NBN Web Services Workshop

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- Rapid ‘what is a soap web service?’
- NBN Web Services documentation
- Today’s tools:
  - SOAPUI – for creating requests
  - WAMP – for running our php pages
- soapUI and basic php grid map + exercises
- Data access model and registration keys + exercise
- Easy Maps + exercises

Contents contd…

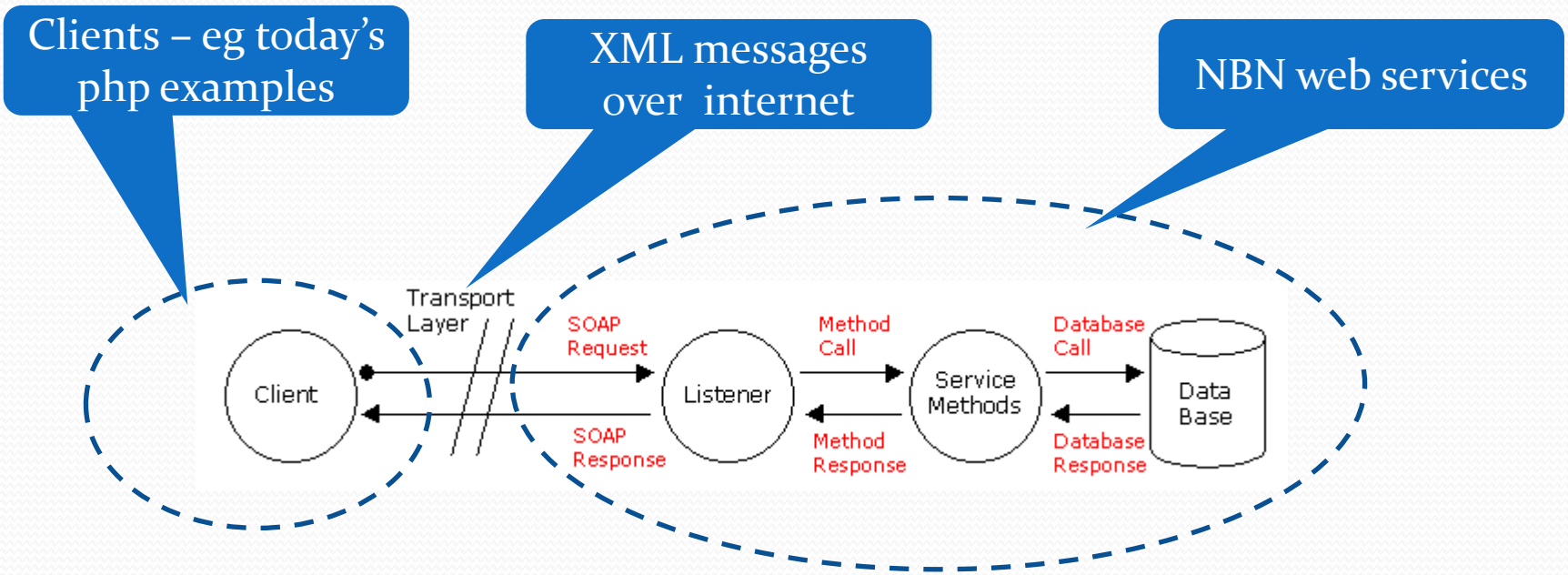
- Video clip: Java and proxy objects
- Exercise: species list web service
- Exercise: taxonomy search web service

What is a web service?

- A method that is callable remotely across a network
- Defines an interface for communication
  - Eg mandatory arguments
- Communication is independent of technology
  - Eg .NET client and Java web service
- Does not provide a GUI
  - Client provides GUI – eg web page

