

WORLD METEOROLOGICAL ORGANIZATION



WMO RARS IMPLEMENTATION GROUP

1st MEETING

GENEVA, SWITZERLAND

3 – 4 July 2007

FINAL REPORT



PARTICIPANTS

The Participants of the workshop included representatives of the Asia-Pacific RARS (Australia, China, Japan and Korea), the South-American RARS (Argentina), EARS (EUMETSAT) and WMO. The contact details of all the participants are attached as Annex III to this report.

1. INTRODUCTION AND REVIEW OF THE AGENDA

1.1 Dr Donald E. Hinsman, Director of the WMO Space Programme (WMOSP), welcomed the participants to Geneva and emphasised the importance of the RARS initiative to WMO. He recalled that the WMOSP had among its objectives to develop the use of satellite data, namely through assimilation in NWP models. In improving the timeliness of satellite sounder data, the RARS initiative has proved to be extremely valuable and has had beneficial impacts on the output of many forecasting centres.

1.2 Dr Hinsman noted that this first meeting of the RARS Implementation Group had its origins in the preceding three RARS workshops that had been held between 2004 and 2006. By building upon the experience of EARS, the global RARS network is now approaching an operational status. Coordination was essential to ensure overall consistency and steady progress. It thus appeared fully appropriate to now officially establish a RARS Implementation Group.

1.3 Dr Hinsman thanked the participants for their attendance and their contributions to the preparation of the meeting and handed over chairmanship of this meeting to Jerome Lafeuille, Chief of the WMO Space-based Observing System Division.

1.4 Jerome Lafeuille added his welcome to that of Dr Hinsman. Following a review of the provisional agenda, the Participants agreed that the agenda be adopted for the meeting (attached as Annex I of this report).

2. TERMS OF REFERENCE AND MEMBERSHIP

2.1 The Chair recalled that the members of the group had been nominated by their respective Permanent Representatives or Organisations. A list of nominated members is attached as Annex II. Most of the nominated Members were present, with the exception of Dr Griersmith, represented by Dr Rea, and Mr de Paula Pereira, who had provided a written contribution.

2.2 The Chair also noted that, prior to the establishment of this Implementation Group, the precursor workshop generated a draft version of the Terms of Reference for this group. These Terms of Reference were subject to review by 34th CGMS, and were endorsed.

2.3 The main elements of the Terms of Reference were briefly recalled, namely:

- to build upon the successful experience of EARS;
- to coordinate and facilitate:
 - the establishment of new RARS to expand the network towards global coverage;
 - the inter-regional data exchange of RARS data;
 - standardisation;
 - consistency with the IGDDS concept;
 - expansion of data types to be re-transmitted.
- the group will keep the RARS concept under review to ensure it fulfils the regional and global requirements for improved timeliness of critical LEO data;
- the group would meet nominally once per year and report on its activities to CGMS and WMO;

- unless otherwise agreed, the RARS Implementation Group will cease its activities when its objectives will be completed or handed over to a new structure ensuring operational coordination of activities in the longer term.

2.4 The group took note of the Terms of Reference and EUMETSAT requested clarification about the link to the user community.

2.5 The Chair noted that one element in the relationship between RARS and the User Community could be via the Expert Team on Satellite Utilisation and Products (ET-SUP) as one of the tasks of that group is to consolidate the needs of the user community and provide feedback to data providers. However, it was acknowledged that this element, on its own, may not be sufficient and that the International TOVS Study Conference (ITSC) could be a very useful forum to communicate with the NWP Operators community. It was recalled that, at the last ITSC, a presentation had been given by the WMOSP and had triggered several important recommendations.

2.6 Following discussions it was felt that it would be very appropriate to ensure that there was a systematic dialogue between this group and the ITSC, and agreed on an action for the forthcoming ITSC in 2008.

Action RARS-IG-1.1: The Asia-Pacific RARS coordinator to provide a report to the next meeting of the ITSC on the status of the RARS initiative and to seek user feedback on i) the impact of the use of ATOVS data, and ii) user requirements for the further development of the RARS network.

