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SCAPC2 PROJECT

STANDARD-CENTRIC AUTHORIZING AND PUBLICATION FOR CARTOGRAPHIC CONTENT

WebMGS 2010
Como, Italy

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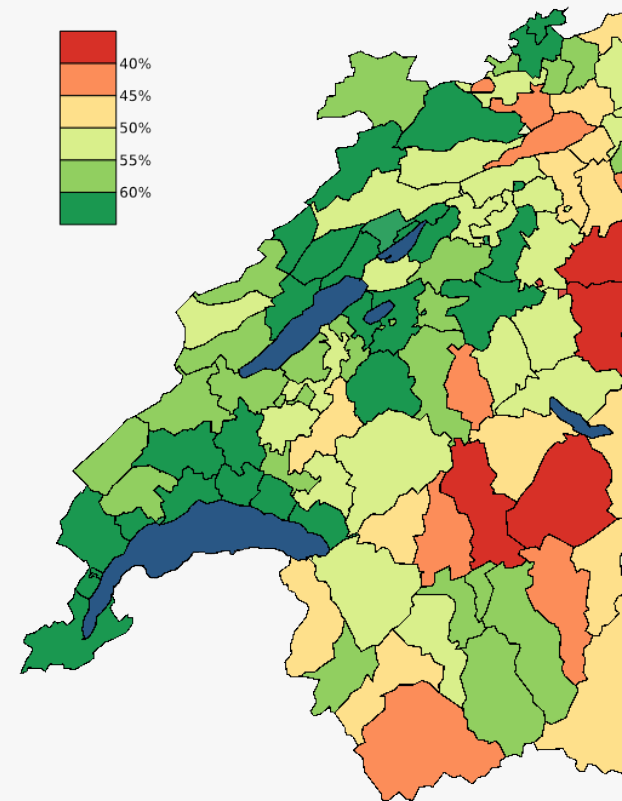
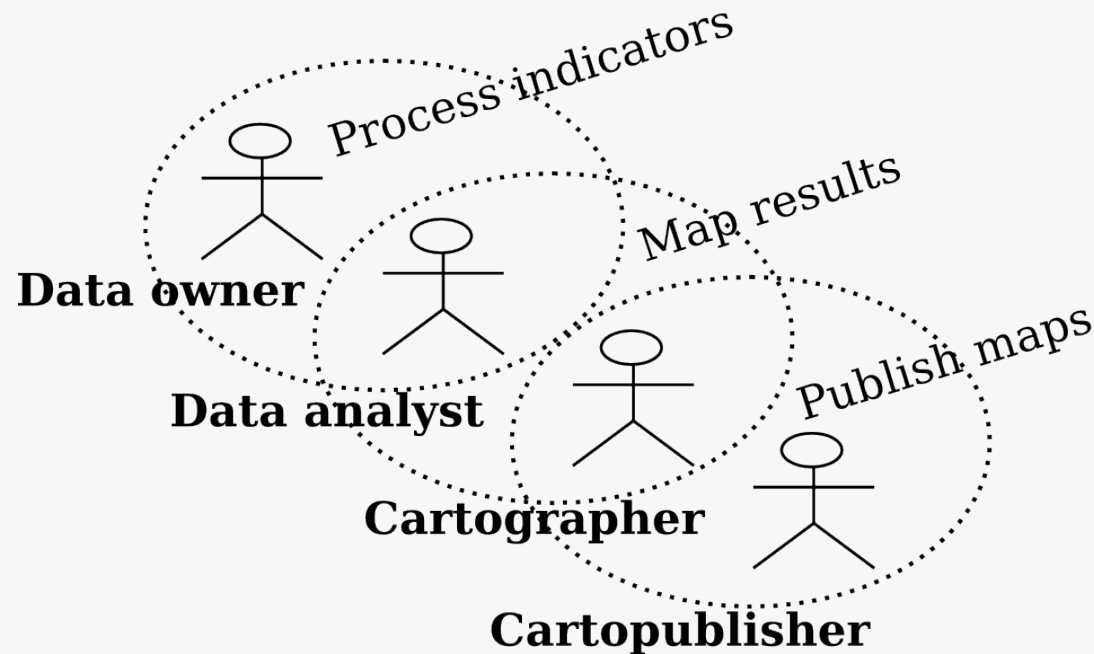
STANDARD-CENTRIC AUTHORIZING AND PUBLICATION FOR CARTOGRAPHIC CONTENT

