



ELF EUROPEAN
LOCATION
FRAMEWORK

Validating services and data in an SDI

Presentation to: INSPIRE Conference

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Date: 30 September 2016

4 October, 2016



the Competitiveness and Innovation framework Programme (CIP)
ICT Policy Support Programme (PSP) Call 6 Grant 325140

EUROPEAN LOCATION FRAMEWORK

ELF is ...



- ...the response from the European Mapping and Cadastral Authorities (NMCAs) to requirements at the European arena
- ... a 44 month project co-financed by the European Commission and comprising 40 partners, including 23 NMCAs
- ... running from March 2013 to October 2016



www.elfproject.eu

ELF Services - short overview

- **Currently a total of more than 100 services from 13+ service providers – ALL (to be) validated / tested !**
- **Pan European services (single access points)**
 - View services
 - ELF Topographic Basemap (WMTS) and ELF Cadastral Index Map (WMS)
 - Download services – WFS 2.0, GML 3.2.1
 - A service cascade built on 70+ national services
 - Thematic services providing 11 INSPIRE themes and more than 120 attributes.
 - INSPIRE 3.0 and INSPIRE 4.0/ELF1.0

Tier	Services and Data contents	Responsible party
User Tier	Applications	Users
Central Platform Tier	<ul style="list-style-type: none"> Cascaded view services Cascaded download services ELF Security <div style="border: 1px solid blue; border-radius: 10px; padding: 5px; width: fit-content; margin: 10px auto;"> https://security.locationframework.eu/..... </div>	ELF Core team
National Service Tier		National service provider
National Data Tier		Data owner/data provider

Test	Validator	Tools used	Hosted by
OGC conformance	OGC CITE Tests for WFS 2.0, GML 3.2, WMS 1.3, WMTS 1.0	TEAM Engine, Test NG	OGC, local tests possible
Service metadata	INSPIRE Geoportal Metadata Validator		JRC
INSPIRE/ELF requirements on services, schemas and GML encoding	ETF Web App configured with INSPIRE/ELF-specific tests	ETF, SoapUI, BaseX	interactive instruments, local tests possible
INSPIRE Service capacity & performance	Spatineo Performance monitor		NLSFI
INSPIRE Service availability	Spatineo monitor		NLSFI
Data quality	Various GIS	ELF quality tools, Esri, 1Spatial, Snowflake, FME, etc.	Local tests by NMCA

Service validation in ELF - Where are we?

- In general the existing service validation tools are still somewhat immature
 - Functionality
 - Error reporting
- View service validation is 'doable', WFS currently hard to do good enough
- Overall status : not good enough, but useable for ELF at an absolute minimum level

- A service not conforming to standards is not usable
- Service validation is for help, not a punishment
- Integrate service validation in your development procedures

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ETF – A test framework for testing SDI services, datasets and metadata

- ★ Builds on existing, widely used open source tools
 - ★ SoapUI for web service tests
 - ★ BaseX for XML document sets – including very large ones
- ★ Extends these tools with additional capabilities
 - ★ Uniform reporting across tools
 - ★ Improved test reports (compared, e.g., to the standard SoapUI reports)
 - ★ Customizable report stylesheets
 - ★ Support for spatial tests (in BaseX)
- ★ Can be used in multiple ways
 - ★ Tests can be executed using the ETF Web Application or directly in SoapUI or BaseX
 - ★ ELF uses a centrally deployed ETF instance, but local deployments by a service provider are supported, too

ETF – Prebuild resources

Docker image:

<https://hub.docker.com/r/iide/etf-webapp/>

Use badges in GitHub repositories:

