Press release

PragmaList: a new common laboratory dedicated to the validation of communicating systems.

Paris - France - October 22nd, 2013 - The French national nuclear research center CEA-List and PragmaDev have created a common laboratory called PragmaList. Based on the combination of two efficient tools, Real Time Developer Studio from PragmaDev and Diversity from CEA-List, PragmaList will ease and secure the design and the development of communicating systems used in telecommunications, transportation, and energy, as well as the automatic generation of validation test cases.

Complementary tools

PragmaDev Real Time Developer Studio is a real time and embedded software modeling and testing tool. CEA-LIST Diversity is a tool specialized in two areas: property verification on critical systems specification and design models, automatic generation of tests out of these models.

PragmaList common laboratory will allow to automatically generate test cases to validate models developed with Real Time Developer Studio, to integrate them in the development process and to automate their execution.

Improve validation, quality and cost of communicating systems

Real Time Developer Studio aims at easing the design of real time and embedded systems, and more generally speaking of any communicating system. For that matter PragmaDev tool is based on standards from the International Telecommunication Union such as the formal modeling language SDL, and the testing language TTCN-3. These technologies are used by major companies such as Alcatel-Lucent to develop its 4G equipments, or Airbus to design its Air Traffic Control embedded in its planes.

Diversity is a technology developed in the CEA List research center to analyse formal specification of control systems. The innovation resides in its capacity to optimize test cases in creating complementary scenarios dedicated to a specific validation objective. Based on rigorous formal techniques it automatically removes all redundant and non relevant scenarios.

When developing real time and embedded systems, architects must have a complete trust in their development process in order to meet market quality standards and certification authorities requirements.

Earning this trust requires:

- **design tools based on precise and non ambiguous standards that can be understood by man as well as by automatic analysis tools - that is the case with Real Time Developer Studio based on SDL language ;**
- **tools allowing to test the model or the implementation of a system with several degrees of coverage - that is the case of Diversity, with its automatic test case generation module.**

The combination of Real Time Developer Studio and Diversity will allow to reduce the cost of real time complex systems validation while maintaining a high level of trust necessary to the development of such systems. This new software solution, result of the combination of two tools, will complete the tools proposed to industrials from different embedded domains.

A creativity and competitiveness challenge

" *The integration of Diversity technology in PragmaDev toolset will allow our users to automatically generate a minimum of test cases covering all or a part of a model.* " says Emmanuel Gaudin, founder and CEO of PragmaDev ; " *This will allow to either substantially speed up writing the tests of a model, or to automatically generate validation tests from a reference model (Model Based Testing).* "

CEA-List has a strong expertise in digital technologies such as automatic test generation out of models. " *Since it is impossible to test all possible cases because of the combinatorial explosion, it is essential to be able to design the test cases in a robust and efficient way.* " explains Karine Gosse, director of CEA-List institute.

About PragmaDev

PragmaDev is a privately held company based in Paris France that provides a set of modeling and testing tools for the development of real time and embedded software: "Real Time Developer Studio" and "PragmaDev Tracer". Real Time Developer Studio targets all development teams working on communicating systems with a unique combination of standard languages. The PragmaDev Tracer is a free on-line or off-line tracing tool on which properties can be verified.

Real Time Developer Studio provides three levels of modeling: informal, semi-formal, and fully formal modeling. While informal modeling is mainly used for documentation, the most advanced level of modeling allows simulation, prototyping, verification, full code generation, debug on target, and test of the model.

PragmaDev has established partnership with key players in the real time domain. Customers include Airbus, Renault, Alcatel-Lucent, the French Army, the European Space Agency, Toshiba, Korean Telecom, and LG Electronics.

About CEA List

The CEA is the French Alternative Energies and Atomic Energy Commission (Commissariat à l'énergie atomique et aux énergies alternatives). It is a public body established in October 1945 by General de Gaulle. A leader in research, development and innovation, the CEA mission statement has two main objectives: To become the leading technological research organization in Europe and to ensure that the nuclear deterrent remains effective in the future.

The French Atomic Energy and Alternative Energies Commission (CEA) is a public sector research body active in four main fields: low-carbon energy technologies, information technology and health technologies, large-scale research facilities (TGIR), defense and global security. Building on a basis of excellence in fundamental research and a recognized skills base, the CEA participates in a wide range of research projects in collaboration with leading academic and industrial partners. With 16,000 researchers and other employees, the CEA is a leader in the European research community with a growing international presence. Located at the heart of the Saclay science super campus outside Paris, the CEA LIST Institute focuses its research activities on developing smart digital systems. Its R&D programs, with potentially major economic and social implications, center on interactive systems (ambient intelligence), embedded systems (architecture, software and systems engineering), sensors and signal processing (industrial control systems, health, security and metrology). By developing advanced technologies, CEA LIST contributes to the industrial competitiveness of its partners through innovation and technology transfer

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