

Increasing Process Reliability in a Geospatial Web Services Composition

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About Me

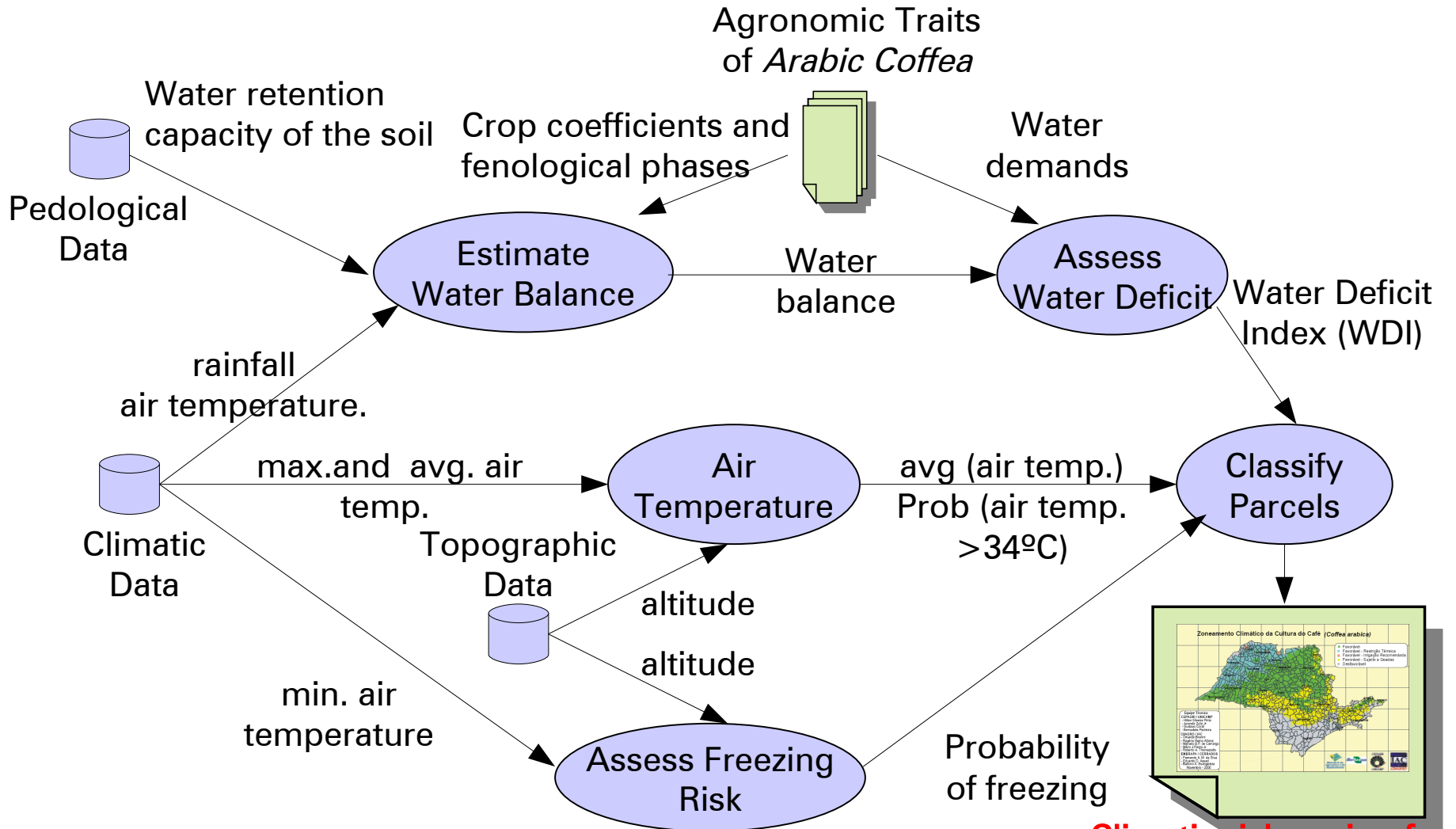
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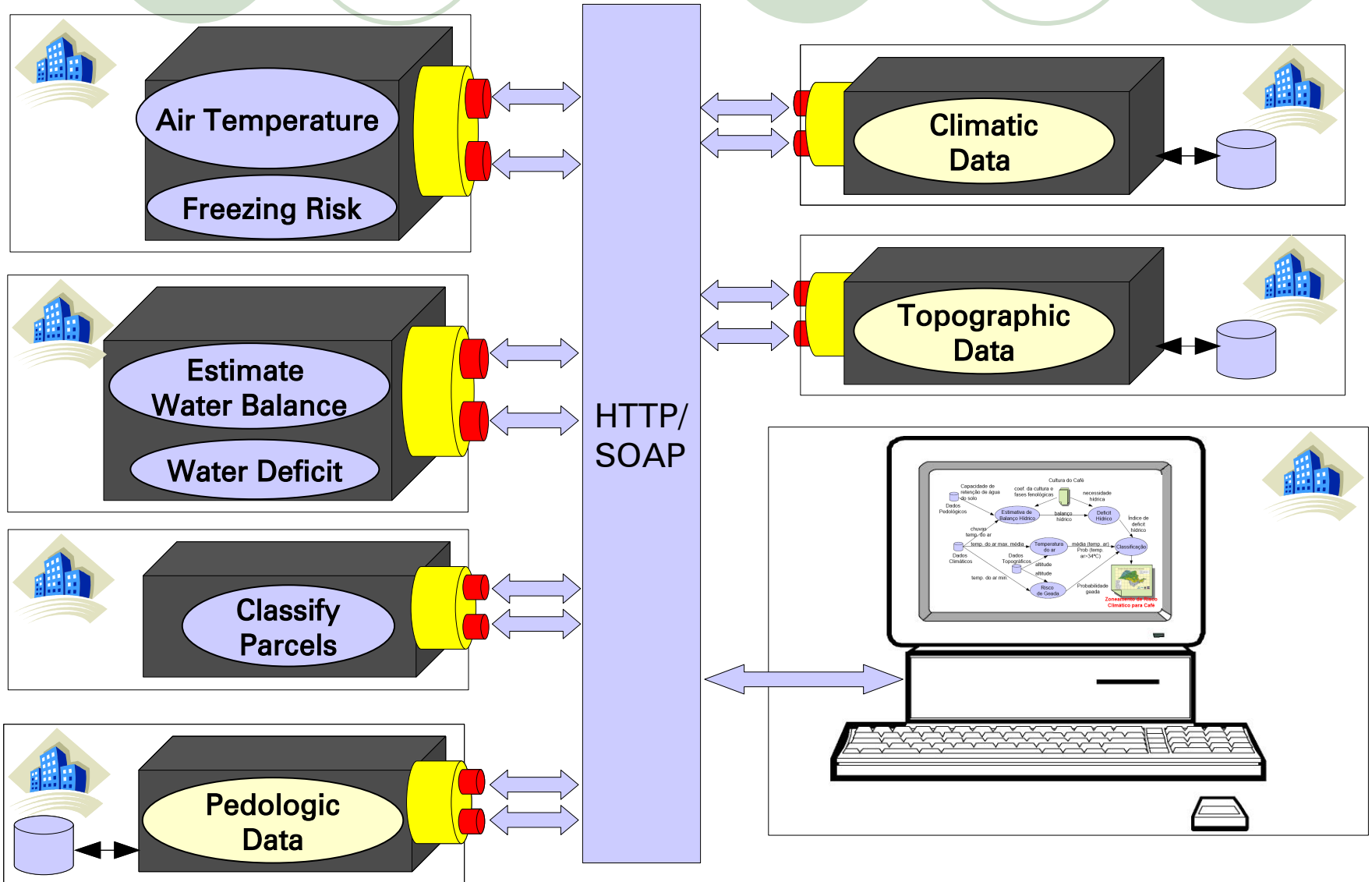
Introduction