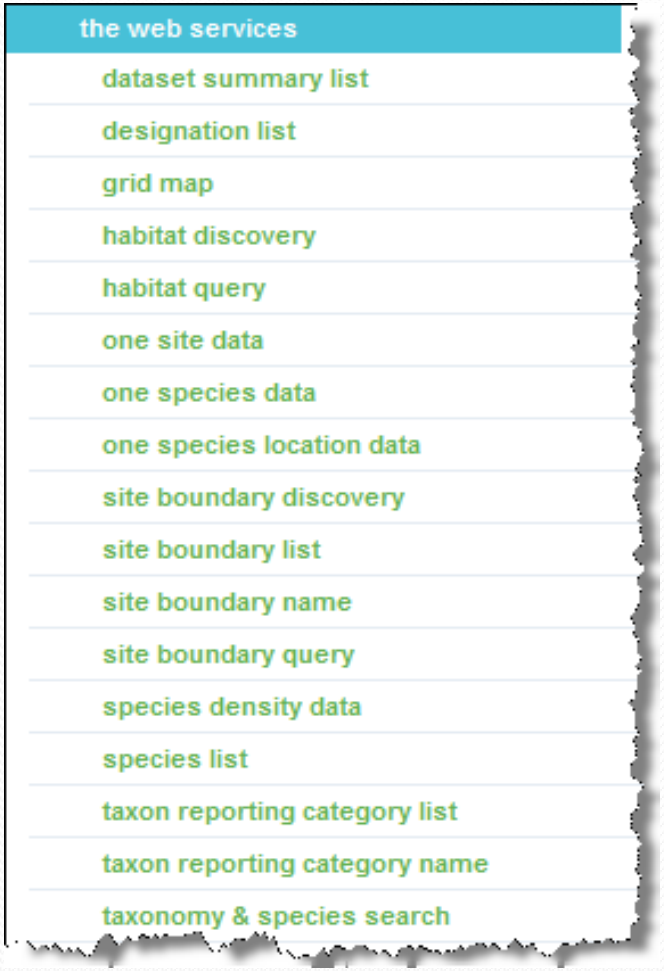
What is a SOAP web service?

- Messaging protocol that uses xml
- Request-response dialog usually via HTTP
- Web Service Definition Language (WSDL) file



Documentation

www.nbn.org.uk > Guidebooks > Web services guide



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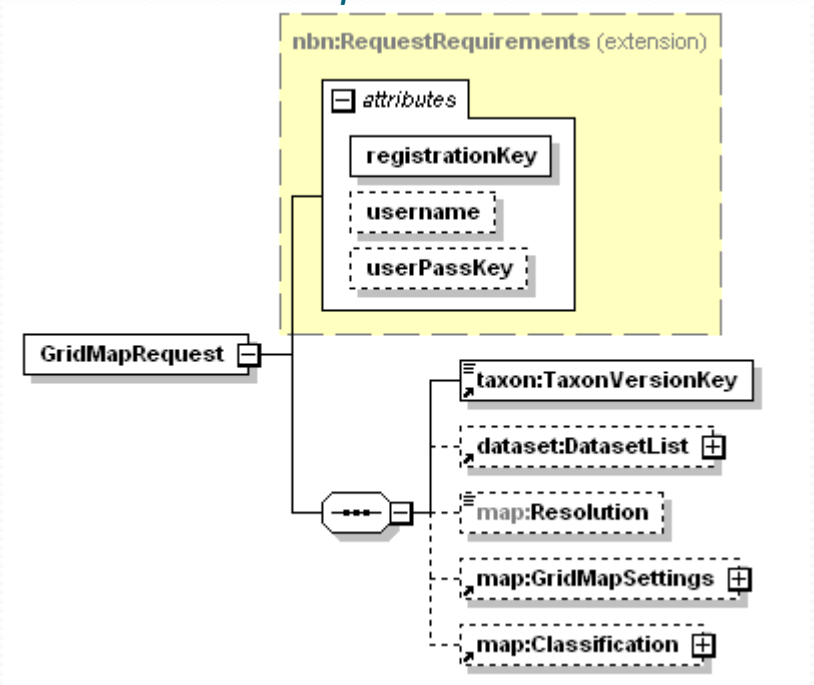
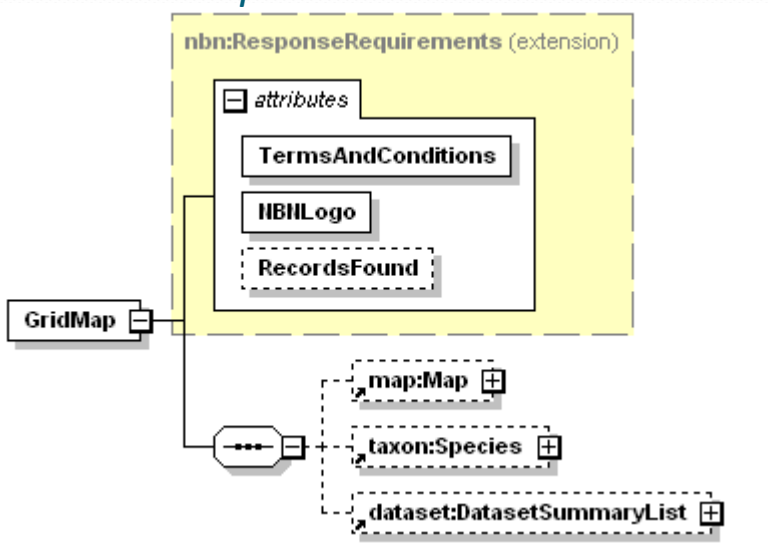
Request