3. STATUS OF EARS

3.1 EUMETSAT provided a presentation covering the current status and future planning for the three main EARS service components [EARS-ATOVS, EARS-AVHRR (pilot) and EARS-ASCAT (pilot)]. In particular, the presentation addressed:

- evolution of EARS:
 - schedule;
 - scope.
- EARS ATOVS coverage (original and current);
- EARS System Overview;
- evolution tasks (including upgrade activities to receive Metop data in addition to NOAA data, segmentation of data - necessary to meet AVHRR and ASCAT timeliness requirements, AAPP update, validation testing);
- evolution achievements (with a focus on the status of HRPT station upgrades for Metop);
- issues encountered during evolution (i.e. need for early familiarisation of station providers with Metop RF characteristics, difficulties experienced by manufacturers with providing Metop level 0 data, internet congestion in Greenland, RF interference issues);
- detailed HRPT station capabilities;
- EARS coverage evolution and plans for future stations (e.g. La Reunion, Moscow, Oman and provisional discussions with South Africa);
- EARS-ATOVS status (station status, dissemination to users, quality monitoring, ensuring a pre-processing of NOAA data that is consistent with NOAA provided global data sets);
- EARS-AVHRR concept (one-minute data segmentation, timeliness implications and mechanisms to avoid duplication in dissemination);
- EARS-AVHRR coverage (currently based on 5 stations – Svalbard, Lannion, Maspalomas, Kangerlussuaq and Athens);
- EARS-AVHRR status (including dissemination to users);
- EARS-ASCAT concept;

- EARS-ASCAT history and current status (demonstration service using ERS-2 data, dissemination to users and status of KNMI ASCAT processor).

3.2 WMO asked about the AAPP versioning strategy that was employed by EUMETSAT. It was clarified that EUMETSAT apply new AAPP versions nearly straightaway, following a period of testing (currently AAPP v.6.4) and ensure consistency across the EARS network with respect to the use of AAPP versions, in accordance with the agreed RARS Operators Standards.

3.3 The Implementation Group expressed their appreciation to EUMETSAT for the comprehensive overview of the current status and the future planning for EARS.

4. STATUS OF THE ASIA-PACIFIC RARS

4.1 The acting Asia-Pacific RARS Coordinator, Anthony Rea (BoM), started by thanking all the regional contributors to the Asia-Pacific presentation, particularly CMA, KMA and JMA.

4.2 The status of the Asia-Pacific RARS was then presented, covering:

- key developments (Singapore, Hong Kong and New Zealand);
- A-P RARS status;
- current coverage (including gaps in the Pacific);
- new station summary;
- predicted station coverage as of mid-2008;
- Metop progress (in terms of data reception);
- benefits to NWP;
- NWP benefits at JMA;
- key relevant developments at BoM;
- BoM network of receiving stations.

4.3 In particular it was noted that, due to bandwidth constraints, there were no plans at the moment to include Casey and Davis within the HRPT network (which is a change to the baseline). In addition it was noted that Townsville will be added.

4.4 It was confirmed that the A-P RARS data are available on the GTS, and will be subject to routine quality monitoring by the NWP SAF in the same way as EARS-ATOVS data are monitored.

4.5 Mr Zhou Lin (CMA) then presented the status of A-P RARS related activities at CMA, including:

- current status of GTS at Beijing;
- PCVSAT (NMIC DVB-S distribution system);
- plan to merge PCVSAT and FengYunCast;
- exchange of RARS data;
- reception of ATOVS 1b data;
- requirements on further ATOVS data.

4.6 Mr Jae-Dong Jang (KMA) then presented the status of A-P RARS activities at KMA, including:

- brief history;
- current status;
- future planning (including the relocation of satellite activities in December 2007 to a new National Meteorological Satellite Centre in Jincheon, and preparations for Metop);
- proposals for future work (internet site for monitoring acquisition, ATOVS data user guide and quality test tool for data);

- quality of ATOVS data.

4.7 The acting Asia-Pacific RARS coordinator suggested, for the future, to have a meeting of the A-P RARS participants just prior to this Implementation Group meeting. This was felt by the Group to be an appropriate suggestion given the rapid progress that was being made in the region.

4.8 The Group congratulated the Asia-Pacific RARS on the substantial achievements that had been made since the last meeting.

5. STATUS OF THE SOUTH AMERICAN RARS

5.1 Marcelo Colazo (CONAE) presented Status of the Argentinean component of the South American RARS including:

- Cordoba ground station (including satellites acquired);
- Base Marambio Station;
- ATOVS processing status;
- future plans.

