# Second Envisat Rehearsal Campaign Review

# Meeting Minutes

*Tuesday 17 July and Wednesday 18 July 2001*

**GOMOS, MIPAS and SCIAMACHY Calibration and Verification Teams**
**Atmospheric Chemistry Validation Team**

*Thursday 19 July and Friday 20 July 2001*

**MERIS and AATSR Validation Team**
**MERIS and AATSR Calibration and Verification Teams**

*Friday 20 July 2001*

**RA-2 Absolute Calibration Team**
**RA-2/MWR Validation and Cross-Calibration Team**

*Main Conference Room, ESRIN, Frascati, Italy*

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# 1 Introduction and Welcome: E. Attema

**Attema** welcomed the participants to the Second Rehearsal Review meetings, which were held at ESRIN, Frascati, Italy, from 17 – 20 July 2001. A meeting of the atmospheric chemistry community was held from 17 – 18 July, the MERIS & AATSR communities on 18 July, and the RA-2 & MWR Calibration, Cross-calibration & Validation communities on 20 July. In addition, splinter meetings of the Model Assimilation and the MERIS Water Products subgroups were held on 18 July.

ESA's thanks were relayed to those present for taking part in the rehearsal and for attending the review meetings. **Attema** outlined the objectives of the meeting, which were to focus on the outcome of the rehearsal activities and to discuss issues of common interest. The agendas for the three meetings (Annex A) were adopted with the following modifications:

- The addition to all meetings of two discussions led by G. Levrini on:
  1. Product distribution and data requirements during the Commissioning Phase, and
  2. Interaction of the Validation teams and the ESL to ensure necessary algorithm improvements.
- The addition to the ACVT and MAVT meetings of a discussion on EnviView led by G. Brooker
- The GOMOS Calibration and Verification report would be presented by G. Barrot
- The MERIS Calibration and the MERIS Vegetation Products & Atmospheric Corrections over Land reports would be presented by J-P. Huot.
- The discussion the NILU Database (Agenda Item 3) was removed from the CCVT agenda as this was not relevant and one presentation by L. Rempicci would cover agenda items 5 to 9.

# 2 Envisat Status Report: G. Levrini & E. Attema

**Levrini** reiterated Attema's thanks to all participants. The systems have been designed by engineers and so these tests were invaluable as engineering level tests are not fully satisfactory. This is still a running project and the exercise has been very helpful from ESA's point of view.

**Levrini** discussed the recent failure of the Ariane 5 launcher to place Artemis in a geostationary orbit. This had been due to problems in the third stage of the launch and the satellite had been left in a degraded orbit. An investigation into the causes of the launch failure is currently underway, and the preliminary results will be known at the end of August / beginning of September. Whatever the cause, it was thought that there would probably be some impact on the launch date of Envisat, although not firm statement can be made at present. It had been decided to continue preparations for Envisat along the original timelines until the scale of the delay is known, when any necessary modification will be made.

A recovery strategy for the Artemis mission was decided and announced on 19 July. This would attempt to slowly place the satellite in a nominal geostationary position, over a timescale spanning several months, and at the same time trying to minimise the amount of chemical propellant and xenon used. These activities had been designed to maximise the lifetime of the mission, which was originally planned to span 10 years. The Commissioning Phase for the satellite will start once it has reached 31 000 km and is in a quasi-circular parking orbit. Further details can be found on the ESA website (www.esa.int).

Envisat is currently in Kourou and ready for launch. The problems with Artemis have a minimal effect on Envisat operations. It may be that Artemis becomes operational in a few months once it has reached its geostationary position. However, there is already a backup plan in place that does not involve the use of Artemis and instead employs a second receiving station in Svalbart in addition to the main one in Kiruna. Using Artemis, the plan was to dump 7 orbits to Kiruna, and 7 to ESRIN, but without Artemis this changes to 10 orbits to Kiruna and 4 or 5 to Svalbart. Thus, in terms of mission objectives, the data will still be recovered and the goals met.

## 3 NILU Database Rehearsal Report: T. Krognes

**Krognes** presented an overview of the NILU database. He stressed the importance of using the latest version of the metadata files when converting data to HDF, ready for uploading to NILU. As long as the user is employing the most up-to-date metadata files, and adhering to the NILU guidelines, the data files should not be rejected. NILU agreed to provide more examples and better explanations of the process, and to improve the web presentation of the metadata guidelines. It was hoped that the metadata structure will be frozen in August 2001, after which all that will be required will be simple additions. Improvements are also planned for ASC2HDF, IDL2HDF and database querying, and a data visualisation tool will be developed. **Krognes** asked the MAVT & ACVT communities to provide NILU with any remaining metadata requirements. The system will remain open and the community should maintain their interaction with NILU.

