Title of Proposal

Integrative and Comprehensive Understanding on Polar Environments (iCUPE)

WP 1:

Ground-based component for SLCFs

Task 1.3

Interactions with planned intensive observations in the polar regions

Milestone 1.3:

Documented plan on future data flow of campaignwise selected Arctic data sets, their sustainable storage, data harmonization and integration in existing data policies. (M12)

Webpage:

Design, organization and installation of a webpage to announce Arctic field campaigns and reorganize logistical challenges within the scientific Arctic community.

A new website has been created where details about planned field campaigns in polar areas should be given. These details include location and period of the campaign, measured parameters and instrumentation and some more information. The design of the website was improved during the last six months and will still be modified according to the feedback of users.

Plan for datasets and data availability:

Scientific actors that announce Arctic field campaigns on the webpage will be asked to list a table of datasets that will be available after a certain time period after finalizing the field campaign. The datasets shall be directly uploaded on the webpage while the information of a contact person is also submitted with the dataset. Datasets are recommended to document the level of scientific quality based on ACTRIS recommendations. Downloads of respective datasets will only be possible after positive evaluation of the contact person. Datasets shall include parameters as they are important for WP1. Here, special focus is on particle number, black carbon mass concentration and ozone concentration measured within Arctic field studies (no monitoring).

Also, datasets stating vertical distribution of the respective parameters will be included. Finally, data on the general aerosol chemical composition and the detailed chemical analysis of the organic fraction will be provided for samples collected at several sites during extended periods. Based on this data, aerosol sources will be apportioned into several categories, e.g. primary versus secondary, marine versus continental and biogenic versus anthropogenic.

NCSR Demokritos has launched a campaign at Ny Aalesund Svalbard for a study on ultrafine aerosol volatility and a dataset of six months of this microphysical Arctic property has been generated. The dataset will become available according to the plan above.

The same will be for vertical profiles of black carbon and ozone concentration obtained from field campaigns with a tetheread balloon carried out by CNR in cooperation with University Perugia during 2018 and 2019. This dataset will include quality assured vertical profiles.

Data storage and harmonization:

According to the iCUPE Data Management Plan (DMP), the produced data (datasets – DS – as data products) will be stored at the University of Helsinki (UHEL; coordinator of the project) repository and the original (i.e. raw) data at the repository of the project partner (responsible for delivering a dataset - owner). The storage will be maintained for, at least, a 5 year period after finalization of the project (possibility of further prolongation for extra years could be considered). In particular, the UHEL repository will be free of charge and it will be managed and supported by a team of experts. The UHEL will be setting up and upgrading (when is needed) the hardware and software components of the storage repository. UHEL will be responsible for creation, maintenance and upgrading the database for users accessing datasets as well as for collection of user requests to data access and downloading. Moreover, it will co-create data repository's folders/sub-folders for each dataset and keep document type (e.g. data, metadata, templates) as well as capacity management of hardware and software components.

The long-term storage of iCUPE project data (in form of datasets, DS) and legacy will be planned in more details during the project. Dataset owners will have access to data and consortium partners will have access as far as it is needed to follow the project research plan. Intellectual Property Rights, in case needed, will be agreed following the iCUPE Consortium Agreement.

CNR will work to connect the Italian Arctic Data Centre (IADC) with UHEL repository with the aim to put at disposal ancillary data collected in Ny Alesund by Italian Research groups that are no

partners of iCUPE. A mutual benefit will arise from greater visibility of data collected at Dirigibile Italia station. In the case of Near Real Time (NRT) data becoming available in the Arctic there is a different scope of action. Few parameters are available and their exploitation is rather suitable when continuous long-term measurements are performed. Selected parameters like black carbon which are available in the form of NRT are in the process of being tested within i CUPE (task 1.2) for potential use by services of COPERNICUS.

Integration in existing data policy:

The iCUPE consortium partners endorse the open data policy as stated in the project DoW (i.e. all deleiverables as datasets are "P" public of nature). Data to be stored are encouraging an unlimited and open data policy for non-commercial use. It should be mentioned that standard data collection methods and validated protocols commonly used in the research field will be applied.

Links to existing data bases will be given but open access should be provided. The goal is to link existing data bases with each other to store each data set at one place only. Long term continuous SCLF aerosol in situ observations are available at the EBAS database. The EBAS database policy is one generally well received and applied in the scientific community.

Italian Arctic Data Center will provide open access to a part of the stored data, in particular those that pertain to SIOS core data, being SIOS data policy also oriented to encourage an unlimited use for non-commercial scopes. Through IADC, UHEL repository will be also connected, in an interoperability sense, with the SIOS Data Management System.