StyledCat: Definition of a SLD Catalogue

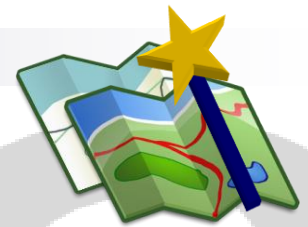# Overview:

Three maps from a WMS:

A nice help for selection of the correct symbolization…
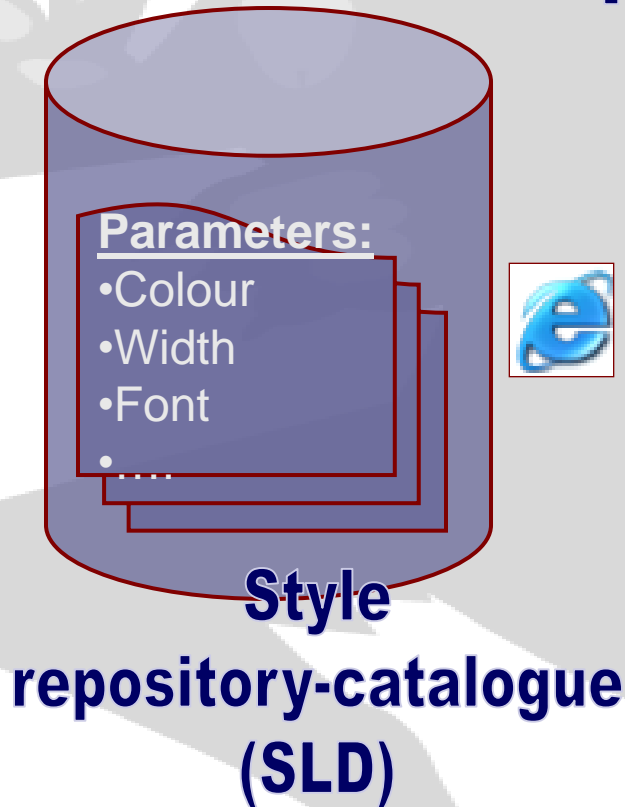
- **In SDI context...**
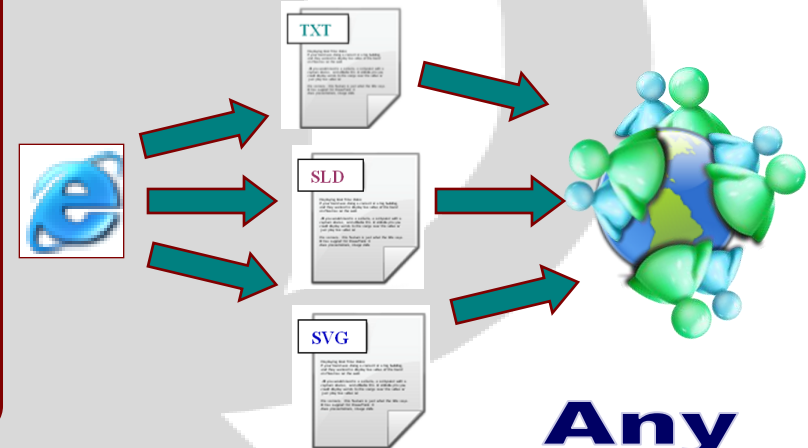
Symbols of mapping agencies

Three different formats

Parameters:
- Colour
- Width
- Font
- ...

TXT

SLD

SVG

Symbol parameters

Style repository-catalogue (SLD)

