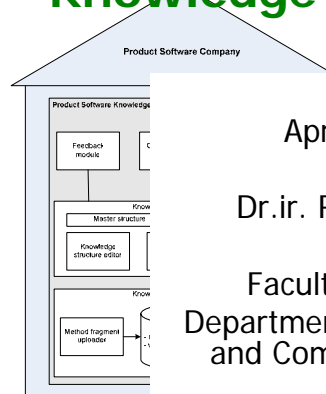




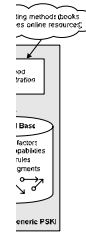
Structuring method knowledge in Product Software Knowledge Infrastructures



April 5, 2006

Dr.ir. Remko Helms

Faculty of Science
Department of Information
and Computing science



ISOC seminar: Taxonomy Management and Information Integration, 5 April 2006

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Outline

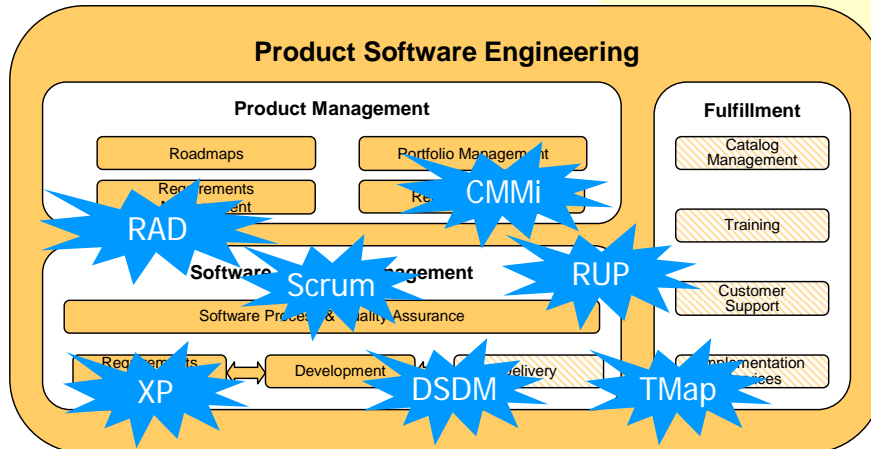


- **Introduction Product Software Knowledge Infrastructure**
- Case study: Baan
- Describing methods using Topic Maps

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Overview of Product Software Engineering



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Methods and their elementary building blocks



- A **METHOD** is an **approach** to perform a systems development project, based on a **specific way of thinking**, consisting of **directions and rules**, structured in a systematic way in development **activities** with corresponding development **products**
- A **METHOD FRAGMENT** is any **coherent building block** of a method

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Knowledge Infrastructure for Product Software companies



- Support the **capture/storage** of method fragments in a method base
- Support the **dissemination** of method fragments in the (distributed) organization
- Support the **manual selection/adaptation** of method fragments for situational methods
- Support the **(semi-)automatic selection & assembly** of method fragments based on project characteristics and assembly rules

Outline



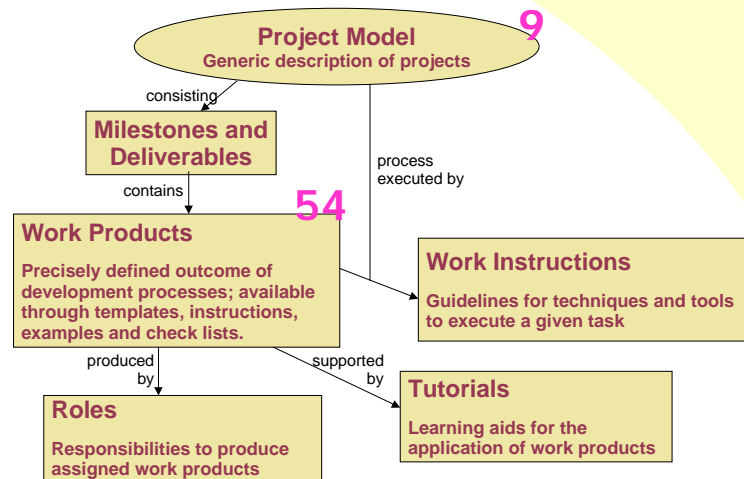
- Introduction Product Software Knowledge Infrastructure
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Case study Baan



