FAIRICUBE –
F.A.I.R. INFORMATION CUBES

WP2: Use

M4: First version of the Report on UC data source synergies released

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Disclaimer

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1   Introduction

To prove the use of the FAIRiCUBE Hub, 4 Use Cases (UCs) were designed. To ensure efficiency on data ingestion and harmonisation of data, we need to identify and leverage potential synergies between UCs. Where possible, data sources, processing and ingested data need to be re-used. To this end, 4SF has coordinated the elaboration of an inventory of data sources with all 4 UC. The aim of the inventory is to gather an initial list of all the different data sources that all UCs envisage to be using and identify common data source needs between UC. The identification of data source synergies is a clear example of knowledge sharing across UCs and is essential for efficiently executing the UCs, not only to minimise data access but to cut down on processing/ingestion time. This initial inventory will be updated throughout the project becoming a final document by month 24.

2　　Formal deliveries contributing to M4

As a formal measure to validate the achievement of the M4 milestone, the deliverable shown in (Table 1) was formulated and documented.

Description	Lead Beneficiary	Type	Dissemination Level	Due Date
D2.1: Report on UC data source synergies	4SF	R	PU	2022-12-31

Table 1: Formal deliverables contributing to M4

The **deliverable D2.1** and the respective report provided a snapshot of the initial data source needs of all UC and the potential synergies between them. Appended to the report was the state of the FAIRiCUBE data sources inventory on Tuesday, 13.12.2022, available in FAIRiCUBE website.

3   Summary of synergies

All 4 UCs have provided a total of 54 data sources. Of these, 25 data sources have been identified as further use by at least 2 UCs. A summary of these sources is presented in Table 1. The synergetic data sources are related to geographical parameters, land cover, data on buildings, biological parameters and climate variables. It is worth noting that all of the 25 synergetic sources have been identified as high priority by at least one UC. Additionally, 3 data sources (Open Street map, Temperature data and Digital Elevation Model) have been identified as further use by all 4 UCs.

Table 1: Summary of synergetic data sources found. Columns UC1, UC2, UC3 and UC4 represent the priority of use of each data source, with 1 meaning high priority, 2 meaning low priority and a blank meaning that the UC does not plan to use the source.

Name	Source	Origin	Resp. maint.	Coverage	Spatial res.	Time cov.	UC1	UC2	UC3	UC4
Open Street Map	www.openstreetmap.org		OSM	World	vector		2	2	1	1
INSPIRE Buildings	https://inspire-geoportal.ec.europa.eu/overview.html?view=themeOverview&theme=bu		EEA	EEA-38	vector		2			1
Corine Land Cover	https://land.copernicus.eu/pan-european/corine-land-cover	EO-based, produced by countries	EEA	EEA-38+UK	100m	1990 2000 2006 2012 2018	1	2	1	
Imperviousness	https://land.copernicus.eu/pan-european/high-resolution-layers/imperviousness/status-maps	EO-based	EEA	EEA-38+UK	10m 20m	2006 2009 2012 2015 2018	1	2	2	
Forest type	https://land.copernicus.eu/pan-european/high-resolution-layers/forests/forest-type-1/status-maps	EO-based	EEA	EEA-38+UK	10m 20m	2012 2015 2018	1	2	2	
Forest - tree cover	https://land.copernicus.eu/pan-european/high-resolution-layers/forests/tree-cover-density/status-maps	EO-based	EEA	EEA-38+UK	10m 20m	2012 2015 2018	1	2	2	
Forest -Dominant Leaf Type	https://land.copernicus.eu/pan-european/high-resolution-layers/forests/dominant-leaf-type/status-maps	EO-based	EEA	EEA-38+UK	10m 20m	2012 2015 2018	1	2	2	
Grassland	https://land.copernicus.eu/pan-european/high-resolution-layers/grassland	EO-based	EEA	EEA-38+UK	10m 20m	2015 2018	1	2	2	
Water & Wetness	https://land.copernicus.eu/pan-european/high-resolution-layers/water-wetness	EO-based	EEA	EEA-38+UK	10m 20m	2015 2018	1	2	2	
Small Woody Features	https://land.copernicus.eu/pan-european/high-resolution-layers/small-woody-features	EO-based	EEA	EEA-38+UK	10m 20m	2015 (2018)	1	2	2	
European Settlement Map	https://land.copernicus.eu/pan-european/GHSL/european-settlement-map	EO-based	JRC	EEA-38+UK	2,5m 10m 100m	2012 2015	1		1	
CLMS Urban Atlas	https://land.copernicus.eu/local/urban-atlas	EO-based	EEA	EEA-38+UK	vector	2006 2012 2018	1	2		2
CLMS Urban Atlas Street Tree Layer	https://land.copernicus.eu/local/urban-atlas	EO-based	EEA	EEA-38+UK	vector	2012 2018	1	2		

