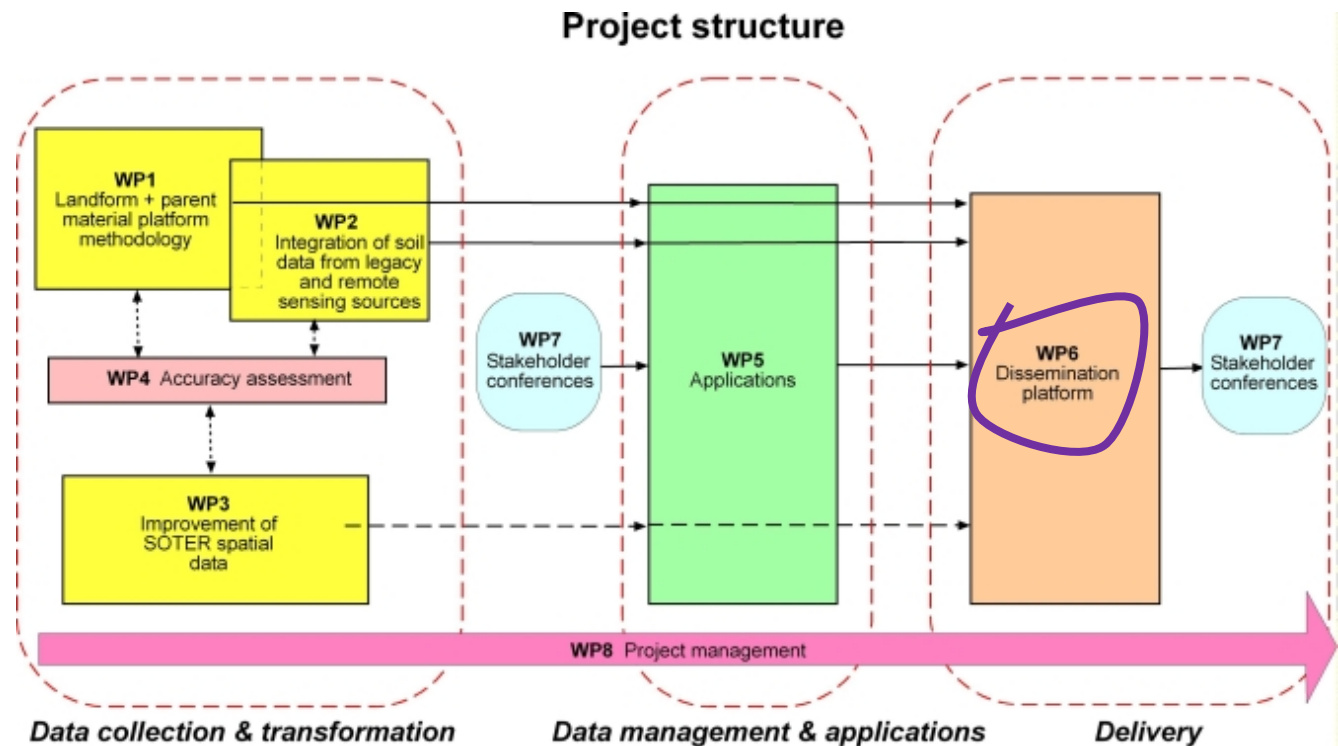


e-SOTER - Work Package 6

Development of an e-SOTER Dissemination Platform

Dr Stephen Hallett, NSRI, Cranfield University, UK



WP6 – Tasks and Deliverable

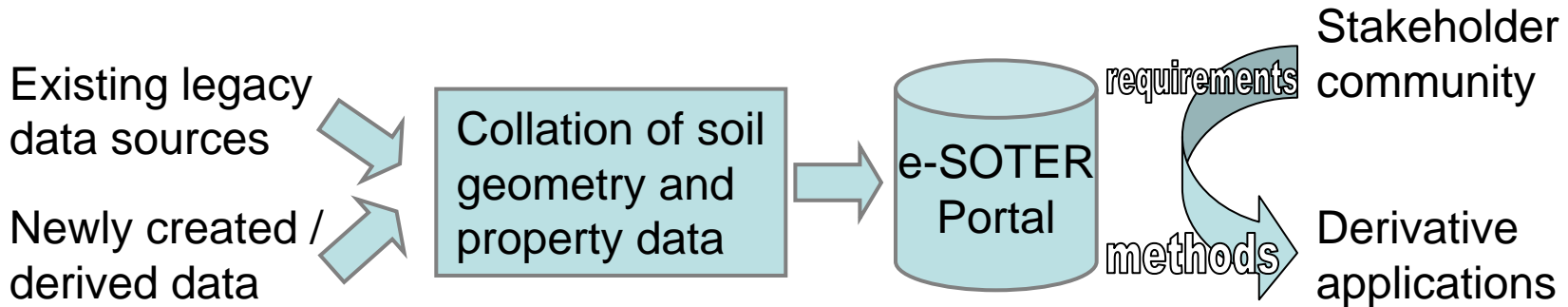
- Task 6.1: Analysis of data specification and exchange rules (XML) and development of concept rules for SoTerML (OGC)
- Task 6.2: Soil profile and analytical data management (Global Pedon Database; Semantic Map Database)
- Task 6.3: Development, setup and implementation of a global/ European e-SOTER portal
- Task 6.4: Transfer of methods developed by WP1-3 into Algorithm Database and Incorporation into e-SOTER Portal
- Task 6.5: Publication of European Dataset as DVD or Publication as an EU-Report
- D6.1 Freely accessible e-SOTER operational Web services and relational DBMS including an algorithm database containing methods developed in WP1-6

Work Package 6 Partners

- JRC (WP Leaders)
- ISRIC
- Cranfield University
- BGR
- The University of Nottingham



WP6 – a Rationale



