



RODAN SYSTEMS S.A.
ZARZĄDZANIE INFORMACJA



Intelligent Content Management

www.rodan.pl

TMRA'05 - International Workshop on
Topic Map Research and Applications
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Concept Glossary Manager - Topic Maps Engine and Navigator

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Presentation outline

ICONS project

Concept Glossary Manager Overview

CGM as Topic Maps Engine

Topic Maps Script Language (TMSL)

An Ontology Driven Topic Maps

Visualization and Modification

Conclusions



Intelligent CONtent Management System

<http://www.icons.rodan.pl/>



January 2002 - April 2004.

Cooperation between 7 partners from universities and industry.

Realised within the European Commission Fifth Framework Programme.

The ICONS project focused on bringing together into a coherent, web-based system architecture the advanced research results, technologies, and standards, in order to develop and further exploit the knowledge-based, multimedia content management platform.

Result: 19 modules were implemented from scratch or as an extension of the existing open source modules

CGM allows to store and process concepts and concepts' relations.

A concept is an information about knowledge element used in a target application.

Single concept can be described by:

- names and definitions written in various languages

- links to external resources

- relations with other concepts

structure of concept structure of topic

CGM is a tool which helps create, modify and visualize Topic Maps.

CGM consist of the following components:

- Topic Maps Engine

- Topic Maps Navigator

- Topic Maps Server

- Topic Maps Editor

- Touch Graph Applet

Topic Maps Editor

Concept Glossary Manager - Microsoft Internet Explorer

Plik Edycja Widok Ulubione Narzędzia Pomoc

Wstecz Wyszukaj Ulubione Multimedia

Adres an&port=8085&mode=navigator&url=http://217.153.47.167:8080/cgm/&topic=101_2%7C102_0%7C103_1%7C102_3%7C7%7C102_4%7C1887 Przejdź Łącz

mysql on localhost selected topic map: **ICONS Ontology**

Providers Topic Maps Topics

<all Scopes> Refresh Add...

Selected Topic

Base name: Concept Dictionary Manager
Subject: http://www.rodan.pl/xm1.0/psi/topic_cgm
Topic Id: 1887

Names	Occurrences	Associations	Types	Subject Indicators
Scope	Type	Resource Data	Is remote	Location
	DEFINITION	The concept glossary manager is a module that takes car...	false	
	Website		true	http://ser04.rodan.pl:8081/icons/c...

Acronym
Actor
Application data
APPLICATION-SOFTWARE
ASSOCIATION TYPE
Automatic Text categorization
Bart training
Business process
Business rules
captures
CAPTURING
CATEGORISATION-ENGINE
CATEGORIZATION-MODE
CKO
CLASS
CLASS-INSTANCE
Collection Objects
Complex Adaptive System
Component
CONCEPT
Concept Dictionary Manager
Concept Glossary
Conceptual tree
concrete part
concrete whole
Content

