



GeoShield
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*AUTHENTICATION AND AUTHORIZATION MANAGEMENT TO
OGC SERVICES WITH GEOSHIELD: IMPROVEMENTS FROM
FOSS4G 2009*



FOSS4G 2010
Barcelona

Content

- 📌 Quick intro
- 📌 Security issues with OGC standards
- 📌 Security with GeoShield
- 📌 Technologies and design
- 📌 Web administration interface
- 📌 WFS security
- 📌 Next improvements
- 📌 Q&A



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QUICK INTRO



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Fields of activities

[intro]

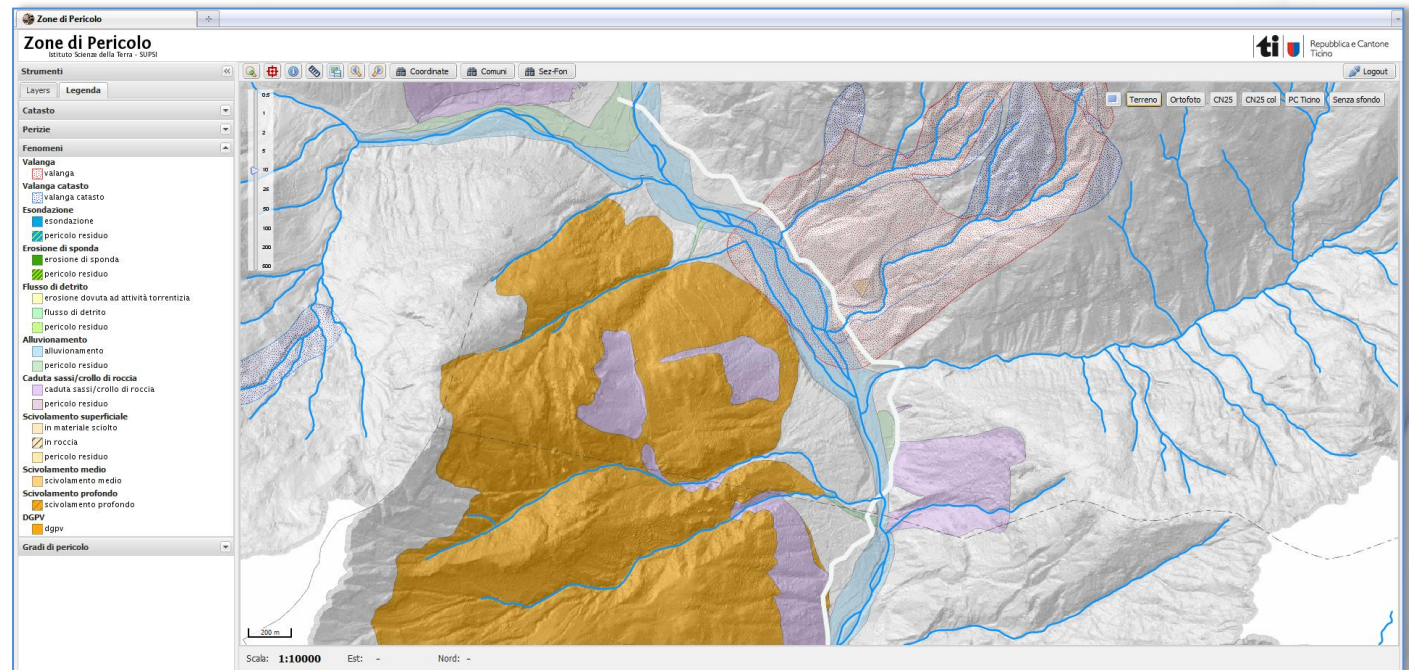
Land Planning

Hydrology

Hydrogeology

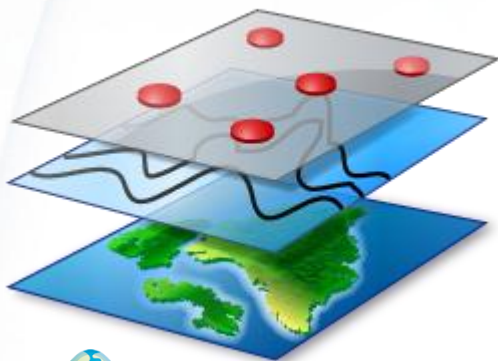
Geology

Geomatics

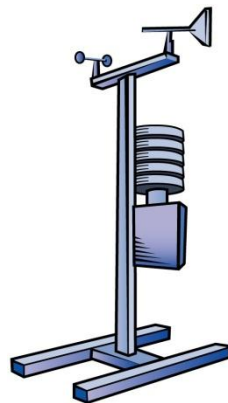


OGC implementations

[intro]



