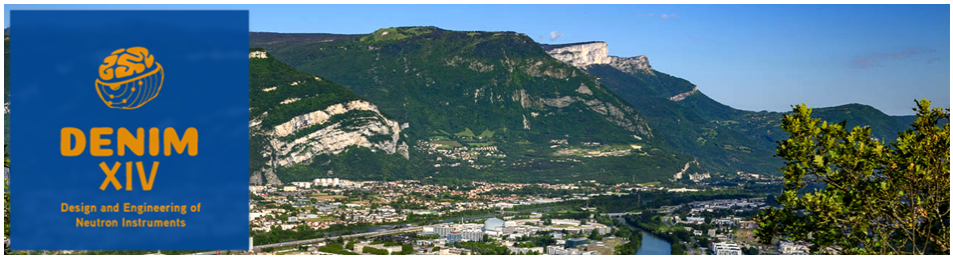

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FAT-SAT-Tools, accelerating acceptance testing

Wednesday, 22 October 2025 14:15 (1 minute)

The ESS facility has been receiving a large number of subsystems to be installed across various instruments. The MCA group has faced the challenge of performing numerous acceptance tests for all motion-related devices within a short period of time. To ensure timely delivery and maintain a high-quality standard, the MCA group has developed a testing method based on ISO standards and automated testing tools.
The subsystems consist of motion equipment powered by motors or pneumatic actuators, such as linear stages, rotary stages, slits systems, and pneumatic shutters. The subsystems are connected to test crates, which are prepared for quick connection. Software has been developed to control the motors or actuators, and a python script runs automated tests, moving the devices to various positions while simultaneously acquiring and saving time stamped data related to position and switches. Once the test is complete, another script processes the logged data and generates a detailed report containing all the necessary results to determine whether the equipment meets installation requirements.
These results are based on the ISO 230-2 standard, which specifies the performance variables required for motion systems. The purpose of ISO 230 is to standardize methods for testing the accuracy of machine tools. Specifically, this section of ISO 230 outlines test procedures to evaluate the accuracy and repeatability of positioning for numerically controlled axes.
Finally, the test results are added to the official test report and uploaded to CHESS for approval.

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