(Adapted from Fileto, 2003)

Climatic risk zoning for coffee

Service Oriented Architecture



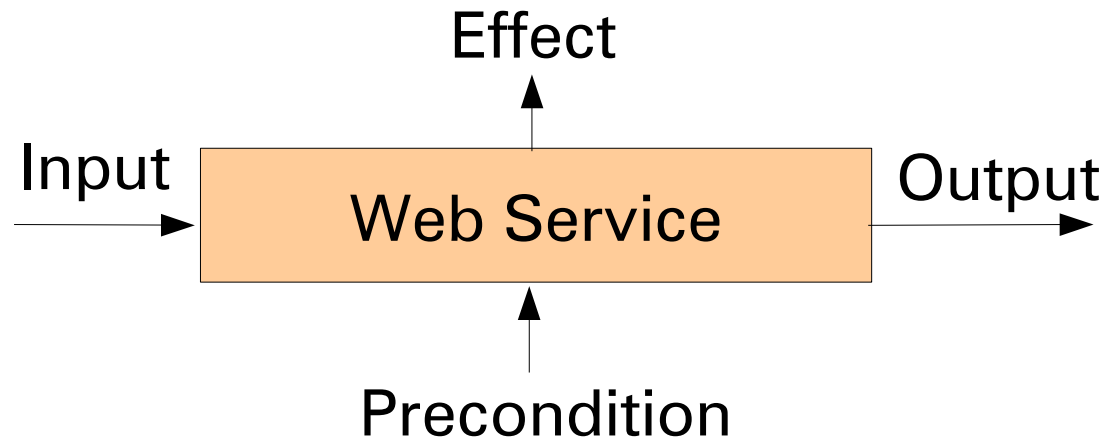


Services Composition

How to combine services in order to build a specific process given a set of component services ?

Automated Web Services Composition

- AI Planning Method based on the Web Services functional descriptions.