It was suggested that there should be one person identified per instrument to help NILU in defining the metadata for that instrument. **Bojkov** informed the meeting that this strategy had already been adopted, although not fully exploited. **Attema** explained that there is a structure in place and that to change this for a new one would not be helpful at this late stage. Initially, the point of contact concerning the NILU facilities is Koopman. For issues regarding templates / protocols, then the subgroup leader should be addressed.

**Fricke** pointed out that EnviView and NILU use different versions of the HDF format and he recommended that these be harmonised. He also suggested further enhancements to EnviView be made as it currently converts PDS binary data to HDF with disregard to the geophysical aspects of the data. **Koopman** responded that it is up to the user to link the quantities, and HDF allows this to happen. **Attema** pointed out that time and resources are limited, and thus any additional suggestions of this nature would need to detail exactly what is required and why. The geophysical output of the data would constitute a major exercise, and would probably not be possible for the Commissioning Phase. **Zehner** informed the meeting that ESA had just issued an invitation to tender for the development of Envisat toolboxes. The development of the toolboxes will last around 12 months and so are more appropriate for Phase E. Within the toolboxes, scientists will be able to insert their own algorithms and these can then be shared with the community.

The question of a third rehearsal was raised, particularly to check new files uploaded to NILU. **Krognes** agreed that these should be tested although a third rehearsal would not need to be called to allow this to happen. **Attema** added that a full rehearsal is an intensive operation including many elements and involving many people who would otherwise be working on further system developments etc. A third rehearsal is not anticipated although we would need to examine the results of this rehearsal to decide. The community should continue to exercise the system and maintain the dialog. **Bojkov** maintained that it is important for people to respond to requests to test the system and to examine files promptly when called upon. In the past he has found that feedback was not provided until the last minute.

The development of tools to further exploit the HDF data was raised by **Fricke**. **Bojkov** responded that if the tables are applied and HDF implemented properly, all the necessary information would be available. **Attema** added that we have to exercise some sort of control. There are sometimes limitations to what can be achieved in the time available. A list of actions and requirements detailing what is manageable should be drawn up. **Bojkov** has a great deal of experience with the use and exploitation of HDF data and he agreed to provide a list of recommended HDF software to the community.

**Doerffer** remarked that it would be useful to have a list of variables for submission to NILU. This should be restricted to a certain number and all other variables would then be handled by the PI. It was agreed that a common list of variables would be compiled and passed around the water community for agreement. **Huot** agreed to circulate the updated list and **Hassinen** to check it.

# 4 PDS Rehearsal Report: P. Potin

**Potin** outlined the rehearsal results from the point of view of the PDS. The Monitoring and Control Facility (MCF) could not be included in the rehearsal as it was undergoing tests at ESRIN. Therefore, those who sent certain types of queries would have had no response, although formally the request would have had an accepted status. This will, of course, not be the case in the operational phase.

Some of the common issues reported concerned loading the applet for the web browser and the speed of access. Plans are in place to improve the interfaces within the USF and to improve its performance and speed. **Pal** complained that, when he used the back arrows to return to the previous page, he was logged out of the USF completely. **Potin** agreed that this was a problem and that they are tackling this issue. A list of priorities will be drawn up resulting from the feedback from the rehearsal and a series of projects are planned to tackle some of the immediate issues.

Additional disk capacity will be installed as a result of lessons learnt during the rehearsal. Access to the USF is restricted to 20 / 25 users at any one time and this was sometimes a problem during the rehearsal when all activities were focused intensely in one week. This is not expected to be a problem during normal operation. Some of the problems in loading the EOLI applet are Netscape, Explorer or platform-dependent issues and so are often beyond the USF's control. It was thought a good idea to have a few frequently asked questions on the USF site on ways to get around these types of problems. **Potin** agreed that this would be a good idea but reminded users that EOhelp is in place to provide this kind of help and advice.

There is probably not enough time to test the additional subscription services planned. The plan is to harmonise the product packaging and subscription services. **Attema** identified that the first few weeks of operation will act almost as a focused rehearsal to test these types of procedures.

For the rehearsal, registration to the USF was limited to one individual (PI) for each project. Many claimed that this was impractical and thus for the operational phase Co-PIs can become registered users. The rehearsal week was too short to complete all the tests the community wished to do on the USF. **Huot** asked if it would be possible to open the USF in its present state for say another 3 weeks. **Potin** explained that for this rehearsal a team had been placed at Kiruna and have been removed. There is, however, an EOLI stand-alone platform at http://www.test.envisat.esa.int and this can be used for testing, although any orders made will not be satisfied. From time to time upgrades and testing will be performed on this platform and users should be aware that it will not be available 100% of the time. Further PERL testing is possible and users are requested to contact EOhelp for further information and registration. **Brockmann** asked about the link between the EOLI and PERL interfaces. During the rehearsal they were completely separate and he asked if they will be linked in the future so that orders made using PERL will also appear in the EOLI. **Potin** explained that they are two separate interfaces and this will remain so for the Commissioning Phase. The order status should be visible at the USF after a short period of time and orders made through PERL will then be visible at the EOLI HMI. **Petiteville** added that there is no difference between the standard and the EOLI USFs, except that the interface is more sophisticated in the case of the EOLI.

