

Enterprise Attention Management System

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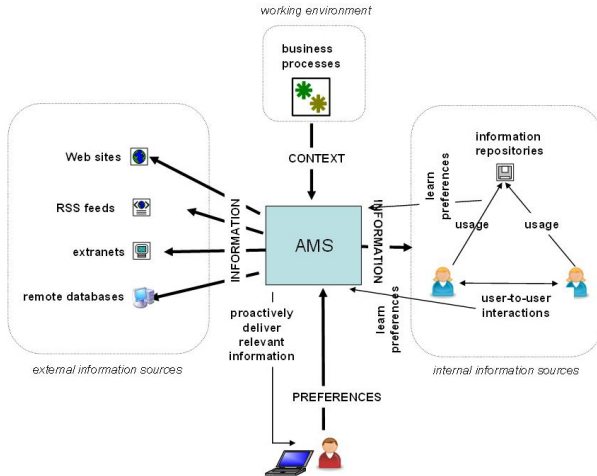
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Introduction

- How to adapt to knowledge-intensive dynamic business environments including the ability to deal with changing situations and large quantities of information;
- Human attention in knowledge intensive organisations (and on Web, in general) is scarce resource which is difficult to manage and support;
- AMS proactively supports the user in dealing with processes, activities and tasks defined by a semantically-enhanced business workflow.

Attention Management Framework



Requirements

Events

Proactive user support through combination of *context-aware ECA* rules with ontologies.

Contexts

It is important to identify the *context* during which active behavior is relevant.

Preferences

Enabling filtering of relevant information according to its importance/relevance to the given user's context.

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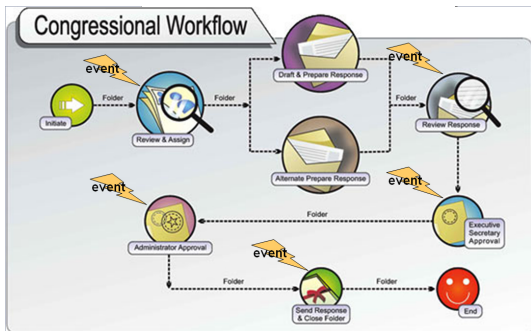
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SAKE Ontologies

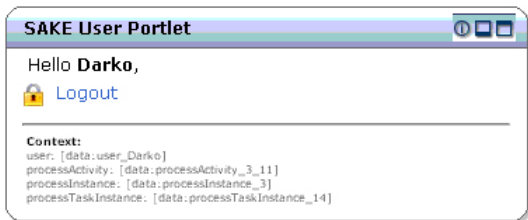
- Information Ontology;
- Process Ontology;
- Preference Ontology;
- Log Ontology;
- SAKE use-case specific ontologies.

Contextual Event Processing



- On an *event* check the context out, and find all relevant preference rules;
- Then execute preference rules in order to proactively deliver relevant information resources.

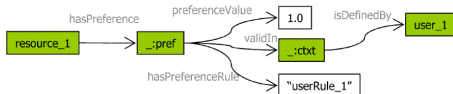
Contextual Event Processing



- Business context is derived using a context observer;
- The context observer triggers an event;
- Which starts reasoner for context evaluation and preference rule execution.

Preference Rules

Preference: n-ary relation between a user, multiple resources, context, and a preference value.



```
Document(?res) ^ yearCreated(?res, "2006") ^
RuntimeContext(?ctx) ^ queryContext(sakesystem, ?ctx) ^
isDefinedBy(?ctx, userA) ^ isDefinedBy(?ctx, processZ) ^
swrlx:createIndividual(?x)
=> Preference(?x) ^ hasPreferenceRule(?x, "rule_2") ^
preferenceValue(?x, "1.0") ^ hasPreference(?res, ?x)
```

- Information resource may be assigned with different preference values;
- Preference values are not pre-computed and persisted;
- Adding a preference rule may significantly influence the whole preference model.

Preference Editor

Create a new rule

Name:

Preference Value:
 0.6

for all
 as Variable RES

where

<input type="text" value="Variable RES"/>	<input type="text" value="pref:hasPreference"/>	<input type="text" value="Variable X"/>	<input type="text" value="AND"/>
<input type="text" value="Variable X"/>	<input type="text" value="rdf:type"/>	<input type="text" value="...please select"/>	<input type="text" value="back"/>
		<input type="text" value="pref:Preference"/>	

show SWRL?

Figure: Preference Editor: Step-wise, interactive rule development

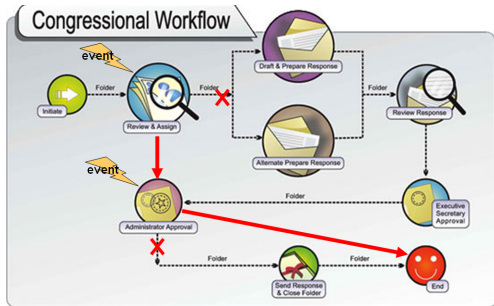
Results of Rule Execution

The screenshot displays the SAKE User Partlet interface with the following components:

- SAKE User Partlet:** Greeting "Hello Darko," and a "Logout" button. Context information includes user details and process identifiers.
- Process Partlet:** A flowchart showing a sequence of tasks: "start", "Identify needs" (highlighted with a red box), "set task of GBR", "create experts group", and "map situation".
- Details Partlet:** A section for "Preference Rules" with three rules, each with a preference value of 1.0. The rules are: "for all File", "for all File", and "for Forum Messages created in cbt: Identification of a Need".
- Preference Output Partlet:** A table titled "Preference Output" showing the results of rule execution.

Information Resource	Preference Value
file_1	1.3862944
forummessage_11	0.0
file_12	0.0
forummessage_12	0.0

Future Work



- Synchronization of work, cooperation between concurrent workflows, access to shared resources;
- Collaboration in *ad-hoc* workflows: all this, but not in a completely *predefined* manner.
- Intelligent event processing (logic-based CEP with reasoning capabilities over situations).

Discussion

Thank you!
Questions...