FAMA Framework[*]

Pablo Trinidad   David Benavides   Antonio Ruiz-Cortés   Sergio Segura
Alberto Jimenez
University of Seville, Spain

Abstract

FAMA Framework (FAMA FW) is a tool for the automated analysis of variability models (VM). Its main objective is providing an extensible framework where current research on VM automated analysis might be developed and easily integrated into a final product. FAMA FW is built following the SPL paradigm supporting different variability metamodels, reasoners or solvers, analysis questions and reasoner selectors, easing the production of customized VM analysis tools. FAMA FW is written in Java and distributed under LGPL License.

In [1] we presented *FAMA Eclipse plug-in* as a tool for the automated analysis of feature models that integrated three logic paradigms and their respective solvers: CSP (Ja-CoP), SAT (SAT4j) and BDD (JavaBDD). Using this tool, you may perform different reasoning operations like calculating the number of products in a SPL, getting its list of products, filtering products according to a criterion or detecting and explaining errors[2].

FAMA FW arises with the intention of allowing third parties to integrate their automated reasoning techniques into a workspace where some basic services are provided by default. Among these features we may find VM file storing, a benchmarking system to compare the performance of several reasoners and VM random generation.

FAMA FW is built following SPL paradigm so a customer may build a customized distribution only with some desirable features. Furthermore, its component-based architecture allows to extend or update FAMA FW by means of the so-called *FAMA Extensions*. Current FAMA Extensions support adding new variability metamodels, reasoners, analysis operations and reasoner selectors. Among the benefits of using FAMA FW we highlight:

- *Easy to integrate*: FAMA FW has a simple and stable Java interface, implementing a query-based interaction.
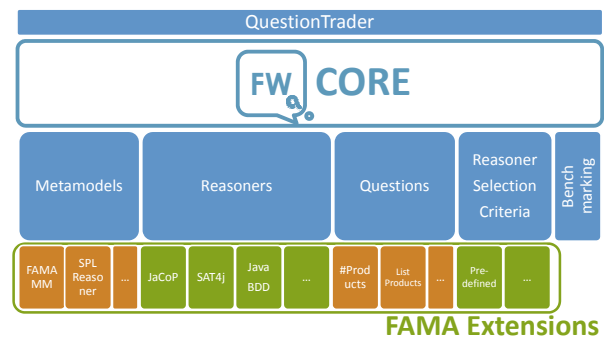
Figure 1. FAMA Framework Architecture

- *Easy to extend*: FAMA FW architecture allows to extend or update existing products just by adding or updating its components or features. Third-parties are allowed to develop and integrated their own FAMA Extensions.

- *Easy to configure*: FAMA FW is configured by means of an unique XML file, easing its maintenance and configuration to adapt the tool to the user needs.

FAMA FW is distributed as a set of self-contained *Jar* files under LGPL license. Its available at `http://www.isa.us.es/fama` where you may additionally find the related papers and companies and institutions that are currently using the tool.

We are currently working on new FAMA Extensions such as extended feature metamodels (those containing extra-functional attributes), new Reasoners as Choco, VM refactoring and merging.

References

[1] D. Benavides, S. Segura, P. Trinidad, and A. Ruiz-Cortés. FAMA: Tooling a framework for the automated analysis of feature models. In *VAMOS*, pages 129–134, 2007.

[2] P. Trinidad, D. Benavides, A. Durán, A. Ruiz-Cortés, and M. Toro. Automated error analysis for the agilization of feature modeling. *Journal of Systems and Software*, 81(6):883–896, 2008.