- 1300 software developers at Baan Development
- 11 offices in NL, India, Brazil, Canada, USA, Israel
- 5 product lines: ERP, Business Intelligence, Baan OpenWorld, e-Enterprise, Supply Chain solutions
- Started early 90's to describe their software development method
- Started as a paper handbook, in 1997 decision to switch to an Intranet environment

Structure of DMethod



Homepage of Baan's DMethod

DMethod[©]

(The current edition is **Actual**. [Change edition here](#))

[what is DMethod?](#) | [search](#) | [what's new](#) | [process areas](#) | [traffic lights](#)

Click on a development phase to explore its work products or go to the [overview](#).

Go directly to the information you need by using a dropdown-menu:

Project Models (?)
Beta Evaluation

Work Products (?)
Benchmark Instruction Manual

Work Instructions (?)
Automated test tools

Links per Role (?)
Moderator

Tutorials (?)
BDM

What will be changed in DMethod? Have a look in the CR (Change Request) [database!](#)

New variants for Definition Study

Example: Project model

Milestone description

[Return to top](#)

States:
- Initial
- Preliminary
- Actual
- Historic

Milestone / work product	State
Project start	
Project Proposal (only for Common Tech)	Actual
Project plan : SWD (first edition)	Actual
Configuration Item-list	Actual
Definition study	
Definition study (first edition)	Actual
Configuration Item-list	Actual
Project plan	
Project plan : SWD (next edition if needed)	Actual
Project Evaluation	Actual
Configuration Item-list	Actual
Functional design	
Definition study (next edition if needed)	Actual
Functional design (first edition)	Actual

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Example: Work instruction



The screenshot shows a Microsoft Internet Explorer browser window displaying a web page titled "Work Instruction Customer Commitment". The address bar shows the URL: <http://www.baandev/bdm/html/editions/Actual/WorkInstructions/Customercommitment/Description.htm>. The page content includes a navigation menu with links for "Introduction", "Overall Description", "Flow Chart", "Detailed Description", and "Document Information". The "Introduction" section is active and contains the following text:

Introduction

This work instruction describes the process of making customer commitments within Baan Development.

The following types of customer commitments are distinguished that are described in this work instruction:

- Commitments on Content (what)
- Commitments on Timing (when)
- Commitments on both Contents and Timing

Purpose

The purpose of this work instruction is to define a uniform, unambiguous process of making customer commitments to customers within Baan Development by defining:

- What is a commitment?
- How and when can a commitment be made?
- Who can make commitments on content and/or on timing?
- How and by whom are commitments tracked?

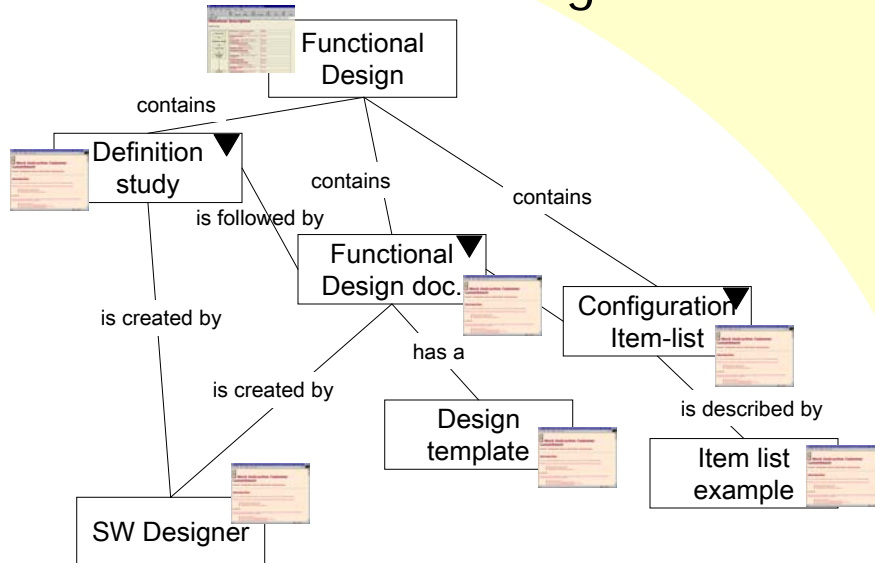
The browser's status bar at the bottom indicates "Local intranet" and the page number "11". A red circle highlights a traffic light icon in the top left corner of the page content.

