

## **PMT Teleconference #10**

26 June 2014

Meeting Minutes

## 1. Introduction

The tenth PMT Meeting was organized in the form of a teleconference on 26 June 2014.

The teleconference started at 10:00 and ended at 11:00.

## 2. Participants

Name		Short name	Role in project	Institute
Martine	De Mazière	MDM	Project Coordinator	BIRA-IASB
Nathalie	Kalb	NK	Project Manager	BIRA-IASB
Bavo	Langerock	BL	Scientist	BIRA-IASB
Klemens	Hocke	KH	WP3 Lead	UBern
Andreas	Richter	AR	WP4 Lead	UBremen
Stephan	Henne	SH	WP5 Lead	EMPA
Maud	Pastel	MP	Collaborator in WP6	CNRS
Sander	Niemeijer	SN	WP8 Lead	S&T
Emmanuel	Mahieu	EM	WP9 Lead	ULg

Excused:

Name		Short name	Role in project	Institute
Thomas	Blumenstock	TB	WP7 Lead	KIT
Sophie	Godin-Beekmann	SGB	WP6 Lead	CNRS
Leo	Breebaart	LB	Collaborator in WP8	S&T

## 3. Agenda

1. Status of the project and progress of work packages
2. Status of deliverables
3. NORS follow-on update
4. NORS Final Workshop update
5. Status of action items
6. AOB

## 4. Minutes

MDM welcomes the participants.

### 4.1. Status of the project and progress of work packages

#### 4.1.1. WP1 Project coordination

All minutes of meetings can be found on the private part of the website (documents). NK will circulate the minutes of this teleconference for correction and load the final version up on the website.

#### **4.1.2. WP2 Project outreach**

The public part of the website contains publications, presentations and deliverables that are of public nature. The private part of the website contains the deliverables that are of restricted nature and working documents. To access the private part of the website, one needs an account (see bottom of the Login Form to create an account).

NK has updated the website according to the remarks of Richard Engelen at the last teleconference with Steering Committee and the information about the final workshop.

SN gave different presentations at the MACC-II Users meeting. All the presentations are available. NK will send the link to these.

SN reports about the outcome of this meeting. The procurement of the operational phase is ongoing. The EC wants to contract the coordination of COPERNICUS to a single party which will be ECMWF. ECMWF would issue requests for quotation / invitations to tender for the single aspects around the end of 2014. This means that for NORS we will have to hook up with the group in charge of validation in MACC, a priori the same team as currently. The discussions between the EC and ECMWF will continue until around the end of the year. The aim is to be operational after the first quarter of 2015. AR thinks there will be delay. All agree.

MDM adds that she's writing an editorial for PAN European Networks magazine about NORS, the need for validation data and data acquisition.

#### **4.1.3. WP3 Rapid data delivery at 4 NDACC stations**

KH reports that there are now two directory structures for La Reunion, Maito and for La Reunion, Saint-Denis. New data files for UV-Vis have been submitted. Progress has been made since last teleconference in La Reunion, but the situation is not perfect yet. Generally, normal data submission is achieved for about 80%.

MDM has been in contact with the people responsible for the stratospheric ozone LIDAR in La Reunion. They promised to submit data very soon. MP comments that there have been problems with the metadata file. It should be solved before the end of the day.

#### **4.1.4. WP4 Advanced characterisation of NORS data products**

AR reports about the status of work in WP4.

#### **Task 4.1 Data Formats**

##### IASB

The new GEOMS UVVIS.DOAS templates have been implemented on AVDC (see <http://avdc.gsfc.nasa.gov/index.php?site=1876901039>), in close collaboration with the GEOMS Metadata Board. The new templates include two new variables (LATITUDE and LONGITUDE) to report the location of the effective air mass probed by the UV-vis instruments. The determination of these effective locations are based on first-order approaches developed within the NDACC/NORS UV-vis WG. Example files have been successfully tested by NDACC (Roger Lin), so the NDACC/NORS RD database is ready to

accept files in the new format. BIRA is submitting ZENITH O3 and NO2 and OFF-AXIS NO2 and aerosol data files in the new format since beginning of June.