# 5 EnviView Rehearsal Report: G. Brooker

**Brooker** listed a series of planned and requested refinements to EnviView and these are detailed in the first chapter of the user guide on the EnviView CDROM. The next major release of EnviView is expected at the end of September / beginning of October. **Levrini** explained that many of the features requested by the community were at the limit of what EnviView should do. EnviView will never match the plotting capabilities of a more sophisticated environment and, if too many additional requirements are insisted upon, the runtime issues will never be solved and other improvements will be held up. **Brooker** explained that users should accept the limitations of EnviView. It is a tool that provides a quick look at the data and it is not an analysis tool. It is also a bridge to the exporting of data and formats. Emails, requests, feedback etc concerning software improvements to EnviView

were requested and these should be sent to EOhelp, which will ensure that ESA also sees these requests. Only if time is critical should the more direct EnviView email address be used.

**Brooker** informed the meeting that EnviView can already do child sub-setting geographically. He also explained that if the SCIAMACHY calibration processor is run with no calibration functions, L1b will be exported into L1c products. **Fricke** asked for the inclusion of an option to place user-specified numbers into the data file. **Brooker** agreed to add an option, for test purposes, so that when exporting PDS to HDF a value of your choice can be written.

**Doerffer** asked about the addition of a capability within EnviView to extract ship tracks etc. **Brooker** explained that the plans are to incorporate the selection of a box or rectangle of data by geographical location and by defining its dimensions. For ship tracks, a series of narrow boxes could be defined.

**Brockmann** asked about plans to provide a series of predefined plots within EnviView. **Brooker** explained that the original intention was to help the atmospheric community who found it difficult to visualise their data. However, ideas from any of the teams would be welcomed to EOhelp or to the EnviView team before the end of August.

# 6 Product distribution and data requirements during the Commissioning Phase: G. Levrini

**Levrini** discussed the plans for product distribution and data requirements during the first six months of the mission. During this time the cal / val teams will be the only recognised users of the system. During the first few months, the cal / val community will not be asked to access the USF to make orders. Rather, there will be one co-ordinator for each team (the subgroup leader) who will be responsible for compiling the data requirements and for submitting the orders for the subgroup, thereby ensuring coherence at the start of the mission. Belonging to the cal / val teams means that the amount of data one can receive could be quite substantial, as dictated by the specific validation requirements. This is another reason why the ordering will be done on a per-group basis at the beginning to ensure that the system is not overloaded during the first few months. The orders that will be put together will be as standardised as possible and the data will be distributed on a systematic basis.

The media used to distribute the data will also be in the plan. Data that are needed by a restricted community, i.e. L0 and L1b, will be preferably distributed via the satellite link as, on the whole, these communities have the equipment and facilities to enable this. Meteo products will be distributed systematically by ftp. L2 products will be sent out on CDROMs. The facility to make more specific *ad hoc* requests will always be available although we must be constantly aware not to overload the system at the beginning. **Barrot** raised the issue of data compression. **Levrini** responded that there is a technical difficulty in that the achieved compression ratio depends on the content of the data, and therefore the amount of compression for each file is unknown. There is some internal discussion on this matter.

The systematic ordering of each group's data will commence in the second half of August. **Wehr** identified that most PIs already have a good idea about what data products they need. This information should thus be provided to the subgroup leader as soon as possible.

**Fricke** asked if the mission planning is to include the geographic locations of the validation instruments. **Barrot** explained that, for GOMOS during the Commissioning Phase, there will be a background observation plan that will target at a few specific ground stations as much as possible. **Nett** detailed the MIPAS case which will be operated in its nominal scenario, the time windows being defined in the MIPAS cal / val plan. **Attema** explained that the mission planning has been sorted out for the cal / val work and for the first nine months non-nominal modes of operation are not planned as the operation of the instruments needs to be tested and verified.

**Piters** asked about the auxiliary products and it if will be possible to order these later. **Levrini** explained that in principle additional data ordering will always be possible. The auxiliary files will not change very often and one idea is to distribute them to the community via ftp each time they are changed.

For the MERIS community, L2 RR data will go via a primary data stream through Brockmann Consult. The data required by the user will be selected out of the global parent product and will be packaged onto media, or accessed via ftp. L0 and L1b data will be distributed via the satellite link. MERIS FR data will be processed by the PACs and will be delivered on media directly from them.

Users will be able to place their own orders at the USF once the operational plan has been finalised. Everyone will then receive their own user ID and will be able to submit their own orders at once Envisat is in nominal mode, at L + 6m at the latest.

# 7 Interaction of the Validation teams and the ESL to ensure necessary algorithm improvements: G. Levrini

**Attema** introduced the session by explaining that we have to ensure that the results from the first nine months after launch are fed back to those who develop the algorithms as soon as possible, thereby ensuring the improvement of the data products.