5.2 It was noted that both the Cordoba and Marambio stations should be providing RARS data by the end of 2007, and the HRPT station baseline for the region needs to be updated to reflect this planning.

5.3 In the absence of Sergio de Paula Pereira, the report of the Brazilian component of the South American RARS was presented by the Richard Francis (WMOSP) with an emphasis on three main themes:

- centralised versus distributed AAPP processing;
- AAPP versioning;
- equipping AAPP sites and ensuring appropriate links.

5.4 In discussions, the group noted the importance of using the latest version of the AAPP software across the RARS network, to ensure consistency.

5.5 The Chair noted that the test results included in the report were very recent, and the progress of the South American RARS is very encouraging.

6. CODE AND FORMAT HARMONISATION ISSUES

6.1 Robert Husband (WMO Consultant) presented the paper entitled "Code and Format Harmonisation Issues" addressing:

- HRPT Station Identifiers;
- File-naming Conventions.

6.2 Pierre Kerhervé (WMO/WWW/ISS) then presented the 4 recommendations contained in the ISS analysis of the RARS network.

6.3 Recommendation 1 was "To develop proposals for the allocation of A_1A_2 for $T_1 T_2 = IN$ in Attachment II-5 of the Manual on the GTS, in co-operation with the CBS Expert Team on GTS-WIS Operations and implementation."

6.4 EUMETSAT noted that their current operational practice does not limit the value of T_1T_2 to "IN", with "E", "N", "W", "X" and Z currently in use for T_2 by EUMETSAT. Therefore it was agreed

that the recommendation to set T_1T_2 to "IN" should apply to future data RARS (i.e. non-EARS data).

Action RARS-IG-1.2: All RARS Operators to develop proposals for the allocation of A_1A_2ii for the cases where T_1T_2 is set to "IN" in accordance with Attachment II-5 of the Manual on the GTS, in co-operation with the CBS Expert Team on GTS-WIS Operations and implementation – applicable to future RARS data.

6.5 Concerning GTS points of contact for coordination, it was noted that these are all given on the World Weather Watch (WWW) pages of the WMO web-site at:
(http://www.wmo.int/pages/prog/www/index_en.html)

6.6 Recommendation 2 was "To standardize the practices for file naming by using the general file naming convention with pflag = W, to start implementing the WMO Core Profile of the ISO Metadata standard (version 1.0 adopted by CBS-Ext.(06)), and to contribute to the further development of these standards, in particular through the Inter-Programme Expert Team on Metadata Implementation".

6.7 EUMETSAT commented they had no problem in implementing this recommendation but felt that it would not necessarily achieve the desired effect as EUMETSAT files contain a conglomeration of data from multiple sources (and are not limited to RARS data). In addition, it was noted that when the EUMETSAT files reach the RTH at Offenbach the bulletins are extracted, re-packaged and transmitted according to the routing table requirements (and assigned new filenames). Following discussions, it was concluded that Recommendation 2 should apply to files which only contain RARS data.

Action RARS-IG-1.3: For files that only contain RARS data, all Coordinators to standardize the practices for file naming by using the general file naming convention with pflag set to "W", to start implementing the WMO Core Profile of the ISO Metadata standard (version 1.0 adopted by CBS-Ext.(06)), and to contribute to the further development of these standards, in particular through the Inter-Programme Expert Team on Metadata Implementation.

6.8 Regarding the metadata file, it was noted that when the WIS becomes operational the provision of a metadata file will be required.

6.9 Recommendation 3 was "To develop general principles for the definition of the contents of the product identifier field for the file naming convention with pflag = W for satellite data and accordingly develop proposals for the allocation of categories and sub-categories in Common Table C13 of the Manual on Codes in coordination with the CBS Expert Team on Data Representation and Codes."

6.10 The group felt that the existing categories [003: vertical sounding (satellite) and 012: surface data (satellite)] are basically fine for the current RARS network and its possible extension to scatterometer data, respectively. Specific sub-categories would however have to be defined for the various types of RARS data.

Action RARS-IG-1.4: EUMETSAT (Simon Elliott) to propose appropriate sub-categories of category 003 for ATOVS and sub-categories of 012 for ASCAT, and communicate them to the Implementation Group by the end of August 2007.

Action RARS-IG-1.5: All RARS Coordinators to implement the filenaming convention with product identifiers using data designator category 003 and sub-categories to be defined (see above EUMETSAT action) in Common Table C-13 of the Manual on Codes.