Outline

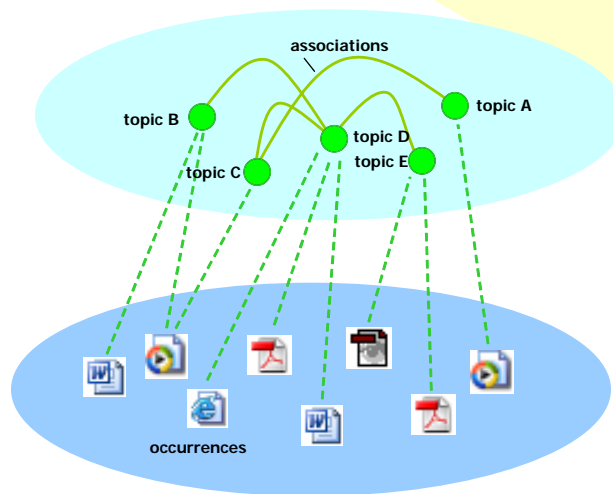


- Introduction Product Software Knowledge Infrastructure
- Case study: Baan
- **Describing methods using Topic Maps**

Method as a collection of linked method fragments



Topic maps

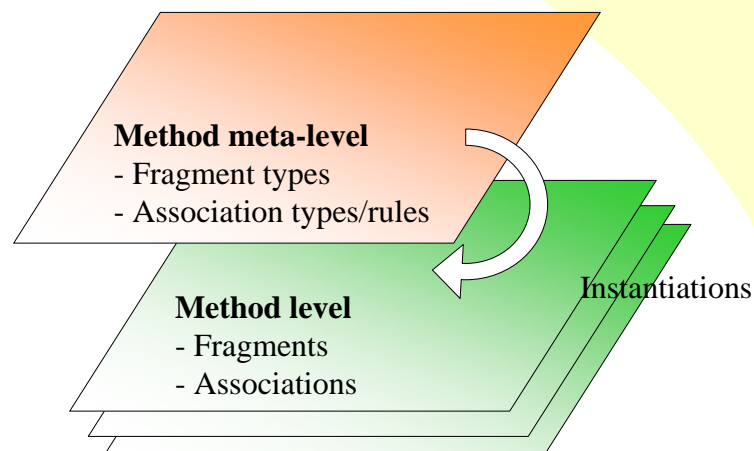


Describing methods using XTM



- *Method fragments* can be defined as *topics*
- *Links* between fragments can be defined as *associations* between topics
- *Webpages or other media* containing information on method fragments are defined as *occurrences*
- => Rather straightforward!

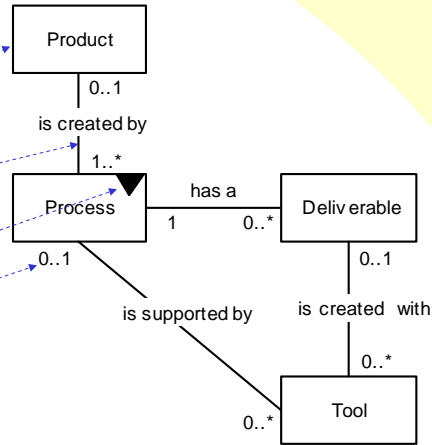
Meta-modeling of methods: structure definition of methods



