Ground-Based Preparatory Activities (13)
Ground-Based Preparatory Activities - Session 3 (3)

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SIMULATE AND TEST ON THE GROUND THE SPACE SYSTEM BY THE SOFTWARE METHODOLOGY : THE OPS SAT MODEL

Abstract

The Space as a service provides the capacity to deliver products and an access easier to the orbits. Moreover, the way to produce a SmallSat to ensure these services changes by factories, by digital platforms, by small rockets and the infrastructure updated with new requirements completed by security and sustainability. The conception of the system and the model follow a traditional cycle of IVVQ through the system tool based on the MBSE. The add-on of the software in the process provides the capacity to simulate the system and the sub-systems by using the micro-service architecture. This to prepare the building of the model and the workflow of data between the on board computer and the other sensors in Space. Some steps shall be included to improve the security of Space systems and subsystems during the design and the verification phase. These steps should be a digital environment to test the robustness of the systems and subsystems through the digital containers, the agents inside the configuration system to monitor and to test the operational scenarios. These use cases via the simulation provides the baseline to test the security and safety requirements as the CPU management, the robutness of the data processing, the on board computer configuration.