- Introduction and context
- Collaborative cartographic production
- Standard-compliant map authoring tools
- Cartographic content structuring
- Polypublishing/crossmedia approach
- Adaptive publication of cartographic content
- Conclusions

- The ultimate platform to discover, explore, share, analyze and create content by combining distributed information and services
- A new paradigm for GIS and cartography practices to produce collective geospatial knowledge
- Geodata and geoservices are the base materials to create cartographic products useful for stakeholders
- Democratization : more and more map makers and map consumers
 - Wide range of skills : help to make “good” maps
 - Wide range of user profiles : help to get “useful” maps
- « It’s about the sharing as much as the geography » (R. Lake, 2010)

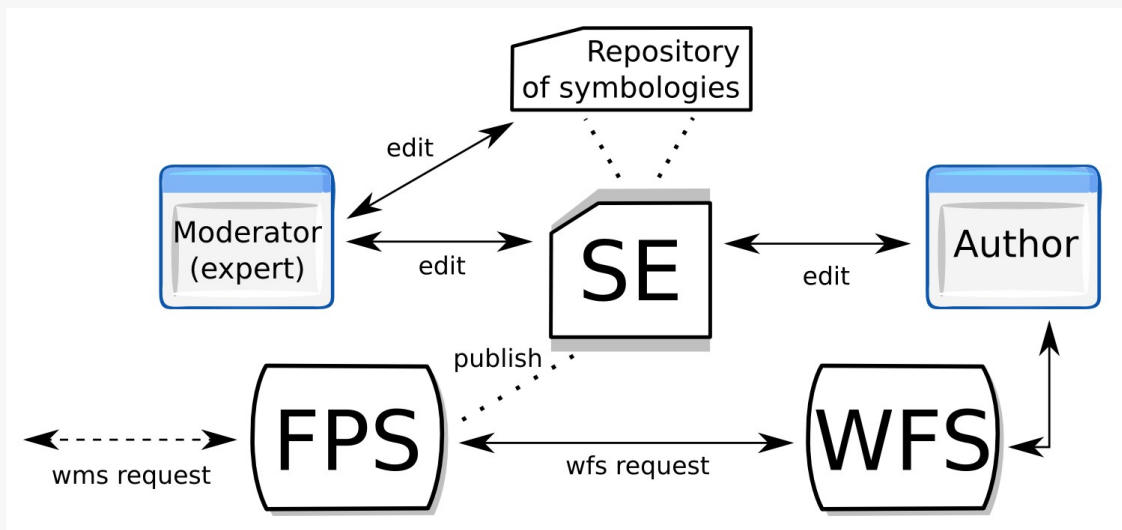
Cartographic products

- Share geospatial knowledge in the form of cartographic products
 - Not only red dots over satellites views with photographs
 - Take benefits from the power of thematic maps
 - Based on standards and content structuring
- A multi-actors transformation process



Collaborative cartographic production

- Common languages and content structuring are essential for describing :
 - the symbology of a map layer
 - the context of a map
 - the content of a cartographic document.
- Map layer description :



OGC Symbology Encoding offers the ability for « carto-actors » to share map layer symbology descriptions (O. Ertz, 2009)

OGC Symbology Encoding

- Symbology model with capacity to formalize several types of maps
- Work in progress at Open Geospatial Consortium : promising improvements of the standard and new abilities

e.g. for thematic mapping (Iosifescu-Enescu, I., 2009) :

- add classification methods, new graphic DiagramGraphic (pie chart, ...) ...
- towards a self-contained description of thematic maps (O. Ertz, 2007)

also :

- portable measurements
 - absolute portrayal units (not only pixels), mm, in, pt, percent, ...
 - ready for high resolution printing