 **GeoServer**
Geographical data serving



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Sensor Observation Service

Monitoring data



PyWPS

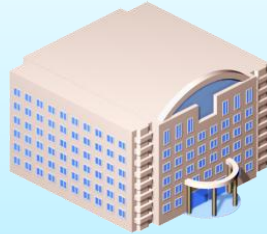


ZOO

Data processing service

Data Security

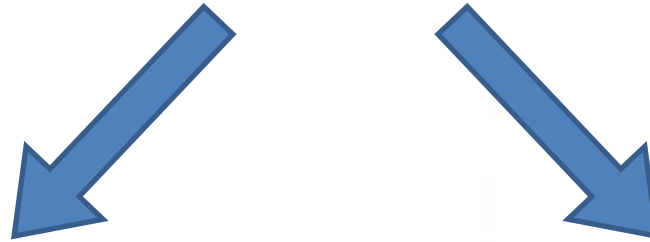
[intro]



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Public data



Sensible data

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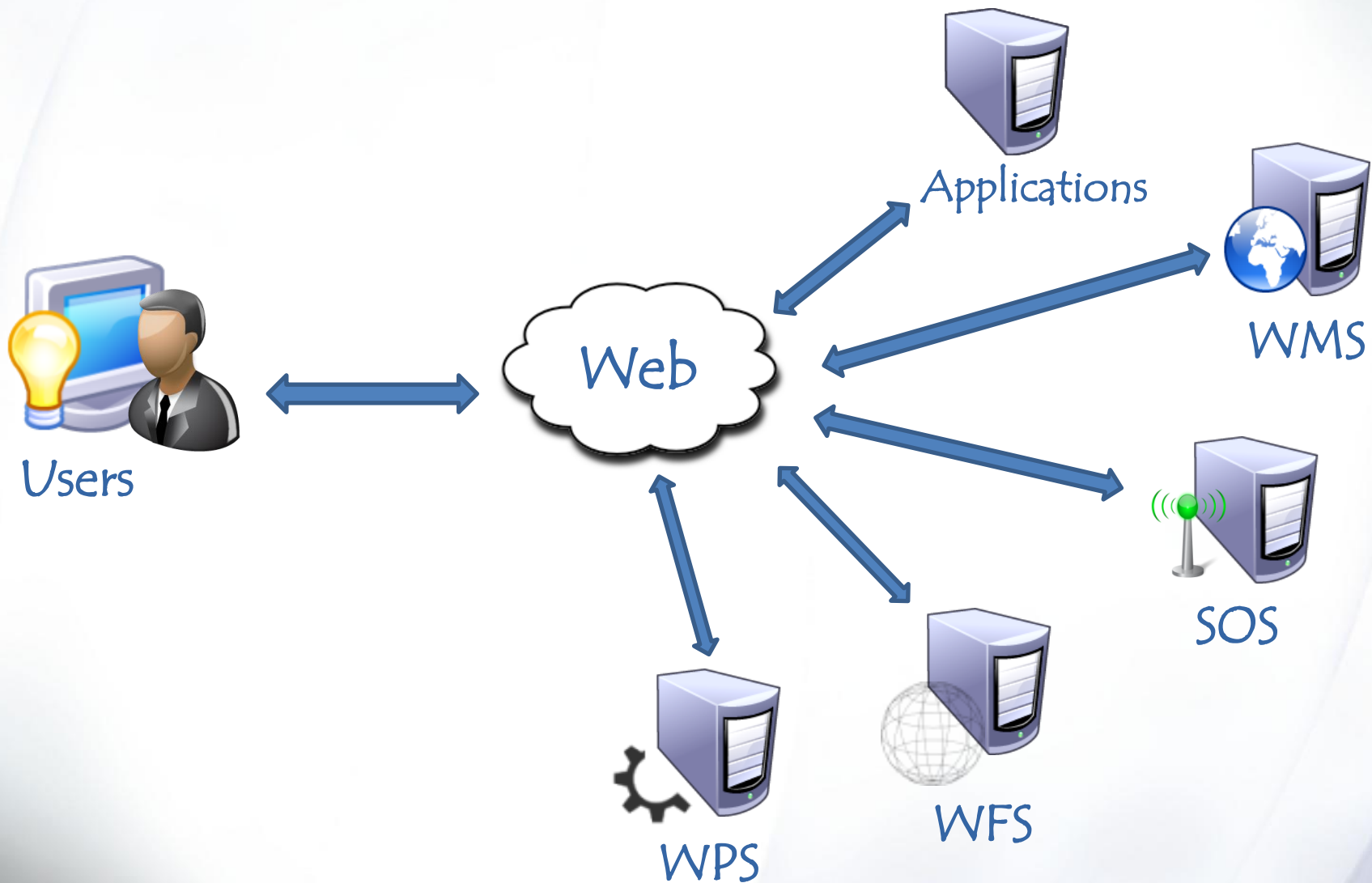
Security issues with OGC standards



