

Establishing an OGC Web Processing Service for generalization processes

Theodor Foerster & Jantien Stoter
Workshop of the ICA Commission on Map Generalization and
Multiple Representation
25th June 2006 - Portland



Overview

- Motivation
- The standard
- Architecture
- WPS in action
- Discussion
- Outlook



Problem

- Generalization knowledge not transparent
- Data dissemination already Web-based
- Web Services promising
 - Availability
 - Reusability
 - Platform independent
- Interoperability still a problem
- Standardization still missing



Solution

- OGC initiated standard about Web Processing Service (WPS)
- WPS provides common view on geo-processes
 - Complex processing for climate change
 - Simple spatial analysis (Buffer)

➔ Establishing WPS for generalization

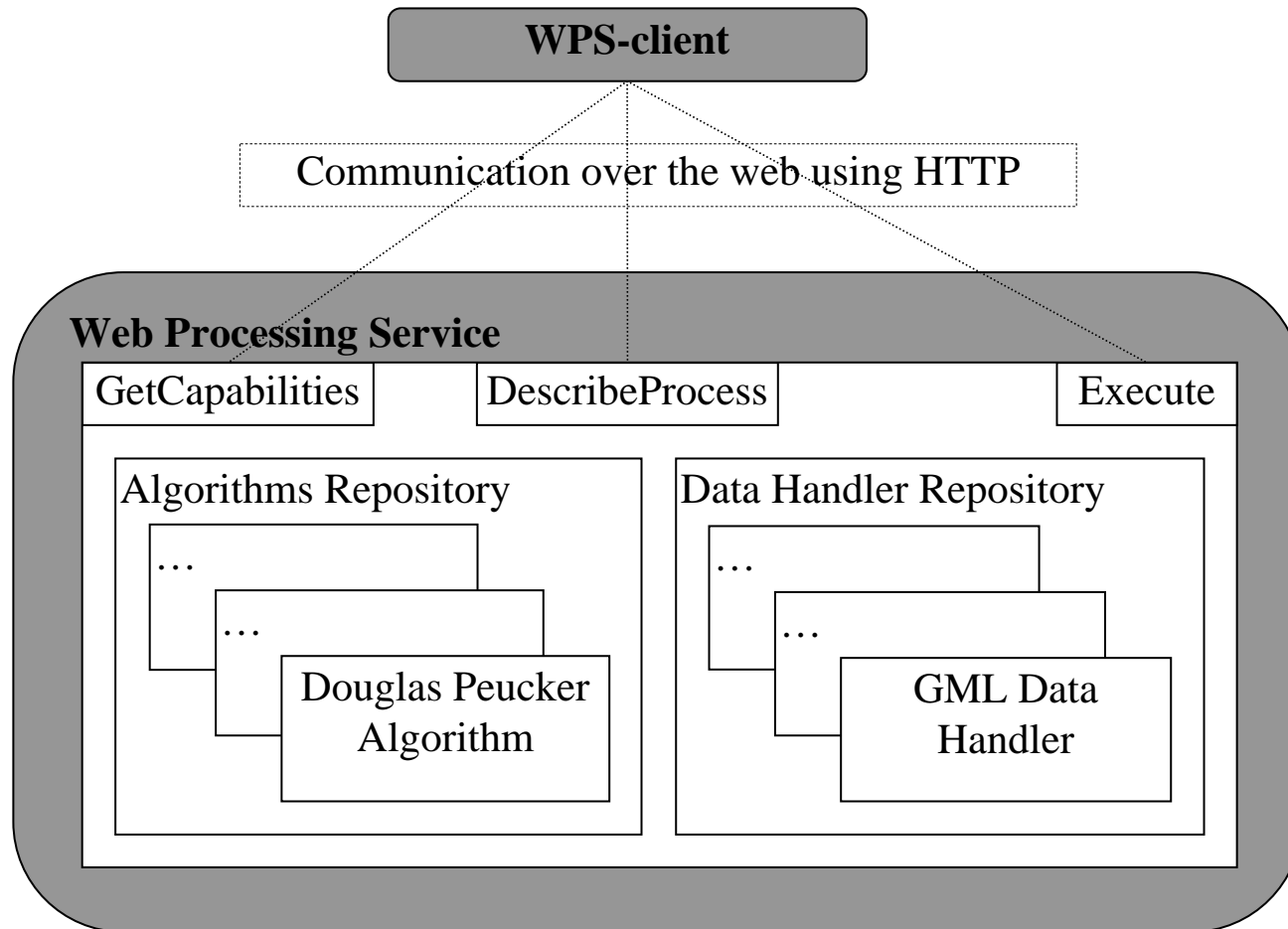


The standard

- Operations (HTTP+XML messaging)
 - GetCapabilities
 - DescribeProcess
 - Execute
- Features
 - Basic chaining
 - Long term processing



