

Tools for Requirements-Centered Collaboration

Group 1

Problems with distributed requirements management

- Time-zone differences
- Cultural differences
- Knowledge is fragmented
- Loss of knowledge
- Requirement defects creep in
- Information doesn't reach right people in right time

EGRET

Server side

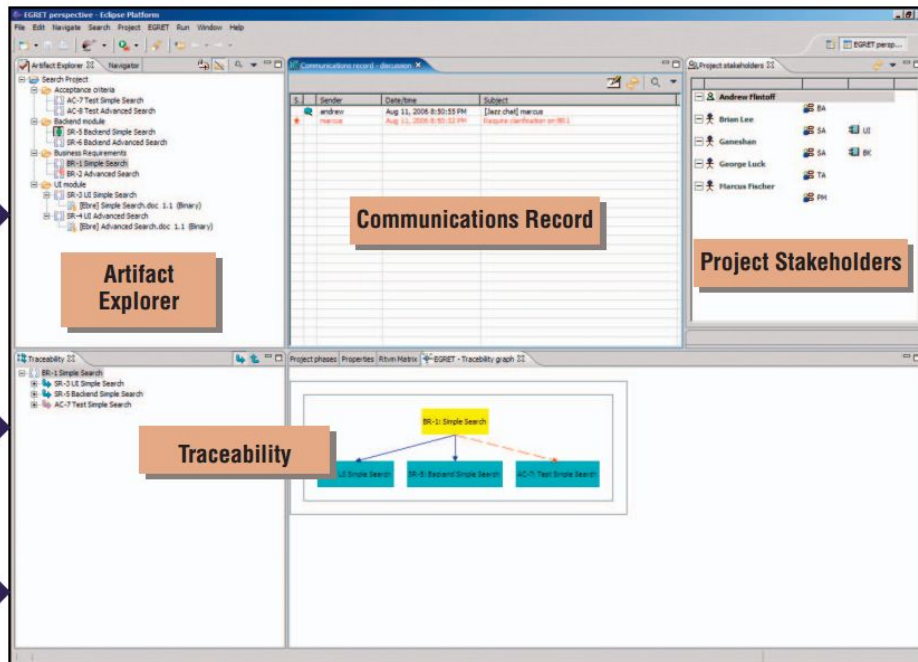
MySQL database

- Requirements data
 - Name, text, hierarchy
 - Traceability
- Communication data
 - Discussions, change notifications, requests
- Change log
- People and project information
 - People, role, responsibility, project phases, modules

Jazz Server for
synchronous communication

CVS for document sharing

Client side



Key features

- Synchronous and asynchronous communication about specific requirement
 - Stays in context
- Requirement owner manages all changes to a requirement
 - Gets directly notified if changes are requested
- Stakeholders of related requirements are notified when a related requirement is changed
- Notifications carry rich contextual information
- User can subscribe to any requirement

Business analyst

Requirements repository

Change request/
notification
submission
module

Stakeholders repository

Requirement owner
(e.g., system
analyst)

Requirement
awareness
module

Other connected users
(e.g., project
manager)

Requirement
edit process
module

Traceability repository



Select
requirements
Requirements

Submit change request (CR) on
selected requirements

Query for
stakeholder to
route request to

Stakeholder

Route request to stakeholder

Signal pending CR

Mark
requirements
with pending
requests

Edit requirement,
link edit to a CR

Save requirement version

Mark CR as completed, link to new
requirement version

Require-
ments

Send change notification to
related stakeholders based
on traceability information

Find related
requirements

Route notification to stakeholder

Signal pending notification

Mark
requirements
with pending
notifications



Test analyst

System analyst,
business analyst

Other connected users
(e.g., project manager)