### CNRS

Updating of GEOMS/UVVIS template from v004 to v006 is ongoing. Minor modification is done. The calculation of the new variables (LATITUDE and LONGITUDE) added in v006 to report the effective airmass location is ongoing. It is expected to be implemented in September

## **Task 4.2 Information Content and Harmonization of Networks / Techniques**

### INTA

working in the comparison of FTIR, satellite and DOAS comparison at Izaña observatory for NO2

### UB

- FTIR applied improved pressure correction for full data set since 1992
- After some more code updates regarding sfit4 another version of the whole FTIR timeseries of CH4, CO and O3 will be derived
- Improved MAX-DOAS analysis over Bremen and provided one year of tropospheric NO2 columns & profiles for validation of MACC-II regional model data
- Analysis of ship-borne data from a SHIVA cruise for SO2 and NO2; showed that for these measurements, geometric columns derived from 15° elevation are in very good agreement with the results from full profile retrieval, and even 10° elevation data provide good tropospheric vertical columns.

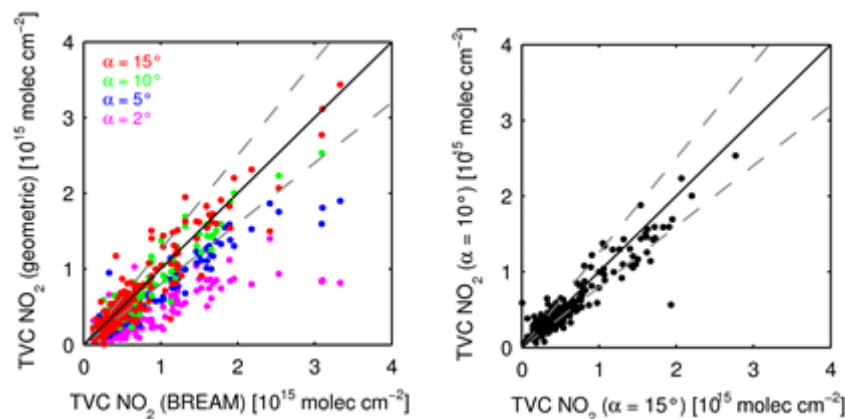


Figure 1: Scatter plot of tropospheric vertical columns derived by the profiling algorithm BREAM and the simple geometric approximation applied to different elevation angles (colour coded). Data are for one day of ship-borne observations during SHIVA. From Schreier et al., submitted to AE, 2014

### ULG

Continuation of HCHO retrievals from Jungfraujoch

## **Task 4.4 Comparison to Satellite Observations**

### INTA

D4.7 has been delivered by INTA to BIRA. MDM is very happy with this document. She will however interact with INTA about some remaining questions. AR says that he is impressed by the synthesizing efforts of the publications.

### MPIC

Contribution to GOME-2 NO<sub>2</sub> validation by IASB by providing tropospheric NO<sub>2</sub> VCDs over Mainz (Julia Remmer) and stratospheric NO<sub>2</sub> VCDs over Kiruna (Myojeong Gu). The Chinese partner Jianzhong Ma contributed tropospheric NO<sub>2</sub> VCDs over Beijing

## **Presentations / Publications**

### INTA

Preparing contribution to the 41st Annual European Meeting on Atmospheric Studies by Optical Methods in August entitled "NO<sub>2</sub> seasonal evolution in the background free troposphere from MAXDOAS measurements" applying the approximation of Gomez et al., 2013, to obtain the annual evolution of NO<sub>2</sub> and O<sub>3</sub> at Izaña from MAXDOAS measurements

### ULG / IASB

A manuscript is in preparation to report about the respective performances of the MAXDOAS and FTIR techniques in measuring HCHO at a high altitude mostly unpolluted site, involving comparisons with IMAGES and GEOS-Chem model results.