The e-SOTER Portal will hold existing soil spatial and semantic information, plus the means to transform (via methods), integrate and apply to user application requirements.

e-SOTER portal outputs can be used to develop thematic and zonation mapping, data interrogation and as the basis for computerised modelling

Supporting...

- ➔ **Better Land use planning**
Land and water resource utilisation and allocation
- ➔ **Land monitoring**
Monitoring soil threats such as salinisation, soil productivity, erosion, compaction, degradation
- ➔ **Sustainable land use**
Promoting sustainable land and water resource usage

Key Activities : Data specification and encoding



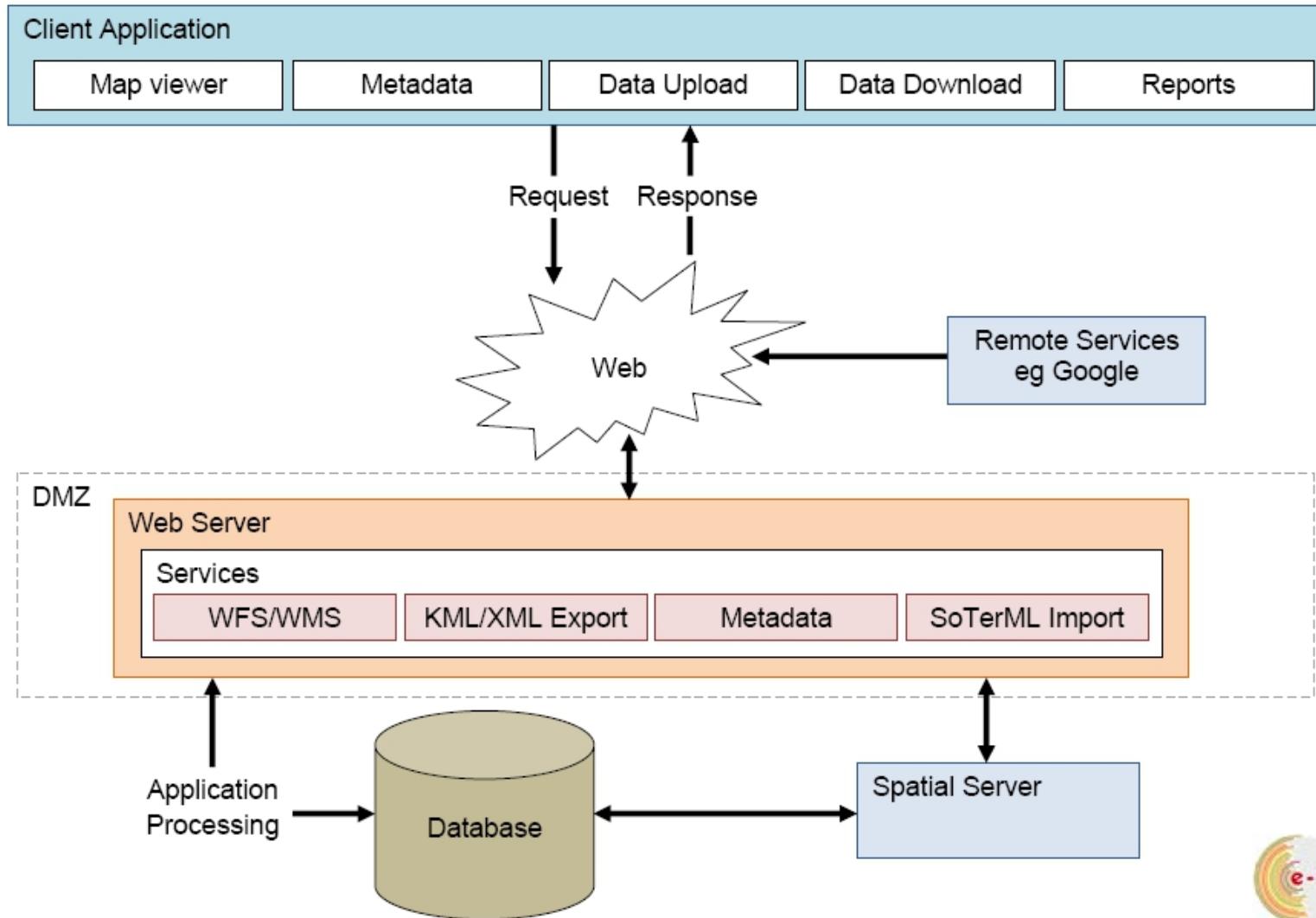
- Preparation of the SoTerML, including data dictionary for nomenclatures and various data sources (metadata)
- Development ongoing of WRB 2006 XML exchange format
- Development of a SoTerML, as an extension of GeoSciML, for SOTER model compliant with ISO/TC190/SC 1 N140 Recording and Exchange of Soil-Related Data

