

IGAS 1st Annual Meeting Minutes

Venue: KNMI
Utrechtseweg 297
NL-3731 GA De Bilt
The Netherlands



Participants:

Name	Affiliation
Andrews, Arlyn	NOAA GMD (IGAS-SAB, stand-in for Jim Butler)
Barrie, Leonard	Bolin Centre for Climate Research (IGAS-SAB)
Beswick, Karl Munir	University of Manchester
Boschetti, Fabio	MPI-BGC
Boulanger, Damien	CNRS-LA
Bozóki, Zoltán	Hilase
Brötz, Björn	DLR
Braathen, Geir	WMO
Eskes, Henk	KNMI
Filges, Annette	MPI-BGC
Gautron, Benoit	LA-UPS
Gerbig, Christoph	MPI-BGC
Marshall, Julia	MPI-BGC
Nédélec, Philippe	CNRS
Neumeier, Marco	KIT
Parrington, Mark	ECMWF
Petzold, Andreas	FZJ
Piters, Ankie	KNMI
Pontaud, Marc	CNRM
Rauthe-Schöch, Armin	MPI-C
Rohs, Susanne	FZJ
Smit, Herman G.J.	FZJ
Staufer, Johannes	LSCE-IPSL
Thomas, Karin	FZJ
Thouret, Valerie	CNRS-LA
van Velthoven, Peter	KNMI
Verma, Shreeya	MPI-BGC
Volz-Thomas, Andreas	FZJ (IGAS-SAB)
Zahn, Andreas	KIT

Wednesday, 12.11.2013

12:00 Registration, Lunch

13:00 Welcome (Christoph Gerbig, MPI-BGC Jena)

13:15 Keynote presentation: Satellite Observations of Short-lived Climate Forcers (given by Michiel van Weele on behalf of Pieter Levelt, who fell ill)

14:00 IGAS WP 2 Enhancing the IAGOS-GMES link (Peter van Velthoven, KNMI), with 2.1 presented by Damien Boulanger

15:00 Coffee break

15:30 IGAS WP 1 Management, WP 6 Scientific Coordination, and WP 7 Dissemination and sustainability (Julia Marshall, MPI-BGC Jena)

To prepare for the periodic report and the submission of deliverables and the periodic report

Next came a presentation of WP5, with each task leader giving an update on the progress of their respective instrument development. There was no presentation from Task 5.1, as the contributing scientists were occupied with installations into new IAGOS aircraft over the past months, and as such were not yet able to begin work on this task.

16:00 Task 5.2: PTR-MS (Andreas Zahn, KIT)

16:15 Task 5.3: BCPD (Karl Beswick, UMAN)

16:30 Task 5.5: Hilase-Hygro (Zoltán Bozóki, Hilase Ltd.)

16:45 Task 5.4: CAPS PM_{ex} (Andreas Petzold, FZJ)

17:00 Discussion

17:45 Meeting logistics (Peter van Velthoven, KNMI)

Thursday, 13.11.2013

9:00 Invited talk: Instrumented Commercial Aircraft Fill Big Gaps in Earth System Observations, Process Research and Modelling (Len Barrie, Bolin Centre for Climate Research, Stockholm University)

9:45 Invited talk: Evaluation of long term time series using trajectory mapping techniques: Comparison of ozone sondes with MOZAIC in the UTLS (Johannes Staufer, LSCE-IPSL, Paris)

There was a lot of discussion about the exact meaning of the error bars shown on the plots. They are the 90% confidence level on the *mean*, so that they should decrease with increasing numbers of measurements. There was some discussion of how the project started as a way of validating the ozonesonde data by treating the MOZAIC data as

“truth”, but they ended up indicating some potential problems with the first couple years of MOZAIC data as well. It was seen as an instructive exercise overall. There was much discussion about what caused the changes in the agreement over time, as it was not always clearly tied to changing sonde types. The importance of improving the handling of the sondes themselves (after feedback from the JOSIE calibrations) was highlighted.

10:30 Coffee Break

11:00 IGAS WP3 update (Marc Pontaud, Météo-France)

Concerning the subcontracting for the RTTU certification/installation: Following the call for interested parties in September (which was to be followed by a round of proposals to the qualified parties), there were no acceptable submissions. One party did apply, but did not follow the proper procedures and as such was disqualified. The call was then repeated in one round (without pre-selection of candidates, which unfortunately means that the specifications of the work must be fully publicized). The deadline is in December. It may well be that only one proposal is submitted, which means that the price is difficult to negotiate. Despite this setback, the deadlines are expected to be reached following an adjustment of the decision-making procedure.

11:15 IGAS WP4 Evaluation and harmonization of data quality in routine aircraft observations (Herman Smit, Research Centre Jülich)

Len Barrie suggested applying the current QA/QC standards to MOZAIC data as a kind of audit. Perhaps the current standards are too rigorous? Or are the early data too uncertain?

Regarding the discussion of the guidelines for the storage of data, the suggestion was to have one value of total error associated with each data point, with the error expressed in the same units. Arlyn Andrews commented that often a single value is insufficient to characterize the error properly, and she's found it more useful to have instead a few different error terms to characterize different aspects of the error, some of which are operating on different time scales. This seemed to make sense to some instrument PIs, but not to all – it was decided that each instrument PI should be able to determine their own error characterization, with the minimum being a single total error associated with each data point, and the number of extra error columns being instrument- and species-specific. Armin Rauthe-Schöch commented that it was important that the file (perhaps the column headers?) indicated clearly whether each error term should be divided by N or \sqrt{N} when averaging over the data series (as with random errors) or not (as with systematic errors).