### IASB

- The cloud screening method developed at BIRA is now published on AMTD (Gielen et al., A simple and versatile cloud-screening method for MAX-DOAS retrievals, Atmos. Meas. Tech. Discuss., 7, 5883-5920, 2014). This method is implemented in the Xianghe operational process for the creation of hdf files.
- SAOZ and FTIR measurements of stratospheric NO<sub>2</sub> columns at Jungfraujoch have been used to validate the OMI stratospheric NO<sub>2</sub> product developed at KNMI (van Geffen et al., Improved spectral fitting of nitrogen dioxide from OMI in the 405 – 465 nm window, submitted to AMTD)
- MAX-DOAS observations of H<sub>2</sub>CO and NO<sub>2</sub> made by BIRA at Jungfraujoch have been presented at the ACTRIS VOCs/NO<sub>x</sub> Workshop (EMPA, 2-5 June 2014) and at the ACTRIS General Assembly (Clermont-Ferrand, 10-13 June 2014). There is a strong demand of MAX-DOAS NO<sub>2</sub> profiles by the in-situ community in order to make the link between in-situ surface concentrations and the vertical distribution of NO<sub>2</sub>.
- Papers in preparation
  - o comparison between MAX-DOAS and FTIR measurements of H<sub>2</sub>CO at Jungfraujoch, in collaboration with the University of Liège (Franco et al, to be submitted to AMTD)
  - o comparison between parametrized and OEM-based profiling methods based on MAX-DOAS measurements of NO<sub>2</sub>, H<sub>2</sub>CO, and aerosols at Xianghe (Vlemmix et al., to be submitted to AMTD)
  - o development of a method for the retrieval of tropospheric NO<sub>2</sub> columns from daytime zenith-sky scattered sunlight observations (Tack et al., to be submitted to AMTD)

BL asks AR to remind CP about the reanalysis of the Bremen FTIR measurements with SFIT 4.

#### **4.1.5. WP5 Integration of tropospheric products**

SH says that he is working on the MAXDOAS comparisons (in situ vs. MAXDOAS) at JFJ. The correlation looks similarly bad as AR mentioned. By taking representativeness into account, he is able to improve this behaviour a little bit. He will perform the same work for O<sub>3</sub> and NO<sub>2</sub>, but he is not very optimistic about it. The results will be documented in a final report and in a publication.

#### **4.1.6. WP6 Integration of ozone products**

MP reports about the status of WP6. For Izana, La Reunion and Ny-Alesund the new products such as ozone profile, tropospheric and stratospheric columns are ready. The validation of these products with MLS and SAGE-II for the profiles and with UV-visible spectrometers for the stratospheric columns has been done. For Izana and La Reunion, we obtain a very good agreement. The validation of Ny-Alesund should be done very soon. For the alpine station, the methodology needs some further modification (bias correction).

The final report for this WP is being written.

MDM asks if MP intends to publish her results. MP says her contract will end by the end of July 2014. She will not have enough time.

#### **4.1.7. WP7 Reanalysis of ground-based time series back to 2003**

MDM reads the report sent by TB prior to the teleconference.

As reported last time data has been re-analysed (back to 2003) and archived. MWR data which was still flagged as RD data at the last telecom, are meanwhile consolidated and archived as such. So, MWR, Lidar and FTIR data sets are fully consolidated. Just UV-vis data is flagged as RD data. DOAS data will be formatted and archived in GEOMS data format soon.

BL comments that he used the reanalyzed FTIR and MW measurements at Ny-Alesund and Lidar measurements at OHP to validate the model reanalysis of MACC from 2003 to 2013 for ozone. Some results will be included in the validation report.

KH mentions that he has submitted MW data to the consolidated directory.

MDM asks if the reanalysed time series are also used in the validation server in a standard way. BL says that the validation server is not able to do that at this stage because there is too much data. On the server, we are capable of doing one year. It's possible offline to validate longer time series, but it can't be automated at this stage.

#### **4.1.8. WP8 Web-based server for validation of GAS products using NORS data products**

SN summarizes the status of work with regards to the validation server. BIRA and S&T have recently held a telecon about how to implement the system at BIRA. The system will have the same configuration as at S&T. The machine will be shipped back to BIRA.

The report generation has stopped at bit because of a problem of conversion of GRIB-1 to GRIB-2. BL, SN and Yves Christophe are working on this.

S&T is also working on some other reports and trying to include H<sub>2</sub>O at the moment.

BL comments that Simon Chabrilat is really interested in grouping the cross-comparisons with the northern hemisphere according to latitude bands. SN says he's not sure what kind of plots are available, but it should be possible to filter the plots on a certain latitude range.

SN asks if there is some documentation or agreement on the methodologies that are used with regards to validation in other workpackages. AR answers negatively but the methodology will be documented in the deliverables. The reason is that it should be kept as simple as possible for MACC. AR explains why some aspects of his comparisons are not manageable in an automated system. SH comments that his methodology is pretty close to S&T's. All agree that towards the end of the project we should compare our methodologies. BL says he is writing the algorithms paper at the moment. It should be finished in July. SH asks to be kept in the loop.