Architecture

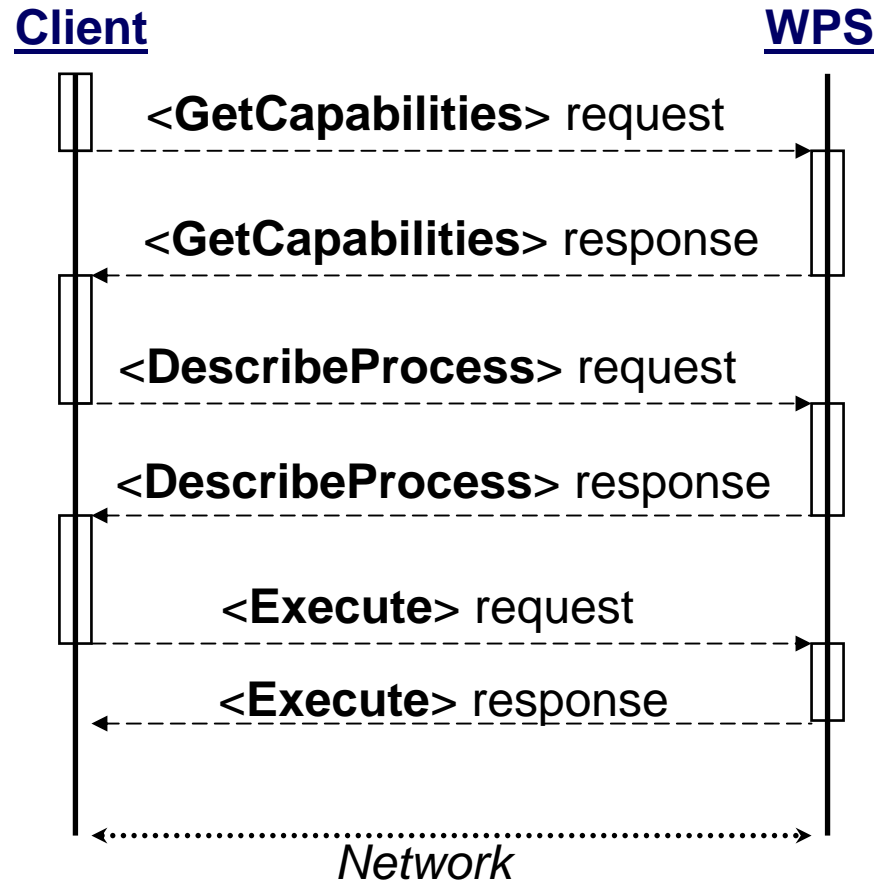


Implementation

- Pluggable architecture
 - Processes
 - Data handlers
- Available under GPL license (@ www.52North.org)