Next Tasks : Database and e-SOTER Portal

```
<?xml version="1.0" encoding="UTF-8" ?>
<!-- Sample GML/XML file for demonstrating how to code SoTer information
as a part of a SoTer project -->
<!-- Version Date: 4.1. 4 May 2011. By Boris Pourabdollah, Centre for Geospatial Science, The
University of Nottingham -->
<!-- SoTerURL: http://www.w3.org/2001/XMLSchema xmlns:gml="http://www.iso211.org/2011
xmlns:soTer="http://www.opengis.net/gml" xmlns:gs="http://www.iso211.org/2005/gco" xmlns
xmlns:st="http://www.opengis.net/gml" xsi:schemaLocation="http://www.iso211.org/2011/SoTer
http://www.iso211.org/2011/SoTer.xsd" -->
<!-- This line appends the attribute vocabulary for validating the attributes in this
file -->
<!-- This line appends the attribute vocabulary for validating the attributes in this
file -->
<!-- Defining a SoTer Unit, including its geometry. It's Terrain Component (and Soil C
-->
<SoTerUnit>
  <gml:observationMethod>
    <gml:CGI_TerrValue>
      <gml:value codeSpace="urn:ogc:def:crs:EPSG:6.6:4326">SampleObservationMethod</gml:value>
    </gml:CGI_TerrValue>
  </gml:observationMethod>
  <gml:purpose>typicalNorm</gml:purpose>
  <!-- Geometry starts here -->
  <gml:occurrence>
    <gml:MappedFeature>
      <gml:observationMethod>
        <gml:CGI_TerrValue>
          <gml:value codeSpace="urn:ogc:def:crs:EPSG:6.6:4326">SampleObservationMethod</gml:value>
        </gml:CGI_TerrValue>
      </gml:observationMethod>
      <gml:positionalAccuracy>
        <gml:CGI_TerrValue>
          <gml:value codeSpace="urn:ogc:def:crs:EPSG:6.6:4326">10m</gml:value>
        </gml:CGI_TerrValue>
      </gml:positionalAccuracy>
      <gml:samplingFrame>
        <gml:specification />
      </gml:samplingFrame>
      <gml:shape>
        <gml:Polygon srsName="urn:ogc:def:crs:EPSG:6.6:4326">
          <gml:outerBoundaryIs>
            <gml:LinearRing>
              <gml:coordinates>-0,0 100,0 100,100 0,100 0,0</gml:coordinates>
            </gml:LinearRing>
          </gml:outerBoundaryIs>
        </gml:Polygon>
      </gml:shape>
    </gml:MappedFeature>
  </gml:occurrence>
</SoTerUnit>
```