BL comments that he has lots of difficulties to get in contact with the persons who are responsible for the validation in MACC, except for ozone (Simon Chabrilat). AR says that MACC-II will end in just a few weeks. People are thus not enthusiastic about taking new things into the project at the moment. Next to that there are also issues with the design of the MACC validation. MDM says that this is a good point and we should take it into account when promoting continuation.

#### **4.1.9. WP9 Validation of GAS products for O<sub>3</sub>, NO<sub>2</sub>, CO, CH<sub>4</sub>, H<sub>2</sub>CO, aerosol**

EM summarizes the status of work in WP9. The aim is to provide some validation products for the FTIR measurements for the main targets, but also NO<sub>2</sub> which has been added in the mean time. They had a discussion about the possibility to add formaldehyde. But this has been given up on, to concentrate on the species described in the project.

EM would like to know how the server will evolve and when it will be available at BIRA. SN says it should be in July, but adds that there will be almost no differences.

In conclusion, the aim is to concentrate on the FTIR products and to support the MACC validation.

#### **4.1.10. WP10 Capacity building and sustainability**

MDM summarizes the different capacity building activities reports by the different institutes.

##### BIRA-IASB:

- Xianghe, China: Due to instrumental issues, the instrument was working in zenith mode only since January 2014. Problems are fixed now and the instrument is again working in full MAX-DOAS mode since end of May. Daily NO<sub>2</sub> and aerosols data files are now generated using the latest version (v006) of the GEOMS UVVIS.DOAS template which includes the location (latitude, longitude, altitude) of the effective air

mass. The complete time-series of NO<sub>2</sub>, HCHO, and aerosols data files covering the March 2010-December 2013 will be reprocessed by mid of August.

- Bujumbura, Burundi (same as for the previous telecon): instrument (including data transfer to BIRA) is operational since end of November 2013. We are still working on the optimisation of the retrieval settings for NO<sub>2</sub>, HCHO, and aerosols. Our plan is to submit data covering the November 2013-May 2014 period to the NORS database by the end of the project. We would like also stress the good collaboration with the University of Burundi regarding the maintenance of the instrument.

#### KIT:

- FTIR site Altzomoni, Mexico:  
Wolfgang Stremme and Eddy Francis Plaza from UNAM Mexico City attended the NDACC workshop in Jena last month. They presented first results of the ongoing NDACC certification process.
- FTIR site Addis Ababa:  
Dr. Gizaw Mengistu Tsidu (Addis Ababa University) is visiting us in Karlsruhe right now. He is working on the data analysis of Addis spectra.

#### INTA:

- Measurements at Belgrano are working on. We have not yet received any official communication about NDACC admission of Belgrano in the network.
- We made a contribution during the last EGU with data of Belgrano: "Halogen oxides from MAXDOAS observations at Belgrano station (Antarctica, 78°S) in 2013. Olga Puentedura, Margarita Yela, Manuel Gil, Manuel Perez-Camacho, Monica Navarro-Comas, and Hector Ochoa. Geophysical Research Abstracts Vol. 16, EGU2014-14635, 2014. EGU General Assembly 2014."

#### IAP-Bern:

- The compact ozone microwave radiometer GROMOS-C arrived at La Reunion and is in operation since begin of June 2014
- Scientists from IAP-Bern and from our partner institute (Sookmyung Women's University, Seoul) attended the ARTS Workshop in Sweden ([http://www.sat.ltu.se/workshops/radiative\\_transfer9/](http://www.sat.ltu.se/workshops/radiative_transfer9/)). The workshop was about microwave/submillimetre radiometry, atmospheric radiative transfer and retrieval technique

#### MPIC:

- Our Chinese Partner Jianzhong Ma has recently sent NO<sub>2</sub> VCDs to BIRA. Gaia Pinardi will use them for the validation of GOME-2.

#### CNRS:

- SAOZ team :  
The automatic delivery of SAOZ real time data of Rio Gallegos with the new UV-Vis template v006 HDF format is ongoing.  
It is expected to be implemented in mid-July without some new variables. The full version 6 of the template will be implemented in September.  
Consolidated V3 data since the installation of the instrument in 2008 is ready to be submitted.  
It will be done in September after validation of v006 HDF template.