Add occurrence Delete occurrence Change occurrence

Applet pl.rodan.icons.cgm.dialogs.TopicMapEditor started Internet

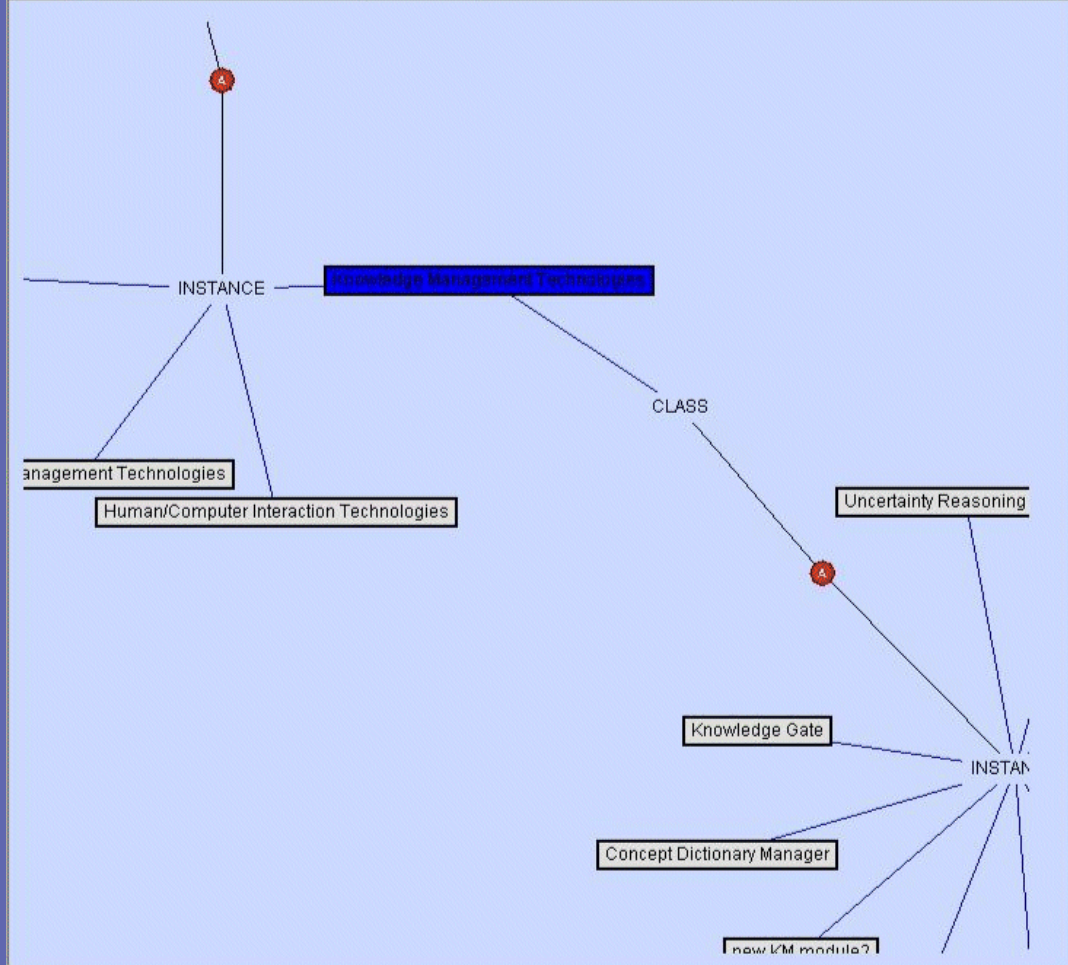
Touch Graph Applet

Concept Glossary Manager - Microsoft Internet Explorer

Plik Edycja Widok Ulubione Narzędzia Pomoc

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Adres: an&port=8085&mode=navigator&url=http://217.153.47.167:8080/cgm/&topic=101_2%7C102_0%7C103_1%7C102_3%7C7%7C102_4%7C1795



Menu Search Navigate Edit

Knowledge Management Technologies

Knowledge Management Technologies
KM Technologies

def: A layer of modules, that builds services in the advanced knowledge managment area.

Inst:

Concept types:
[CONCEPT](#)

Relations:

CLASS

(INSTANCE) [Knowledge Schema Manager](#)

(INSTANCE) [Structural Knowledge Navigator](#)

(INSTANCE) [Uncertainty Reasoning Engine](#)

Applet pl.rodan.topicmaps.gui.touchgraph.GraphLayoutApplet started

Internet

Java API

Implementations: „buffered”, „memory”, „jdbc”, „remote”, „filtered”.

Useful features: XTM import/export, hierarchies support, full text search, Tolog, XMI import/export

Advanced features:

