspects, customer satisfaction and not least in the un-efficient planning of very skilled experts, busy travelling all the time or field resident abroad waiting potential issues, instead of being available for the Company for more value added tasks. This situation becomes more extreme in space environment in which becomes impossible any operation if not planned and tested on ground.

The solution Reducing the response time to minutes it is not only a question of customer satisfaction, but, in space severe environment, becomes mandatory from a safety and mission success stand point. A single expert can solve multiple situations in the same day, independently from the physical distance between the expert and the problem. The system distributes technical assistance calls to the expert entitled to support. Multi expert sessions speed up team work in trouble shooting or damage assessment. The TAK solution allows the expert to assist the remote technician, displaying him specific schematics, pictures, animations and videos, without the need of giving him a detailed copy of all the systems he has to support. A modular architecture address different specific needs, from the communication channel to the peripherals already addressable from the system under assistance, as combined thermal and visual camera, oscilloscope, wi-fi connected data acquisition and stimulation units. Augmented Reality, wearable (rugged) computing, headset with integrated see-through display and camera, adjustable bandwidth and web browser based expert interface are solid bricks building a very effective but affordable solution.