- Lidar Team:  
A scientist from Argentina is coming to France in September in order to work on the HDF software and delivery.

#### UBremen:

- Cooperation with Yekaterinburg (FTIR): CP will visit them again later this year
- Cooperation with Paramaribo (FTIR): Local staff was trained to operate the instrument. Because of a hardware failure, the local staff cannot operate the instrument right now. A previous campaign in Spring 2014 worked very well.

#### **4.1.11. WP11 Project management**

Our Project Officer, Stijn Vermoote, has informed us that he will be replaced by Monika Kacik in his role as Project Officer of NORS.

Monika Kacik is a very motivated and highly experienced Project Officer and will cover several of the Copernicus Climate Change and Atmosphere projects together with Stijn Vermoote.

Stijn Vermoote said that he really enjoyed working with us and wishes us all the best for the final months of NORS and the NORS/NDACC/GAW workshop in November.

#### **4.2. Status of deliverables**

##### **4.2.1. D4.7 Consistency with satellite data (M30)**

This deliverable has been submitted during the writing of these minutes.

##### **4.2.2. D6.2 Integrated Ozone profile data (M36) and D6.3 Integrated Ozone tropo- and stratospheric column data (M36)**

The initial delivery date of "D6.2 Integrated Ozone profile data" and "D6.3 Integrated Ozone tropo- and stratospheric column data" was M30=April 2014. A delay of two months had been requested and accepted. The reason for this was an O3 campaign at La Reunion in the beginning of June. This campaign was a good opportunity to validate and correct NORS WP6 products at this station. The Ny-Alesund, Izana and OHP data should have been available sooner.

During the writing of these minutes, a new delay until the end of October has been requested and accepted. The reason is an unexpected leave of the person who was responsible for this work and deliverable at the CNRS (responsible partner's institute). In the mean time, a new person has been hired who has already taken over the job and is making good progress. The delay of these deliverables will have no negative impact on any other workpackages.

##### **4.2.3. Other deliverables due at the end of the project (M33>M37)**

- D2.3 Publications / Communications (NK)
- D2.4 Final NORS Workshop & report (MDM/NK)
- D3.3 Final documentation of data delivery system (KH)
- D5.3 Cross comparisons report (SH)
- D9.2 Assessment of GAS products (EM)
- D10.1 NDACC Capacity report (MDM)
- D10.2 NDACC status report (MDM)
- D10.3 NORS capacity and sustainability (MDM)

#### D10.4 NORS as an in-situ GAS (CAS) component (MDM)

These deliverables will be discussed more extensively at the next telecon.

### 4.3. NORS follow-on

MDM summarizes the recent evolutions in terms of follow-on.

MDM, Stijn Vermoote and the coordinator of DG Enterprise met at the EC on 28 April to discuss the NORS white paper and the continuation of NORS in CAS.

The outcome of this meeting has been circulated by email on 30 April 2014:

“On Monday, April 28, we had a discussion at the DG Enterprise of the EC with P. Breger and M. Rohn about the future of NORS. NORS was represented by Bavo Langerock and myself (MDM); S. Vermoote was also present.

I believe that the need for a continuation of NORS, including support for the data stream (acquisition, analysis, quality control, delivery) and for the validation server activity, was understood.

I believe that our discussion has happened at the right moment, because they are negotiating now with ECMWF as to how ECMWF has to organise the future atmospheric operational service, including the requirements from the EC.

Our impression at the end was

- (1) that they are willing to support NORS-type activities
- (2) that they are looking for sharing costs with other organisations like ESA who are also in need of reference data for validation and NORS-type activities.

We will see further how this gets realised, and I will follow closely the next steps in the development of the Copernicus Atmospheric service in which ECMWF will play the central role.

I think you can help pushing in the same direction if you make it also clear to your national contact points in H2020 and Copernicus that there is a real need to support the ground-based observation component and that they should argue for that in their meetings with the EC about future workprogrammes.

The more voices telling the same story, the more chance we have that the message gets through.”

It was a quite positive meeting but there has not been any follow-up on this matter since then. MDM is still in contact with MACC about continuation.