- Transfer pre-existing and new soil data into an object-relational database
- Flag soil data with their respective level of uncertainty
- Creation of a global/European e-SOTER Portal, including RDBMS structures, algorithm database and data dissemination services
- Testing of methods for e-SOTER data dissemination for global context

e-SOTER portal and potential functionality



OpenLayers SoTerML prototype - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localhost:8080/soter-portal/sa.htm

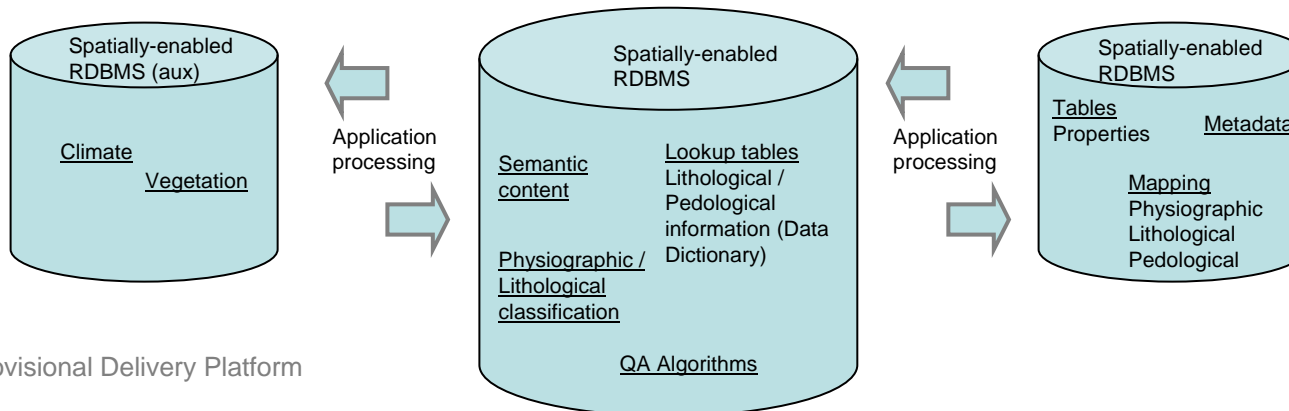
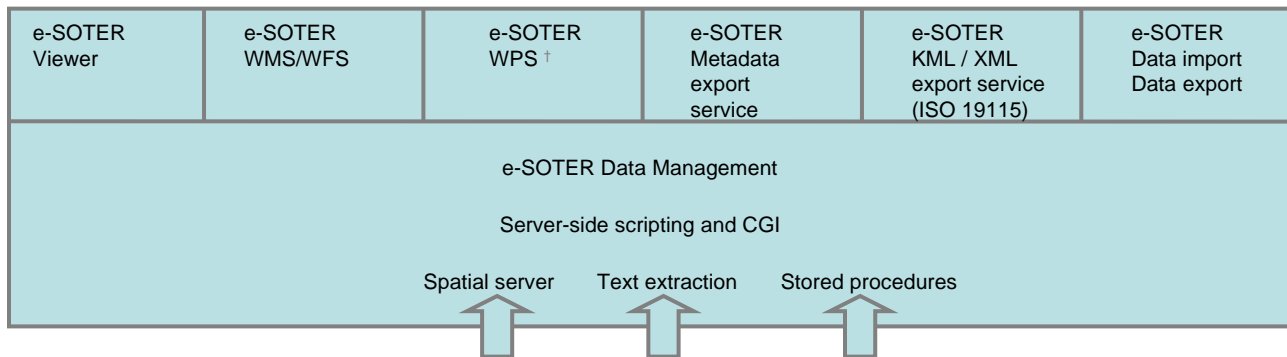
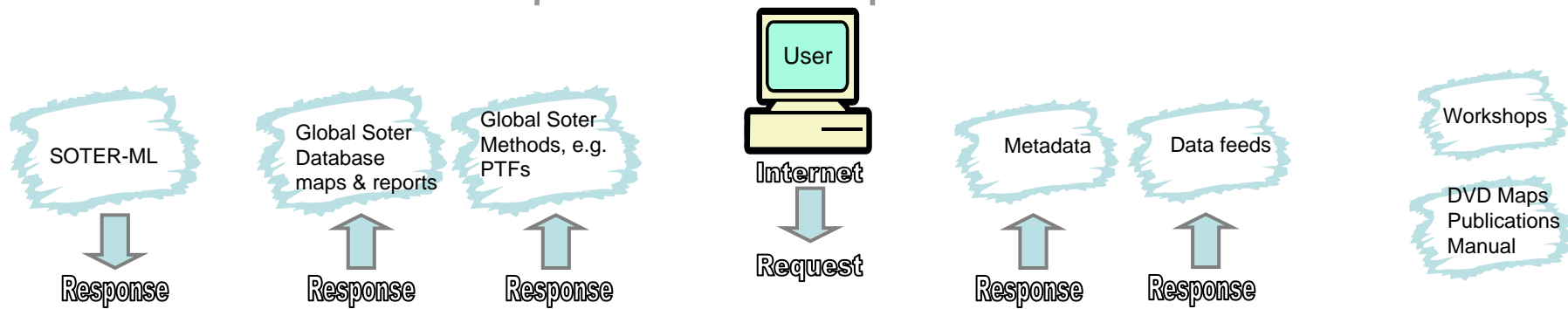
OpenLayers SoTerML prototype