Any user

grupo mercator

1 INTRODUCTION

1. Introduction to WMS

2. Introduction to SLD

3. Rationale for this project

2 OBJECTIVE

• Creation of a style repository-catalogue

3 DEVELOPMENT

• Creation of a Postgres database
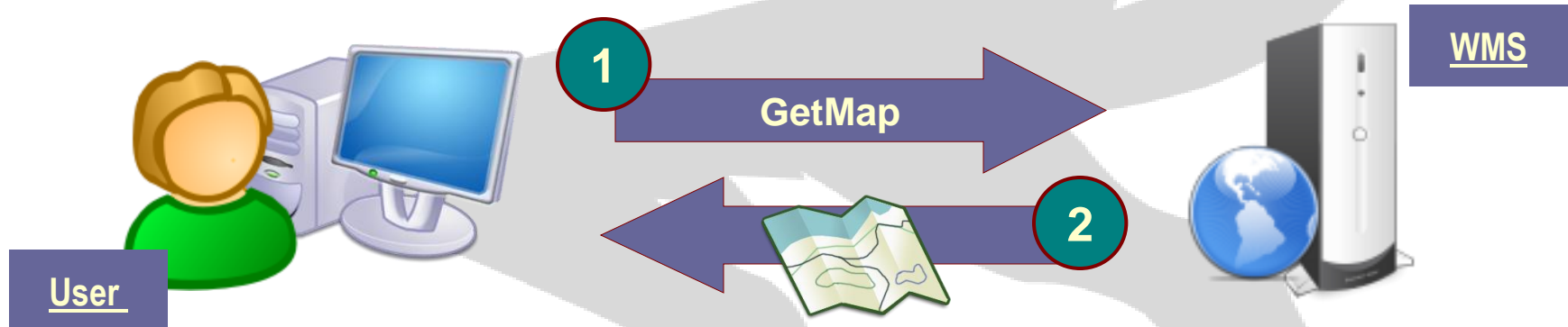
• Integration in a Geoservice

- **Introduction to WMS**

- Introduction to SLD

- Rationale for this project

Through WMS:

1 The user makes a **GetMap request** to a Web Map Server (WMS), asking for a map.

2 The WMS returns a map.

1

GetMap

2

WMS

User

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- Introduction to WMS
- **Introduction to SLD**
- Rationale for this project

What is SLD?

- **Styled Layer Descriptor (SLD)** is an Open GIS Consortium (**OGC**) Specification

- Allows a WMS user to **choose the symbolization** of the map he wants to get.

- **Including a SLD document in a GetMap request to a WMS**, a user can define the symbology of the map.
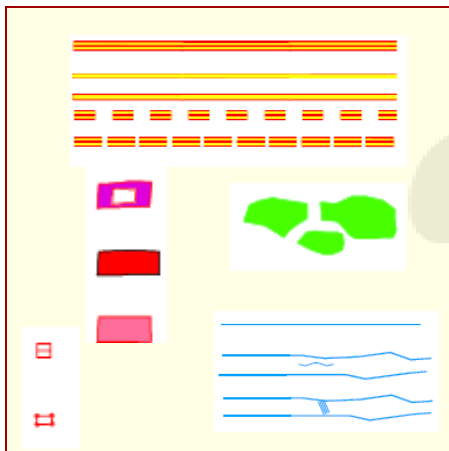
GetMap (SLD) → **WMS** →

- Introduction to WMS
- **Introduction to SLD**
- Rationale for this project

SLD Documents (XML):

- These documents **model and assign parameters to the cartographic symbols**

- They define colours, weights, fonts… for each symbology in a structured way

"The SLD Specification transforms the cartographic symbols into words and numbers".

Symbology

Symbology Parameters

SLD Document

```
<StyledLayerDescriptor>
    …
</StyledLayerDescriptor>
```

SLD also allows to differentiate symbology of features according to their attributes. (Filter encoding)

- Introduction to WMS

- Introduction to SLD

- Rationale for this project

Rationale for this project:

Some reasons for drawing up this project:

1. Lack of a symbolization normalized style catalogue at the present time.

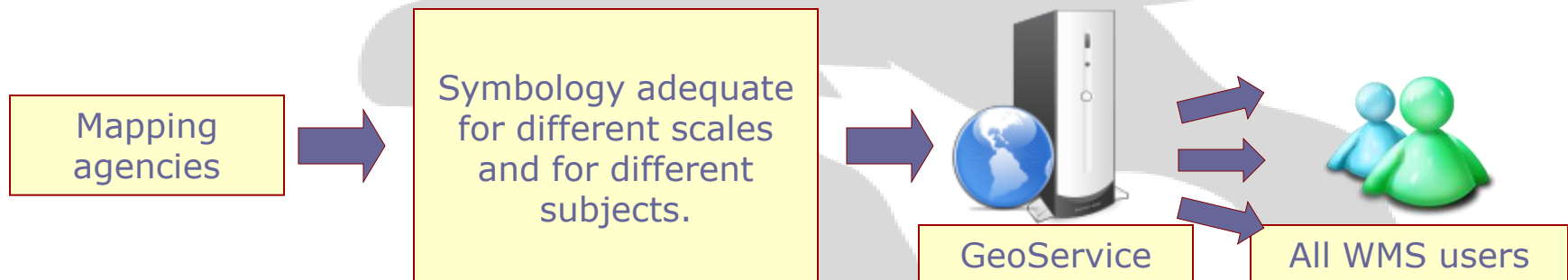2. Loss of **cartographic quality** in maps obtained from WMS.