**Levrini** explained that the algorithms have been developed by the ESL teams and the prototype processor is under their control. The results from the validation activities should thus be channelled through them. Cal / val team members should compare Envisat data with their own, and it is essential to clarify the way this comparison will be undertaken. Thus, the community is required not only to provide data, but also to undertake analyses. It is also important to look at the data uploaded to NILU and to exploit this information as much as possible.

There are a number of rendezvous points during the first nine months:

1. The Commissioning Phase review at L + 6m, which will mainly focus on calibration, but will also provide the first opportunity for people to gather and discuss their activities and preliminary results,
2. A validation round-table at L + 7.5m, an intermediate checkpoint when the various teams can get together and compare their results, and
3. The Validation Workshop at L + 9m.

Some concerns were raised that the L + 9m workshop will be too early as some groups will not have data by then. **Attema** explained that this will be the first of a few workshops and that it is important to fix one at L + 9m to maintain a deadline within the validation work and to enable reporting on what has been done to date.

It was identified as very important to clarify the communication channels. Direct communication between knowledgeable people was agreed invaluable, but it is important that the subgroup leader is used as a co-ordinator and filter for problems and discussions within the group. The subgroup leader should be copied any correspondence and information exchange, and this will ensure that a degree of coherency is maintained within the discussions. He / she will also keep the team active. If a PI finds something wrong with the data, he / she should ask the ESL and algorithm development team, through their subgroup leader, to check things out. ESA will ensure that there is always a co-ordinator available and, if the subgroup leader is away from the office, a replacement will fulfil their role. The subgroup leader is inside the agency, has knowledge of the instrument and can thus field comments and requests effectively. The subgroup leaders have a clear assigned task to liase with their team members and with other subgroups. In addition to this, **Brockmann** offered that the Contest database could be used to allow the MERIS community to follow what is going on and what people are doing. This was agreed as a good idea as the history of activities and reporting would then be kept together.

**Levrini** informed the meeting that there is a plan to upgrade the L1 processing chain 6 months after launch, and an upgrade of the L2 will be made at L + 9m. Other changes may be necessary due to poor performance of algorithms, but this cannot be planned for. However, it must be remembered that making lots of changes will result in discontinuity in the data over time and so caution must be adopted and small change requests should be avoided.

**Dekker** asked about ESA's public relations policy for Envisat. **Attema** explained that for ESA there is a common approach and Envisat will be subject to all the usual PR activities, including media exposure. **Levrini** explained that promotion within the scientific community and in scientific journals will be pressed strongly, and after the validation workshop there is expected to be at least one special issue of a journal.

# 8 Subgroup Rehearsal Reports

## 8.1 GOMOS Calibration and Verification Rehearsal Report: G. Barrot

**Barrot** asked if it would be possible to receive an email once a product has been ordered from the USF, to verify what exactly will be sent. The installation of the USF PERL interface takes a few minutes only and on the whole this was found to function well. The graphical capabilities of EnviView were found to be limited.

### 8.1.1 AO 190 & 648: S. Hassinen

**Hassinen** identified that during the first rehearsal everything was working, but this time many problems were encountered even though the computers used etc. were the same.

## 8.2 MIPAS Calibration and Verification Rehearsal Report: H. Nett

**Nett** presented the status on the MIPAS algorithms and processing facility, the ESL & AO projects, data distribution needs and the rehearsal outcome.

### 8.2.1 AO 191: G. Schwarz

**Schwarz** requested that a single username and password be used for all the different facilities (the USF, NILU, ECMWF etc.) as it was confusing which should be used to access which system. He found it easiest to access the USF using a PC and Microsoft explorer. The download of overpass tables via Netscape worked although when using ftp, a carriage return was inserted into the table thereby ruining the format. **Snoeij** suggested that he use the ASCII version and not the binary and **Schwarz** suggested that this could be an entry in the frequently asked questions list.

## 8.3 SCAIMACHY Calibration and Verification Rehearsal Report: J. Frerick

**Frerick** summarised the SCIAMACHY subgroup's feedback from the rehearsal. He explained that what was missing in EnviView was the facility to export SCIAMACHY data products. No limb data for SCIAMACHY had been provided for the rehearsal but **Piters** directed those interested to the SCIAMACHY web page for information on how to produce one's own simulated limb data.

### 8.3.1 IUP, University of Bremen: J. Skupin

**Skupin** requested a facility within NILU to delete files that have been uploaded but are wrong. **Krognes** explained that the facility already exists although it is not available for outside use for security reasons. If data needs to be removed from the database, an email should be sent to NILU. If a file with the same name and version number as one already in the database is uploaded, it will not overwrite the existing one and will only result in an error being registered.