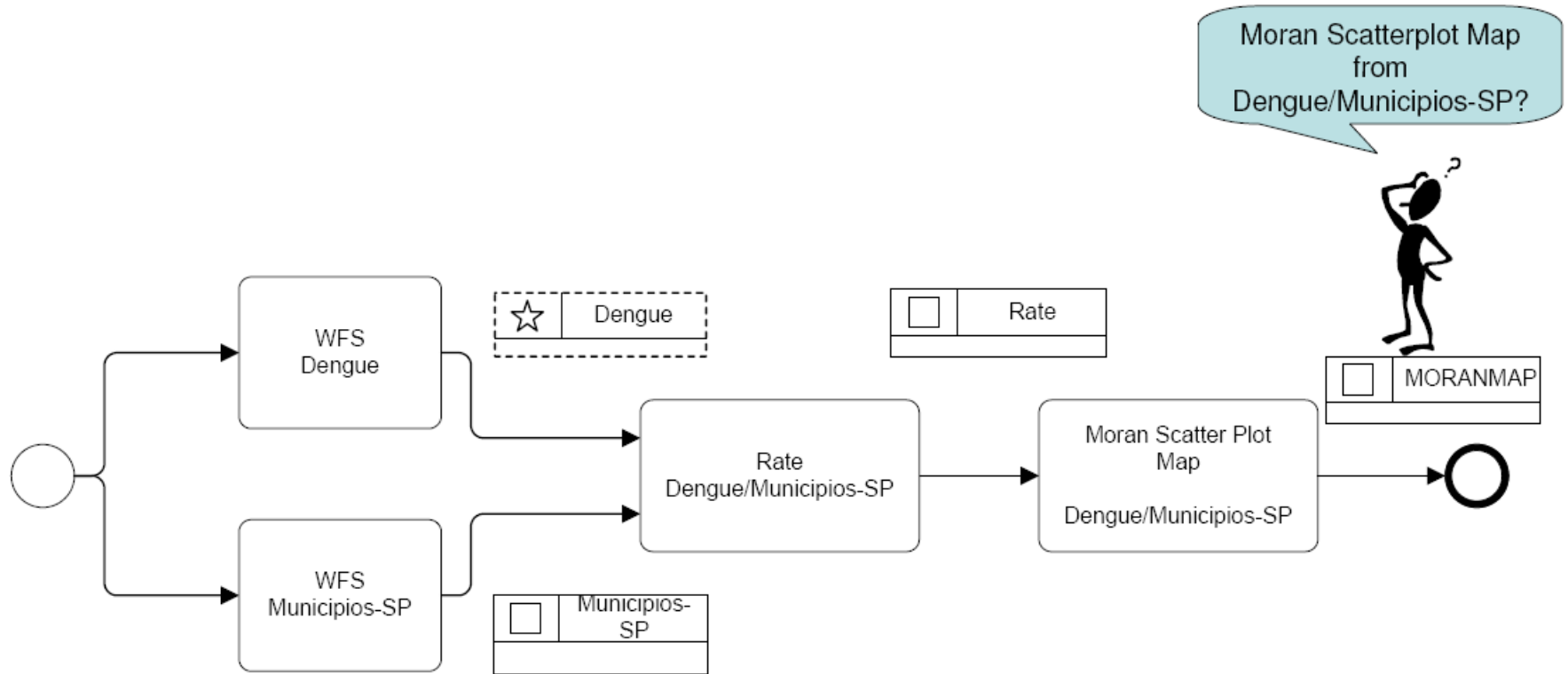
OWL-S Functional Description



Services Compositon

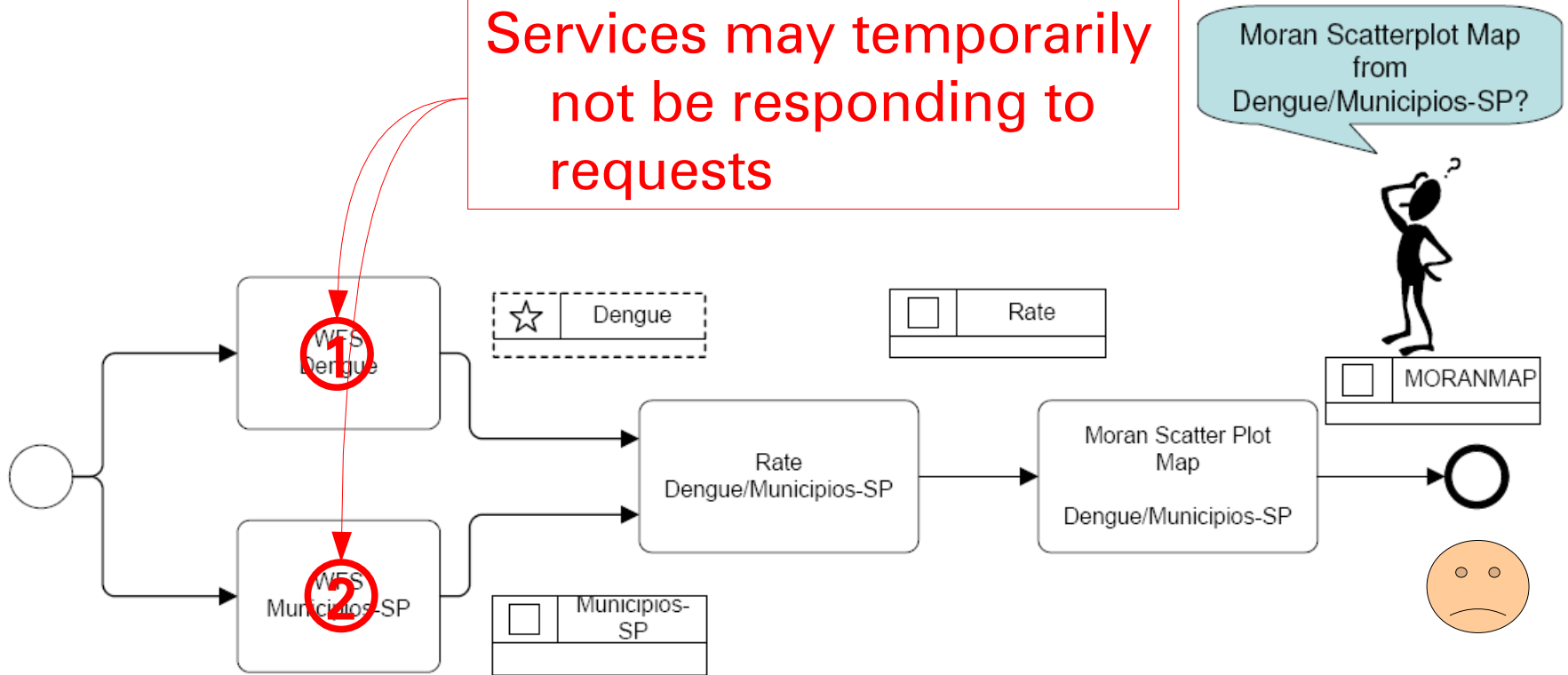
- Classic Planning
 - Static
 - Deterministic
 - Little robustness for practical applications

