

The role of CMUG in the ESA CCI programme

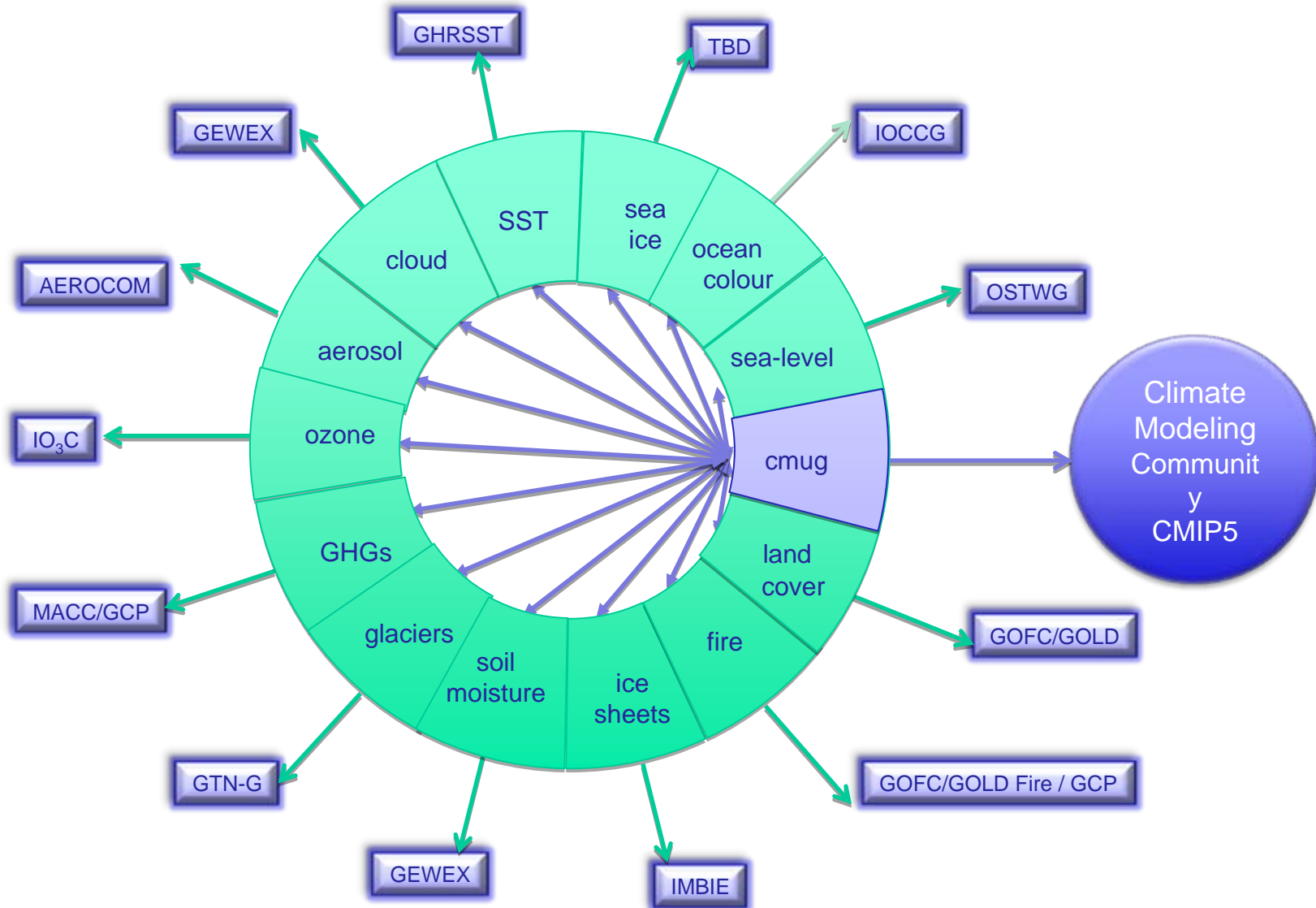
WGClimate #3
Geneva

Thursday February 21st, 2013.