### 8.4 Balloon & Aircraft Campaigns Rehearsal Report: P. Wursteisen

**Wursteisen** summarised the subgroup's feedback from the rehearsal reports. **Attema** reaffirmed that generic comments are not very constructive and to be effective in changing the system a PI has to be specific about what needs to be changed. Time and money allocations may mean that some things may not actually happen and, in this case, PIs should be prepared to make their own plans. It was agreed that it would be a good idea to compile a list of requirements and their status so that everyone can see what will be provided and what they will have to do themselves. It also must be borne in mind that some requests may directly conflict with those of others and so may not be undertaken for that reason.

#### 8.4.1 AO 114 & 240: G. Wetzel

**Wetzel** explained that he was not able to plot pressure and height in a logarithmic scale using EnviView.

#### 8.4.2 AO 291: M. Pirre

During the discussions **Barrot** recommended that it would be useful to get submitted PERL script back from the USF so that it could be slightly altered and reused. **Levrini** thought that this should be possible and he also agreed to verify if it would be possible to make available a more interactive version of the PERL script.

### 8.5 Ground-based measurements Rehearsal Report: R. Koopman

**Koopman** outlined the team organisation and gave an overview of the performance of the rehearsed facilities and software. He stressed the need for stability in Envisat's data structures etc. a few months before launch so that PIs can plan their own work and software tools etc. **Koopman** outlined a series of actions relevant for the ground-based team to be executed before launch.

#### 8.5.1 AO 153: S. Pal

**Pal** talked about the sensitivity of the formats at NILU. **Attema** explained that considerable effort had been taken to harmonise the formats and a certain amount of rigidity in the formats is essential. Although they may be sensitive and it takes a little time to adjust at the start, the end result is probably worth the initial effort. **Pal** identified that the log files are confusing and could be improved. **Bojkov** responded that the error messages are indeed a little confusing and some work is required. **Schwarz** added that there should be better documentation on how to create the files.

#### 8.5.2 AO 174: A. Piters

**Piters** informed the community that the rehearsal reports for SCIAMACHY would be placed on their validation website at http://www.knmi.nl/sciamachy_validation and she invited others to do the same on their sites. **Piters** recommended the generation of metadata templates, particularly for ozone sondes. **Bojkov** replied that templates have been generated for most of the ground-based measurements. However, there was not enough data submitted at the first rehearsal to test out and reformulate the templates properly. **Bojkov** and others will now look at the data thus far submitted and discuss the format of the templates with the users by 10 September. **Piters** suggested that an open web page be made available where software and tools can be placed for people to download. **Attema** agreed that this would be a good idea and he and **Levrini** agreed to look into this.

#### 8.5.3 AO 179 & 9003: D. Swart

**Swart** explained that he could not export HDF from EnviView using it on an NT-4 platform. **Brooker** explained that there was a problem with the installer on the CDs and that an email had been sent around explaining a work-around for this. An email to EOhelp would have provided a solution.

#### 8.5.4 AO 206 & 632: G. Giuliani

**Giuliani** outlined the rehearsal activities and their local data flow. **Bojkov** responded to some of the presentation issues by explaining that the metadata entries for each category are living things and each time someone brings in a new instrument the table.dat file will change.

#### 8.5.5 AO 222: U. Blum

**U. Blum** outlined the results from the rehearsal activities undertaken. He recommended that Envisat data should be disseminated in HDF and that it should be released as "data" and not "data PLUS program to read it". **Levrini** responded that data products cannot be distributed in HDF. He asked if the distribution of the source code to read the binary Envisat data directly would be enough. There was general agreement that it would and **Levrini** promised that this would be included in the next release of EnviView.

#### 8.5.6 AO 158, 156, 317, 360, 602, 701 & 713: S. Marchand

**Marchand** outlined the rehearsal activities and feedback from several AOs. **Brooker** was interested in finding out the reasons for some problems that had been encountered with PDS2HDF. He agreed that speed is a common issue with EnviView and that the program is memory hungry. Optimisation to improve these issues will only be done once the tool is complete.

#### 8.5.7 AO 429: T. Suortti

**Suortti** outlined the rehearsal activities and feedback for AO 429.

#### 8.5.8 AO 9083: L. Mona

**Mona** outlined the rehearsal activities undertaken and feedback produced.

#### 8.5.9 AO 9100: F. Congeduti

**Congeduti** outlined AO 9100's rehearsal activities and feedback. **Congeduti** suggested that the default setting of the media should be changed from Exabyte to CDROM at the USF. **Levrini** agreed that this should be done.

### 8.6 Model Assimilation Rehearsal Report: T. Wehr

**Wehr** outlined the activities and results from the reports received from AOs 160, 270, 339 and 1039.

#### 8.6.1 OZVAL: F. Fierli

**Fierli** presented the findings of the OZVAL team.

### 8.7 Satellite Intercomparison: C. Zehner

**Zehner** outlined the results from the satellite intercomparison subgroup's rehearsal activities.

#### 8.7.1 AO 241: A. Straume

In addition to outlining the rehearsal activities, **Straume** identified a few problems with EnviView and **Brooker** asked for details of these.