- Etc... **see OGC SLD/SE SWG activities**

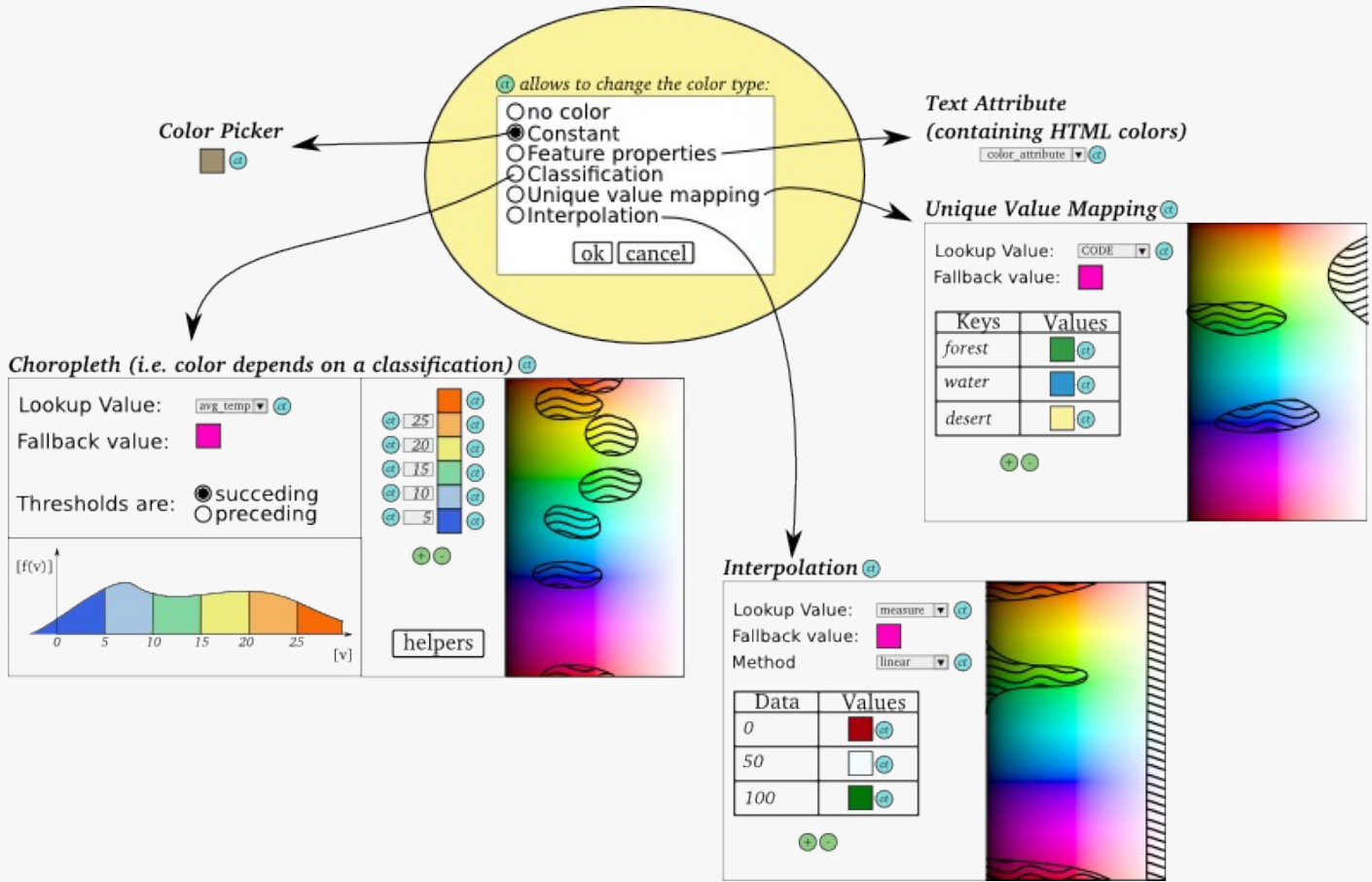


Authoring tools

- More and more map makers = various profiles of skills
- We need :
 - Map editors for everyone
 - To respect precise cartographic rules (esp. for thematic mapping)
 - To control aptness of map expression
- How ?
 - Provide/Use meta-information on attributes typology to drive wizard which can guide the map maker
 - Improve user interfaces with smart “live on” visual widgets
 - Take benefits of a collaborative context for human control/moderation

SE conform authoring tools

- User interface shall demystify the complexity of the standard
- OrbisGIS Modular UI Legend editor : work in progress ...