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Which security implementations to use?

[security issues with OGC standards]



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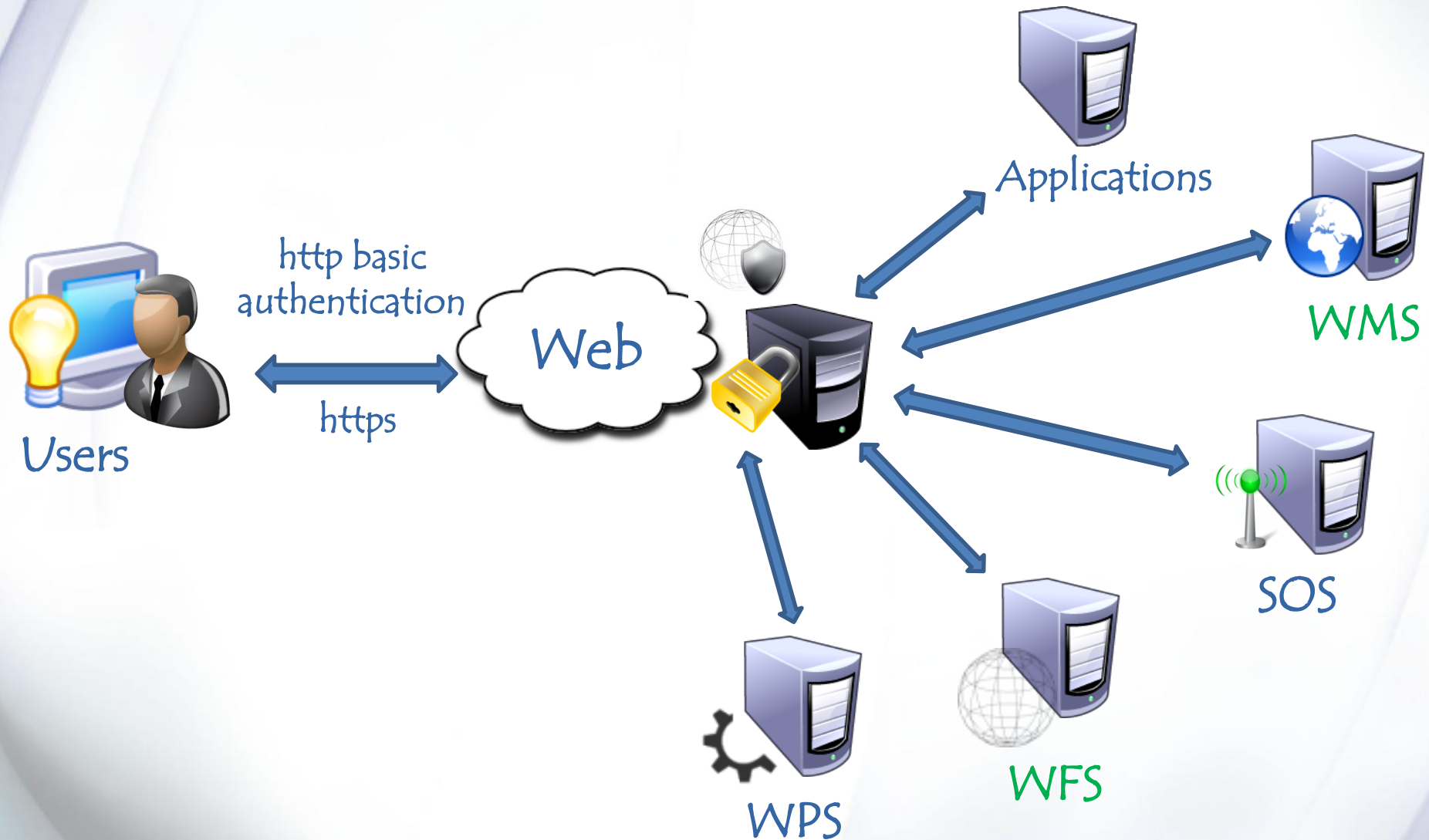
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Security with GeoShield



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Technologies and design



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Technologies

[technologies and design]

Server side



Java Servlet:

- Handling HTTP request and response



GeoTools 2.6.5:

- Conversion of CQL to OGC:FILTER
- filters aggregation
- filters evaluation
- Encoding/decoding OGC request /response



Java Persistence Api (with EclipseLink 2.0.0):

- Data manipulation



PostgreSQL 8.4 database

- User and group permission store

Technologies

[technologies and design]

Web Admin

-  Desktop Style (Sencha Extjs)
 - Users and groups definition
 - Services initialization
 - Features definition (Layers)
 - Filters definition

Design

[technologies and design]

Intercepting filter pattern:

Modularity

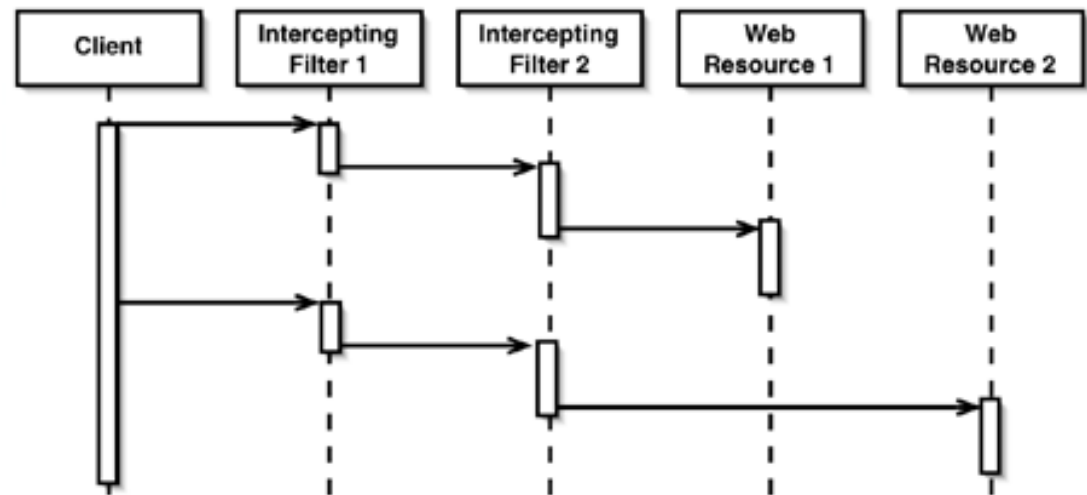
📌 Easy to add new ogc security implementations

HTTP redirection

📌 login pages

Pre-processing e post-processing

📌 Active modification of user request and services responses



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Web administration interface



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Web administration interface

The screenshot displays the GeoShield web administration interface. The top right corner features the GeoShield logo and the text "Institute of Earth Science SUPSI". The interface is divided into several sections:

- User accounts:** A table listing user information. The table has columns for id, User, First name, Last name, Email, Ufficio, Tel, Fax, Indirizzo, and Attiv. A single row is visible with id 8, User ist, First name admin, Last name admin, and Attiv true.
- Group accounts:** A table listing group information. The table has columns for id and Group name. A single row is visible with id 1 and Group name ist.
- Group properties:** A detailed view for the 'ist' group. It includes a "Group name" field with the value 'ist'. Below this are three tabs: "Members", "Services permissions", and "WMS/WFS permissions". The "Services permissions" tab is active, showing a table of services with columns for Service, Path, and Address. Three services are listed: WMS /public, WMS /map, and WFS /foss4g, all with checkboxes checked. To the right of this table is a "Permitted service's requests" section with a table listing requests: Request, getcapabilities, describeFeatureType, and getFeature, all with checkboxes checked. A note at the bottom of this section reads "Note: select available Services from left".

The bottom of the interface shows a taskbar with a Start button and three open windows: "User acco...", "Group acc...", and "Group pro...".

