Automated Template-Based Web Service Re-Configuration

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Context

**Web service**: Web services provide a standard means of interoperating between different software applications, running on a variety of platforms and/or frameworks.

**A configuration of web services**: A set of web services interacting in a loosely coupled way in order to achieve complex operations.

**The environment of web services** is dynamic, web services come and go, temporarily or for good. This also holds for web service configurations

**Problem**: When one or more web services in a configuration fail.

**Challenge**: To automatically re-configure complex web services.

**Syntax based re-configuration**

Re-configuration: rebinding with equal service

Approach: Running backup copies

**Semantics based re-configuration**

Re-configuration: matching to find equal functionality. Adaptation of configuration can be required.

Approach: Web services are annotated with additional information

**Template based re-configuration**

Problem if no **exact match** can be found:

- what properties are relevant for this configuration?
- (hidden) dependencies between services in the configuration?
- could the functionality be created in a new configuration?

A structure is needed to express this information: A template

Description of Service in OWL-S Profile

Interface in OWL-S Grounding

Specification of Interface and relevant properties of abstract web services

Process dependencies using OWL-Process