SSEI Research Task Summary – T4

Task Number: SSEI/T4 Lead Delivery Organisation : SEIC

Project Title : Framework for Distributed Development and Integration

Research Theme : *Integration of Software Systems* Last Updated : November 2009

Objective of Work (why are we doing it ?)

Most software intensive systems are produced by supply chains which span multiple companies, and often multiple countries.
Often it is only possible to integrate software when equipment and engineers are moved to the same physical location. This typically happens late in projects, and it is not uncommon for there to be major problems at integration.

The objective is to enable software teams at geographically dispersed locations to work together on complex software integration at least as effectively as if there were no geographical separation. The improved communications should mean that many misunderstandings or issues of conflict between the designers can be resolved much earlier in the development process, leading to reduced risks and problems at physical integration.

Nature of Work (what is it?)

Remote monitoring, performance evaluation and maintenance of complex, high-integrity real-time embedded software systems is the topic for this task. The research project aims to develop techniques and a framework to allow multiple system development teams to collaborate over the Internet on the integration, testing and maintenance of systems under development and in-service, thus reducing the need for on-site customer support.

Primarily, the technical challenges are to identify the limits to which real-time embedded software can be remotely integrated over the internet, and to identify or develop appropriate real-time integration performance evaluation approaches.

Outcomes (what will it produce/has it produced ?)

This work will produce the following outputs.

- A proof-of-concept toolset, implementing a federated information infrastructure, to demonstrate transfer of large scale (and small-scale) time-sensitive data over the internet, remote monitoring and evaluation of performance and remote maintenance of operation software
- A user guideline covering novel methodologies and technologies to enable distributed development and integration

Timescales	24 month task, March 2008 to February 2010
Partners	BAE Systems, Loughborough University
Related Work	SSEI/T5
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