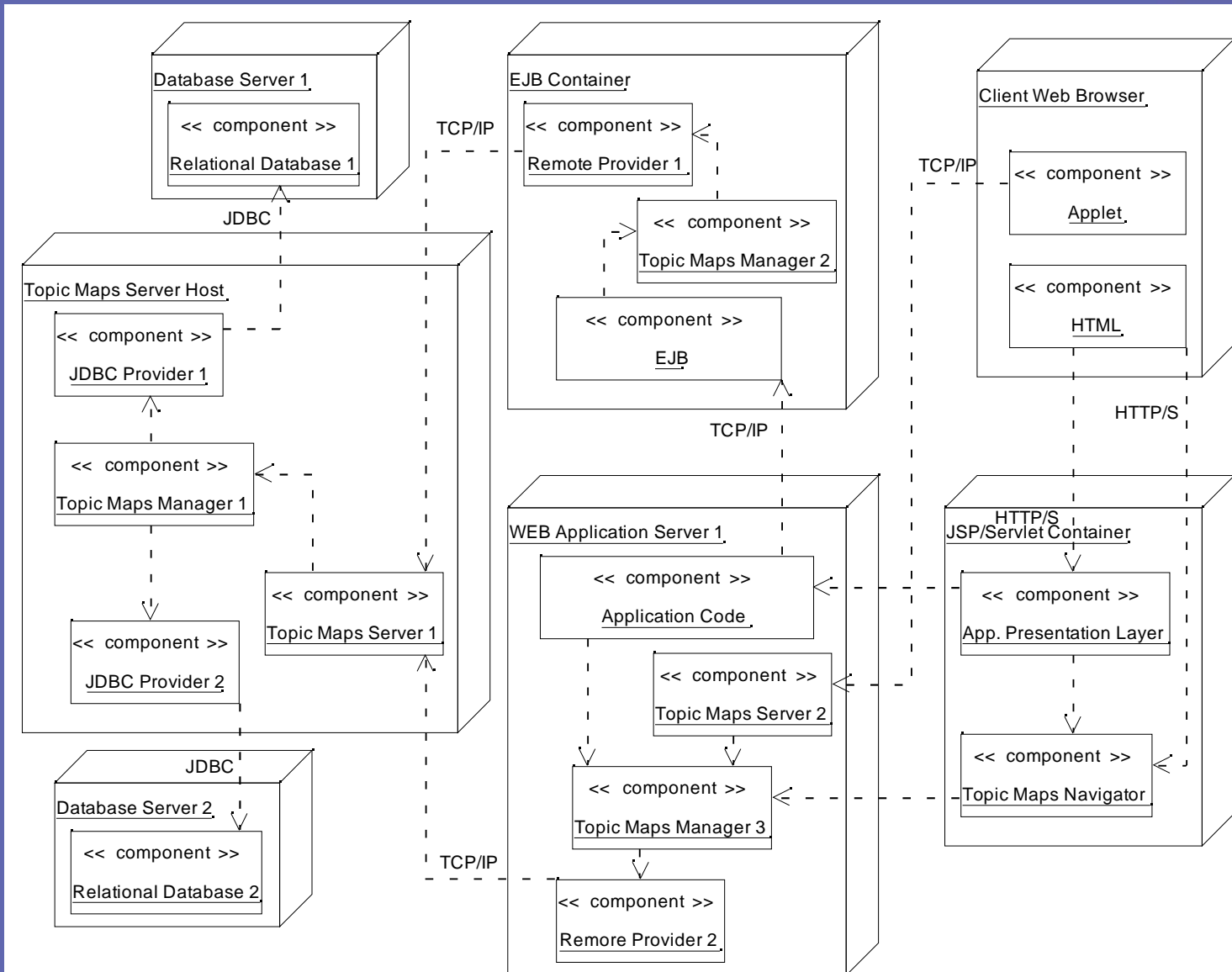
- Distributed computing

- User Rights Management

- Topic Maps Script Language (TMSL)

- Versioning mechanism

Distributed Computing



Created with Poseidon for UML Community Edition. Not for Commercial Use.

„Filtered” implementation executes user rights on the Topic Map’s content.

User right types: view, create, remove, modify, modify types, activate, deactivate

...

A set of associations between users, user groups, topic classes, association classes, right types and hierarchies defines user rights.

Additional features: topics and associations owners, rights to the user’s account, rights to the topic characteristics.

Main assumptions:

- TMSL bases on Java grammar

- TMSL embeds constructs from TMQL and TMCL

Implemented prototype:

- Uses ANTLR (extends java.g grammar)

- Supports almost all Java constructs

- Supports a SELECT expression from the TMQL

- An execution context can be extended by a programmer

- Many functions are already added: TM modification functions, math operations, strings operations, arrays operations, etc.