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WFS security



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The new WFS module

[WFS security]

Working components

- 📌 WFS version: 1.1.0
- 📌 WFS BASIC profile:
 - GetCapabilities
 - DescribeFeatureType
 - GetFeature
- 📌 OutPutFormat: GML

Developing

- 📌 WFS version: 1.0.0
- 📌 WFS Transactional profile
- 📌 OutPutFormat: shapefiles, JSON

How it works

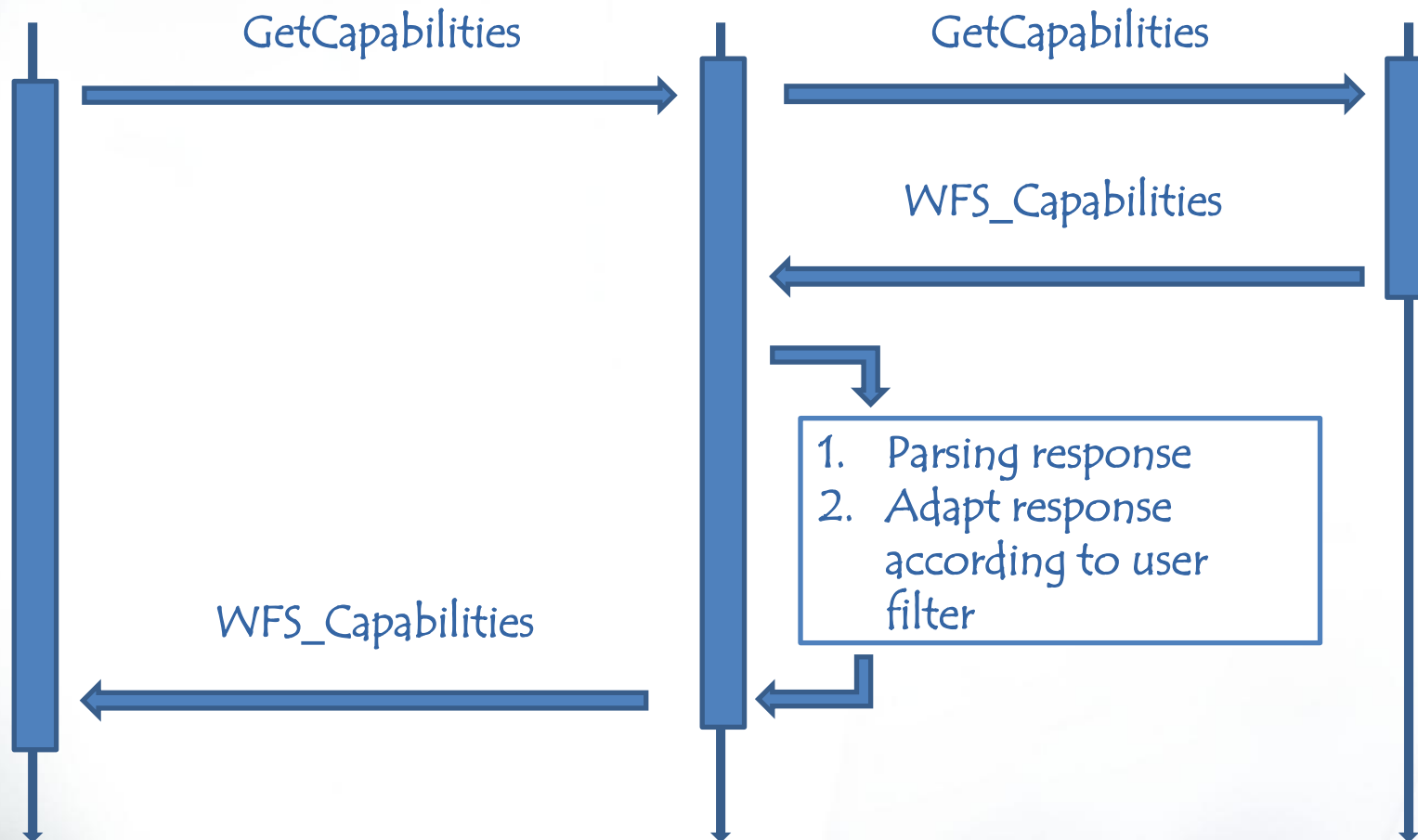
[WFS security]