6.11 Recommendation 4 was “To review the tables defining the originator and generating satellites centres and limit their numbers, to define those tables to be used for defining the <location indicator> field of the static part of the product identifier of the general file naming convention with pflag = W, and to make proposals for updating the [common Tables C-1, C-11 and C-12 of the Manual on Codes](#) as required in coordination with the CBS Expert Team on Data Representation and Codes. (Tables C-11 and C-12 are accessible from the WMO website by selecting the WWW programme, then “(WMO Data Management including) **WMO codes**” then “Common Code Tables to Binary and Alphanumeric Codes”.

6.12 It was noted that the data from 3 CMA HRPT stations were merged and processed in Beijing in a single data set with removal of duplication and it is doubtful whether it is possible to trace these data to their HRPT source. Hence, in this particular case, these 3 stations will probably have to be treated as a single source (for quality monitoring purposes). As concerns the possibility to further merge RARS data into a single regional data set, it was recalled that the current baseline is to retransmit ATOVS data from the various contributing HRPT stations without such merging and that NWP centres can remove duplicates when screening the data. In this respect it was noted during the meeting that the UK Met Office confirmed its support to this approach.

6.13 It was agreed to implement the approach proposed in Recommendation 4 for identifying HRPT stations through the use of the <location indicator> field of the static part of the product identifier, noting that this requires proposals to be made for updating the common tables C-1, C-11 and C-12 of the Manual on Codes (particularly table C-12).

Action RARS-IG-1.6: In order to identify HRPT stations in a coherent manner, all RARS Coordinators to make coordinated proposals for unambiguous sub-centre identifying numbers that would be proposed for inclusion in a future update of the common Table C-12 of the Manual on Codes, in coordination with the CBS Expert Team on Data Representation and Codes. Due date: end of September 2007

6.12 Concerning the HRPT stations acronym that appear in the Asia-Pacific and South American filenames, two cases of duplication were identified, and:

- BoM agreed to change the acronym of the Melbourne station from “cpt” to “mel”;
- an action was placed on the coordinator of the Brazilian component of the South American RARS to propose a different acronym for the Manaus HRPT station to avoid confusion with Svalbard (sva).

Action RARS-IG-1.7: The Coordinator of the Brazilian component of the South American RARS is invited to propose a different acronym for the Manaus HRPT station by the end of September 2007.

7. SOFTWARE IMPLEMENTATION ISSUES

7.1 The importance of installing the latest version of the AAPP S/W was emphasised (as indicated in the Operator Standards).

7.2 In response to a query about tools for validating BUFR formats, it was noted that the ECMWF website could be of use:
www.ecmwf.int/products/data/d/check

7.3 In response to a query from KMA, it was noted that the URL of the NWP SAF website feedback form for reporting a problem with the AAPP software is:
<http://www.metoffice.gov.uk/research/interproj/nwpsaf/feedback.html>

7.4 Furthermore it was noted that the URL of the NWP SAF form for requesting the AAPP software is:

http://www.metoffice.gov.uk/research/interproj/nwpsaf/request_forms/index.html

7.5 EUMETSAT also drew the attention of the group to the EPS View tool that is available on the EUMETSAT website, which could be useful for manipulating and displaying RARS data. The related URL is:

http://www.eumetsat.int/Home/Main/Access_to_Data/User_Support/SP_1117714787347?l=en

8. OVERLAP AND REDUNDANCY ISSUES

8.1 Robert Husband (WMO Consultant) then presented the paper entitled "Overlap and Redundancy Issues" from the perspective of coverage optimisation.

8.2 In terms of overlaps it was noted that the HRPT stations in Guangzhou and Hong Kong are very close, and the Asia-Pacific RARS coordinator will investigate whether there is a need to reconsider the HRPT station baseline in this area, in order to optimize data management and transfer.

8.3 Concerning the objective of moving towards global coverage, potential coverage gaps were identified and discussed for the following four geographical areas:

- Central and South-West Africa;
- Central America;
- Southern tip of South America/Western Antarctica;
- West Coast of South America/South and Central Pacific.

