

DigLogs

WP2 Pilot implementation

Progress Report #3

5.3.3. Spatial Data Management System

Responsible partner: CFLI			
Involved partners: All			
Version	Status	Date	Author
0.1	Draft	31.03.2021	CFLI
0.2	Draft	30.04.2021	CFLI
0.3	Draft	06.09.2021	CFLI
0.4	Final	07.09.2021	CFLI
Notes:			

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1 Reporting period

Reporting period	01.04.2021 - 31.08.2021
Date of the report	06.09.2021

2 Pilot action progress status

2.1 Pilot implementation schedule

The pilot action implementation follows the previously defined roadmap, which is reported as follows for convenience.

Note that the roadmap tasks are not strictly sequential, as many of them are going to be carried out in parallel or to follow different priorities.

(completed tasks reported in bold)

1) Pilot planning

- a) **Target definition**
- b) **User needs analysis**
- c) **Hardware/Software prerequisites definition**
- d) **Spatial data set to be used for the pilot implementation**
- e) **Involved processes and services analysis (re-scheduled)**
- f) **Training and educational program**

CHECK OFF MILESTONE 1 - PLANNING (FEB 2021): COMPLETED

2) Spatial datasets acquisition

- a) **Data acquisition** (started and running in parallel with implementation)
- b) **Analysis of the spatial data packages for the pilot test** (started and running in parallel with implementation)

- c) **Optimization and pre-processing training on the job** (started and running in parallel with implementation)

3) Spatial Data Infrastructure implementation

- a) **Data model design**
- b) **Performance requirements analysis**
- c) **IT infrastructure implementation (HW/SW)**
- d) **Network configuration**

CHECK OFF MILESTONE 2 – PREPARATION (APR 2021): COMPLETED

4) Data migration

- a) **Workshop with involved users**
- b) **Spatial data conversion and migration test**
- c) **Spatial data conversion and migration training on the job (extended)**

CHECK OFF MILESTONE 3 – DATA MIGRATION (AUG 2021): COMPLETED

5) Procedures implementation

- a) **Procedures objectives assessment**
- b) **Grants policy definition**
- c) **Procedures development training on the job**
- d) **Information design and delivery workshop / training**

6) Processes and services optimization analysis

- a) **Definition of involved processes and services**
- b) **Identification of spatial-data-driven support to processes and services**
- c) **Workshop with involved users**
- d) **Process / service re-design assessment**

CHECK OFF MILESTONE 4 – PROCEDURES TESTS (NOV 2021)

2.2 Progress status

Stage 1 have been completed considering that it was decided to develop task *1e* underway with training activities within the various departments.

Regarding the spatial dataset integration activity, the pre-assessment layer list has been further implemented with two removals and the addition of the new “Power grid”, “Digital Terrain Model”, “Quays”, “Berths”, “Seamarks” spatial datasets:

- Weather station data (removed)
- Buoys / Dolphins
- Navigation aid systems
- Railway
- Road network (removed)
- Aerial photogrammetry digital map (postponed)
- Orthophoto (postponed)
- Coastline (postponed)
- Mo.S.E. system structures (postponed)
- Venice Port boundary
- Trees and green areas
- Waste bins location
- Seabed bathymetry
- Lighted pathway
- Public property areas
- Canals and basins
- Underground infrastructures
- Power grid (latest addition)
- Digital Terrain Model (latest addition)
- Quays (latest addition)
- Berths (latest addition)
- Seamarks (latest addition)

The **stage 2** related to dataset acquisition has completed.

15 datasets have been integrated into the system:

- Railway (processed items: 5; output items: 3)

- Public properties areas (processed items: 1; output items: 1)
- Canals and basins (processed items: 1; output items: 1)
- Seabed bathymetry (processed items: 33; output items: 1)
- Buoys / Navigation aids systems (processed items: 3; output items: 3)
- Venice Port boundary (processed items: 3; output items: 1)
- Underground infrastructures
 - Sewerage (processed items: 82; output items: 2)
 - Water (processed items: 4; output items: 2)
- Trees and green areas (processed items: 5; output items: 3)
- Power grid (processed items: 1; output items: 1)
- Waste bins location (processed items: 1; output items: 1)
- Lighted pathway (processed items 1; output items: 1)
- Digital Terrain Model (processed items: 343; output items: 1)
- Quays (processed items 1; output items: 1)
- Berths (processed items 2; output items: 2)
- Seamarks (processed items 1; output items: 1)

Total processed items: 144

Total output items integrated into SDI: 25

NOTE: in the previous progress report#2 “seabed bathymetry” was included as 34 items layer: in this update the dataset has been exposed as WCS coverage through the Geoserver Mosaic Plugin, so it can be selected as a single raster layer.

After the latest additions, the data migration stage is completed.

The **stage 3**, related to the infrastructure implementation, is completed.

The **stage 4** is completed for what regards the dataset conversion and migration procedures. The training activities have been extended to the following months in order to better fit the employees and manager agenda with the courses and seminars modules.

So far, training activities, seminars and presentations events have involved personnel of the following areas:

- Strategic Planning and Development Department (DPSS)
 - Strategic Planning
 - Urban Planning
 - Transportation and Maritime Studies
- Technical Department (DTEC)
 - Environmental services
 - Canals and navigation
- Institutional Affairs and State Properties (DEM)
 - State Properties Concessions
 - State Properties Promotion and Development
- IT area
- President and Secretary Staff

With the employees belonging to these departments, so far, 24 workshop / training-on-the-job sessions were carried-out, involving 10 different operators / decision-makers.

Stage 5 is ongoing with activities planned for the last few months.

Previous reported developed special procedure were:

- Grants policies management for users belonging to different departments
- Bathymetry layer maintenance
- Minor procedures for dataset integration and access simplification
- Lightweight web-oriented visualization tool

So far, a new simple procedure has been defined to create virtual layers for multiple raster datasets.

Further procedures have been defined for the maintenance of WMS and WCS data sources by the Geoserver admin tool, particularly for multiple raster tiles with the “Raster Mosaic Plugin”.

For what concerns daily user operations, some basic recurring procedures have been defined and documented through the user guide in relation of the GIS environment first setup, the spatial datasets styling and visualization techniques, and the workspace, layers and tables management.

Finally, a more advanced user procedure has been defined to compute seabed volume calculation using bathymetry data.

Stage 6 is also ongoing with activities planned for the last few months.

2.3 Milestones and actions

Milestone / action	Responsible partner / external resource	Deadline, as defined in PWP	Predicted or achieved completion date	Estimated completion %	Progress status
Milestone 1	CFLI	Feb 2021	Feb 2021	100%	COMPLETED
Milestone 2	CFLI	Apr 2021	Apr 2021	100%	COMPLETED
Milestone 3	CFLI	Aug 2021	Aug 2021	100%	COMPLETED
Milestone 4	CFLI	Nov 2021	Nov 2021	20%	ONGOING

3 Risks

Risk description	Solution suggestion	Status
Training activities delays caused by Covid-19 emergency.	Different forms of training activities.	Several activities carried out on-line. Some activities spanned through next months.
Initially defined working dataset acquisition delay.	New dataset package list definition as alternative working set.	List defined with no significant issues.
Added workload needed due to new dataset to be optimized and migrated.	Hire new expert.	Tender published and completed. Waiting for assignment.

4 Next steps

The next planned steps concern:

- a) Training activities completion
- b) Processes analysis completion and procedures definition