The European Space Agency has established the “Climate Modelling User Group” (CMUG), to place a Climate System perspective at the centre of its Climate Change Initiative (CCI) programme, and to provide a dedicated forum through which the Earth Observation Data Community can work closely together.

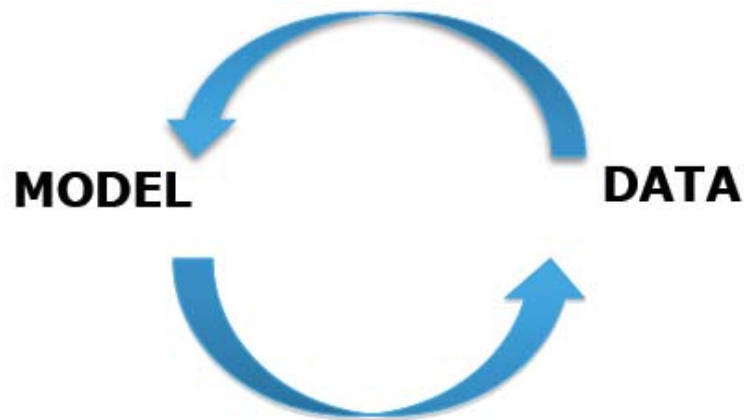
- **The CMUG aims to provide CCI ECV Projects with:**
 - Requirements of the Climate Modelling Community (CMC) and the Reanalysis Community
 - Model Based Assessment of quality and consistency of ECV products and precursor data set across the CCI projects
 - Independent feedback on data and documents from a “Climate system and modelling perspective”
 - Connection across the CCI ECV Project teams and to the “Climate Modelling Community”.
 - *Direct communication and feedback to the ECV projects*
 - *Yearly Integration meetings*

Coordinated with international actions on climate research ?



- **Between the CCI ECV Projects teams**
 - Direct communication
 - Integration meetings
 - *Reading 2011*
 - *Toulouse 2012*
 - *Hamburg 2013*
- **With European Initiatives**
 - Climate modelling infrastructures (IS-ENES)
 - Reanalysis (ERA-CLIM, ERA-4M, MACC)
 - Modelling teams (EC-Earth)
 - EC FP7 Projects (EUCLIPSE, EMBRACE, ICE2SEA, SPECS, ...)
- **International Initiatives and Bodies**
 - GCOS IOPC
 - EUMETSAT SAFs
 - IPCC (through AR5 and CMIP5)
 - Future potential EC Climate Services (e.g. GMES)
 - WCRP (WGCM/WOAP)
 - OPS4MIPS

Data used to initialise, force, validate constrain models ...
 Learn about data quality / error / consistency (in time, in space and across ECVs)



Model used as data interpolator – extrapolator ...
 Learn about model quality / skills / strengths and weaknesses.

CMUG Assessment of precursor Data

1. Validation with in-situ data (e.g. SST)
2. Comparison with Climate Models (e.g. SSH, Clouds)
3. Assimilation (e.g. Ozone, Ocean Colour)
4. Consistency across ECVs (e.g. terrestrial)