8.4 For South-West Africa, WMO reported on recent contacts with the South African Weather Service (SAWS) who expressed willingness to contribute to the global RARS network and had been encouraged to participate in the RARS-IG meeting. SAWS had been informed that their potential contribution to the RARS network could be either as a new stand-alone RARS, i.e. processing data regionally and injecting it into the GTS, or as a contribution to the existing EARS, i.e. forwarding the data to EUMETSAT for processing and dissemination. The group felt that any technically viable approach could be supported and considered that further dialogue was necessary with SAWS in order to define the appropriate way forward (with a focus on station status and availability of communications links).

Action RARS-IG-1.8: EUMETSAT to discuss the technical options with SAWS (contact point: Nico Kroese) and to propose a way forward for SAWS contribution to the global RARS network (addressing stations, processing centre and communications links) by the end of 2007.

8.5 Assuming that South-African area can be covered, other stations located e.g. in Niamey and in Ascension island would fill the remaining gap between South-Africa and South-America.

Action RARS-IG-1.9: WMOSP to investigate the possible use of Ascension Island (at approximately 8°S, 14.5°W), to check the existence of an HRPT station and suitable telecommunications links by the end of July 2007.

8.6 For Central America it was noted that there is an on-going action from the 3rd Global RARS workshop (Action 3.3) on the South American RARS coordinators to improve the coverage in Central America – see section 14 of this report for further details.

8.7 For the Southern tip of South America/Western Antarctica the group noted that the inclusion of the Marambio HRPT station within the South American RARS network (announced during the meeting) will significantly improve the coverage in this area.

8.8 For the West Coast of South America it was felt that the already planned developments within the South American RARS should, to a large extent, resolve this coverage gap. To improve the coverage in the South and Central Pacific, the Asia-Pacific RARS Coordinator took an action.

Action RARS-IG-1.10: The Asia-Pacific RARS Coordinator to approach relevant HRPT operators with the objective of expanding coverage in the Central and South Pacific.

8.9 Following the review of the coverage it was noted that the updated information that had been made available during the meeting necessitated an update of the HRPT station baseline (the updated baseline is attached as Annex IV of this report).

8.10 The relatively limited availability of receiving stations equipped for Metop reception, compared to NOAA reception, was discussed and it was felt that there was a need to try to increase the coverage in this area.

Action RARS-IG-1.11: All RARS operators to consider upgrading their reception stations to take advantage of the availability of Metop data and report at the next RARS-IG meeting.

8.11 The issue of global data availability was also raised and it was felt that the NWP SAF monitoring activity would provide an indication of any problems with getting the RARS data to Europe. It was also felt appropriate to make global NWP operators aware of the increasing availability of ATOVS data and to seek their feedback.

Action RARS-IG-1.12: The WMOSP to inform the various Regional Associations of the increased availability of RARS data and seek feedback from NWP operators, via the Regional Rapporteurs on Space matters – due date January 2008.

9. RARS OPERATIONS MONITORING

9.1 The paper entitled “RARS Operations Monitoring” was presented, with a focus on the obligations of RARS Operators in the areas of:

- web-site provision;
- maintenance and operations.

9.2 In response to a question from BoM about the number of web-sites that were required, it was clarified that this should include as a minimum one per RARS region, with the possibility of additional web pages maintained by each processing centre (which could result in up to 2 web-sites per RARS region).

Action RARS-IG-1.13: BoM agreed to develop a generic RARS website for propagation to, or use by, other processing centres by the end of 2007 (taking due account of the information contained in the RARS Operator Standards) and the existing EUMETSAT EARS web-site material.

9.3 On the topic of quality monitoring, it was thought appropriate to contact the NWP SAF in order to expand the monitoring activity to cover all the available RARS data.

Action RARS-IG-1.14: The WMOSP to send a letter to the NWP SAF, providing the contact details of all the RARS Operators and inviting the NWP SAF to initiate the full monitoring of the global RARS network before the end of 2007 – action due date: before end-September 2007.

10. RARS WEBSITE

10.1 Following some information on the background to the WMO RARS website, Richard Francis presented the current status of the RARS web-site implementation, noting that:

- the changes to the overall WMO web-site layout mean that some changes have had to be made to the navigation menu structure for the RARS web-pages;
- the implementation of the web-site is not frozen and all comments are welcomed.

10.2 It was agreed that the main purpose of the web-site was to keep potential users informed about the availability of RARS data and the process to be followed to obtain access to the data. It was also noted that the web-site also provides information that will be of interest to a more general audience.

10.3 The Chair then asked members for feedback about:

- completeness of information;
- structure/navigation;
- ease of maintenance;
- look and feel.