MDM informs all about the status of the call from the EC about research infrastructure directed towards continuation of ACTRIS. It turns out ACTRIS will not integrate NDACC in their proposal, because there is not enough overlap between NDACC and ACTRIS stations. She has been in contact with NDACC persons about the possibility of submitting a competing proposal about NDACC as research infrastructure. There are several issues: (1) the call is oriented towards aerosols, clouds and reactive trace gases, (2) the call is for research infrastructure (coordination, networking), and thus not so much for research and

data acquisition, (3) there is no volunteer to coordinate a proposal. At the moment there is no intention to submit a proposal from NDACC.

#### 4.4. NORS meetings schedule

Month	Meeting Name	Venue	Date	Time
M2	Kick Off Meeting	BIRA-IASB	Wednesday, 14 December 2011	9:30 AM
M4	PMT Teleconference 1		Thursday, 9 February 2012	10:00 AM
M6	SC Teleconference 1		Thursday, 12 April 2012	10:00 AM
M8	PMT Teleconference 2		Tuesday, 26 June 2012	2:00 PM
M11	PMT Teleconference 3		Thursday, 13 September 2012	10:00 AM
M13	First Progress Review/Meeting	BIRA-IASB	Tuesday 20 & Wednesday 21 November 2012	
M14	PMT Teleconference 4		Thursday, 13 December 2012	10:00 AM
M16	PMT Teleconference 5		Thursday, 26 February 2013	10:00 AM
M18	SC Teleconference 2		Thursday, 18 April 2013	10:00 AM
M20	PMT Teleconference 6		Thursday, 20 June 2013	2:00 PM
M22	PMT Teleconference 7		20 August 2013	3:00 PM
M24	Second Progress Review/Meeting	BIRA-IASB	Thursday 17 & Friday 18 October 2013	9:00 AM
M26	PMT Teleconference 8		Thursday, 12 December 2013	10:00 AM
M28	PMT Teleconference 9		Thursday, 13 February 2014	10:00 AM
M30	SC Teleconference 3		Monday, 14 April 2014	10:00 AM
M32	PMT Teleconference 10		Thursday, 26 June 2014	10:00 AM
M34	PMT Teleconference 11		Thursday, 8 October 2014	10:00 AM
M37	Final Project Review/Meeting/Workshop	BIRA-IASB	5-7 November 2014	

#### NORS final Workshop

The invitation to the workshop has been sent on 11 June 2014. The deadline for registration and abstract submission is 10 September 2014. The final programme will be published around 1 October 2014.

We solicit abstracts for oral presentations (maximum 15 minutes including discussions).

The programme of the whole week of meetings is as following:

- Monday 3/11 – Wednesday 5/11 AM: **NDACC Steering Committee Meeting** - open to members only and upon invitation
- Wednesday 5/11 PM – Friday 7/11 AM: **NORS/NDACC/GAW Workshop** - open
- Friday 7/11 PM: **NORS Final Review Meeting with Steering Committee** - open to members of the NORS consortium only

#### Preliminary programme of the NORS/NDACC/GAW Workshop:

- Session 1: Satellite applications and validation  
Keynote talk by Claus Zehner (ESA - European Space Agency, Italy)
- Session 2: Validation of Copernicus Atmosphere Service products  
Keynote talk by Henk Eskes (KNMI - Royal Netherlands Meteorological Institute, Netherlands)
- Session 3: Decadal time series for trend and climate studies

Keynote talk by Jean-Pascal van Ypersele (UCL - Université Catholique de Louvain, IPCC Vice-chair, Belgium)

- Session 4: Stratospheric Ozone and the Montreal Protocol

Keynote talk by Wolfgang Steinbrecht (DWD - Deutsche Wetterdienst, Germany)

- Session 5: Aerosols, Clouds, and Trace Gases (incl. Greenhouse Gases)

Keynote talk by Gelsomina Pappalardo (CNR - Consiglio Nazionale delle Ricerche, Italy)

#### 4.5. Status of action items

AI #	Description	Assigned to	Status
AI-PMT6-55	AR to check the reporting about the uncertainties in the files.	Andreas Richter	Closed
AI-PMT9-80	MDM to send the minutes of the GEOMS Metadata Board telecon and request feedback.	Martine De Mazière	Closed
AI-PMT9-81	BL to send around the algorithm document to discuss the opportunity to provide the airmass profile calculation in the files.	Bavo Langerock	Closed
AI-SC3-82	All to send NK their presentations about NORS at EGU.	All	Closed

#### 4.6. AOB

MDM thanks all the participants and wishes them a nice summer holiday. She closes the meeting.