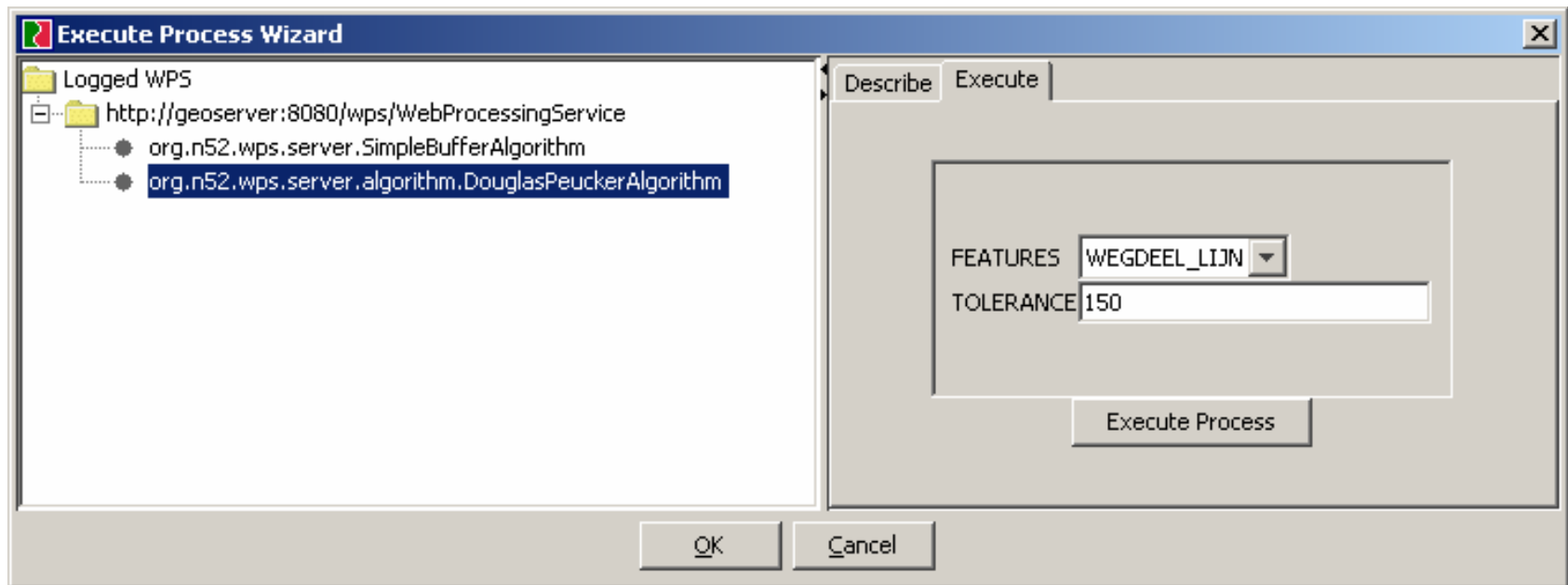


WPS in action



Example - Simplification

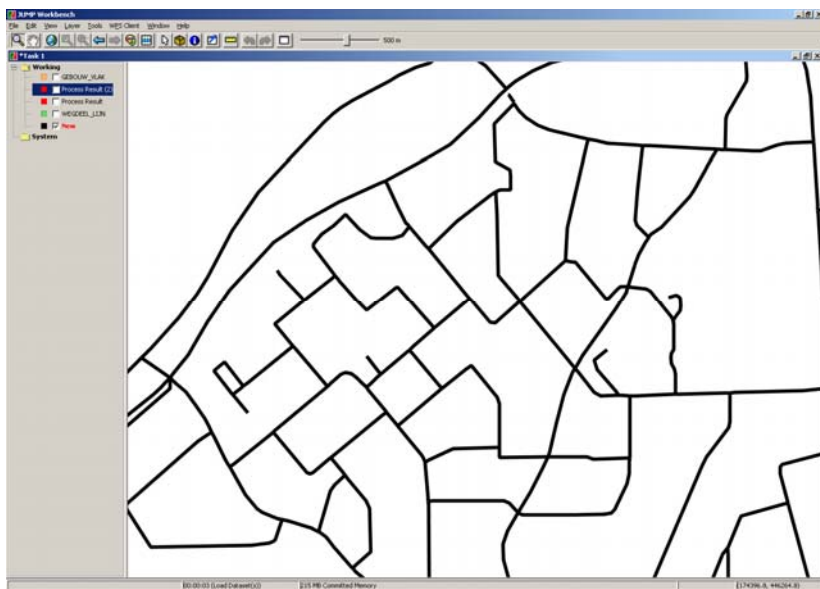
Registering the service and configuring your process...



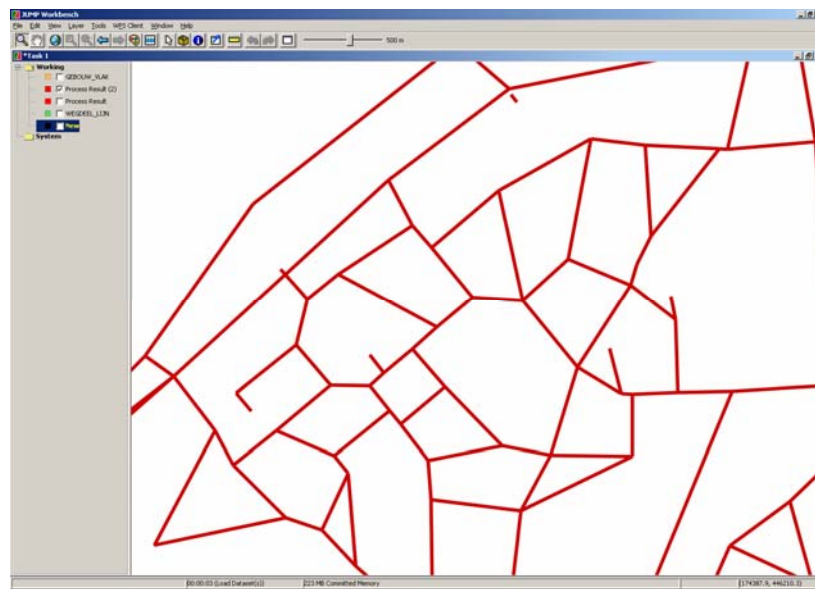
Example - Simplification (contd.)



- ...Visualize the result!



original data



processed result

Discussion

- Some aspects are missing in the WPS
 - Asynchronous communication mechanism
 - Complex service chaining
 - Reflecting semantics of the processes



Outlook - research context

- Automated generalization as means of information extraction
 - Representation vs. process-oriented view on generalization
 - Data dissemination through the Web is successful (through SDIs)
 - Web provides platform-independent processing (scalability, accessibility)
- ➔ Establishing automated generalization as a complete process on the Web



Outlook - Problem

- Establishing automated web-based generalization processes
 - Loose-coupled structure
 - Operators are not described meaningfully
- ➔ Formalization of generalization operators



Outlook - Objectives



- Finding a sufficient concept for formalization of generalization operators
- Representing the formalized operators in the Web
- Applying the web-based formalized operators to a generalization system as a proof-of-concept

Conclusion

- WPS provides standard on geo processing
- Some issues remain unsolved
- Technical and organizational approach builds valid basis for knowledge exchange
- WPS will provide generalization operators within the web-based architecture



- Thanks!
- Any questions?
- foerster@itc.nl



Questions

- What is special about generalization operators?