**Preliminary Assessment based on
precursor data sets as proof-of-concept
e.g.**

ARC / HadISST for SST

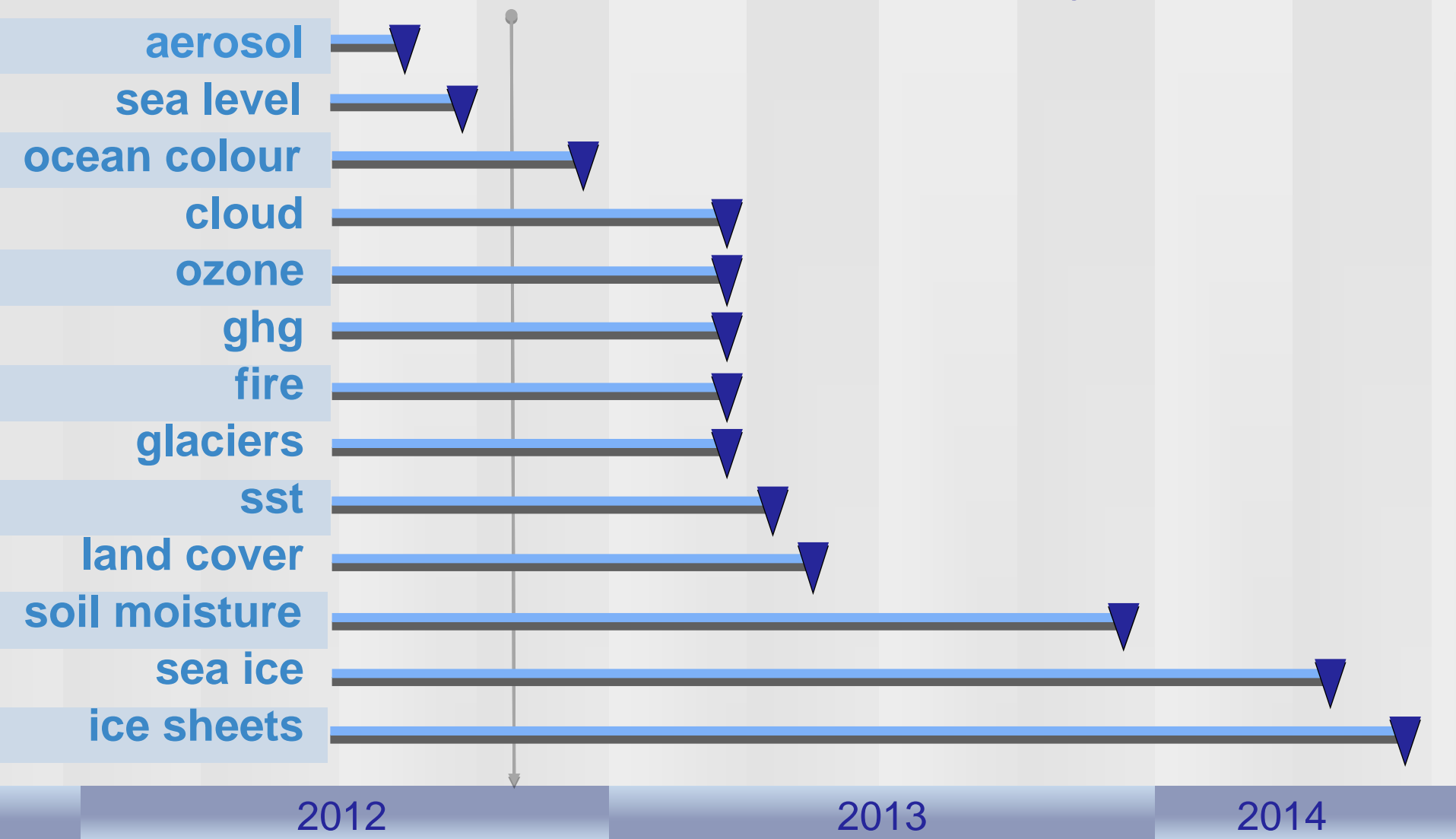
ISSCP for Clouds

IASI products for Ozone

GLOB Colour for Ocean Colour

**Next Assessment based on CCI Data sets
when available**

CCI Phase 1: Data Products Delivery Schedule



- Plan to address issues raised by CMUG review report by CCI teams
- Enhance interaction between CMUG and CCI teams
- Agreement on communicating CCI science
- Clear statement on what uncertainties are being provided within CCI datasets for climate applications
- Preparation of the CCI Project Integration Meeting facilitated by the CMUG.

<http://www.cci-cmug.org/>

- **CMUG will perform the following main tasks:**
 - Integrated Climate Science Requirements Analysis for all 13 ECVs
 - Error characterization of ECVs in model & Data Assimilation context
 - Integration & assessment of proto-type ECVs in climate model context
 - Promotion of ECV Exploitation by wider community
 - Project Management

- **The main outcomes will include:**
 - Improvement of quality and consistency of the ECV data sets
 - Better understanding of uncertainties of the ECV data sets
 - Better exploitation of ECV for climate model evaluation
 - Assimilation of some ECVs data sets into Climate Re-analysis
 - Enhanced take-up of ECV data products by a broader user communities