Name	Source	Origin	Resp. maint.	Coverage	Spatial res.	Time cov.	UC1	UC2	UC3	UC4
Population by Urban Atlas polygon	https://land.copernicus.eu/local/urban-atlas/population-estimates-by-urban-atlas-polygon	EO-based	EEA	EEA-38+UK			1			2
Natura 2000 landcover/land use	https://land.copernicus.eu/local/natura	EO-based	EEA	EEA-38+UK	vector	2006 2012 2018	1	2		
NUTS regions	https://ec.europa.eu/eurostat/web/nuts/background	national reporting	Eurostat	EEA-38+UK, - BA, XK	vector		1	2	2	
Urban Audit city delineations (FUA, city, commuting zone)	https://ec.europa.eu/eurostat/web/cities/background		Eurostat	EU-27+EFTA	vector		1			2
Temperature	https://cds.climate.copernicus.eu/cdsapp#!/dataset/derived-near-surface-meteorological-variables	modelled	C3S	global	grid		1	2	1	2
Physiologically Equivalent Temperature	https://climate.copernicus.eu/thermal-assessment-tool		C3S	global	grid		1			2
Climate extremes indices and heat stress indicators	https://cds.climate.copernicus.eu/cdsapp#!/dataset/sis-extreme-indices-cmip6?tab=overview		C3S		grid		1	2	1	
Copernicus DEM	https://land.copernicus.eu/imagery-in-situ/eu-dem/eu-dem-v1.1	EO-based	Copernicus	global	grid 10m 30m 90m		2	2	1	2
Global Biodiversity Information Facility	https://www.gbif.org/	in-situ observations	GBIF Secretariat	World	various	2014-2022		1	1	
HR VPP (NDVI, PPI, FAPAR, LAI)	https://land.copernicus.eu/pan-european/biophysical-parameters/high-resolution-vegetation-phenology-and-productivity	Sentinel 1, 2	CLMS	Europe	10 m	2014-2022	2	2		
Soil grids	https://soilgrids.org/		ISRIC	World	250m	2014-2022	2	1		
3D building model (LOD2)	https://geoe3platform.eu/geoe3	GeoE3	GeoE3	NO, ES, NL, FI, EE	vector		2			1

4   Planning

The FAIRiCUBE GitHub repository (https://github.com/FAIRiCUBE/catalog) is to be maintained by the users to track all data sources used in the UCs. The repository of data sources will act as a management tool to track the requirements of data digestions.

The initial list of synergetic data sources, as well as data sources that have been requested by a particular UC will be made available in the catalogue. Throughout the project, UCs can request data sources to be included in the catalogue. When a new data source is added in GitHub, the following steps will be performed:

- Check that the new data source is not a duplicate
- Check that the information related to the data flow is complete
- Check if the data source is already available under Rasdaman and/or EOxHub services
- Identify to which service the data source needs to be ingested and which process is more efficient to digest the new source
- Make it available to the relevant UC(s)
- Identify data source synergies

The identification of data source synergies obtained during this process will be used to produce the deliverable **D2.3 UC Ingest/Process synergy report**, with due date 30.06.2023.

With the development of the catalogue, it is expected that the initial inventory list of data sources will be expanded and updated. Therefore, the list of UC data source synergies will be updated as well. This will be reported in the updated deliverable **D2.1 Report on UC data source synergies** and milestone **M12 Final version of the Report on UC data source synergies released**, with due dates on 30.06.2024.