TripCom Implementation Plan: the 2nd

Elena Simperl, component developers and their friends

April 28, 2008

Problem statement

- Functionality of the 2nd TripCom prototype is even more underspecified (in the technical annex) than it was the case for the 1st prototype
- Timelines and work plans in technical annex are not written in stone, especially when it comes to late stages of a project
- Without a clear specification plus refined timeline we risk to
  - Loose focus
  - Disapoint the use case partners

In theory everything is almost perfect

- In Innsbruck the use case responsibles David & Dario confirmed that the 1st TripCom prototype provides almost all functionality required to implement the use cases

- ALMOST = David needs local transactions before M28

David‘s EAI

Sixth Framework Programme Priority 2
Information Society Technologies (IST)
Specific Targeted Research Project

Data Generation Plan

- We have a set of DB for different content types
- For actors we will create data from the scratch (not a great amount of data)
- 2nd Version of the ontology available
- Ontotext to generate instances
  - Onto to provide sample queries
  - TID has to provide mappings from DB schemas to ontology attributes (document)
  - Onto to build and execute queries to generate instances?
- Deadline: End of January

Implementation Plan (I)

- M28 First Implementation
  - Front-End Component
    - First Prototype ready by middle of January
    - Web portal to access functionalities
    - Other interfaces planned if possible (i.e: mobile)
  - Back-End Component
    - WSDL of Web services defined
    - Translations Java-RDF for WS invocation to be scheduled (inside WP4?)
    - Invocations to TS API to be defined (policies change as well)
  - Ontologies
    - First version available: User and DAM versions
    - NUIG will refine them and relate to EDI ontologies
    - Ontotext is generating instances from sample DB

Implementation Plan (II)

- End of the project
  - Refinement of Use Case functionalities
  - Application for deployment purposes (M28 prototype refined)
  - Thin clients for validation purposes
    - Simulation of a real scenario
    - Performance and scalability tests
    - Objective: to derive some conclusions about TripCom's infrastructure which can be useful for exploitation purposes

Requirements (I)

- 2nd year review
  - A demo can’t be focused on TS functionalities
    - Out and in functionalities won’t allow us to show underlying business logic
    - Will SPARQL API will be ready?
    - We will be able to show part of the interface and planned functionality (we can simulate it)
    - Documentation or instructions to integrate first prototype with the use case implementation

Requirements (II)

- Functionality that will be called by the Use Case
  - TS Functionality
    - Extended querying mechanisms
    - Creation / deletion of spaces
    - Multiple reading/writing
    - Subscribe/notify
    - Completeness in a subspace is needed (i.e: return of all valid bids is critical)
    - Transactions would be desirable for realistic scenario
  - Security
    - API to define and change policies

Dario‘s eHealth

Sixth Framework Programme Priority 2
Information Society Technologies (IST)
Specific Targeted Research Project

1st Prototype

- Focus on demonstrating Triple Space capabilities
  - EPS Adapter
    - EPS logic for using MNGT API and TS API
    - RDF grounding component already available
  - HTML Mock-ups of external applications
    - Directly communicate using WSML messages
- WS API
  - WSMX Integration for SWS is planned after M28
  - Asynch invocation of WS is planned after the Review

1st Prototype numbers

- 3 Kernels
  - England Health Authority
  - South-Tyrolean Health Authority
  - Italian Health Authority
- 4 Actors
  - English General Practitioner
  - South Tyrolean Dentist
  - Laboratory (through WS API)
  - Italian Hospital
- Interactions
  - 2 MNGT API
  - 6 TS API
- Use case focused on one summary
  - Generation of other summaries: ~100.000/Kernel

Proposal of Plan and Responsibilities

- Deadline of T8b.3 (implementation) is M28 (July)
  - Triplespace prototype planned for M24 (end of March)
  - Next Review is at M27 (June)
- Instances generation with the tool [Onto by end of January]
- EPS Adapter and Logic (RDF Storage is already available) [CEFRIEL with TID support by end of April]
- HTML Mock-ups [CEFRIEL by end of May]
- Mappings between messages and coding systems [TID by end of March]

Proposal of Plan and Responsibilities

- Deploy and configuration of the TS for the EPS scenario with ontologies, roles and policies [Onto by end of April]
- Integration for the review [All by end of May]
- Final integration [All by July]

- Deliverable D8b.2 [CEFRIEL and all by July]

Step 0: PS Initialization
(Will not be shown at review)