South African SOTER data

27.65308, -22.51221

- ACb - Haplic ACRISOLS
- ACc - Haplic ACRISOLS
- ACp - Pithic ACRISOLS
- ACq - Gley ACRISOLS
- ARb - Haplic ARAEKSOLS
- ARc - Haplic ARAEKSOLS
- ARd - Calcic ARAEKSOLS
- ARq - Gley ARAEKSOLS
- ARr - Luvis ARAEKSOLS
- ARs - Ferralic ARAEKSOLS
- CAq - Pithic CAUCISOLS
- CMb - Chromic CAMBISOLS
- CMc - Chromic CAMBISOLS
- CMd - Haplic CAMBISOLS
- CMs - Chromic CAMBISOLS
- Fla - Eutric FLUVISOLS
- FRb - Phaeic FERALSOLS
- FRc - Haplic FERALSOLS
- FRd - Xanthic FERALSOLS
- GLa - Eutric GLEYISOLS
- FSb - Haplic FUSFANOSSOLS
- FSd - Luvis FUSFANOSSOLS
- LPb - Dystric LEPTOSOLS
- LPc - Eutric LEPTOSOLS
- LPd - Umbric LEPTOSOLS
- LPq - Luvis LEPTOSOLS
- LPs - Umbric LEPTOSOLS
- LVb - Haplic LUVISOLS
- LVc - Ferric LUVISOLS
- LVd - Gleyic LUVISOLS
- LVs - Single LUVISOLS
- LVt - Calcic LUVISOLS
- LVu - Chromic LUVISOLS
- LVv - Ferric LUVISOLS
- LVw - Haplic LUVISOLS
- RH - Rhodic RITISOLS
- RHb - Haplic RHODOSOLS
- RHc - Luvis RHODOSOLS
- RHd - Dystric RHODOSOLS
- PLa - Eutric PLINOSOLS
- PLb - Eutric PLINOSOLS
- PLc - Umbric PLINOSOLS
- POb - Haplic PODISOLS
- POc - Calcic PODISOLS
- POd - Dystric PODISOLS
- POe - Eutric PODISOLS
- SCh - Calcic SOLCHOSOLS
- SHb - Haplic SOLCHOSOLS
- SHc - Gleyic SOLCHOSOLS
- SHd - Eutric SOLCHOSOLS
- SHs - Calcic SOLCHOSOLS
- SD - Solonchaks
- TD - Calcic Deposols

The e-SOTER portal and its potential functionalities



e-SOTER Provisional Delivery Platform

†Provisional

Glossary of key terms

WMS – Web Map Service

presents rasterised mapping data

WFS – Web Feature Service

presents vectorised feature data

WCS – Web Coverage Service

presents grid coverage data

WPS – Web Processing Service

geospatial data processing services

CWS – Catalogue Service for the Web

presents resource descriptive metadata

XML – Extensible Markup Language

flexible textual format for structured computer documents

KML – Keyhole Markup Language

Google's XML-schema for 'Earth' and 'Maps' data

SDI – Spatial Data Infrastructure

integrated IT resource for managing geospatial information

GEOSS – Global Earth Observation System of Systems

initiative from GEO for a global SDI

PTF – Pedo-Transfer Function

algorithm to derive or interpolate missing soil properties