10.4 Following an open group discussion, the following consensus emerged:

- the information is generally complete;
- entry should be through the overview page with easy access to lower level menus;
- the overview diagram should be generic, while the current diagram would better fit in the EARS description ;
- the page entitled "Achieving RARS Objectives" should be renamed "Implementation Status" and the three key coverage diagrams should be given a much higher profile;
- implementation status logically refers to a target and this high-level target should be indicated :ATOVS data from 90% of the globe available with 30 minutes timeliness;
- the benefits of the initiative are currently undersold and a separate section should be introduced to make the benefits more evident;
- the mechanism for accessing data should be made more explicit (via links and contact points);
- consideration should be given to the inclusion of a section on regional and global RARS quality monitoring.

Action RARS-IG-1.15: EUMETSAT took the action to rework the concept diagram to make it more generic (taking due account of the need for consistency with the other diagrams within the web-site) – due date end-August 2007.

Action RARS-IG-1.16: WMOSP to update the WMO RARS web-site to reflect the following comments:

- a) entry through a short overview page with easy access to lower level menus;
- b) overview diagram should be generic;
- c) the page entitled "Achieving RARS Objectives" should be renamed "Implementation Status" and the three key coverage diagrams should be given a much higher profile;
- d) high-level objective to be highlighted (ATOVS data from 90% of the globe available with 30 minutes timeliness);
- e) a separate section should present the benefits of the RARS initiative ;

- f) the mechanism for accessing data should be made more explicit (via links and contact points);
- g) prepare inclusion of a section on RARS quality monitoring.

Due date: end-September 2007

11. INFORMATION ACTIONS TOWARDS THE USER COMMUNITY

11.1 It was agreed that the WMO RARS web-site should be one of the main mechanisms for informing users about the state of the initiative. Information shall also be passed to Regional Rapporteurs on space matters. Regional data exchange meetings (North-America Data Exchange meeting and APSDEU) are regularly briefed on the progress of RARS. The International TOVS Study Conference (ITSC) was also considered to be an important forum in informing the user community (see related action in section 2 of this report).

12. POTENTIAL EXTENSION OF THE COVERAGE TOWARDS AFRICA

See Section 8.4 above.

13. RARS CONCEPT APPLICABILITY TO FUTURE SOUNDING MISSIONS

13.1 The Chair noted that the focus of the group has been on ATOVS data and raised the issue of the potential use of other sounding instruments that could be of benefit to both users and satellite operators. It was noted that FY-3 is scheduled for launch in autumn 2007 and the Chair asked about potential access to these data.

13.2 EUMETSAT noted that some stations in EARS network may have the capability to receive FY-3 data, but was unsure about the capability to process such data (i.e. the availability of an equivalent processing package to AAPP). WMOSP clarified that the AAPP Version 7 will be able to process NPP, but not FY-3.

13.3 BoM noted that within their X-band station network there is a requirement to be able to receive FY-3 data.

13.4 Turning to NPP/NPOESS, the Chair noted that for NPOESS the USA plan the Safety Net, that will concentrate data in the US with a very high timeliness requirement (75% of the data within 15 minutes), but the question was open as concerns further distribution of the data to WMO Members. As NOAA/NESDIS were unfortunately not able to attend this meeting, the group postponed discussion of the modalities for receiving these data in other regions to the next meeting of the implementation group.

13.5 BoM asked about the possibility of adding IASI data to the RARS. EUMETSAT noted that IASI data is not within the current remit of the EARS project and there has been a lot of interest expressed by the user community in extending the EARS concept to IASI (i.e. an IASI re-transmission service). The implications of adding such a service will be actively investigated by EUMETSAT during 2008. EUMETSAT also noted that bandwidth will certainly be an issue for IASI data, and there will probably be a need to trade-off data volume versus benefit (in this respect it was noted that the experience of the early use of IASI data will be important).

13.6 In response to a question concerning the processing arrangements for ASCAT data, EUMETSAT noted that all the ASCAT data are sent unprocessed to EUMETSAT. The overlaps are then removed at EUMETSAT and then the data are sent to KNMI (via their OSI SAF obligations) for wind extraction which is retransmitted via EARS-ASCAT with 30-minute timeliness.