Composition – Geoprocessing Example



Composition – Geoprocessing Example

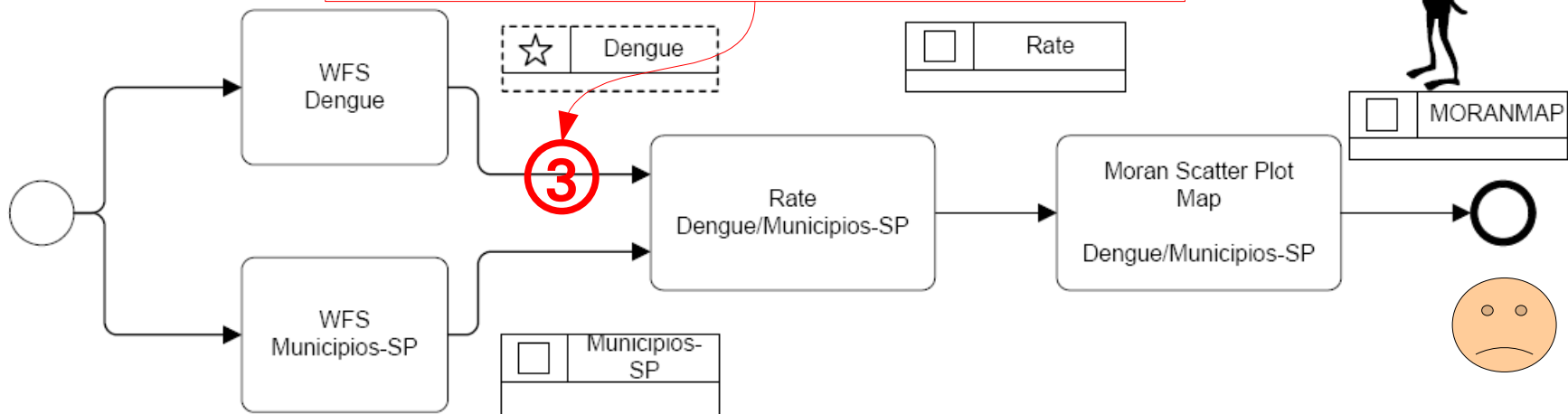
Services may temporarily not be responding to requests



