

# EarthCARE Correlative Data Protocol

## 1. Introduction and objectives

The Earth Clouds, Aerosol and Radiation Explorer (EarthCARE) Mission, is implemented as the sixth Earth Explorer Mission. EarthCARE has been specifically defined with the basic objective of improving the understanding of cloud-aerosol-radiation interactions so as to include them correctly and reliably in climate and numerical weather prediction models. EarthCARE will achieve this by providing global observations of cloud and aerosol profiles with collocated measured as well as modelled long-wave and short-wave radiation.

Atmospheric cloud and aerosol properties will be retrieved from EarthCARE's 355nm lidar with a high spectral resolution receiver with co- and cross-polar channels (ATLID), 94GHz Doppler radar (CPR) and a multi-spectral imager (MSI). Radiative transfer models will be used to derive atmospheric radiative properties and heating rates from the retrieved cloud and aerosol observations. Reflected solar and emitted terrestrial thermal radiation will furthermore be observed by EarthCARE's broadband radiometer (BBR) and compared to their modelled equivalents.

The EarthCARE mission is implemented in collaboration with the Japanese Aerospace Agency (JAXA) who provides one of the core Instruments, including the associated ground facilities in Japan to process their instrument data.

This document describes the protocol for the handling of correlative data for EarthCARE validation. Correlative data are the independent/external data that Principal Investigators contribute to EarthCARE validation, typically from ground-based or airborne instruments, but also data from models and from satellites other than EarthCARE. Signature of this protocol is a prerequisite for reception of any preliminary EarthCARE data (i.e. test data generated before launch and commissioning-phase data generated before public release of consolidated EarthCARE products) and for access to the central repository of correlative data.

The aims of the protocol are:

- (a) to ensure free and fair use of EarthCARE correlative data,
- (b) to encourage rapid dissemination of the scientific results,
- (c) to uphold the rights of the individual data owners,
- (d) to ensure equal treatment of all data owners involved,
- (e) to encourage an orderly and timely analysis and publication of data, and
- (f) to produce a central repository of data to be released to the public domain.

## 2. Protocol for handling of correlative data for EarthCARE

### A. Data

- i) Participants are to provide data in EVDC compatible formats and with GEOMS metadata as far as reasonable. (Note that conversion support and numerous conversion tools will be made available by ESA)
- ii) Preliminary data are to be made available within 7 days for routine data, and within 1 Month for campaign datasets.
- iii) Consolidated data are to be made available within 6 weeks for routine data, and within 3 months for campaign data acquired during the commissioning phase.
- iv) Any corrections/amendments to the preliminary data should be announced as soon as possible.
- v) It is the Principal Investigator's responsibility to ensure that the data used in his/her publications are the best available at that time.

B. GENERAL

- i) All Principal Investigators involved in EarthCARE Validation have equal and complete access to measurements and model results produced during EarthCARE Validation. Data cannot be provided to persons outside of the EarthCARE Validation Project and the ESA algorithm development teams without the expressed approval of that data set's PI and the EarthCARE Project.
- ii) Public access to the data will be given one year after the end of the project
- iii) The data sets are and remain password protected. The password information will be made available on the condition that the user signs this data protocol and takes into account the rights of the EarthCARE Validation Project and the Principal Investigators.

C. Publications

- i) If measurements/model results from other EarthCARE Validation data owners are used in a publication, joint authorship must be offered.
- ii) The EarthCARE project should be informed of any publication involving preliminary EarthCARE data and/or correlative data obtained via this protocol.
- iii) Publication of results in the scientific literature is encouraged at any time, as long as conditions i), ii), and iii) are met.

The undersigned agrees to the conditions of this data protocol.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Name: \_\_\_\_\_

Position (PI, Post-doc, ....): \_\_\_\_\_

Institutional Address : \_\_\_\_\_

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E-mail: \_\_\_\_\_

Please return to: