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C5.112 Map REST Services further refined and fully integrated into EDIT Platform

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Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

This report provides a description of capabilities and applications of the latest version of the EDIT Map REST Service. It was compiled by Marcin Gašior with a generous input from Patricia Mergen, James Davy and Franck Theeten and the colleagues from the EDIT developer mailing list.

Introduction

The EDIT Map REST Service, together with EDIT MapViewer, is being established and developed under Work Package 5.4. It is a very practical visualization tool for automated publication of the collated taxonomic data. The Service is operational, and yet undergoing a constant development in order to advance its capabilities and stability. The architecture is based on GeoServer + PostGIS as a maps source and ImageMagick as a visualization tool.

Integration into the EDIT platform

The REST Service is extensively used in many EDIT Platform for Cybertaxonomy sites and are currently tested for the exemplar groups for the the African e-Flora exemplar project. The goal is to use the Platform, including the MapRestServices to produce volumes of the African flora as “camera-ready” copy, i.e. ready for the printer. Non-EDIT institutions are also using it or expressed their interest to do so, because the REST Service is particularly useful for biodiversity visualization and monitoring purposes, so it has its practical application especially in All Taxa Biodiversity Inventory and Monitoring (ATBI+M), the “Creating a Taxonomic e-Science” (CATE) project, and in EDIT Scratchpad sites. Moreover the Map REST Service can be utilized in the EDITor (the EDIT Desktop Taxonomic Editor) and in EDIT DataPortals.

A list of example sites with the Map REST Service fully integrated is presented below (image examples are depicted in the Annex):

ATBI+M:

<http://www.atbi.eu/mercantour-maritime/?q=node/481> (see Fig.1)

<http://www.atbi.eu/gemer/?q=node/38> (see Fig.2)

CATE:

<http://www.cate-araceae.org/> (see Fig.3)

<http://www.cate-sphingidae.org/> (see Fig.4)

Scratchpads sites:

<http://scratchpads.eu/scratchpads/thumbs>

Other:

<http://www.palmweb.org/> (see Fig.5)

<http://wp6-cichorieae.e-taxonomy.eu/portal/> (see Fig.6)

Global Compositae Checklist (hosted in New Zealand)

<http://compositae.landcareresearch.co.nz/Default.aspx>

FLOW (a taxonomic referential dedicated to planthoppers, hosted at MNHN)

<http://flow.snv.jussieu.fr/cgi-bin/flowsite.pl?db=flow&page=home&lang=en>

Map REST capabilities and refinements

- The Service is designed to be accessed in an automated way by exposing its map image representations as resources. It returns a map image as a response to an appropriately

constructed URI. The syntax and examples are provided on the Map REST wiki site: <http://dev.e-taxonomy.eu/trac/wiki/MapRestServiceApi> or by querying the services themselves with no parameters, example: http://edit.br.fgov.be/edit_wp5/v1/areas.php.

- The Service offers a flexible array of graphic expression means allowing generating maps customized to specific needs. This includes points and areas symbolization, specifying map extent, features labelling or creating map legends.
- Multiple data sources (vector, raster, distribution, occurrences) can be combined together in one map.
- The latest improvement is the possibility to display one or several external WMS layers as background in the 'Areas' and 'Point' services. This handy functionality allows using a growing range of shared environment data. The syntax after final enhancements will be published on the Map REST wiki site.
- An output image can be directly embedded into database driven websites that allows dynamically generating maps based on data stored in a database.
- The performance on a new server at Royal Museum for Central Africa (RMCA) at Tervuren was enhanced, compared to a former server at CSIC Madrid. The new installation was made almost from the scratch, using virtual machine technology and newest versions of software components. Placing the REST Service on a virtual server facilitates maintenance, backup and distribution of a preinstalled system to partner institutions.
- The stability and reliability have been improved thanks to functional mirror of Geo Services (Map REST and MapViewer) and load balancing service for distribution of user-generated inquiries. (Mirror synchronization tools should have been implemented until the EDIT termination).

Conclusion

The EDIT Map REST Service is a good choice for taxonomists looking for means to enhance their websites or other tools. It enables dedicated and convenient environment for presenting species occurrences and distributions.

Due to time and staff restrictions it was not possible to develop all demanded capabilities. They can be postponed after the EDIT lifetime project as e.g. highly requested functionality of uploading and displaying custom user Shapefiles (vector maps) which was deferred due to its technical complexity and IT resources restrictions.