Composition – Geoprocessing Example

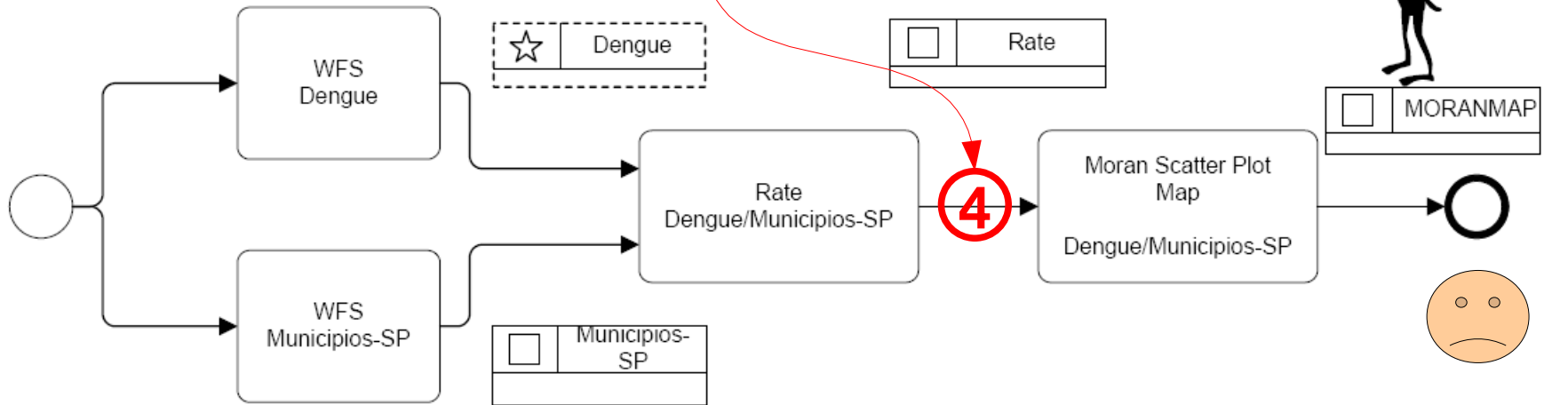
The geodata from WFS
Dengue may have a random
distribution preventing the
rest of the analysis.

Moran Scatterplot Map
from
Dengue/Municipios-SP?



Composition – Geoprocessing Example

The rate Dengue/Municipios-SP calculation may present outliers which undermine its direct use.

