

FT-UNSHADES Maintenance

The FT-Unshades2 system is a non-instrumented, FPGA-based, fault injection emulation platform originally designed to study SEU effects on ASIC and FPGA designs (ESA contract No. 22981/09/NL/JK). The aim of the system is to help engineers improve the robustness and fault tolerance of their designs.

The present talk will describe the activities performed during the last year of maintenance of the system. The maintenance activities have been focused on bug fixing, stability improvements, and solving the needs detected by the users at ESA. New features will be described, such as the integration and enhancement of the Analog FT-Unshades, the addition of full FPGA readback capabilities, and the extension of injection coverage to Block RAM contents, which is essential for microprocessor analysis.

Finally, the first experience towards a beam-able fault injection platform with FT-Unshades will be described. The possibility of using exactly the same hardware both for fault injection and for radiation testing will help engineers and researchers bridge the gap between both worlds.