#### 8.7.2 AO 118: B. Bojkov

**Bojkov** outlined his impressions of the rehearsal and suggested that if this type of exercise was to be repeated, a time should be chosen when both Europe and the USA are awake to really test the system properly. He reminded the meeting that latitude, longitude and altitude are mandatory for all files uploaded to NILU.

### 8.8 MERIS Calibration Rehearsal Report: J-P. Huot

**Huot** presented the results from the MERIS calibration subgroup's rehearsal activities.

### 8.9 AATSR: M. Edwards

**Edwards** presented the rehearsal activities and results for the AATSR Calibration, the AATSR Land Validation and the AATSR Sea Surface Temperature Validation subgroups.

### 8.10 MERIS Clouds and Water Vapour Products Validation Rehearsal Report: P. Goryl

**Goryl** presented the rehearsal reactions for the MERIS Clouds and Water Vapour team.

### 8.11 MERIS L2 Algorithm Verification: C. Brockmann

**Brockmann** executed the required rehearsal activities and followed this with rehearsals of some others, such as how the data will be handled. He identified that EnviView is very important as it is the only tool available to look at the browse products. **Levrini** informed the meeting that developments to, and the maintenance of, ESOV had restarted one and a half months ago. The next release of ESOV is due at the end of September.

### 8.12 MERIS Vegetation Products & Atmospheric Corrections over Land: J-P. Huot

**Huot** explained that AO 279 (Baret) had been the only participant in the rehearsal for the MERIS land group. Baret had suggested that he did not need to place his data in the NILU archive as he maintains his own that is accessible to everyone. **Attema** responded that, if the land products need validation, the results will need to be somewhere that is easily accessible to all and NILU had been set up specifically for that purpose.

### 8.13 MERIS Water Products Validation Rehearsal Report: J-P. Huot

**Huot** explained that the Water Products group had met the previous day in an highly productive meeting. There had been very few complaints about EnviView. Few had used the PERL interface, although Brockmann did test it extensively. Also, very few used ESOV, probably due to problems in getting the login information easily. **Snoeij** reminded the meeting that the testing of ESOV had not been a formal part of the second rehearsal and **Levrini** added that ESOV is not really ready for testing at the moment. **Attema** raised a view held by the ACVT community who wanted results from the analyses of the validation data to be stored at NILU. He asked if the MAVT community thought that this was a useful thing to do. **Huot** responded that it would and he further suggested that within the primary data file to be uploaded to NILU, additional data columns could be inserted to enter match-up data. **Ruddick** went on to suggest that it would be beneficial to have MERIS pixel match-up data in the database, although he found the idea of having each validation PIs results in the database irrelevant. **Brockmann** added that the Contest database was developed to help the MERIS L2 group's activities, and it would be very easy to add the activities of the water group as the relevant MERIS scenes would already be in the system. However, this would not include scatter plots, just textual information. **Attema** applauded this communication link for the group, but he stressed that at every stage there should be a certain amount of simple validation information that anyone can access. **Edwards** gave the example of the AATSR community who plan to collate the results from their analyses each month and produce monthly reports. Data quality meetings will be held to address situations in a timely way. They would not want to upload any more data to NILU, but a monthly summary could be provided. **Attema** agreed that this would be a good idea and suggested that the other subgroup leaders do the same.

### 8.14 RA-2 Absolute Calibration and RA-2 / MWR Validation & Cross-calibration teams: L. Rempicci

**Rempicci** summarised the results and feedback from the RA-2 and MWR teams who had participated in the rehearsal. One comment had been that when the RA2_WWV_2P product is selected at the USF, there is no option to choose between the offline or NRT version. **Levrini** agreed that this is an important issue for the user, particularly post-commissioning. **Potin** responded that the facility for selecting NRT / offline is not available in the

system. The two products are available from different processing stations and it is possible to execute searches at the two stations given you are aware which type of data is housed where. **Levrini** expressed concern over this and suggested that the option to select NRT / offline should be available and the selection process clear. **Rempicci** suggested that simple filenames are needed for the data products, and not the long filenames currently used that require decoding to find out what the consolidation flag is, if it is fast delivery or offline etc. **Levrini** identified this as a valid system issue and agreed to look into it. **Potin** asked if there is an interest in the ordering of child products through the subscription service for the RA-2. **Levrini** replied that there is and **Femenias** added that this would be an invaluable feature for Phase E users. **Martini** asked about doing this type of ordering through the PERL script. **Potin** replied that the script will be improved shortly to include this.

**Femenias** raised the issue that one user requested access from the NILU database. **Levrini** explained that training in the use of the database would be required and, as the user had not participated in the rehearsal activities, they would need to find the time to do this themselves. Also, if they want to take data from NILU, they have to respect certain rules and also upload data to the database that may be useful to others. Nothing has so far been set up for the RA-2 community and this would therefore need to be established. **Femenias** agreed to clarify the user's requirements with Levrini.