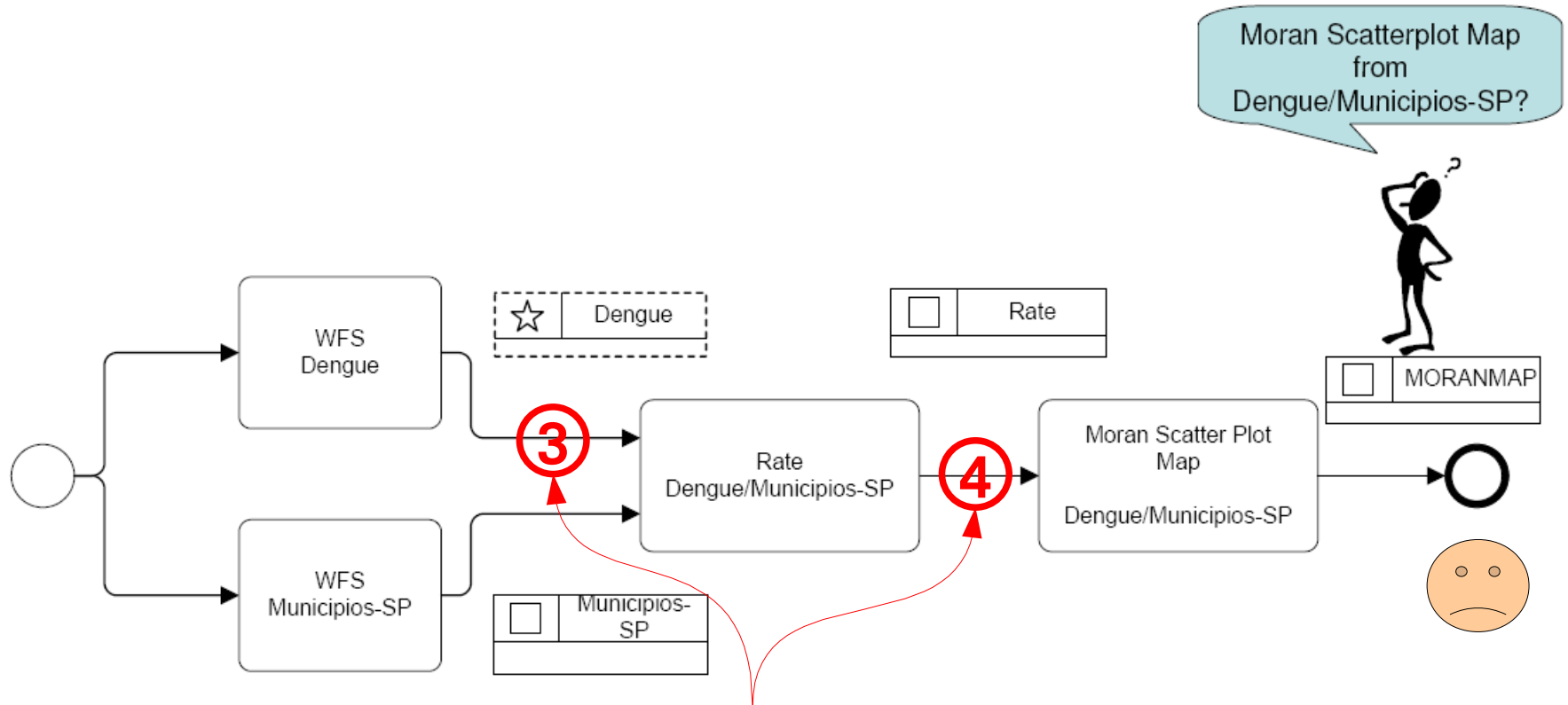




Services Composition

How to combine services in order to build a specific process given a set of component services, **ensuring a successful execution, regardless of the data quality?**