Annex: Examples of sites using the EDIT Map REST Services

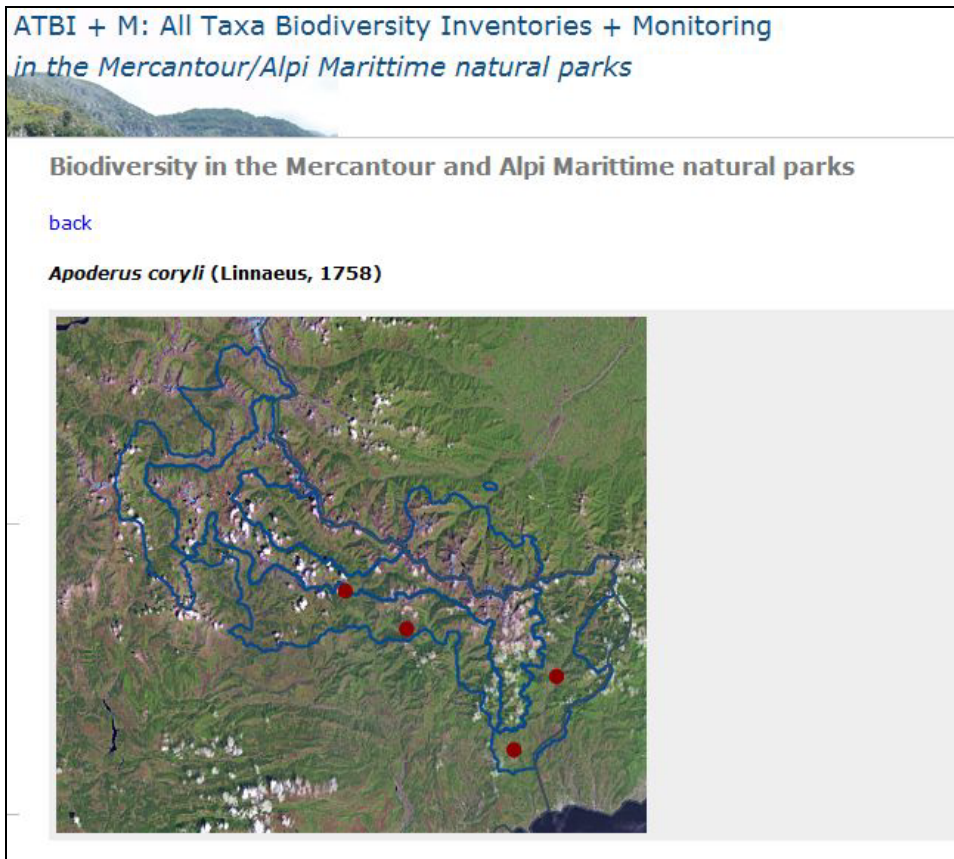


Fig. 1. ATBI+M in the *Mercantour/Alpi Marittime* website

