



Gap Analysis for Integrated Atmospheric ECV CLimate Monitoring: Gaps Assessment and Impacts Document (GAIA-CLIM - GAID)

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Assessment of user needs ('gaps')

As part of the EU H2020 project GAIA-CLIM – see for details the third column of this poster as well as the accompanying poster by Thorne et al. – we report on a iterative bottom-up process to identify and assess generic and specific present-day user needs ('gaps') related to non-satellite observations in support of long-term satellite-based climate monitoring.

Focus is given to user needs / gaps in relation to the non-satellite component of the GCOS monitoring infrastructure relevant for climate monitoring for six of the GCOS Essential Climate Variables (ECVs), i.e.,

- **Temperature**
- **Water vapor**
- **Ozone**
- **Carbon dioxide**
- **Methane**
- **Aerosols**

For these ECVs the impact of missing information/data/practices/etc. for users is assessed in a Gaps Assessment and Impacts Document (**GAID**). The GAID is a living document which is updated regularly during the project (see Figure 1 below). The latest version of the GAID is always made available through the specific GAID project website:

www.gaia-clim.eu/page/gaid

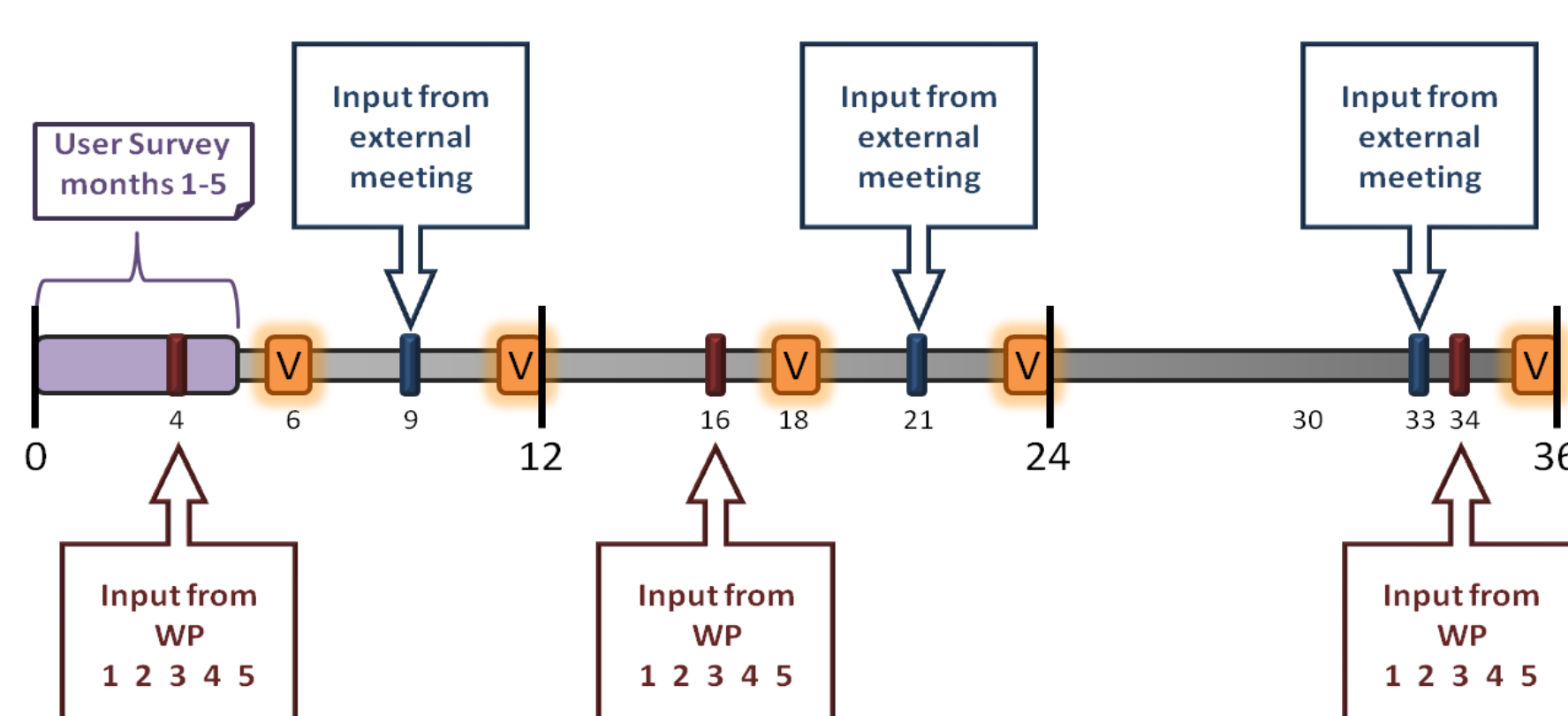


Figure 1: Assessment of gaps and impacts in the GAID: iterative and including external input. Please consider to contribute.

Prioritization

At the end of the GAIA-CLIM project the identified 'gaps' will be prioritized. This prioritization will be based on a thorough discussion of the estimated impact of the gaps on users, on the availability and realism of potential remedies, as well as on the estimated costs associated with the potential remedies.

User Categories

The following user categories are currently distinguished in the GAID (version 2):

- U1 Service providers
e.g. NWP, Copernicus (CAMS, C3S)
- U2 Users of ECV climate data records
e.g. for assessments (IPCC/WMO/EEA)
- U3 Users of non-satellite reference observations
- U4 Users of baseline network observations
- U5 Users of the 'Virtual Observatory' (under development, see below)

Note that some of these user categories might overlap.

User needs ('Gaps')

The following types of user needs are currently distinguished in the GAID (version 2):

- **Gaps in coverage**