**Levrini** proposed that data should be systematically distributed to CORISTA and for ALENIA on CDROM (4 CDs per day). **Milagro** agreed to confirm that they would be happy with CDs and not Exabytes. **Potin** clarified that the IECF used the USF during the rehearsal to retrieve child products, and they also had used the ftp link. **Levrini** explained that they are making sure that the IECF can get data via the DDS, which will bypass the USF.

# 9 Concluding Remarks

**Attema** thanked all for participating in the rehearsal and for attending the rehearsal review. ESA promised to digest the information contained within the rehearsal reports, and the meeting minutes will be produced together with a combined report on the outcome of the second rehearsal. There had been a series of consistent and repeated comments made throughout the meetings and they will be addressed.

**Piters** thanked ESA for a very successful meeting and, along with others, expressed appreciation on the clarification of the data distribution and ordering issues. **Levrini** confirmed that slight revisions may be necessary in light of the issues surrounding Artemis, and this should be clarified in August.

# 10 Actions

| | |
|---|---|
| ***2-1*** | Compile a list of outstanding requirements and necessary improvements to the NILU database. Include details of the action status and completion date (**T. Krognes**) |
| ***2-2*** | Compile a list of outstanding requirements and necessary improvements to the USF. Include details of the action status and completion date (**P. Potin**) |
| ***2-3*** | Compile a list of outstanding requirements and necessary improvements to EnviView. Include details of the action status and completion date (**G. Brooker**) |
| ***2-4*** | Compile a detailed list of actions resulting from the rehearsal activities and review meetings (**P. Snoeij / M. Robinson**) |

# Annex A: Agendas

*Tuesday 17 July and Wednesday 18 July 2001*
**GOMOS, MIPAS and SCIAMACHY Calibration and Verification Teams**
**Atmospheric Chemistry Validation Team**

*Main Conference Room, ESRIN, Frascati, Italy*
*starting each day at 9:00 hours and ending around 17.00 hours*

1. Introduction & Welcome: E. Attema
2. Envisat Status Report: G. Levrini
3. NILU Database Rehearsal Report: NILU
4. PDS Rehearsal Report: ESA
5. GOMOS Calibration and Verification Rehearsal Report: O. Hembise / T. Paulsen + PIs
6. MIPAS Calibration and Verification Rehearsal Report: H. Nett + PIs
7. SCIAMACHY Calibration and Verification Rehearsal Report: J. Frerick / C. Zehner + PIs
8. ACVT- Balloon & Aircraft Campaigns Rehearsal Report: P. Wursteisen + PIs
9. ACVT - Ground Based Measurements Rehearsal Report: R. Koopman + PIs
10. ACVT - Model Assimilation Rehearsal Report: T. Wehr + PIs
11. ACVT - Satellite Intercomparison Rehearsal Report: C. Zehner + PIs
12. Conclusions and Review of Actions

*Thursday 19 July and Friday 20 July 2001*
**MERIS and AATSR Validation Team**
**MERIS and AATSR Calibration and Verification Teams**

*Main Conference Room, ESRIN, Frascati, Italy*
*starting each day at 9:00 hours and ending at 11.00 hours on Friday 20 July 2001*

1. Introduction & Welcome: E. Attema
2. Envisat Status Report: G. Levrini
3. NILU Database Rehearsal Report: NILU
4. PDS Rehearsal Report: ESA
5. MERIS Calibration Rehearsal Report: S. Delwart + PIs
6. AATSR Calibration Rehearsal Report: M. Edwards + PIs
7. MAVT - AATSR Land Validation Rehearsal Report: M. Edwards + PIs
8. MAVT - AATSR Sea Surface Validation Rehearsal Report: M. Edwards + PIs
9. MAVT - MERIS Clouds and Water Vapour Validation Rehearsal Report: P. Goryl + PIs
10. MAVT - MERIS L2 Algorithm Verification Rehearsal Report: C. Brockmann + PIs
11. MAVT - MERIS Vegetation Products & Atmospheric Corrections over Land Rehearsal Report: M. Rast + PIs
12. MAVT - MERIS Water Products Validation Rehearsal Report: JP. Huot + PIs
13. Conclusions and Review of Actions

*Friday 20 July 2001*

**RA-2 Absolute Calibration Team**
**RA-2/MWR Validation and Cross-Calibration Team**

*Main Conference Room, ESRIN, Frascati, Italy*
*starting at 9:00 hours and ending around 17.00 hours*