Example TMSL based TM validator

```
action = getValidationAction();
if (action == "create" || action == "makeActive" || action == "modify")
{
    using mytm for i"http://www.rodan.pl/psi/mytm#";

    ass = getValidatedAssociation();
    oldAss = getValidatedAssociation(false);
    person = rolePlayer(ass, mytm:person-assigned-to-category);
    category = rolePlayer(ass, mytm:category-assigned-to-person);
    personRole = rolePlayer(ass, mytm:role-of-person-in-category);

    if (personRole == mytm:investigator){
        table = select count($UNIT) where
            mytm:employment(
                person : mytm:employee,
                $UNIT : mytm:employer,
            ),
            mytm:unit-categories(
                $UNIT : mytm:unit-having-category,
                category : mytm:category-belonging-to-unit,
                mytm:main-unit: mytm:unit-function-for-category
            );
        if (table[0][0] == 0){
            return "Investigator must be employed "
                + "in the main unit of the category!";
        }
    }
}
```

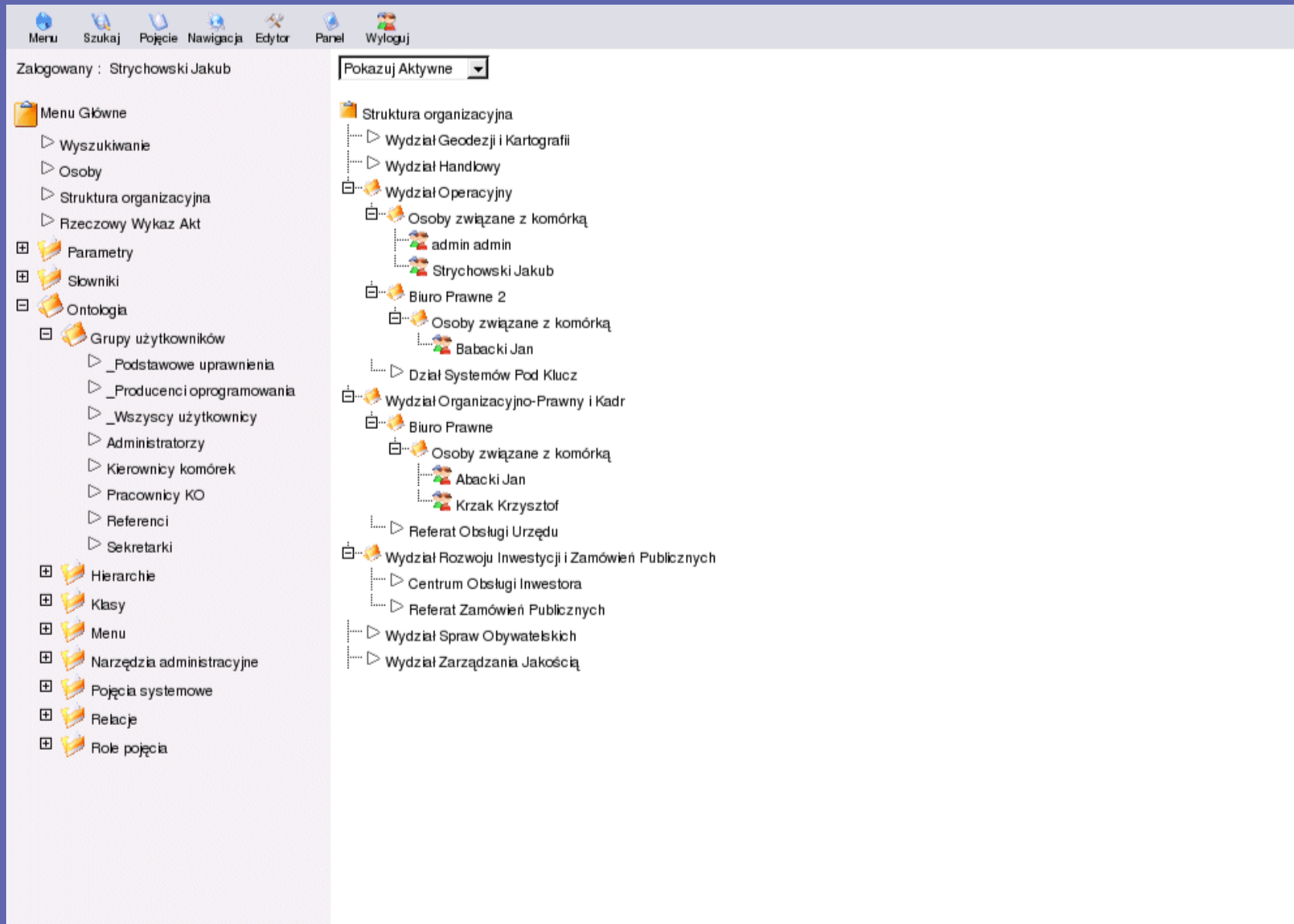
A modification of the topic map's content could be very hard for a user who might not even be aware that such standard as "Topic Maps" exists.