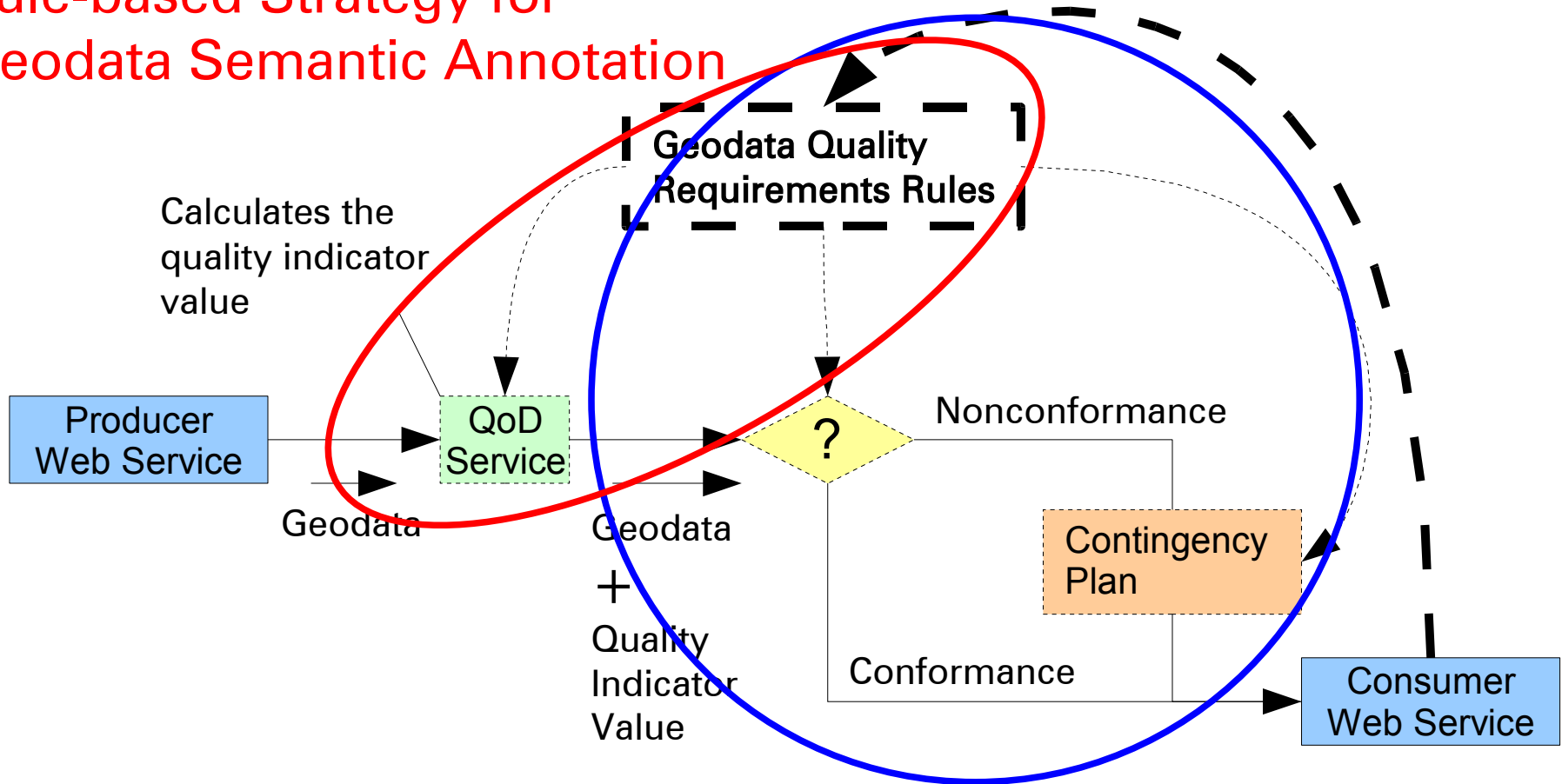
Composition – Geoprocessing Example



Unpredictable events at runtime can help to define rule-based data quality requirements for geodata consumer services

Improved Composition

Rule-based Strategy for Geodata Semantic Annotation



Conditional Planning Method

Status



- **Development**

- GeoData Quality Requirement Ontology (OWL, SWRL)
- OWL-S Geo Web Service Descriptions
- Composer engine

- **Semantic Web Tools**

- Jena 2.6.0
- Protégé 3.4.1

Status



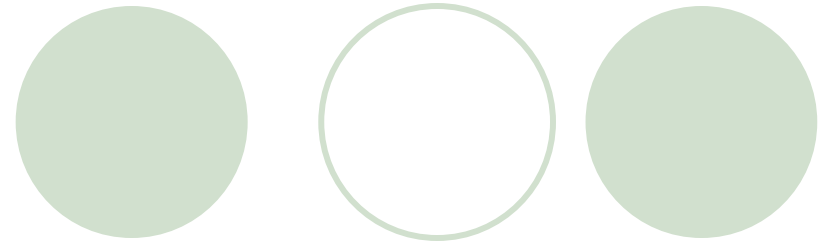
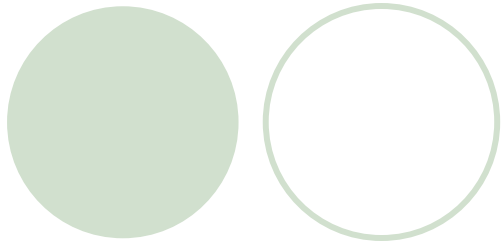
- **Publication**

Cruz, S. A. B.; Monteiro, A. M. V. , Santos, R. Increasing Process Reliability in a Geospatial Web Services Composition Proceedings of the 17th International Conference on Geoinformatics, 2009.

Main References



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Thank you

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