1. Introduction & Welcome: E. Attema
2. Envisat Status Report: G. Levrini
3. NILU Database Rehearsal Report: NILU
4. PDS Rehearsal Report: ESA
5. RA-2 Absolute Calibration Rehearsal Report: M. Roca + PIs
6. CCVT- Range Cross-Calibration and Product Validation Rehearsal Report: J. Benveniste + PIs
7. CCVT - L2 Algorithm Rehearsal Report: M. Milagro + PIs
8. CCVT - Wind/Wave Validation, Sigma Zero Validation and Sea State Bias Determination Rehearsal Report: J. Benveniste / B. Greco + PIs
9. CCVT - MWR Calibration & Validation Rehearsal Report: P. Femenias + PIs
10. Conclusions and Review of Actions

# Annex B: Participants

| | | | Meeting attended |
|---|---|---|---|
| E. | Attema | ESA | ACVT, MAVT, CCVT |
| G. | Barrot | ACRI-ST | ACVT |
| U. | Blum | University of Bonn, Germany | ACVT |
| B. | Bojkov | NASA, USA | ACVT, MAVT |
| C. | Brockmann | Brockmann-Consult, Germany | MAVT |
| G. | Brooker | VEGA, France | ACVT, MAVT |
| R. | Brugge | University of Reading, UK | ACVT |
| M. | Bruns | GKSS Research Centre, Germany | ACVT |
| P. | Ciotti | University d'Aquila | ACVT |
| F. | Congeduti | CNR / IFA | ACVT |
| P. | D'Aulerio | CNR / IFA | ACVT |
| A. | Dekker | CSIRO, Australia | MAVT |
| A. | Dethof | ECMWF, UK | ACVT |
| R. | Doerffer | GKSS, Germany | MAVT |
| M. | Edwards | University of Leicester, UK | MAVT |
| P. | Femenias | ESA | CCVT |
| F. | Fierli | ACRI-ST SA/IPSL, France | ACVT |
| J. | Frerick | ESA | ACVT |
| K.H. | Fricke | University of Bonn, Germany | ACVT |
| P. | Goryl | ESA | MAVT |
| G. | Guliani | University d'Aquila | ACVT |
| S. | Hassinen | Finnish Meteorological Institute | ACVT |
| J. | Hokedal | NIVA, Norway | MAVT |
| J-P. | Huot | ESA | MAVT |
| P. | Keckhut | Service d'Aeronomie IPSL, France | ACVT |
| R. | Koopman | ESA | ACVT |
| H. | Krasemann | GKSS, Germany | MAVT |
| T. | Krognes | NILU, Norway | ACVT, MAVT |
| G. | Levrini | ESA | ACVT, MAVT, CCVT |
| S. | Marchand | CNRS, France | ACVT |
| A. | Martini | ESA | CCVT |
| Y. | Meijer | RIVM, The Netherlands | ACVT |
| F. | Mencaraglia | IROE - CNR, Italy | ACVT |
| M. | Milagro | ESA | CCVT |
| L. | Mona | CNR, Italy | ACVT |

| | | | Meeting attended |
|---|---|---|---|
| G. | Moore | PML, UK | MAVT |
| H. | Nett | ESA | ACVT |
| T. | Nguyen Thanh | NILU, Norway | ACVT, MAVT |
| S. | Pal | SAAI INC / MSC, Canada | ACVT |
| S. | Payan | CNRS, France | ACVT |
| S. | Peters | Institute of Environmental Studies, The Netherlands | MAVT |
| F. | Pinsard | CNRS, France | ACVT |
| M. | Pirre | CNRS, France | ACVT |
| A. | Piters | KNMI, The Netherlands | ACVT |
| P. | Potin | ESA | ACVT, MAVT, CCVT |
| M. | Prosperi | IROE - CNR, Italy | ACVT |
| L. | Redbourn-Marsh | Southampton Institute, UK | MAVT |
| L. | Rempicci | ESA | CCVT |
| M-C. | Robinson | Remote Sensing Applications Consultants, UK | ACVT, MAVT, CCVT |
| K. | Ruddick | MUMM, Belgium | MAVT |
| C. | Schmechtig | LISE, France | MAVT |
| D. | Schnalke | Brockmann-Consult, Germany | MAVT |
| G. | Schwarz | DLR, Germany | ACVT |
| H. | Siegel | Baltic Sea research Institute, Germany | MAVT |
| J. | Skupin | University of Bremen, Germany | ACVT |
| P. | Snoeij | ESA | ACVT, MAVT, CCVT |
| K. | Sorensen | NIVA, Norway | MAVT |
| A.G. | Straume | SRON, The Netherlands | ACVT |
| T. | Suortti | Finnish Meteorological Institute | ACVT |
| D. | Swart | RIVM, The Netherlands | ACVT |
| B. | Theodore | ACRI-ST | ACVT |
| H. | Van der Woerd | IVM, The Netherlands | MAVT |
| T. | Wagner | University of Heidelberg | ACVT |
| T. | Wehr | ESA | ACVT |
| G. | Wetzel | Forschungszentrum Karlsruhe, Germany | ACVT |
| P. | Wursteisen | ESA | ACVT |
| C. | Zehner | ESA | ACVT |
| G. | Zibordi | ISPRA | MAVT |