Response



Today's tools

- soapUI
  - www.soapui.org
  - For consuming web services
  - Writing and testing requests
- EasyPHP
  - www.easyphp.org
  - Windows Apache MySql Php server
  - For running our php examples
- Notepad++
- XML Notepad

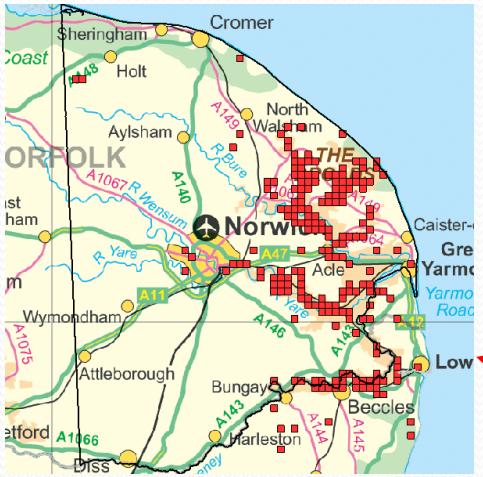
First practical session

- Exercise 1: using soapUI
  - Consume NBN WSDL and list all web services
  - Write a working Grid Map request
  - Get request ready for pasting to php
- Exercise 2: basic php grid map
  - Build working grid map
  - Step through skeleton page adding content
  - Show compliance with NBN terms and conditions

Overview of data access model

- A guide to the NBN data access model is here: http://www.nbn.org.uk/Guidebooks/Gateway-users/Data-Access-Controls/NBN-Gateway-Access-Controls.aspx
- Access is controlled per dataset by an administrator
- Access is given to users, groups of users and the public
- Almost all datasets have a public level of access
- You can apply for better access to datasets
- Two important controls for web services:
  - Records in map images
  - Records in data

Records in maps and raw data



Site name	Gridref	Date Recorded	Date Accuracy
Ramsey	TL28	July, 1943	Month
Woodwalton Fen NNR	TL28	26/7/1986	Day
Woodwalton Fen	TL28	4/9/1913	Day
Woodwalton Fen	TL28	13/8/1913	Day
Woodwalton Fen	TL28	29/7/1990	Day
Monks Wood	TL17	1900	Year
Great Stukeley	TL27	16/9/1969	Day