- Creation of the subspace to store the summary of the citizen
  - Enabling the General Practitioner (GP) to access in read/write the summary of the citizen
  - MNGT API
    - Create space with an URL defined by the authority
    - Set security policies
- The GP publishes the summary of the citizen inside the citizen's subspace and subscribe for notifications when modifications occurs
  - TS API
    - Out a set of triples in the subspace
    - Subscribe for notification on modifications

Step 1: The Toothache and the visit to the dentist while Abroad

- The dentist needs to read the summary of the citizen by knowing one of his real-world IDs
  - Discover the subspace by knowing the ID of the citizen
    - Open issue
      - Not necessary to query the whole EU space
      - A big Hash-Table may be enough
        - Use the internal DHT?
        - Use a subspace with a well-knows URL with completeness?
  - Read the summary from the discovered subspace
    - TS API
      - RD set of triples with completeness with SPARQL query
      - Security policies enforcement to get only a subset of the summary

Step 3: The Surgical Operation at a Regional Hospital

- The specialist discovers and reads the summary of the citizen
  - TS API
    - RD and SPARQL with completeness
- The specialist updates the summary by adding another record to the subspace
  - TS API
    - Out a set of triples in the subspace

Step 4: The Notification to the General Practitioner at Home

- The eHR of the GP is notified by the TS providing information about the added record
  - TS API
    - Notification of a set of triple with completeness
    - RD the updated record in the summary

Whole EPS Numbers

- Full Domain
  - 500.000.000 citizens in Europe
  - 5.000 HA in Europe
  - 100.000 Citizens/HA average
- Full Infrastructure
  - 500.000.000 summaries at whole
  - 1.000.000.000 subspaces at whole (about 2 per citizen)
  - 1.000 triples/summaries
  - 500.000.000.000 triples at whole
- Per kernel
  - 100.000 summaries/kernel
  - 200.000 subspaces/kernel
  - 100.000.000 triples/kernel

Back to the plan …

Sixth Framework Programme Priority 2
Information Society Technologies (IST)
Specific Targeted Research Project

Distribution Manager

- M25 - M27
  - Support for full TS API operations (Extended and further extended API).
  - Support for full monitoring service of DM activities.
  - Optimization of distributed index storage system using services of P-Grid (e.g. Peer Management and Self-Organization of P-Grid).
  - Support for semantic clustering on index storage system.
  - Support for communication with Metadata Manager for space lookup process by handling read operation without a target space URL.
- M28 - M33
  - Support for communication with Query Preprocessor for the distributed query processor. (depends on Query Preprocessor implementation)

Metadata Manager

- M25 – M28
  - Integration of semantic routing with distribution manager
  - Support to self-organization through clustering

API (TS + MNGT)

- M25 – M26
  - Security support (basic string-based)
  - Full API operations support (Note: * subscribe may be implemented later, at least from an initial examination this may be a little bit more complicated

- Extensions to the security support may be possible subsequently (e.g. support for actual security standards as opposed to simplified non-standardized string passing)
- Finally, dependent on configuration requirements, we could consider further work on the client interface e.g. to support other forms of remote access than SOAP over HTTP.

Query PreProcessor

- M25 – M33
  - Query processing support (for distributing queries across kernels
  - Inconsistent reasoning support

Sixth Framework Programme Priority 2
Information Society Technologies (IST)
Specific Targeted Research Project

Security Manager

- Definition of further functionalities is part of a current task in WP5 and depends also on the use case evaluation.

Summary of implementation plans

- Query preprocessor and security manager plans need to be refined.
- We need local transaction support
- Intermediary milestone at M28/M30?
- Final integration at M33 (WP6)

New agenda

DAY 1

- 11:30 - 12:30 WP meetings
- 11:30 - 12:00 WP1, WP3, WP8a
- 12:00 - 12:30 WP2, WP4, WP7
- 12:30 - 14:00 Lunch break
- 14:00 - 14:30 WP5, WP8b
- 14:30 - 18:00 Implementation Fix Meeting

DAY 2

- 09:30 - 10:30 Invited talk
- 10:30 - 11:30 WP 6 including experiments using Amazon EC2
- 11:30 - 11:45 Coffee break
- 11:45 - 13:00 Use cases implementation meeting(s) (in one or two parallel sessions)
- 13:00 - 14:30 Lunch break (PMB meeting if required during lunch)
- 14:30 - 15:00 Ontologization of EDIFACT (presentation by Doug)
- 15:00 - 16:30 Wrap up (max 10 minutes pro WP)
- 16:30 - 16:45 Coffe break
- 16:45 - 18:00 TMB meeting (preparation of the review)

Thank you!