



Project of Strategic Interest NEXTDATA

WP2.1

D2.1.B – Preliminary version of the Archives of mountain observation networks.

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The deliverable 2.1.B is the preliminary version of the archives of mountain observation networks. This report is to certify that the Archive of mountain observation networks is up and running in its preliminary version. It can be reached from the NextData Project website or by the direct link <http://geonetwork.igg.cnr.it> . This report also includes a brief state-of-the-art.

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1. INTRODUCTION

In the scope of the WP2.1 of the NextData project is the implementation of a digital archive of the databases from mountain monitoring networks. The archive provides a frame of the on-going changes in meteo-climatic variables, in the atmospheric composition, in the cryosphere variables, in surface and underground water resources and in ecosystems and biodiversity. It was decided also to include information extracted from mountain ice cores and sea sediment cores. More details on the data included in the WP2.1 archive and its capabilities are reported in the Deliverable 2.1.A of the NextData project.

The aim of this brief report is to certify that the WP2.1 archive is up and running in its preliminary version. After this introduction, section 2 reports the state-of-the-art of the on going activities, while section 3 describes the update of the system architecture of the archive.

2. STATE-OF-THE-ART of the WP2.1 archive

Currently, 246 datasets are collected and registered by using the ISO19115(19139) metadata standard in the archive of the databases from mountain monitoring networks.

The resources collected were organized also by topics to facilitate the discovery of the datasets. To this aim 8 categories were created:

- Atmosphere & Climate
- Instruments & Sensor
- Mountain ice cores
- Sea sediment cores
- DataGRALP: Alpine Glaciers Database
- Ground Deformation in Mountain
- Hydro – Meteo
- Ecosystems & Biodiversity

Table 2.1 synthesizes the state of the art of the collection of metadata and data for WP2.1.

Table 2.1 – Table reports the state-of-the-art of the metadata/data compilation.

Category	Type of data	WP task	Metadata compilation	Metadata validation	Dataset upload
Atmosphere & Climate	Climate stations network for monitoring the composition of the atmosphere in remote areas	1.1.1	OK	On going	OK
Atmosphere & Climate	Network of deposimeters in dolomitic environment	1.1.2	N/A	N/A	N/A
Atmosphere & Climate	Definition of high resolution climatology (30seconds) of the Italian mountain regions with altitude higher than 1500m	1.1.4	OK – one dataset is due by the end of 2018	OK – one dataset is due by the end of 2018	OK– one dataset is due by the end of 2018
	Monitoring and estimation	1.2.1	N/A	N/A	N/A

	of water content and chemical and physical characteristics of aquifers				
Ground Deformation in Mountain	Ex-Hammer	1.2.2	OK	OK	OK
Hydro - Meteo	DIBA - Hydrometeorological database for the Apennine basins – ‘high’ Chiascio and Magra	1.2.3	OK	OK	OK
Alpine Glaciers Database	Monitoring and quantitative census of alpine glaciers (Ex – DATAGR ALP)	1.6.1	On going	On going	On going
	Estimate of snow cover state and changes over Italian mountains	1.6.3	N/A	N/A	N/A
Ecosystems & Biodiversity	Data from LTER mountain Italian stations	1.7.1	Harvesting issues to be solved	Harvesting issues to be solved	Harvesting issues to be solved
Ecosystems & Biodiversity	Animal biodiversity monitoring in mountain areas	1.7.2	N/A	N/A	N/A

Ecosystems & Biodiversity	Alpine grasslands dynamics at high altitudes	1.7.3	OK	OK	OK
Mountain ice cores	Mountains ice cores data	1.4.1	Issues on UNIMI server, to be solved	N/A	N/A
Sea sediments cores	Sea sediments cores data	1.5.3	On going	On going	On going

3. ARCHIVE SOFTWARE ARCHITECTURE UPDATE

3.1. System architecture

The WP2.1 archive implemented for the needs of NextData project is hosted in a server running in the CNR computing centre in Pisa. In particular, the WP2.1 archive is served by a dedicated Virtual Machine where a Geonetwork application has been specifically set-up and configured to meet the special need of the project. The main features of the physical machine that host the virtual machine which provide the service related to the WP2.1 archive are reported in the Table 6.1.

Table 6.1 – Main Hardware and Software feature of the physical machine hosting the WP2.1 archive.

Hardware - Software	
CPU	Intel(R) Xeon(R) CPU E5-2630 v4 10 cores 25MB Socket 2011 v3
RAM	64 GB
OS	Ubuntu 18.04 LTS
Storage	4 TB
Firewall	Configured to give the access only on port 22 (ssh), 80 (http standard), 8080 (tomcat standard)

As mentioned, the WP2.1 archive was build-up in a dedicated guest Virtual Machine where Geonetwork is deployed in a Tomcat application server. A virtual machine (VM) is an emulation of a computer system. Virtual machines are based on computer architectures and provide functionality of a physical computer.

3.2. Geonetwork application update

The WP2.1 archive is currently reachable at the URL: <http://geonetwork.igg.cnr.it> , but it will mostly likely moved to the URL: <http://geonetwork.nextdataproject.it> once this preparation stage will be concluded.

The geonetwork interface was even customized. It is now possible to start the data discovery by choosing the topic categories defined for the project (see section 2). Moreover, also in the search page the topic categories were introduced as first filter. The project and CNR logos were introduced in the home page of geonetwork.