Part of the Topic Map called an ontology defines the structure of the knowledge represented in the Topic Map.

Topic Maps Navigator uses ontology to generate specialized interfaces for visualization and modification of the topics and associations.

The ontology controls also navigation.

Main Menu and example hierarchy



The screenshot displays a web application interface with a main menu on the left and an organizational hierarchy on the right. The user is logged in as Strychowski Jakub.

Main Menu (Left Panel):



- Menu Główne
 - Wyszukiwanie
 - Osoby
 - Struktura organizacyjna
 - Rzeczowy Wykaz Akt
- Parametry
- Słowniki
- Ontologia
 - Grupy użytkowników
 - _Podstawowe uprawnienia
 - _Producenci oprogramowania
 - _Wszyscy użytkownicy
 - Administratorzy
 - Kierownicy komórek
 - Pracownicy KO
 - Referenci
 - Sekretarki
- Hierarchie
- Klasy
- Menu
- Narzędzia administracyjne
- Pojęcia systemowe
- Relacje
- Role pojęcia

Organizational Hierarchy (Right Panel):

Struktura organizacyjna

- Wydział Geodezji i Kartografii
- Wydział Handlowy
- Wydział Operacyjny
 - Osoby związane z komórką
 - admin admin
 - Strychowski Jakub
 - Biuro Prawne 2
 - Osoby związane z komórką
 - Babacki Jan
- Dział Systemów Pod Klucz
- Wydział Organizacyjno-Prawny i Kadr
 - Biuro Prawne
 - Osoby związane z komórką
 - Abacki Jan
 - Krzak Krzysztof
 - Referat Obsługi Urzędu
- Wydział Rozwoju Inwestycji i Zamówień Publicznych
 - Centrum Obsługi Inwestora
 - Referat Zamówień Publicznych
- Wydział Spraw Obywatelskich
- Wydział Zarządzania Jakością

Menu Szukaj Pojęcie Nawigacja Edytor Panel Wyloguj

Osoba
 **Krzak Krzysztof** 

Szczegóły

Nazwy

Pełna nazwa osoby:	Krzak Krzysztof
Imię:	Krzysztof
Nazwisko:	Krzak
Drugie imię:	
Konto użytkownika:	krzakk
Hasło:	***

Atrybuty

Telefon:	
Fax:	
email:	
Opis: [j.polski]	
Strona Internetowa:	http://
Dostępny:	tak
Pojęcie aktywne:	tak
Stanowisko:	Dyrektor
Data utworzenia:	2005.07.01 21:45:27
Data dezaktywacji:	

Globalny Identyfikator:	http://www.rodan.pl/psi/Osoba/Krzak Krzysztof
ID:	101_1 102_2 103_0 102_3 1 102_5 574
Typy:	Osoba

Creating association

Menu Szukaj Pojęcie Nawigacja Edytor Panel Wyloguj

Osoba
Krzak Krzysztof

Nowa relacja typu:
Związek osoby z komórka organizacyjną

Osoba związana z komórką organizacyjną: Krzak Krzysztof

Komórka organizacyjna związana z osobą:

Rola osoby w komórce:

Utwórz Anuluj

- ▷ Funkcje systemowe
- ▷ Grupy użytkowników
- ▷ Komórki organizacyjne
- ▷ Kompetencje
- ▷ Podwładni
- ▷ Pozycje RWA
- ▷ Przekłżony
- ▷ Szczegóły
- ▷ Zastępstwa
- ▷ Zmiana hasła

Conclusions

The generative, ontology driven user interfaces allows rapidly develop applications responsible for a declarative knowledge management.

Some novel features like user rights management, ontology driven topic map management in the Web environment, and TMSL could be very helpful in real life applications.

Smart, generative, ontological user interfaces available within the CGM Topic Map Navigator could considerable decrease development time.

Thanks to CGM, the first version of the EWD-P system was developed in 4 months. More then 35% acceptance test cases for the whole system based on the Topic Map Navigator

Thank You For Your Attention !

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