license Apache 2.0 latest version 1.0.12 build passing

Test projects used in ELF

Testing INSPIRE Technical Guidance requirements

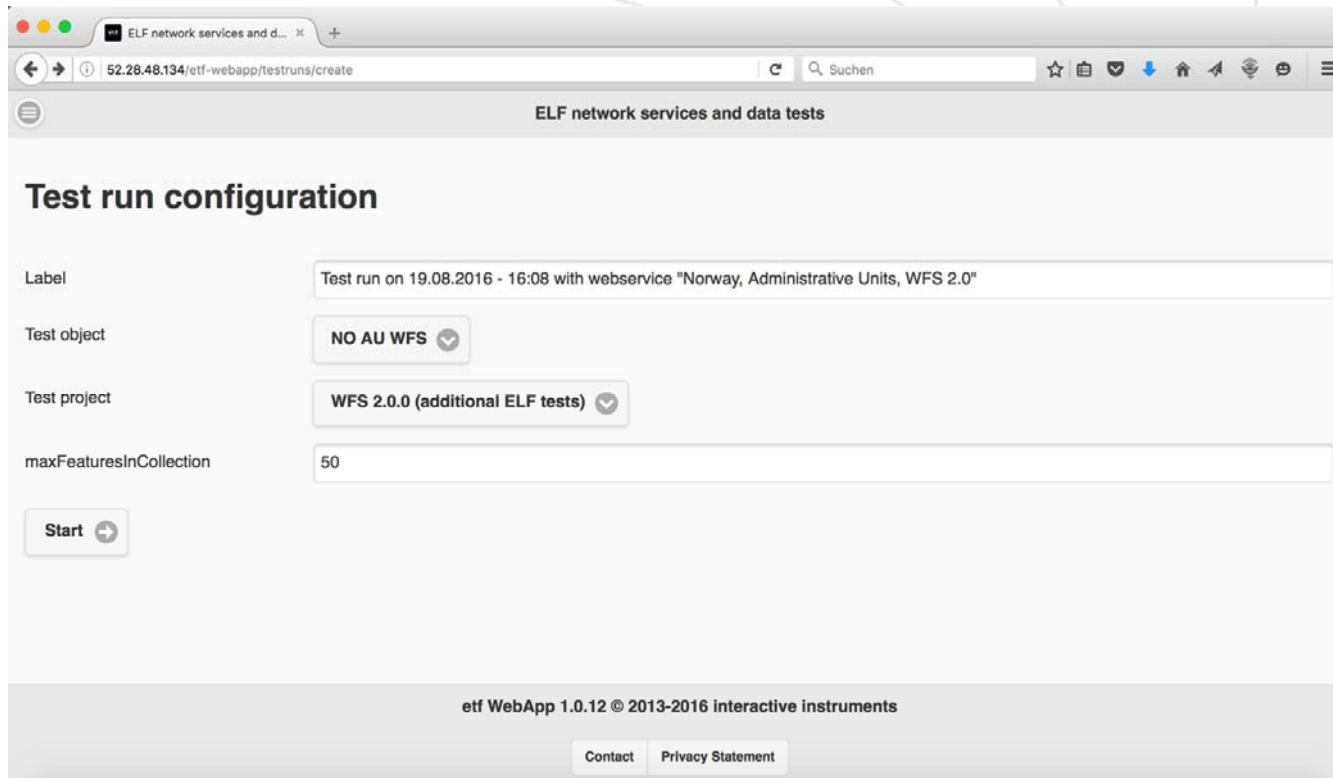
- ★ INSPIRE View Service tests (WMS 1.3)
- ★ INSPIRE Download Service tests (WFS 2.0)
- ★ INSPIRE Download Service tests (ATOM)

