Semantic based auto-completion of business process modeling in eGovernment

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- Semantic based auto-completion
- of Business process modeling
- in eGovernment
- in Switzerland
Outline

- Context
- Focus/Goal
- Architecture/Approach
- Auto-completion
- Interface/Demo
Context

- Switzerland
  - 26 cantons
  - Multiple municipalities
  - Different degree of independence in decision making
  - Three official languages
Context

• eGovernment in Switzerland

  – Goal: enable both businesses and population to carry out electronically important transactions with the authorities

  – Authorities: modernise their business processes and communicate electronically with population

- Context
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- Interface/Demo
Focus

• BPM
Focus

- BPM (for eGovernment in Switzerland)
Goal
Goal
- Context
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- Architecture/Approach
- Auto-completion
- Interface/Demo
Architecture
Approach

• Modeling interface
  – Signavio (web-based business process modeling tool)

• Process Representation
  – Instance of BPMN2.0

• Process translation
  – Auto-completion based on translation
  – Dictionary with TERMDAT (legal and administrative terms)

• Repository querying
  – Look up label
  – Look up structure
  – Looked up owner/role/entity etc.

• Linking processes
  – Relate the process to its context using annotations
- Context
- Focus/Goal
- Architecture/Approach
- Auto-completion
- Interface/Demo
Auto-completion
Auto-completion
User .JSON file

• Representation of the user’s process.
• Structured textual format.
• First input of the Auto-Completion Algorithm.
RDF Triplestore

- Contains RDF representation of Processes.
- Textual representation of the graphical form.
- Data are extracted using SPARQL Queries.
- Second input of the Auto-completion algorithm.
RDF triplestore (inputs)
Auto-completion
Auto-completion Algorithm

- Assess common aspects of both the JSON and RDF files.

- Uses the
  - Similarity/Structure,
  - Metadata/Context
  - History/Popularity criteria.

- For each matching aspect with the User’s drawing, the process gains points.

- The processes with the most points are listed first.
Interface

Weights

Suggested Processes

Preview Image of process
Interface

- Process Image
- Image Zoom
- Different kind of matches
- Suggested Translations
- User Entry
-Context
-Focus/Goal
-Architecture/Approach
-Auto-completion
-Interface/Demo
Future/On going work

• Modules integration
  • Process decomposition
  • Annotation management

• Modules development
  • Process segment autocomplete
  • Database manager
  • Query engine

• Test and Validation
  • Test the result in the prioritized project (B1.13) – commune context
  • Test the result with our project partner (TI Informatique) – enterprise context
Thank you for your attention

Question ?

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