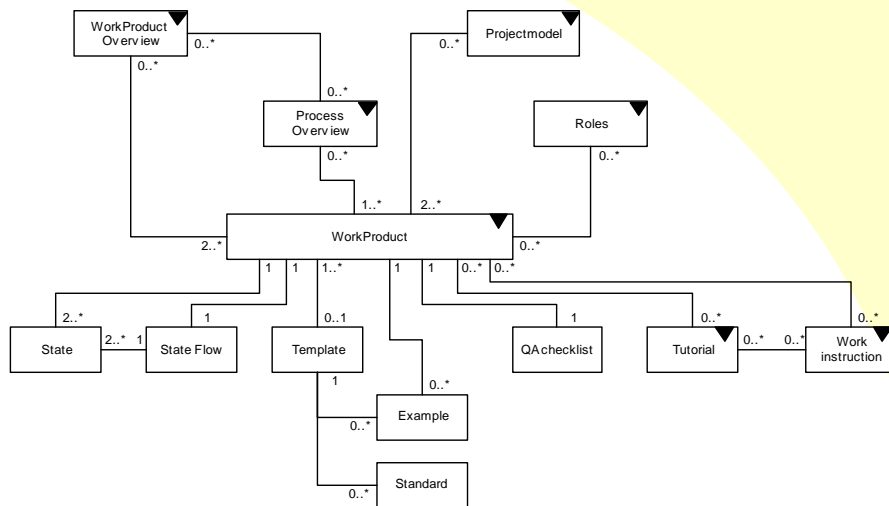
Meta-model: Knowledge Entry Map



- Concept
- Association
- Entry Point
- Rules



Example: KEM at Baan

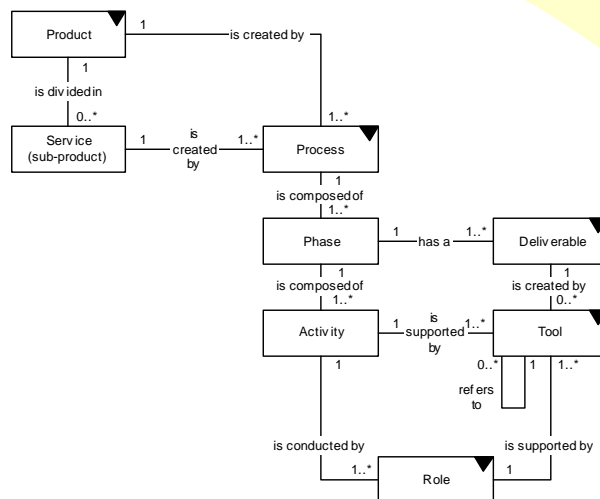


Variants & Conditional associations



- **Variant**: Different appearances of the same method fragment, e.g. a Template for a Data model: UML vs. E-R
- **Conditional association**: The existence of an association between method fragments depends on a certain condition, e.g. there should be a Template OR an Example associated to each Work Product

Example: KEM at Centric



KEM in XTM/OSL (1)



- *Concepts* can be defined as *Topic types*
- *Associations* can be defined as *Topic types*
- *Direction of associations* are defined using the *scope tag* in *Topic types*
- *Entry points* are defined as *Topic types*
- Rules are defined using OSL (association and role tag)

KEM in XTM/OSL (2)



- We did not succeed in expressing variants and conditional associations in XTM/OSL
- Alternatives might be using RDF or OWL instead

Questions?



<http://www.eternaegypt.com>

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Library

Treasures of Tutankhamun
Four

Personal Appearance and Clothing
Collection of 5 Articles

Languages and Scripts in Egypt
Collection of 6 Articles

The Royal Chamber of Tutankhamun
Article

Clothing of Ancient Egyptian Pharaohs
Article

Hieroglyphs
Article

Glossary


Book of the Dead
collection of funerary spells usually written on papyrus and placed with the deceased in the tomb in order to lead him throughout his journey in the underworld

emblem
A symbolic object used as an identifying mark.

Other Multimedia

Virtual Environment

Animation



[Click To Zoom](#)

Attributes

Culture: Pharaonic
Technique: Inlaid, Hammered
Chased
Soldered
Cast

Style: New Kingdom
Materials: Obsidian, Quartz / Rock Crystal, Lapis Lazuli, Glass, Gold

Tree

Type: Mask

Map


Location: Egyptian Museum
Created: Valley of the Kings

Timeline

Created: 1331 B.C. - 1323 B.C.
Acquired: AD 1925

Topics

Topic: Arts and Crafts, Crafts, Jewelry, Government, Leadership, Society and Culture



...ormos...

The Middle Coffin

nd with

The Gold Mas...

Winged Scarab

Diadem of Tu...