(GRUAN, NDACC, TCCON, etc., network design, temporal coverage, vertical domain - e.g. stratospheric water vapor)
- **Gaps in vertical resolution**
(eg CO₂ / CH₄ column vs vertical profiles)
- **Gaps in the uncertainty of the observations**
(a full and traceable uncertainty budget)
- **Gaps in comparator uncertainties**
(related to comparisons between measurements which have inherent different attributes through the use of different instrument techniques)
- **Technical issues**
- **Governance issues**
- **Parameter gaps** (e.g. missing auxiliary data)

User workshops

A series of dedicated user workshops is organized. The first workshop took place October 6th 2015 in Rome. Others shall occur in Nov 2016 and again in 2017. We are looking for users interested in providing feedback on the user needs as identified and assessed in the project as well as users expressing their additional needs (gaps) as potentially not yet covered within the project. A specific template to provide detailed user needs is available through the GAID website

www.gaia-clim.eu/page/gaid

Expressions of interest in participation in the upcoming user workshops in 2016 and/or 2017 are welcome. Please contact us if interested.

The EU H2020 GAIA-CLIM project



The aim of the 3-year GAIA-CLIM project (2015-2018) is to improve our ability to use non-satellite observations to better characterise satellite observations in support of long-term climate monitoring.

GAIA-CLIM is an H2020 project expected "to lead to significant advances in greater consistency and cross-calibration/validation of long term space based measurements with ground-based historical references" (see the accompanying poster on the GAIA-CLIM project by Thorne et al.)

GAID

The GAID and the subsequent prioritization of identified user needs for long-term climate monitoring will be a key outcome of GAIA-CLIM.

Virtual Observatory

Another key outcome of the project will be a "Virtual Observatory" facility of co-locations and their uncertainties. This Virtual Observatory is currently under development. It will be hosted by EUMETSAT. We are looking for users interested in testing and providing feedback on early versions of the virtual observatory. Please contact us if interested.

Your active feedback is solicited through

E-mail:

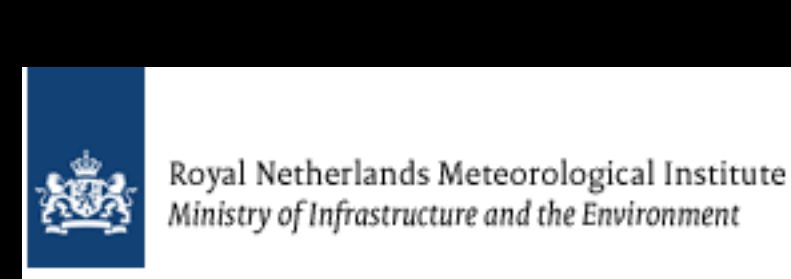
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