- Introduction to WMS
- Introduction to SLD
- Rationale for this project

1. Lack of a symbolization normalized style catalogue at the present time.

Mapping agencies have a **normalized symbolization** system **adequate**

- **for different scales**
- **and for different subjects**.

If this capability is **made accessible to the public** through an Internet Geo-service, any user – with or without cartographic knowledge – could provide his/her maps with the standardized, normalized symbology designed by these agencies.

| Mapping agencies | → | Symbology adequate for different scales and for different subjects. | → | GeoService | → | All WMS users |

- Introduction to WMS

- Introduction to SLD

- **Rationale for this project**

2. Loss of cartographic quality in maps obtained from WMS.

The manual preparation of an XML document consistent with the SLD Specification by any user involves the following drawbacks:

1. the lack of knowledge about **graphic semiotics**

2. **SLD document-making** process turns out to be very tedious
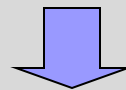
These facts cause a loss of cartographic quality in maps obtained from WMS.

- Introduction to WMS

- Introduction to SLD

- **<u>Rationale for this project</u>**

This catalogue **generates these SLD documents** from the symbology stored in the databases of mapping agencies.

SLD documents will be returned to the user for its application in a WMS.
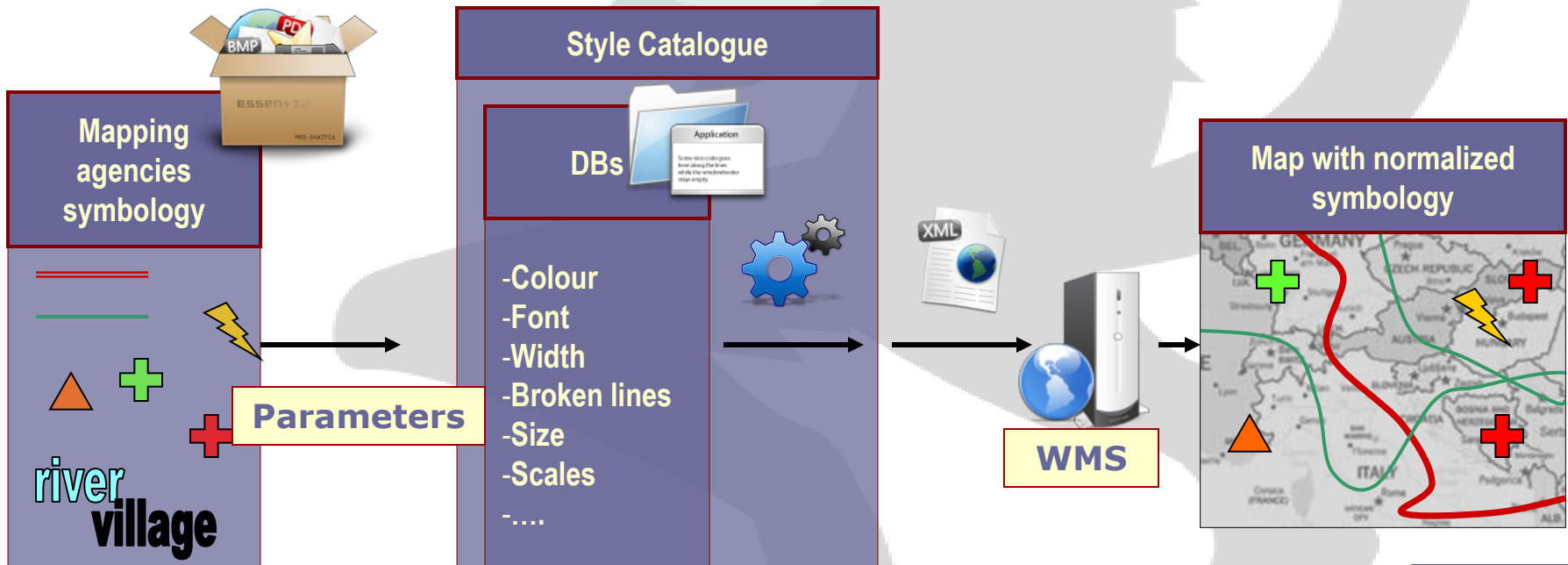
Mapping agencies symbology

river
village

Parameters

Style Catalogue

DBs

-Colour
-Font
-Width
-Broken lines
-Size
-Scales
-....

