SUCCESS STORY

➢ NUCLEAR ENERGY ➢

Nuclear Safety-Software under High Surveillance: IPSN Adopts PolySpace C Verifier

THE IPSN AT THE HEART OF NUCLEAR SAFETY

The IPSN performs research and brings its expertise to the nuclear energy industry, to master risks for humans and the environment. Amongst its responsibilities are safety evaluations for nuclear installations, management of dangerous materials, protection of the environment and human health, and crisis management.
In nuclear installations, its mission is the identification of new ways to improve safety in the medium and long term. Thus, the dependability of software, which ensures this safety, is one of its aims. What is more, the IPSN provides rapid support to the DSIN, which relies on the IPSN's technical expertise to conduct investigations in nuclear safety.

FASTER VERIFICATION WITH POLYSPACE C VERIFIER

While continuously improving on the means at its disposal, the IPSN has refined a set of methods and tools, grouped in a software toolbox called ATLAS.

This toolbox allows the assessment of software that is used in nuclear installations.
The method is efficient, but time-consuming, in particular for static analysis, which led the IPSN to consult PolySpace Technologies.

"PolySpace C Verifier belongs to a new generation of analysis tools" says the IPSN.
It represents "a large step forward for the verification of safety-related software". This new tool will now permit the IPSN to identify all instructions which can lead to run-time errors, such as division by zero, overflow, non-initialized variables...

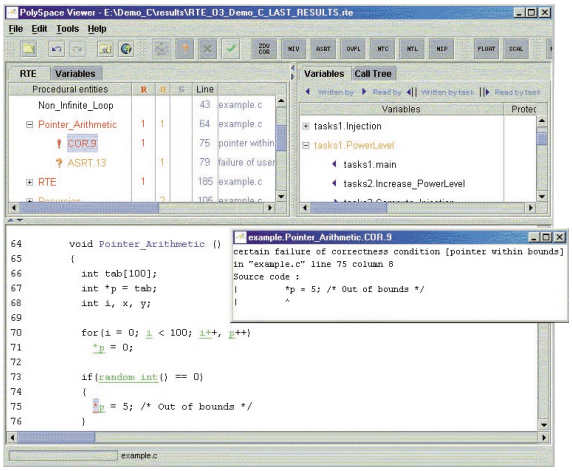
PolySpace TECHNOLOGIES

« TO PROVIDE FAST ANSWERS, WE NEED AUTOMATED TOOLS »

GAIN TIME THROUGH AUTOMATION

The experts at IPSN did not hesitate to seize this opportunity. In fact, PolySpace C Verifier is both simple to use and systematic. The time gained serves to better study the semantic aspects of the software analyzed.

PolySpace C Verifier provides exhaustive detection of possible errors, and also localization of these errors in the code. This identifies risky sections of the software, which can then be corrected or further verified.



RUN-TIME ERRORS HAVE NO PLACE TO HIDE, WITH POLYSPACE VERIFIER

IPSN now uses PolySpace C Verifier on neutron measurement applications at two 900 MWe installations. The tool from PolySpace Technologies has shown that the software is free of run-time errors (arithmetic exceptions, overflow on integer or floating point data, non-initialized variables, etc.). This shows that the scope of application domains for PolySpace C Verifier is vast, and applies to a wide number of industrial sectors, including nuclear safety.
And what a terrific mission for PolySpace Technologies to contribute to the safety of humans and the environment!

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