<https://github.com/Geonovum/etf-test-projects-inspire>

Testing ELF extensions to INSPIRE Technical Guidance requirements

- ★ ELF tests for checking feature type references

<https://github.com/interactive-instruments/etf-test-projects-elf>



ELF network services and data tests

Test run configuration

Label

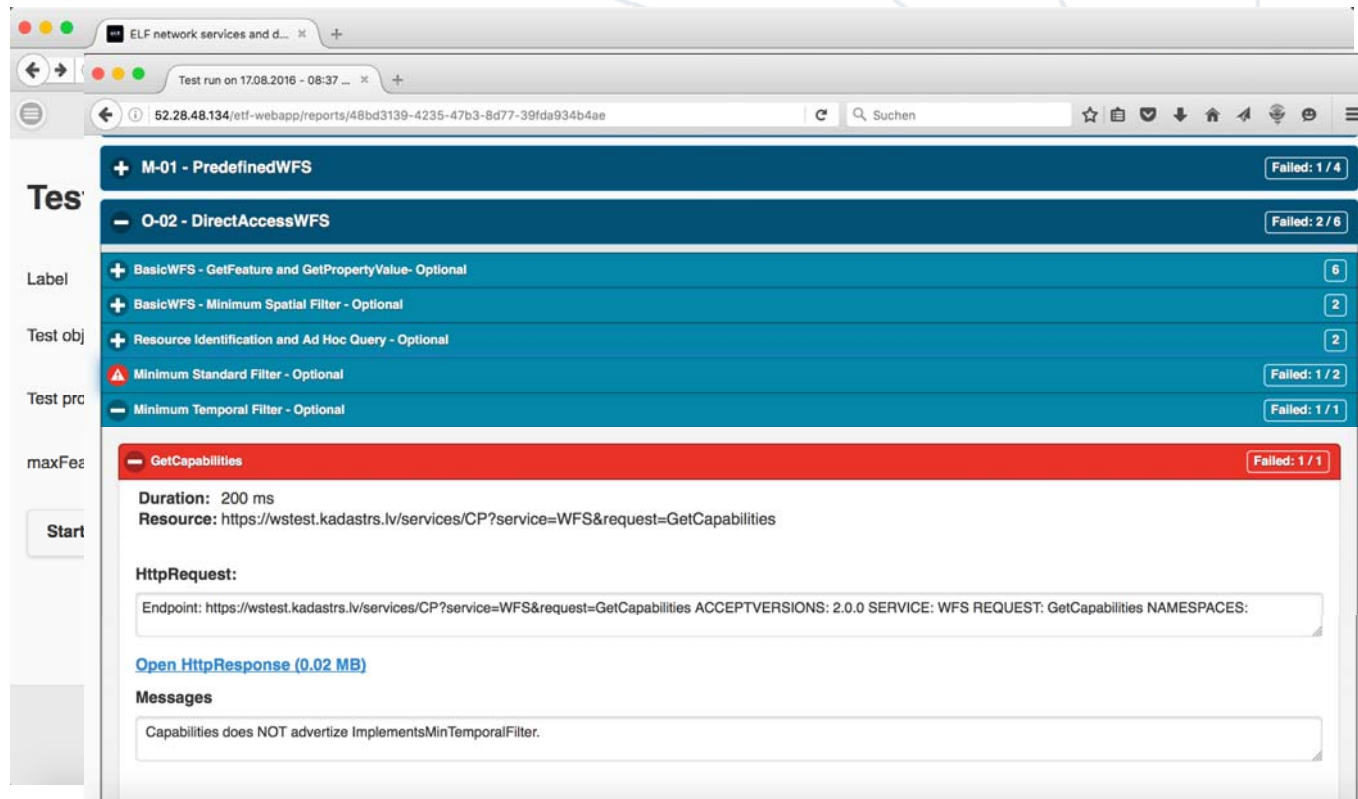
Test object

Test project

maxFeaturesInCollection

etf WebApp 1.0.12 © 2013-2016 interactive instruments

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The screenshot shows a web browser window displaying a test report. The browser's address bar shows the URL: `52.28.48.134/etf-webapp/reports/48bd3139-4235-47b3-8d77-39fda934b4ae`. The report is titled "Test run on 17.08.2016 - 08:37 ...".

The report lists several test cases with their status and failure counts:

- M-01 - PredefinedWFS**: Failed: 1 / 4
- O-02 - DirectAccessWFS**: Failed: 2 / 6
- BasicWFS - GetFeature and GetPropertyValue - Optional**: 6
- BasicWFS - Minimum Spatial Filter - Optional**: 2
- Resource Identification and Ad Hoc Query - Optional**: 2
- Minimum Standard Filter - Optional**: Failed: 1 / 2
- Minimum Temporal Filter - Optional**: Failed: 1 / 1

The selected test case, **GetCapabilities**, is highlighted in red and shows the following details:

- Duration**: 200 ms
- Resource**: `https://wstest.kadastrs.lv/services/CP?service=WFS&request=GetCapabilities`
- HttpRequest**:
Endpoint: `https://wstest.kadastrs.lv/services/CP?service=WFS&request=GetCapabilities` ACCEPTVERSIONS: 2.0.0 SERVICE: WFS REQUEST: GetCapabilities NAMESPACES:
- [Open HttpResponse \(0.02 MB\)](#)
- Messages**:
Capabilities does NOT advertize ImplementsMinTemporalFilter.

Testing ELF web services – SoapUI

- Pros:
 - Open Source
 - GUI for developing tests
 - Local test execution without ETF web application supported
 - Plugin mechanism
- Cons:
 - Complex tests are memory intensive
 - Test case can not depend on the result of a previous run test case
 - Test case iterations not well supported
 - Conventions and extensions required to implement “helpful” reports

ETF in the INSPIRE Validator

- Key extensions under development / planned to support the INSPIRE Test Framework requirements:
 - Extend and document API (REST interface)
 - Support for a rich domain model including Abstract Test Suites, etc.
 - Multilingual reports
 - Single test runs with multiple ETS which may depend on each other
 - Dependencies between test cases, too
 - Test driver for TeamEngine (OGC CITE tests for WFS 2.0 and GML 3.2) planned

