52° NORTH WPS FRAMEWORK WITH ARCGIS GEOPROCESSING SUPPORT

- OPEN SOURCE SOLUTION MEETS CLOSED SOURCE SOFTWARE

Bastian Schäffer, Matthias Müller & Theodor Foerster

52°North
I have a dream...
Ubiquitous Geoprocessing
Reinvent the Wheel
Swiss Knife

542 GIS Functions
Dark Side
Ubiquitous Geoprocessing
WPS

- WPS

GetCapabilities

WPS

Process 1

Process 2

Process n
WPS

- WPS

GetCapabilities

DescribeProcess

Execute

WPS

Process 1

Process 2

Process n
Repository Concept

WPS

WPS-Core

Repository Manager

wps.config

<XML/>

Process 1

Process 2

Process n
Repository Concept

WPS

WPS-Core

Repository Manager

Process 1

Process 2

Process n

<XML/>

wps.config

GRASS
Repository Concept

WPS

WPS-Core

Repository Manager

Process 1

Process 2

Process n

<XML/>
wps.config

SEXTANTE

wps.config

FOSS4G 2010

www.52north.org/wps
Repository Concept

WPS

WPS-Core

Repository Manager

Process 1

Process 2

Process n

ArcGIS

WPS-Core

Repository Manager

ArcGIS

wps.config

<XML/>
Connect to a Backend

1. Update WPS Metadata
2. Create Process Metadata
3. Route inputs/outputs
Update Service Metadata

• Creation of ProcessDescriptions
  → Identifier=GP Name

  e.g. Buffer_Analysis
ProcessDescriptions

- Map ArcGIS to inputs
- Annotate it
  - Keep ArcGIS Order
  - Generic Delegation Mechanism
    - Add more process descriptions/own models
    - No Programming
Repository Concept

WPS

WPS-Core

Repository Manager

<XML/>

wps.config

Process 1

Process 2

Process n

ArcGIS
ArcGIS Binding

• Options
  – Web Service Interface
  – ArcObjects
WPS in Action
WPS-AGS
ESRI-REST API
WPS-AGS in action

• Video
Summary

• Combination of OpenSource/Closed Source
• Works in both directions
• Easy to configure  
  → No Programming
• Runs out of the box
• Extensible  
  → own models
• Reliable Processes
Future Work

• Update Mechanism
  → Moving Code Paradigm

• Cloud ready