The proposal to adopt the GAW three-character flag was discussed further (following the discussion in the WP4 workshop). There was a general dislike of the second character, as this was seen more as scientific interpretation or a value-added data product rather than a measurement. Arlyn Andrews mentioned that at GMD they're still using the three character flag, but that she often finds it too restrictive, and as such NOAA GMD has developed a more complex internal system of flagging data for internal use, which provides overlapping data to but more information than the standard three character flag.

12:00 Lunch

13:15 Discussion of both data access policy and data flagging (held in parallel to the SAB meeting, the minutes of which are in a separate document)

The discussion of data flagging was carried out first, as Susanne Rohs had contributed a lot to the plan, and had to leave by 2:00.

The general dislike for the second column was further discussed. Herman Smit suggested switching the second and third columns, as the third column contained more important measurement-driven information, but this was rejected as it would only lead to confusion, as many data users are familiar with the method as it stands now.

Armin Rauthe-Schöch asked for some clarification about the requirement to not remove any data points, and to leave calibration data in the file. But what if the calibration values aren't in the same unit and can't be converted to a real value? Can -999 still be used? The consensus was that this would still be acceptable, as long as the data points weren't removed from the file.

Mark Parrington asked about the data flagging in the NRT data that would be used at ECMWF: are these flags already in place? Is there some way to ensure that calibration data aren't being transmitted, or are they at least marked as such? No one seemed to have a clear answer to this question, this needs to be checked. He mentioned that the automated checks performed at ECMWF would likely pick up on this anyhow, but it would be good to have a clear answer.

Regarding the various sources of error, it was determined that each data point needs *at least* a "total error" column, but that PIs are free to provide more information in additional columns if they like. Armin mentioned that it should be clear from the column header how the error should be treated when averaging over data (i.e. systematic errors remain unchanged, random errors divided by \sqrt{N}).

Herman Smit indicated that he would update the document related to data storage and data flagging following this discussion.

Then the discussion moved on to the data policy. Armin mentioned that the CARIBIC data have much more explicit requirements regarding co-authorship, including pre-submission of manuscripts to PI, and set procedures for cases of authorship conflict. In practice this may never have been applied, however.

Regarding experimental measurements that have not yet been published, particularly in the case of CARIBIC measurements: perhaps these data will never go into the database at all. Armin gave the example of the numerous halocarbon measurements, many of which have only been measured a few times – these would likely never enter the main IAGOS data centre.

The current MOZAIC/IAGOS data access requires users to submit a short text description of what they plan to do with the data. This isn't meant to hinder their access, but rather to provide the data providers with an idea of what people are using the data for and how many people are accessing the measurements, which can be useful when asking for project support. There was general agreement that the user should be asked

to provide some contact information (name and email address), and give some indication of what they're doing with the data, but that we could move away from the current system wherein a PI (usually Valerie Thouret?) is required to read and approve each description of work. This wasn't meant to be a large hurdle. It was proposed that the potential user could be supplied with buttons or a drop-down menu to select general research topics, i.e. long-term trends, model validation, satellite validation, case studies, etc. Valerie said that she would be able to provide a list of data applications based on responses they've had up to this point. This would simplify the collection of data as well, as sometimes they have to contact the user to ask for more information when the text is too short and general. It was considered acceptable to leave the text field there as well, but that the submission of a text wouldn't be mandatory (but the user would not have to be informed of this fact).

There was some discussion as to whether the email address should undergo some testing to ensure that it's from a real institution (i.e. not hotmail, gmail, etc.), but this was rejected as some scientists use gmail addresses for their day-to-day work. Furthermore, it would be overly restrictive for non-university students who may want to use the data, which isn't the intention.

Björn Brötz mentioned that we should be careful about the language used, i.e. "Open Data" means something specific.

Christoph Gerbig joined the discussion after first reporting to the SAB (in parallel), and commented that use should be restricted to non-commercial applications, and that users should be restricted from redistributing the data.

There was a general consensus on many of the points, and the suggestion was made that we try to agree upon a draft data policy in the next two weeks so that it could be presented to the CARIBIC meeting by Armin two weeks later for approval/discussion. Christoph and Julia agreed that they could put together such a draft document, a first version of which could be made available for the General Assembly the next day.

14:15 Coffee break, held in parallel to the PSC (Project Steering Committee) meeting

Separate minutes for PSC meeting.

Friday, 15.11.2013

9:00 Discussion about the addition of new instruments to IAGOS (WP5-related)

The specifications for new instruments to IAGOS-core need to be made clear: details on mechanical, electrical, and safety requirements.

A clear support by potential users needs to be established in order to start integration of a new measurement system (e.g. as IAGOS-core package 2). Andreas Volz-Thomas mentioned that the original idea for the Hilase water instrument was to replace the current water vapour sensor, with the potential to have a larger number of sensors flying on commercial airliners. H. Smit mentioned the WVSS2 measurement system, which is deployed in the US on more than 100 aircraft, with data being assimilated in weather forecasting.

Action Items:

Andreas Volz-Thomas will make the interface document for package two available to

potentially interested partners, and make the specifications for new package two available. Zoltán Bozóki will have to see if this is reasonable for the Hilase-Hygro instrument. If this seems practical, Herman Smit will inquire with AMDAR to see if there is interest there as well, as well as his contact in Lindenberg (Holger?) to assess if there is potential application in the Brewer network, and he'll provide feedback to IAGOS. Within Task 5.1, Andreas Volz-Thomas and Philippe Nédélec will evaluate the possibility of replacing the current water vapour sensor.

10:00 Coffee break

10:30 Group photo, followed immediately by:

**General assembly, Presentation of outcome of PSC and SAG meetings,
Discussion of any decisions that need to be made**

See separate GA minutes.

12:00 Lunch, end of IGAS First Annual Meeting