Written by Ole Anders Walseth & Erlend Naalsund

Models for COTS / Software Reuse Development Component-Based
Mini CASE
Integrating reuse into Ericsson's RUP
development
Reuse activities in software
Ericsson (Architecture, RUP)
Reuse & REBOOT
COTS

Report Topics
Open Source (modifiable COTS)
Non-modifiable (COTS)
Internal (created within the company)

Three types of components by software vendors

Product or an entire program created
Usually components of a software
COTS = Commercial Off-the-Shelf
Either an old internal component or a COTS

WITH reuse (Use a component already stored.
stored for later use)

FOR reuse (Create a new component. Will be

Two types of reuse:

Component can be bought from vendors

Recycling components for use in a software

Reuse
Two types of reuse

Repository component to the
If modified, return the
Non-modifiable COTS
(modified)
Open source COTS
Component
An old internal
Three options:
The repository
Reuse a component from
WITH reuse

A repository
Store the component in
Functionalities?
Different from current
Needs of future users
How will the functional
Component?
Who will be likely to use
Components for reuse
Creating new
FOR reuse
called a reuse repository or a pool of components. For later retrieval. This storage space is usually
proposes a way to store components in a library
activities related directly to reuse.
development FOR and WITH reuse, to support
well as taking care of technical issues such as
An approach to organizing reuse in a company, as

Technology

REBOOT = Reuse Based on Object-Oriented

Reuse Development
advisor, is our link to Ericsson.
Parastoo Mohaghghghi, our external
more than 140 countries
been active since 1976, and operates in
company
Worldwide Telecommunications

Ericsson AS
RUP = Rational Unified Process

Developing software in iterations

Requirement management
Use of component-based architecture
Software Modeling done visually (UML)
Software Quality Verification and Change Control

The process consists of:

R/2
RUP has four phases:

- Inception Phase
- Elaboration Phase
- Construction Phase
- Transition Phase

RUP includes a fifth phase, which Ericsson uses as an adaptation of RUP.
Integrating reuse into the development process

Integrating reuse into Ericsson RUP

Applying use cases in development FOR

WITH reuse

Challenges
Are we willing to adjust/renegotiate with our vendor?

Are we willing to depend on an outside vendor vs. create decision within reuse development process 1/4

Integrating reuse into the
1. Sketch requirements
2. Component identification
3. Component familiarization
4. Feasibility study
Renegotiate requirements
Second buy vs. make decision

Development process 2/4
Integrating reuse into the
Domain Analysis:

Possible reusers and reuse domains for the components
Emerging technologies within the domain
Customer expectations of requirements
Theories underlying previous development
Knowledge obtained/captured by domain experts
Existing systems and information about their development

For Reuse
Development process 3/4
Integrating reuse into the
In the repository

Store components with documentation

Design reusable components

Integrating reuse into the development process 4/4
Integrating Reuse into ERICHSON RUP
Store use cases in repository

Use cases can be used to document components

Applying Use Cases in development FOR/WITH Reuse
cases in the reuse domain.

Make further investigation of applying use

Incorporate proposed activities.

Updating current routines at Ericsson to

Proposal for further activities:

cases in the reuse domain.

A preliminary investigation on applying use

Reuse activities proposed for Ericsson RUP

What have been done:

Conclusion