SE conform authoring tools

Area Symbolizer

General

Name: Choropleth #1 Geometry: the_geom

Desc.: Unit of measure: mm

Perpendicular Offset: 0

PenStroke

Color: Color Stipple Width: Opacity: 0% 100%

LineCap: Round DashArray: DashOffset: LineJoin: Bevel

SolidFill

Color: Opacity: 0% 100%

GraphicFill

GraphicCollection:

MarkGraphic #1 Unit of measure: mm

Horizontal gap: Vertical gap: Well Known Name: Circle Unit of measure: mm

Height: Width: PerpendicularOffset: External Graphic Online Content

PenStroke

Color: Color Stipple Width: Opacity: 0% 100%

LineCap: Round DashArray: LineJoin: SolidFill

Color: Opacity: 0% 100%

Switch to classified colors

Switch to GraphicFill (ruling)

Classified Colors Panel

Color: Lookup Value: avg_temp Fallback value: Thresholds are: succeeding preceding

25 20 15 10 5

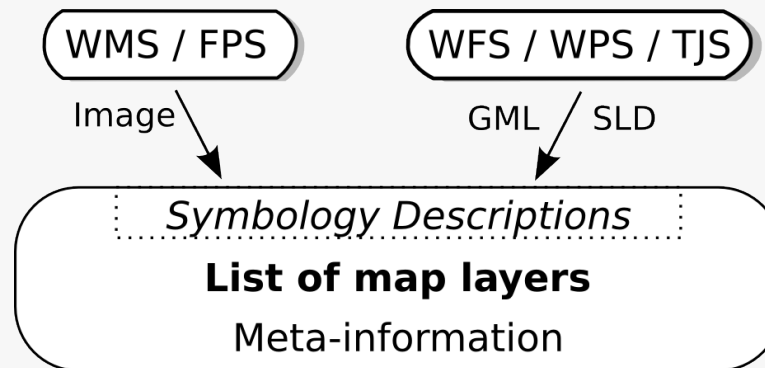
helpers

[f(v)] [v]

Opacity: 0% 100%

Map Context description

- Combination of map layers each driven by a symbology defined/choosen by the cartographer
 - + layer-related information : name, source, date, ...
 - + additionnal context information : map extent, srs, title, author, ...



- OGC Map Context is an interesting candidate
 - Several carto-actors can share their mapping works

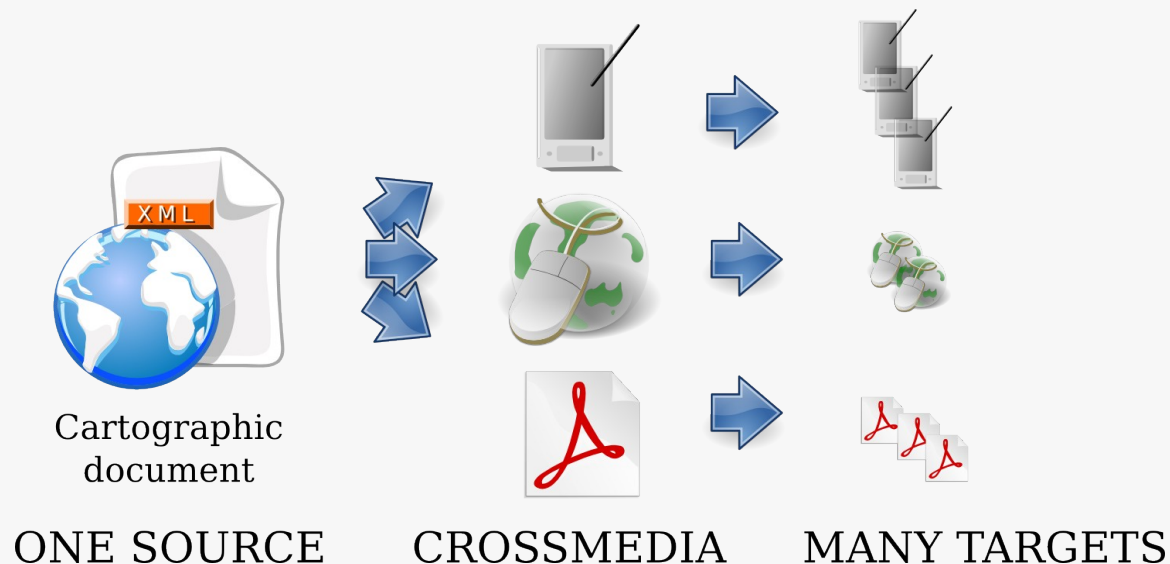
When ready, it can be encapsulated within a cartographic document ...