Requirements repository

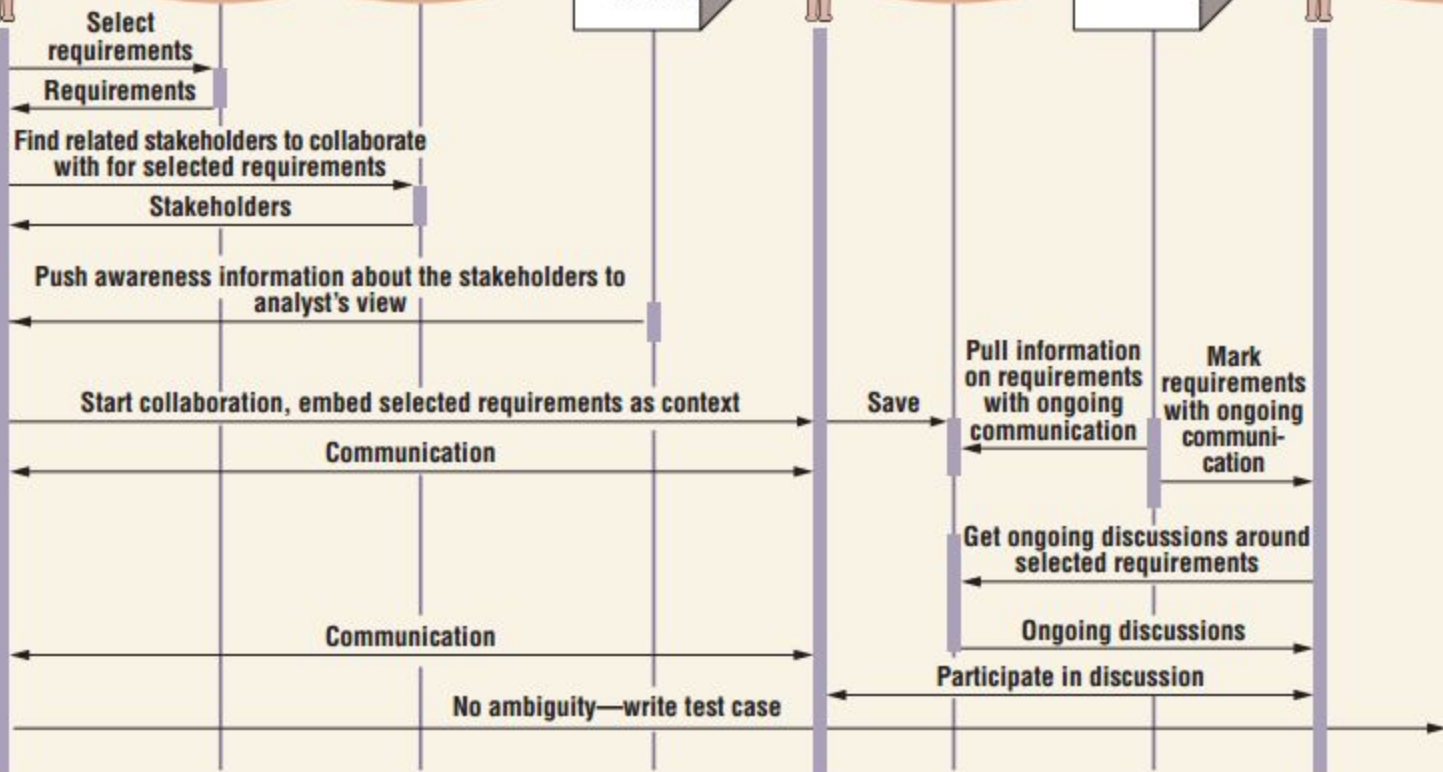
Stakeholders repository

Stakeholder awareness module

Communication repository

Requirement awareness module

Test cases repository



Wiki-Based Stakeholder Participation in RE

- Stakeholder Participation improves quality of requirement products
- Stakeholder challenges
 - Different perspectives on system under development
 - Different backgrounds => communication problems
 - Different objectives => influence views on requirements
 - Different involvements

German researchers investigated how to adapt the wiki approach to support active stakeholder participation in RE

- Low cost and mostly open source
- Features: easy page linking, page-history capture

Wiki as RE tool

Flexible collaboration platform but the moderator has to provide:

