

# Models and Processes for the Evaluation of COTS Components

Eric Dubois

Public Research Center Henri Tudor  
29, Avenue John F. Kennedy  
L-1855 Luxembourg-Kirchberg  
eric.dubois@tudor.lu  
<http://www.citi.tudor.lu>

Xavier Franch

Universitat Politècnica de Catalunya (UPC)  
c/ Jordi Girona 1-3 (Campus Nord, C6)  
E-08034 Barcelona (Catalunya, Spain)  
franch@lsi.upc.es  
<http://www.lsi.upc.es/~gessi/>

## Abstract

*This workshop summary presents an overview of the one-day International Workshop on Models and Processes for the Evaluation of COTS Components (MPEC'04), held in conjunction with the 26<sup>th</sup> International Conference on Software Engineering (ICSE'04). Details about MPEC'04 may be found at <http://www.lsi.upc.es/events/mpec/>.*

## 1. Motivation

Commercial Off-The-Shelf software components (hereafter, COTS) play an increasingly important role in software systems development. This trend is due both to the progressive adoption of component-based software technologies by the developers community, and to the continuous creation of new communication and marketing channels that bridge the gap among providers and customers of those products.

Successful COTS-based system development requires some particular activities to be performed, among which we find COTS evaluation. This activity is one of the cornerstones of COTS selection, COTS implementation and development of cost models for COTS. Its importance and also its complexity are growing more and more due to the increasing number of COTS domains and products available (with the significant increase of open-source components in particular). As a consequence, models for representing the evaluation criteria and the evaluations themselves, as well as processes to conduct the evaluation activity, are needed.

## 2. Objectives

The main goals of the workshop were the following:

- To provide a forum in which researchers and practitioners working in the subject may share proposals and experiences.
- To stimulate discussions among participants better than just attending to talks.
- To establish a network of researchers and practitioners interested in the topic.

- To create an atmosphere able to exploit synergies for facilitating joint collaboration among different research and practitioners groups.
- To write down a research agenda with the most important issues highlighted during the workshop.

## 3. Topics

The workshop was aimed at covering topics related to COTS evaluation, from theoretical foundations to empirical studies, including the following (but not limited to):

- Formal representation of evaluation criteria (ontologies, data models, ...).
- Definition and use of software quality models for representing quality criteria.
- Management of non-technical criteria (supplier characteristics, legal issues, ...).
- Requirements-driven vs. reusable COTS evaluation.
- COTS evaluation maintainability (especially with COTS versions).
- Reusability of (parts of) COTS evaluation.
- COTS evaluation data bases.
- Third-party organizations and their impact on business processes.
- Certification of COTS.
- Selection of open source COTS.
- COTS supplier involvement in the evaluation process.
- Definition and validation of software metrics.
- Examples of use of software metrics.
- Metrics definition processes and techniques (GQM, ...).
- Methods, processes and techniques involving COTS evaluation: software quality assurance methodologies, COTS selection processes, etc.
- Actors involved in the COTS evaluation process.
- Impact of COTS granularity, COTS domain and organization type and size in the COTS evaluation process.
- Case studies in COTS evaluation.
- Tool-support for COTS evaluation.

#### 4. Types of contributions

Submissions were of four types: research papers, experience reports, tool-support descriptions and position papers. The description of these types of papers as appearing in the call for papers is included below:

- *Research papers.* The workshop is soliciting original high-quality research papers on all aspects of COTS evaluation. Papers should present original reports of substantive new work and make clear the novel aspects of the work they present and their contribution to the development of the area. They should clearly establish the research contribution, its relevance and its relation to prior research. Full papers should emphasise what is new and significant about the chosen approach and adequately compare it with similar works.
- *Experience reports.* Experience papers should describe current challenges and trends of state-of-practice in the field. Actual case studies from practitioners emphasizing how to manage the evaluation process, how to model COTS during evaluation, organizational ramifications, business impact or major improvements to the state-of-practice are especially welcomed.
- *Tool-support descriptions.* Reports about tools supporting the processes around COTS evaluation and the creation of COTS models useful for evaluation are welcome. These papers should state clearly the functionality of the tool and the current state with respect to the potential use by the community, both from the functional and technical points of view. Some figures presenting screen captions are worth to be included. Availability of the tool in some URL site will be taken into account when reviewing the paper.
- *Position papers.* Position papers are intended to allow space for preliminary work, general statements or useful experiences, which are of sufficient interest to publish, but which would not meet the review criteria applied for other papers. They are intended to allow for presentation of new developments and works in progress. Therefore, position papers should state the

author's position with respect to the current research, practice or trends in the field and therefore should emphasise topics that are particularly important at present.

Maximum length of the papers is 2 pages for position papers and 4 pages for other types of papers and are in IEEE format.

Selection was made according mainly to the following criteria: adequacy to the topics of the workshop, technical soundness, novelty, significance and potential for generating discussion. Other such as quality of presentation and clarity of exposition were evaluated just to provide recommendations for the final version of the contribution.

The accepted papers are held at the workshop URL, <http://www.lsi.upc.es/events/mpec/>.

#### 5. Workshop organization

Organization and program co-chairs:

- Eric Dubois. Public Research Center Henri Tudor, Luxembourg.
- Xavier Franch. Universitat Politècnica de Catalunya, Barcelona, Spain.

Program committee:

- Carina Alves. University College London, United Kingdom.
- Jean-Cristophe Mielnik. Thales Research and Technology, France.
- Patricia Oberndorf. Software Engineering Institute, Pittsburgh, Pennsylvania, USA.
- Carme Quer. Universitat Politècnica de Catalunya, Barcelona, Spain.
- Ioana Rus. Fraunhofer Center for Experimental Software Engineering, Maryland, USA.
- Marco Torchiano. Politecnico di Torino, Italy.
- Mark Vigder. National Research Council, Ottawa, Canada.