XML

WMS

Map with normalized symbology

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Creation of a style repository-catalogue

3 DEVELOPMENT

•Creation of a Postgres database

•Integration in a Geoservice

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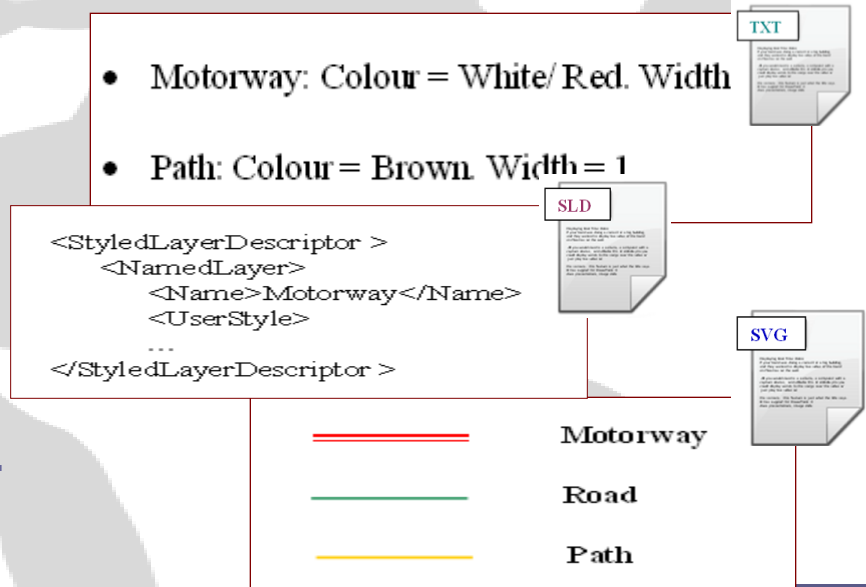**Creation of a style repository-catalogue**

Objective:

The creation of a style repository-catalogue providing SDI users with the styles normalized by the different mapping agencies which.

Three different formats of the style returned:

txt: For simple descriptive purposes

sld: For direct application to WMS.

svg: Provides the style as a legend.

- Motorway: Colour = White/ Red. Width
- Path: Colour = Brown. Width = 1

```
<StyledLayerDescriptor >
    <NamedLayer>
        <Name>Motorway</Name>
        <UserStyle>
        ...
</StyledLayerDescriptor >
```

Motorway
Road
Path

1

INTRODUCTION

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2

OBJECTIVE

•Creation of a style repository-catalogue

3

DEVELOPMENT

•**Creation of a Postgres database**

•**Integration in a Geoservice**

grupo **mercator**

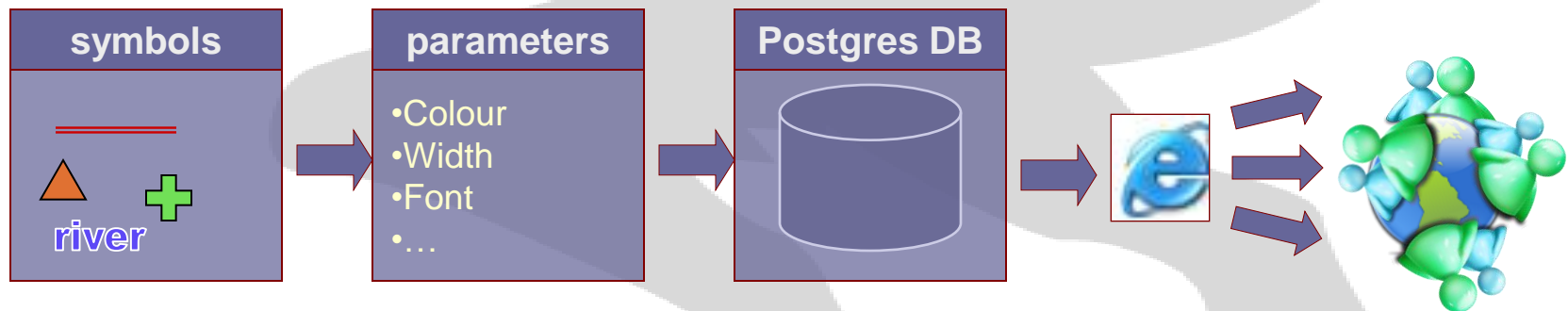# DEVELOPMENT. <u>Creation of a Postgres database</u>

- <u>Creation of a Postgres database</u>

- **Integration in a Geoservice**

The catalogue will be made up of a **Postgres database:**

- The database **stores in relational structured tables** the data defining each style and the agency generating it.

- This Postgres database is **accessible through the Internet**.

