What is MODISTARC

Modistarc is an ESPRIT project

Esprit, the information technologies (IT) programme, is an integrated programme of industrial R&D projects and technology take-up measures. It is managed by DGIII, the Directorate General for Industry of the European Commission.

Objectives and results

The main goal of the MODISTARC project is to support the effort of the European car industry towards the development and standardisation of networking architectures. Through the OSEK/VDX consortium activities, the European industry has issued three new standards defining respectively the OSEK/VDX Operating System, Communication and Network Management. These specifications describe the applicable services and protocols and define the associated APIs. They intend to fulfil the two major goals of the OSEK/VDX initiative:

- enable portability of applications to ECUs coming from different suppliers

- enable interoperability of interconnected ECUs in a distributed automotive system

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The MODISTARC project aims to help the European car industry to keep its leading position in the network based car architectures by providing the relevant test methods and tools to assess the conformance of OSEK/VDX implementations. To achieve these objectives, the following steps have been defined:

Conformance testing methodology:

The MODISTARC partners intend to develop a conformance testing methodology adapted to the constraints of the automotive environment. A document has been issued under the responsibility of Thomson-CSF Detexis and Forschungszentrum Informatik Karlsruhe (FZI) as a conclusion of the discussions. It serves as the basis for the development of the test specifications and test tools. It is made available as an OSEK/VDX technical document. The main results will be largely advertised through publications and conferences.

Test suites specifications:

The OSEK/VDX test suites version 1.0 and version 2.0 are specified in order to allow the development of conformance tools. The specifications have been issued by FZI for the OS and by Thomson-CSF Detexis for the Communication and Network Management, with assistance of the other partners. These documents become an OSEK/VDX standard since the end of the project. Their ownership has been transferred to the OSEK/VDX consortium. They are publicly available and free of charge on the OSEK/VDX server.

Certification tools:

Certification tools implementing the OSEK/VDX test suites have been developed. They are able to assess conformance of both OSEK/VDX independent software and ECU embedded software after appropriate customisation. Certification

tools have been developed by FZI for the OS and by Thomson-CSF Detexis for the Communication and Network Management. They will be marketed and proposed to every company or organisation wishing to produce its own OSEK/VDX implementation.

OSEK/VDX implementations:

In order to validate the certification tools against actual OSEK/VDX implementations, some project partners have adapted or completed their existing implementations to make them compliant with the versions 2.0 of the specifications. Motorola does the work on their PC software. Sagem, Siemens AG and Siemens Automotive build ECU prototypes based on the layered networking architecture defined by the OSEK/VDX consortium. These prototypes will be representatives of the future products the companies plan to market.

Tool demonstration:

A comprehensive demonstration is undertaken to show the relevance of the applied conformance methodology and to validate the certification tools. Firstly, each company having produced an OSEK/VDX implementation will assesses its conformance using the certification tools. PSA has assessed the test suites relevance and completeness on a test platform interconnecting OSEK/VDX prototypes. Interoperability of OSEK/VDX implementations and portability of PSA’s test application on the various prototypes are demonstrated. A report on the demonstration will be widely broadcasted.

Relations to the OSEK/VDX consortium:

The work on the MODISTARC project has been done in close co-operation with the OSEK/VDX consortium. Most technical decisions have been taken during joint meetings with the OSEK/VDX certification group. The IIIT (Institute of Industrial Information Technology) at the University of Karlsruhe has been in charge of reporting project progress to the OSEK/VDX organisation and conversely has brought information and feedback from all other working groups to MODISTARC. Furthermore, both organisations intend to jointly participate in the promotion of the standards and tools produced by MODISTARC. This may concern the car industry or other sectors of activity inside and outside Europe.

Final Public Report on MODISTARC project:

As part of the MODISTARC project, a final public report has been compiled, shortly describing the role of the respective partners within the MODISTARC project. Each company or institution is responsable for their respective section or contribution to this document. The final public report is publicly available.