On the efficiency of domain-based COTS product selection method.

Abstract

- The use of commercial-off-the-shelf (COTS) products is becoming a popular software development method.
- Increasing number of available COTS components.
Introduction

- A COTS component is defined as an independent unit that provides a set of related functions and is suitable for reuse.

- CBS
  - **COTS Based Systems** - Systems that adopt COTS development as much as possible.
  - Faster delivery with lower resource costs.
Selection methods (1)

Normally classified in two categories:

- **Intuition approach**
  - Select components according to their experience and intuition.

- **Direct assessment (DA)**
  - Select components directly from their source.
  - Consider all of the descriptions and based on this takes a decision based on their suitability.
  - More objective than intuition approach.
Selection methods (2)

- Indirect methods
  - Developed by the authors of the paper.
  - Makes use of the specific domain model of the intended system.
    - Application specific domains
    - Technical classification
  - DBCS – Domain based COTS selection method.
Selection methods (3)

- COTS selection
  - Best fit strategy
    - Aims at identifying the best COTS product.
  - First fit strategy
    - Aims at identifying the first COTS product that satisfies all of the requirements.
Some DA methods:
  - **OTSO** - Off the shelf option.
    - Consists of three phases
      - Searching
      - Screening
      - Evaluation
  - **CISD** - COTS based integrated system development.
    - Identification
    - Evaluation
    - Integration
IIDA – Infrastructure incremental development approach.

- This approach combines the classical waterfall and spiral development models.
- Two phases
  - Analysis of prototype
  - Design prototype
A domain Model is connected to a CBS.
Class of COTS \rightarrow A Domain Model \rightarrow A CBS
Consists of two phases:

1. Set-up phase
   - Vendors roll out their COTS, and map them to those modules of the domain that they find applicable.

2. Selection phase
   (a) The corresponding modules in a domain model are indentified for each of the modules of the CBS in question.
(b) Identify the COTS modules that are applicable for mapping the domain model to the COTS modules.

(c) Non-functional properties of the identified COTS modules are assessed.

(d) The most appropriate COTS modules are selected.
Efficiency of the COTS selection methods

- Analyze the efficiency of the domain based COTS product selection method and the DA method.
- Best fit vs. First fit