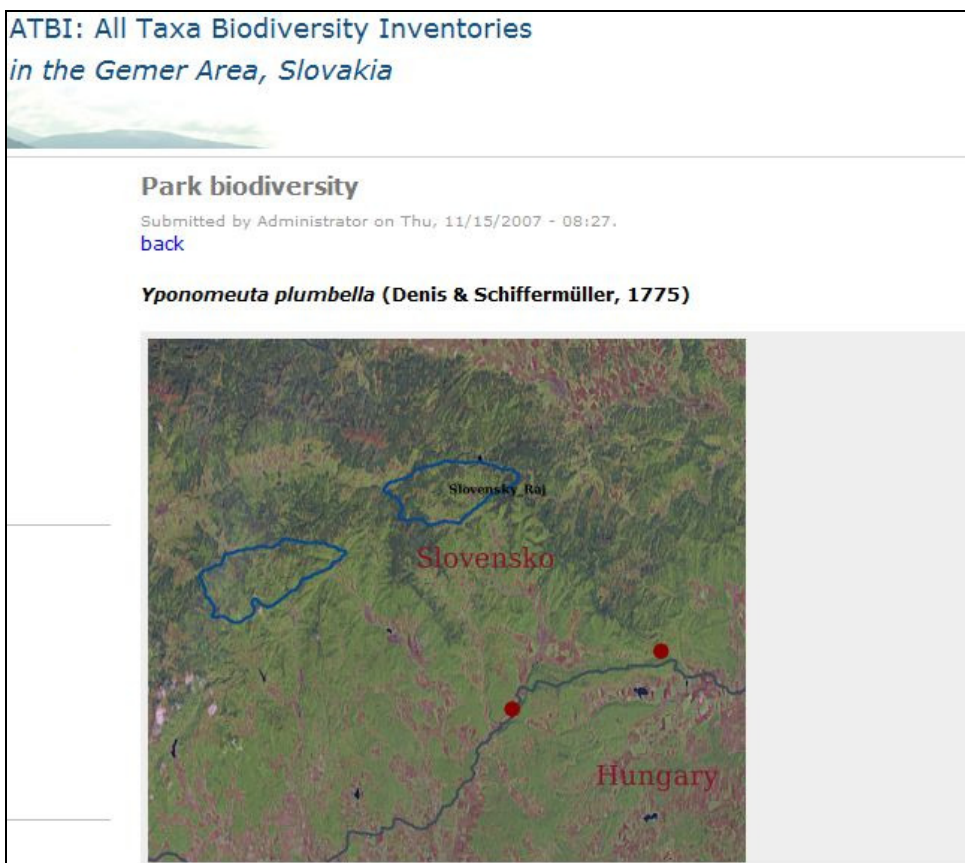


Fig. 2 ATBI+M in the *Gemer* website

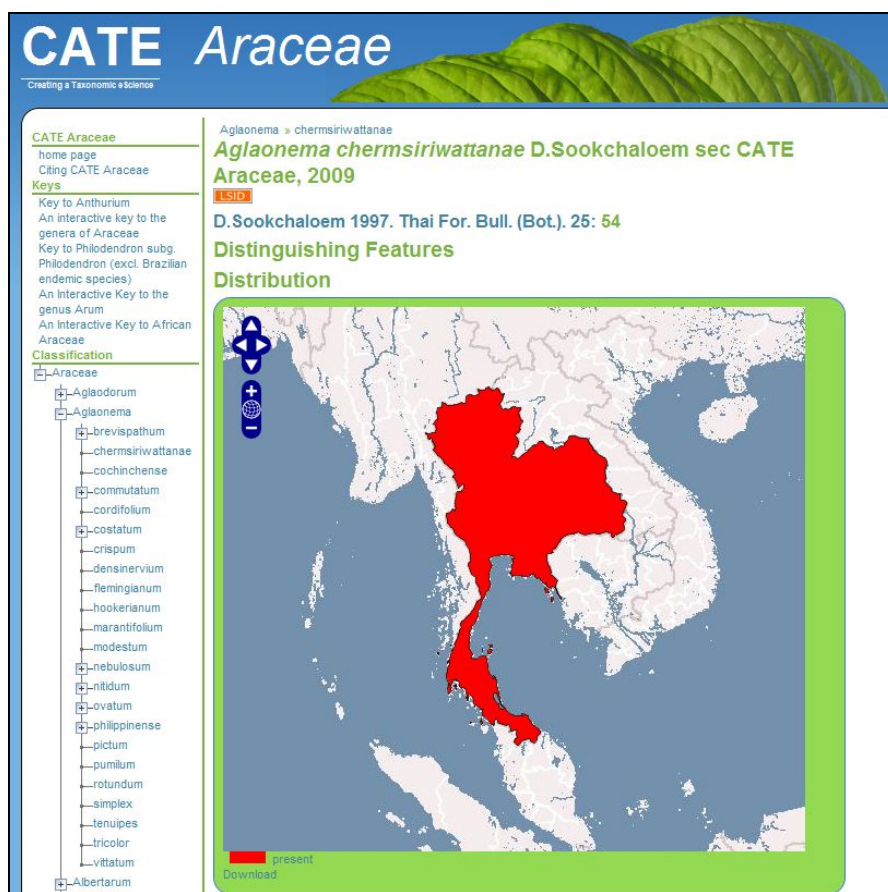


Fig. 3 CATE Araceae website

