



A Classification Framework for Approaches and Methodologies to make Web Services Compositions Reliable

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Introduction

- Definition of composite service reliability
 - Why a definition?
 - Reliability issues
 - Possible solutions
- Use of definition as a classification framework
- Other, related ideas



Need for a definition

- Why a definition?
- Is reliability limited to:
 - Reliable messaging?
 - Extended transactional mechanisms?
 - Or do other issues contribute to reliability as well?



Definition

- Reliability definition divided into two main parts:
 - Reliability of composition
 - Reliability of execution
- Different aspects for the two parts
- Both parts and associated aspects not necessarily disconnected



Definition..

- Reliability of composition
 - Correct composition
 - No error in notation
 - Notation should not lead to erroneous execution



Definition..

- Functional interfaces
 - Web services should actually exist
- Composite service specification conformant to individual service specification
 - Respect for individual constraints



Definition..

- Graceful handling of interface changes in individual services
 - The composite service should not break down
 - Relevance to reliability of execution



Definition..

- Reliability of execution
 - Execution consistent with process flow definition
 - Proper fault-handling in place
 - Use of transactional mechanisms
 - Importance of compensatory activities



Definition..

- Reliable message delivery
 - Message passing between participants in a composite service is important
 - Messages from the sender should reach the intended receiver



Use of definition?

- Definition is extensible!!
- Can be used as a classification framework:
 - For methodologies that seek to make composite services reliable



Classification framework

- Applicability of a methodology to particular reliability aspect(s) helps classify the solution
 - Some solutions address just one aspect, some more
- Classification provides a context to the methodology



Classification framework..

- Comparison and evaluation of different methodologies possible
 - With respect to what part/aspects of composite service reliability they address
 - With respect to “how many” aspects they address
 - Scope of the methodology



Questions/Comments

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