Squares on maps

Record data

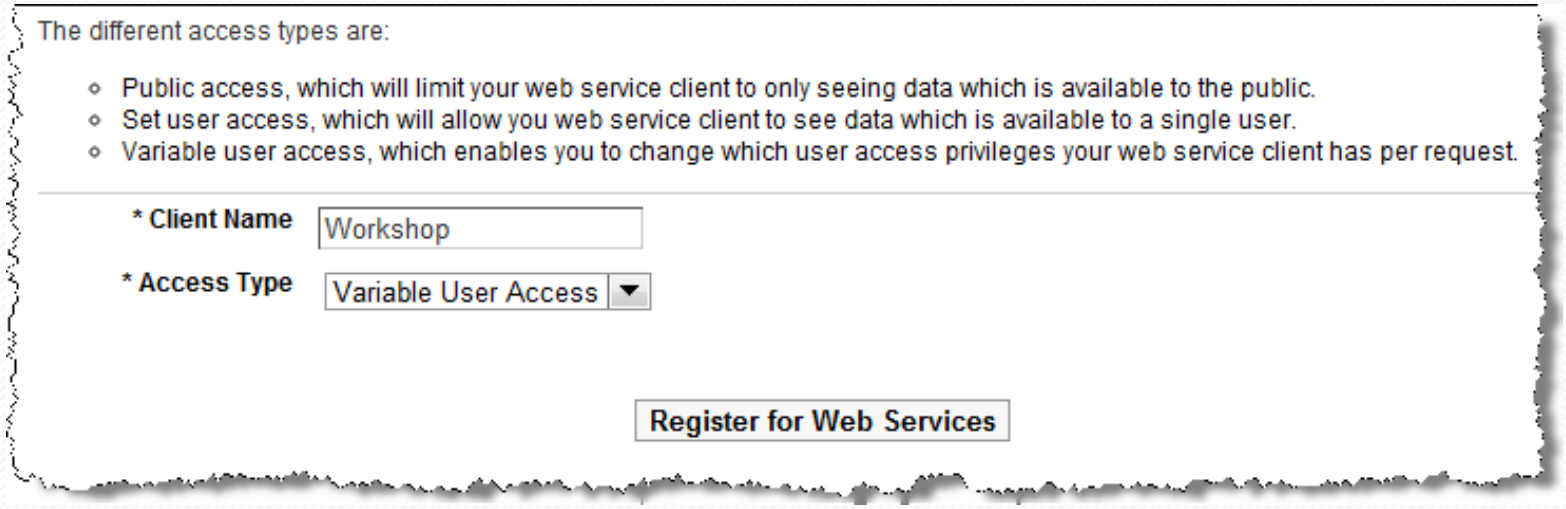
Use	Dataset (sort by: Number of records / Organisation name)	Dataset Resolution	Your Resolution	Sensitive access	Download raw data	View Attributes	View Recorder
	Dragonfly Recording Network						
☑	Dragonfly records from the British Dragonfly Society's Dragonfly Recording Network for the period up to 2010	100m	1km				
	Suffolk Biological Records Centre						
☑	Suffolk Biological Records Centre (SBRC) dataset	100m	10km		✓		
	RSPB						
☑	Odonata records from RSPB Reserves 1970-2009	1km	Full		✓	✓	✓
	Biological Records Centre						
☑	Dragonfly and Damselfly (Odonata) records for Britain to 1992, from the former Dragonfly Recording Scheme	100m	Full	✓	✓	✓	✓

Web service registration keys

- Registration keys are explained fully here: http://www.nbn.org.uk/Guidebooks/Web-services-documentation/Resources/registration.aspx
- Register your client to obtain a registration key
- Three types of key:
  - Public access: access to publicly available data
  - Fixed user access: one specific account's access
  - Variable user access: allows credentials to be passed
- Include key in your request
  - Eg as seen in exercise 2: <map:GridMapRequest registrationKey="a85d4c129728e58…

Steps to get a registration key

- Log onto http://data.nbn.org.uk
- Go to My Account
- Select Web Services > Apply for Access
- Provide a client name, choose a key type and submit
- Accept Ts & Cs and you will be e-mailed your key



Second practical session

- Exercise 3: Using a Variable User Access key

Easy Maps

- Developed by Biological Records Centre
- Full documentation at http://www.brc.ac.uk/schemes/NBNWidget/Easy_Maps_v6.pdf
- A 'wrapper' around the Grid Map web service
- Simplifies using the Grid Map web service
- Applies Terms and Conditions out-of-the-box
- Allows styling and customisation
- Let's use it – Exercise 4

Video: consuming web services in Java

- WSDL consumed to create client proxy classes
- Proxy classes hide client-web service communication
- Proxy are classes very intuitive to use
- .NET provides similar technology
- Focuses on SummaryDatasetList
- http://www.youtube.com/watch?v=6DKW27gFDWM
- (local flash)

Species List web service

- A list of species
- http://www.nbn.org.uk/Guidebooks/Web-services-documentation/the-web-services/Species-List/request.aspx
- Can be filtered by:
  - Site boundary or geographical area
  - Designation (eg BAP)
  - Date
  - **Datasets**
  - Species key**s** (aka Taxon Version Key**s**)
  - Species group key (aka Taxon Reporting Category key)
- Try Exercise 5 – which creates a species list for a dataset

Taxonomy web service

- Taxonomic search service
- http://www.nbn.org.uk/Guidebooks/Web-services-documentation/the-web-services/taxonomy---species-search/introduction.aspx
- Allows searching by:
  - Scientific name
  - Common name
  - Taxon Version Key
- Can include a designation filter (eg BAP)
- Returns with a list of species items
- Exercise 6 illustrates a simple example

Help

- Use the forum: http://forums.nbn.org.uk/viewforum.php?id=15
- Try the help desk: support@nbn.org.uk (watch out for typo on attendees version!)