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Regression testing in the TOTEM DCS

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The Detector Control System of the TOTEM experiment at the LHC is built with the industrial product WinCC OA (PVSS). The TOTEM system is generated automatically through scripts using as input the detector PBS structure and pinout connectivity, archiving and alarm meta-information, and some other heuristics based on the naming conventions. When those initial parameters and code are modified to include new features, the resulting PVSS system can also included undesired side-effects.

In a daily basis, a custom developed regression testing tool takes the most recent code from a SVN repository, builds a new control system from scratch. This system is exported in a plain text format using the PVSS export tool, and compared with a system previously validated by a human. A report is sent to the developers with the differences observed, in view of validation.

This regression approach is not dependent on any development framework or methodology. It has been used successfully for several months proving to be very valuable as final validation before deploying a new production version.

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