

Scientific and Technological Project

The Adèle team works in Software Engineering, more precisely on two main topics: domain specific engineering environments, and dynamic applications. In both cases, the team emphasizes real industrial issues, and adopts a model based approach.

A domain specific environment is an environment which "knows" the tools, methods, procedure and conventions shared by a group of persons, when performing specific tasks. Based on this knowledge, a Computer Aided Domain Specific Environment (CADSE) can assist and automate the work to be performed in that specific domain.

Our technology allows to generate a CADSE from a number of models describing the knowledge, its know how and behavior in a specific domain; and to build large scope and full fledge engineering environments from a composition of such specific environments.

The increasing complexity of an open world made of a large and unpredictable amount of interconnected devices and machines, requires zero management distributed applications. Future applications must be dynamic, autonomic and pervasive, which represents a serious challenge.

We address this challenge from basic service platforms (OSGi in our case), high level dynamic platforms (on top of OSGi, like iPOJO and SAM), and environments for the design, implementation and maintenance of such demanding applications. We experiment our solution in different domains like home office, electric networks etc.

Team History

The Adèle team (Atelier de DEveloppement LogiciEl) was created in the early 80s with syntactic editors as the primary research topic, and program repository as a secondary topic. The program repository soon became the Adèle configuration manager.

The original point of Adèle was a very innovative way to automatically build configurations based on a semantic selection of components satisfying some functional and non functional

characteristics. In order to validate this mechanism, the Adèle system was extended to include all the features required for a real Software Configuration Management (SCM) system. This early Adèle version was sold to the aerospace industry and was used to develop the Airbus A320 software, and later on the other Airbus and a number of flying and non flying pacific or not systems. Along the years, the Adèle system was rebuilt and enhanced a number of times, still emphasizing the large and high end systems. Along the years we have addressed virtually all the dimensions of Software Configuration Management, among others active data bases, hierarchical automatic configuration, workspace control, cooperative work, process support, versioning, interoperability and architecture, SCM/PDM (Product Data Management) integration to mention the most salient.

In the late 80s and early 90s, Adèle was considered among the three or four best SCM systems on the market (cf. the OVUM reports). This success made that Adèle was sold to a number of big companies and our publications on the topic made that we are considered among the best experts in the area.

In 1993 Adèle was bought by Dassault Systems for which we developed the largest cooperative environment of that time, with 1000 engineers in concurrence, 1 million files and a tera byte of data. In 1995, the product becoming too big for a tiny academic team, Adele right and ownership was sold to Dassault Systems, and a common laboratory was created in Grenoble. The work on the Adèle SCM system stopped in the 2000, with more than 10 000 licences sold to industry. Nevertheless the experience and the style of work established during these 20 years of work are still applied to all the works performed in the team.

In the 80s and early 90s SCM was clearly the almost unique topic. In the 90s, a major research topic, in parallel with SCM, was process support. We have developed successive versions of the APEL process support tool, used in many projects and in experimental exploitation. From the mid 90s, an underlying line of work has been related to interoperability. This topic manifests in different results, from process interoperability, to environment and tool interoperability, until CADSEs and CADSE generators. During the Dassault Systèmes collaboration, in the mid 90s, we started our work on components models and run time support. This work was rapidly focusing on service platforms (with OSGi), and more recently, its extensions toward dynamic and autonomic platforms, with as a long term goal, the “future ideal dynamic platform”.

[Joomla SEF URLs by Artio](#)