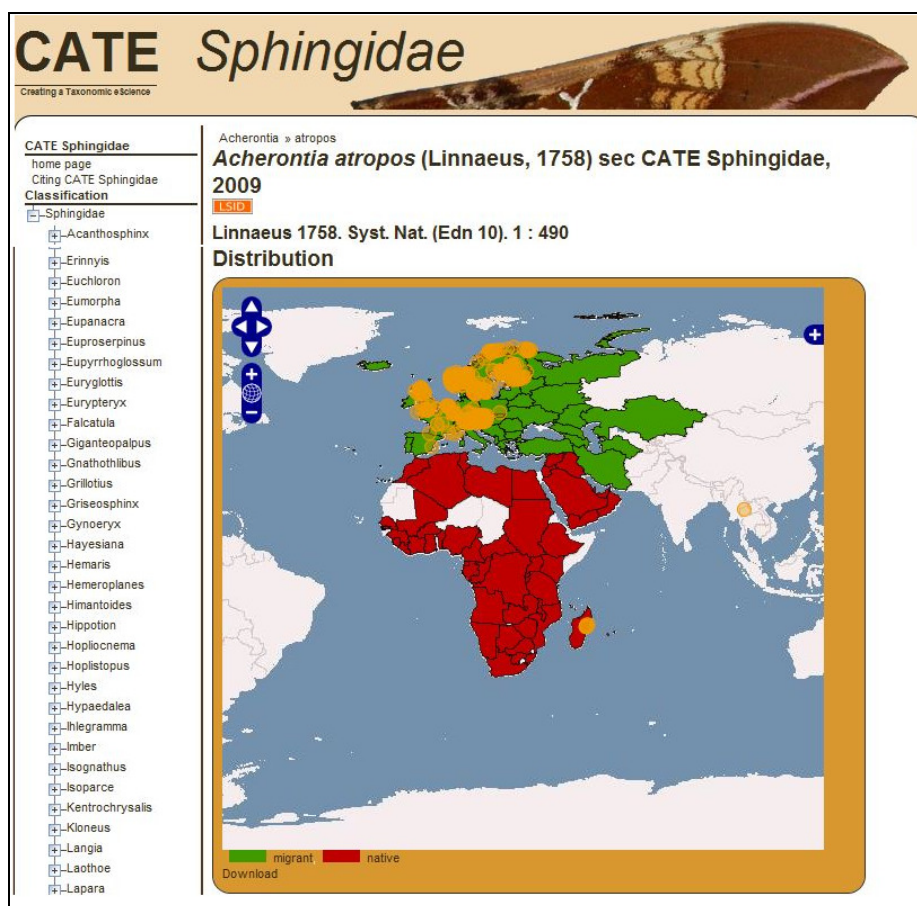


Fig. 4 CATE Sphingidae website



Fig. 5 Palms website.

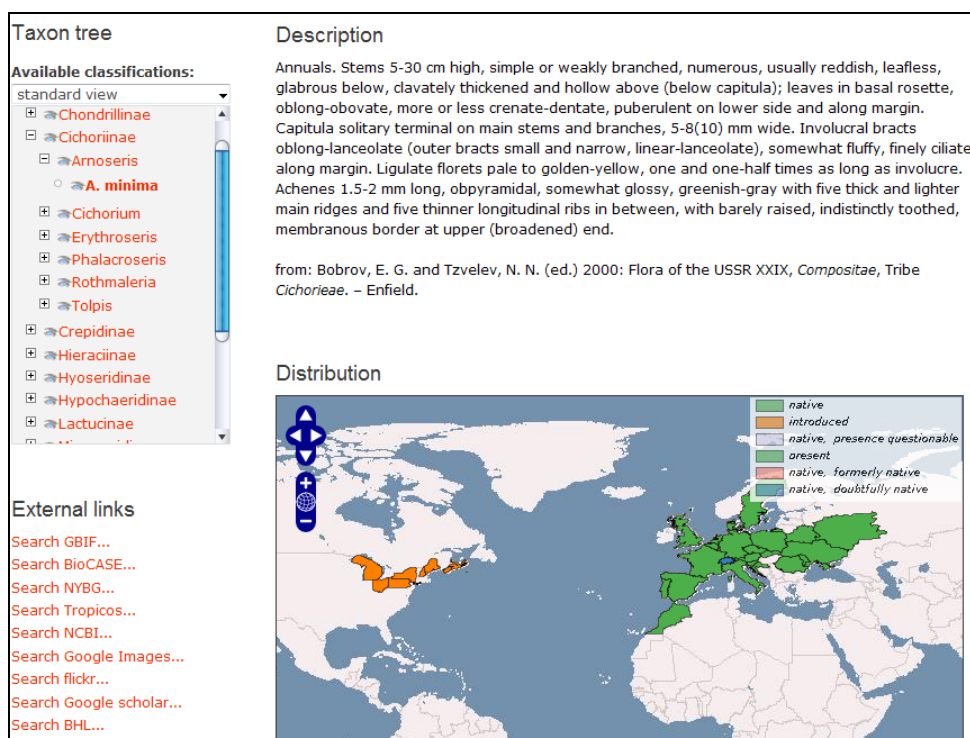


Fig. 6 Cichorieae Portal