User



WFS



How it works

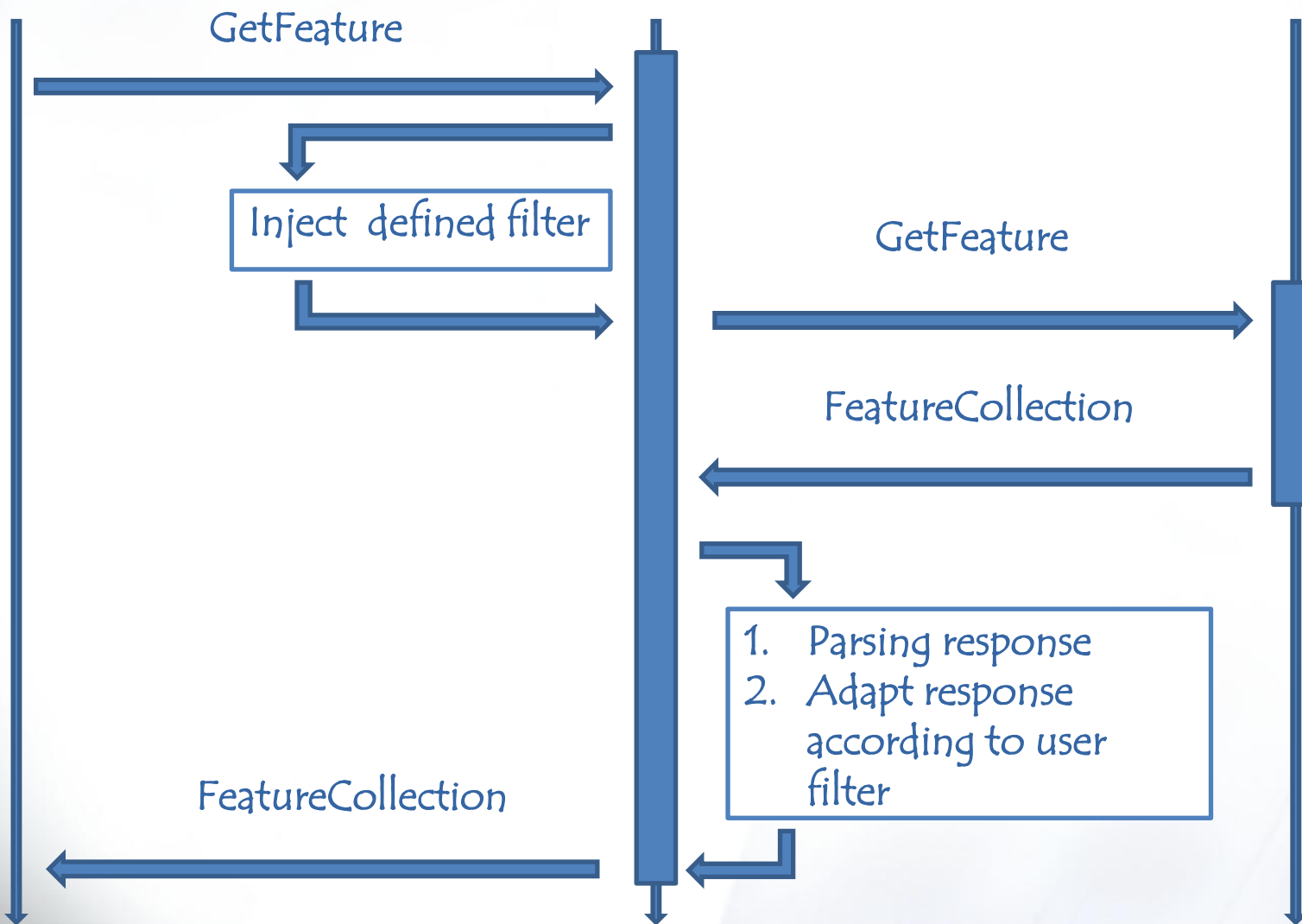
[WFS security]



User



WFS



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Demostration



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Next improvement



Ending full WFS integration



Extending security to:

- Web Processing Service
- Sensor Observation Service
- Web Application



Updating the web administration interface, integrating Opelayers for CQL filters definition.

GeoShield advantages

- 📌 Single login for multiple services
- 📌 Centralized authentication management system
- 📌 CQL filters to control the access to single layers for WMS and WFS
- 📌 OGC standard compliant (manage standard requests)
- 📌 Simple set-up and easy user permission management

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Any question?



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