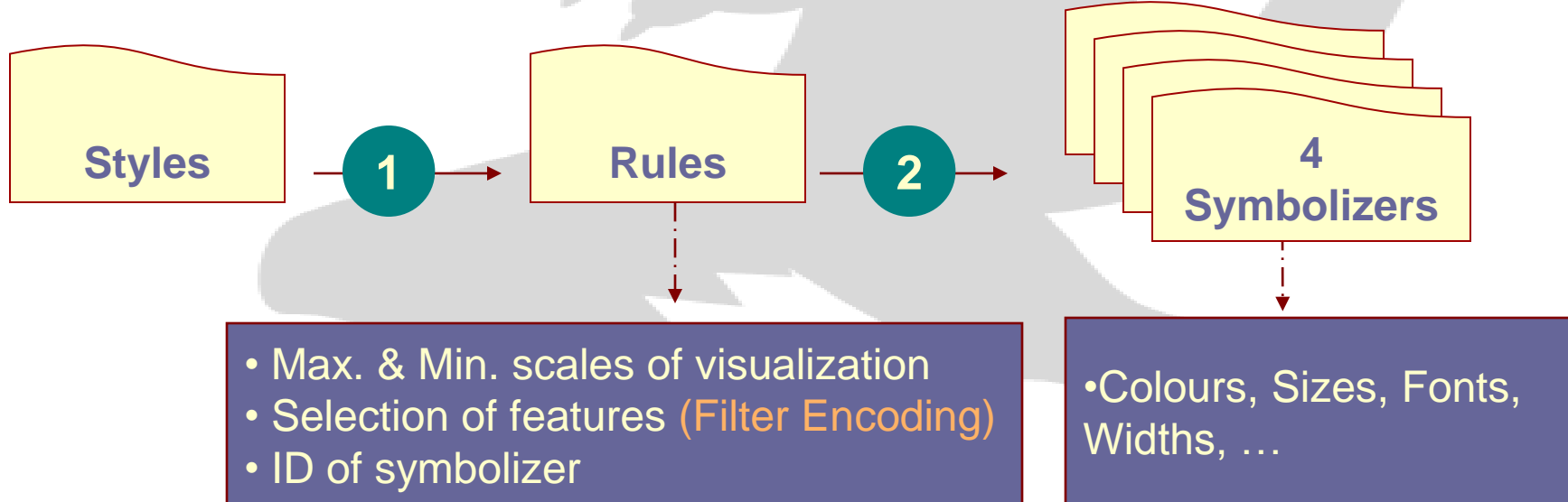| symbols	parameters	Postgres DB
river	•Colour •Width •Font •…	

- **Creation of a Postgres database**

- **Integration in a Geoservice**

- **6 interrelated tables**: Table of styles, table of rules and 4 tables of symbols (points, lines, polygons, text).

- **Interrelation of tables:**

  1 One *Style* contains one or more *Rules*

  2 One *Rule* contains one or more *Symbolizers*

Styles → **1** → **Rules** → **2** → **4 Symbolizers**

- Max. & Min. scales of visualization
- Selection of features (Filter Encoding)
- ID of symbolizer

- Colours, Sizes, Fonts, Widths, …

•**Creation of a Postgres database**

•**Integration in a Geoservice**

Characteristics of the Geoservice:

1. Capability of **interacting with the database** in order to carry out searches, downloading, insertions, updates and deletions

2. **Dynamic generation** of the styles

3. The entire system will be integrated in a service similar to others already in existence **(OGC Specifications)**

•**Creation of a Postgres database**

•**Integration in a Geoservice**

1. **Capability of interacting with the database**

Four groups of requests:

1. **Search requests**

2. **Requests for downloading styles**

3. **Transaction requests**

4. **Requests for instantly creating and obtaining a new style**

•**Creation of a Postgres database**

•**Integration in a Geoservice**

2. Dynamic Style Generation

The styles are **automatically** **and** **dynamically** generated by the catalogue in the **different formats** from the data stored.

StyledCat: Catalogue of Styles

DBs

Parameters of the different styles(colours, weights, widths, fonts, sizes…)

GetStyle

Style (sld, txt, svg)

User

- **Creation of a Postgres database**

- **Integration in a Geoservice**

3. Integration in a service similar to others already in existence (OGC Specifications)

(…thereby achieving a **more familiar use** for the SDI user community.)

The same request schemas will be in place so as to facilitate access either manually or through clients

With the creation of this catalogue we will achieve two goals:

1. Every SDI user will be able to easily obtain **quality maps from a WMS**.

2. The possibility of sharing information and creating **common maps with homogeneous symbology.**

StyledCat: Definition of a SLD Catalogue