Cartographic document

- Last step of cartographic content description
 - Combination of maps validated by a cartographer
 - + document-related informations : title, date, author, logo, ...
 - + enrichment content to complete the message a cartopublisher wants to express
 - Informational elements :
 - Text to explain, ...
 - Images to illustrate, ...
 - Tables to present values, ...
 - Graphics to present statistics, ...
- **A complete cartographic product with everything that can help the reader to capture the message.**

A polypublishing/crossmedia approach (PPC)

- Crossmedia = multi-channels
 - print medium, screen display, mobile device, ...
 - considering device specificities
- Polypublishing = multi-targets
 - one source, many targets
 - considering user needs and profiles



- The cartopublisher configures transformations
 - Formatting language
 - Templating mechanism

Templating	Language	Engine
XSL	XSL-FO	FOP
Server-side templating (e.g. Smarty)	HTML/CSS +JavaScript	OpenLayers AJAX mapping framework

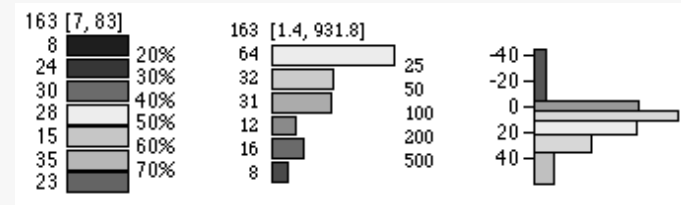
Table 1. Two publishing processes with technologies, one for print medium, one other for screen display

and configurable publication modules ...

Publication modules

- Mapviewer : rendering of a map context
 - needs device-independant measures all along the content description
 - OGC side: WMS should consider a kind of « dpi » parameter

- Maplegend : generate map legends
 - according symbology descriptions



- ... other modules : orientation, scalebar, text, ...
- The cartopublisher configures the publication through these modules
- Besides content structuring, transformations are build up so as to force and guide the cartopublisher to apply best practices

One source, several specific adaptive transformations

- For different channels :
 - print : high-quality maps and statical, offline content;
 - screen : online and interactive content through a webmapping application.
- For different targets :
 - only maps : rapid and synthetic for publication in a newspaper;
 - maps with tables and charts : detailed and analytical for stakeholders.
- Example : place shortcuts
 - Webmapping: “zoom to” actions on the mapview
 - Print medium: add a zoomed map for each shortcut in the publication

Media and targets have their specificities, advantages and drawbacks that have to be considered to build up transformations

- Authoring side
 - Collaborative cartographic production with standards-compliant editing tools
 - Smart visual widgets and wizards (e.g. driven by attribute typology)
 - Still some work in progress on OrbisGIS platform (www.orbisgis.org) ...
- Publication side
 - Standard-based content structuring with polypublishing/crossmedia approach
 - Adaptive publication : describe a cartographic document one time, publish it many times through several medium and user adaptive transformations
 - Besides content structuring, transformations are build up so as to force and guide the cartopublisher to apply best practices
 - Development of a prototype will start in the following weeks ...
- Feed the GeoCognition platform
 - a hub where to share geodata, geoprocesses and cartographic products



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