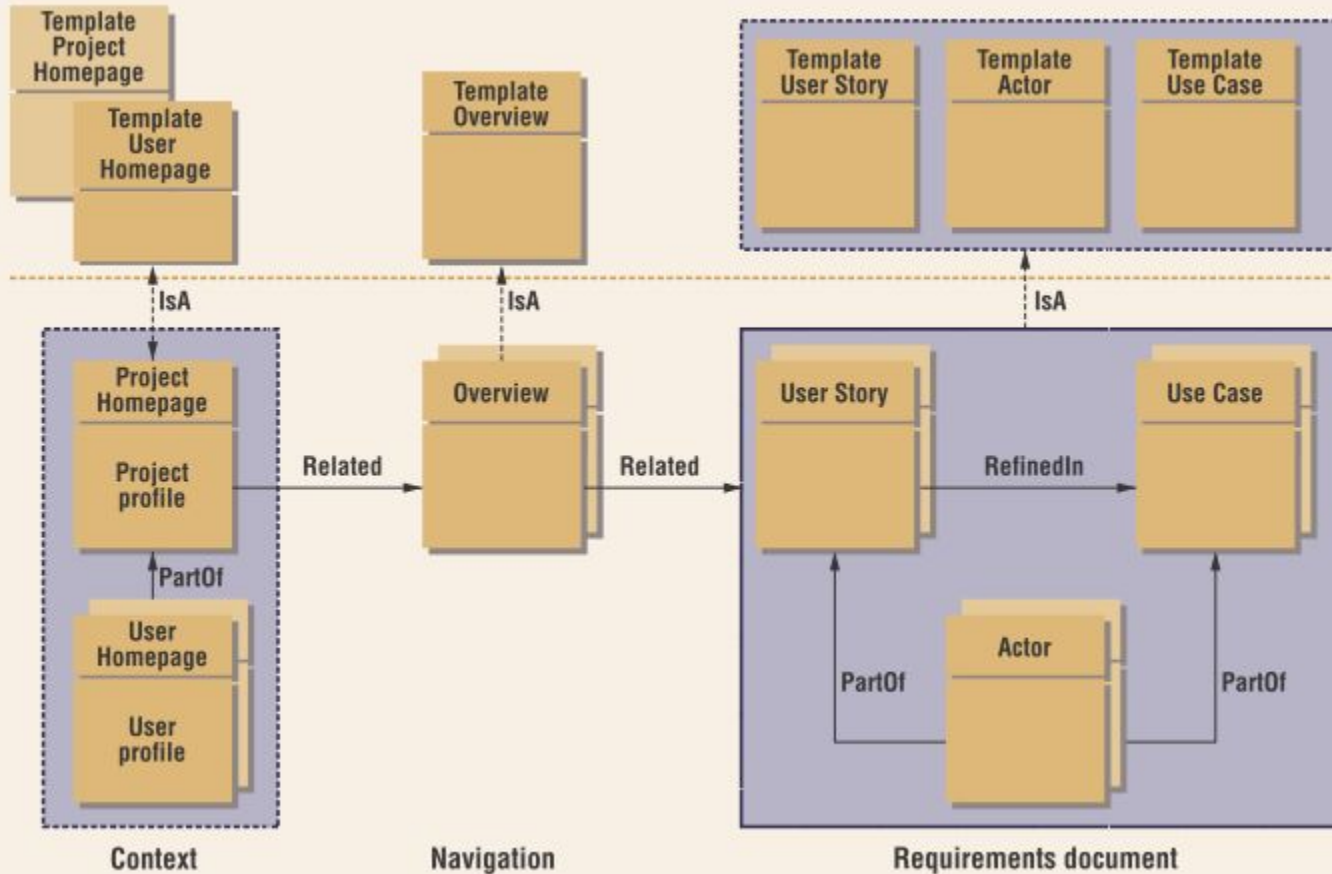
- General structure for RE topics
- Templates for contributing content
- Overviews (new pages, undefined pages, insufficient linking, orphan pages)

Stakeholders must agree on rules for using the wiki and for reaching decisions about requirements.

Handling conflicts and misunderstanding

- No direct means for handle these problems
- Use indicators (edit wars, old pages overview) to uncover conflicts

Document structure





Bearbeiten von UseCase1

Sie sind Mitglied des aktuellen Projektes

Sie bearbeiten diese Seite ohne angemeldet zu sein. Statt eines Benutzernamens wird die IP-Adresse in der Versionsgeschichte aufgeze



IESE-Extensions

Keine Projektabhängigkeiten gefunden, die aktuelle Seite wird zu keinem Projekt gehören.

```
==Level==  
==Primary Actor==  
==Scope==  
==Preconditions==  
==Main Success Scenario==  
==Extensions==  
==Stakeholders and Interests==  
[[is_A::Use_Case]]
```

Document templates can be defined. When a template is selected, a new document based on the template is created

Based on the template a document belongs to, links to relevant pages are provided

Links

Actors

Regulaerer Nutzer

Anforderungsingenieur

Entwickler

Projektmanager

Knowledge-Administrator

[[has_Author::Knowledge-Admin

Use Cases

UseCase_Freeze_/Unfreeze

UseCase_Link_Harvester

UseCase_Renaming

UseCase_Version_Tagging

Neue Relationen

subHierarchy

Has_topUC

Navigation

- Hauptseite
- Projekte
- Produkte
- Mitarbeiter
- Wissen
- Kunden
- Prozesse

Aktivitäten

- Aktuelle Ereignisse
- Neue Seiten
- Letzte Änderungen
- Meistverlinkte Seiten

Administration

- Zugriff und Nutzer
- Spezialseiten
- Sidebar ändern

Lernumgebung

- Metadaten verwalten
- Lernelemente bearbeiten

Hilfe

- Hilfe
- FAQ

Suche

Artikel

Suche

Werkzeuge



SOP (Software Organization Platform)

- Usage:
 - Use cases: between developers and managing team
 - Project management and installation issues
- Success evaluation:
 - Students gained insights they would not have obtained using verbal communication
 - SOP-Wiki supported development activities
 - 9/14 Students: RE benefited from SOP-Wiki, Only 6/14 Students: It saved RE effort
- Problems
 - Versioning across several pages: -> link harvester and freeze, version tagging
 - Exporting the content of wiki pages: -> extension creating open office documents
 - Restructuring content: -> Semantic MediaWiki extension
 - Multiple page (re)classification: -> Text-cast, RegExp
 - Replication of wiki content

Discussion

Discussion

- Have you ever worked in a distributed project? What tools did you use for requirements management?
- Could you imagine working with a wiki based RE tool?