13.7 In response to a question from the Chair as to whether regional processing was feasible for ASCAT data or whether it should be done globally, EUMETSAT confirmed that regional processing would be feasible. In this context the group noted the ongoing development by the NWP SAF of an ASCAT Wind Data Processor (AWDP) and that more details of this development are available from the NWP SAF web site at:

<http://www.metoffice.gov.uk/research/interproj/nwpsaf/scatterometer/index.html>

13.8 Following these discussions, the group agreed to consider the situation again at the next implementation group meeting.

14. REVIEW OF OPEN ACTIONS FROM THE 3rd GLOBAL RARS WORKSHOP

14.1 Under this agenda item the paper entitled “Status of Actions and Recommendations on RARS from the 2nd and 3rd Global RARS/IGDDS Workshops” was presented.

14.2 The Chair welcomed the very promising developments in the South American RARS and noted that, according to the planning, all the currently envisaged elements of this RARS should be fully implemented by the end of the year. Therefore, it was agreed that **Recommendation 2.1** concerning the implementation of a pilot South American RARS should be **closed** and be replaced by:

Action RARS-IG-1.17: The coordinators of the Argentinean and Brazilian components of the South American RARS to finalise the implementation of their plans as reflected in Annex IV.

14.3 The Chair noted the very good progress in the Asia-Pacific region and **Recommendation 2.2**, covering the implementation of the Asia-Pacific RARS, was therefore considered to be implemented and could be **closed**.

14.4 In order to ensure that the RARS web-site is updated periodically to reflect implementation progress and planning, the following action was also agreed.

Action RARS-IG-1.18: WMOSP to request updated tabular information twice a year in order to support the periodic update of the WMO RARS web-site.

14.5 The group considered the remaining outstanding recommendations and actions and concluded as follows:

Recommendation 2.3 (consistency of HRPT station IDs) was **closed** with reference to the new actions agreed in section 6 of this report.

Action 2.1 (implementation of the WMO RARS web-site) was **closed** with reference to the new actions agreed in section 10 of this report.

Action 2.2 (AAPP Version Identifier): agreed to be **closed** – no further action required.

Action 2.3 (file naming conventions and codes): was **closed** with reference to the new actions agreed in section 6 of this report.

Action 2.4 (dissemination product level): agreed to be **closed** – no further action required.

Action 2.5 (NWP SAF quality monitoring): agreed to be **closed** – no further action required.

Action 3.1 (implications of including the AAPP version number within BUFR): agreed to be **closed** – no further action required.

Action 3.2 (data segmentation): EUMETSAT response accepted, noting that the drawbacks probably outweigh the potential advantages – agreed to be **closed** with thanks to EUMETSAT

Action 3.3 (extension of the South American RARS to Central America and Chile): it was confirmed that this action is still **on-going** (and remains valid).

14.6 Following the conclusion of this review of actions and recommendations the Chair expressed his gratitude to the group for the completion of the actions and the recommendations.

15. PRIORITY ACTIONS

No specific discussion took place under this agenda item.

16. CONCLUSIONS

16.1 The Chair, in closing the meeting, thanked the participants for the excellent progress that has been made across the global RARS network and for the very constructive contributions of the participants.

16.2 This next year should see further rapid progress in the development of the network, with the objective of global coverage becoming ever closer, and the Chair looked forward to the next meeting of the Implementation Group (tentatively scheduled for the middle of May 2008).

**RARS IMPLEMENTATION GROUP
First Meeting
(Geneva, 3-4 July 2007)**

PROVISIONAL AGENDA

Day 1: Tuesday 3 July 2007, morning

- 1. Introduction and Review of the Agenda**
- 2. Terms of Reference and Membership**
- 3. Status of EARS**
- 4. Status of the Asia-Pacific RARS**
- 5. Status of the South American RARS**

Afternoon

- 6. Code and Format Harmonisation Issues**
- 7. Software Implementation Issues**
- 8. Overlap and Redundancy Issues**
- 9. RARS Operations Monitoring**

Day 2: Wednesday 4 July 2007, morning

- 10. RARS Website**
- 11. Information Actions Towards the User Community**
- 12. Potential Extension of the Coverage Towards Africa**
- 13. RARS Concept Applicability to Future Sounding Missions
(FY-3, Meteor-M, NPP-NPOESS)**
- 14. Review of Open Actions from the 3rd Global RARS Workshop**

Afternoon

- 15. Priority Actions**
- 16. Conclusions**

RARS IMPLEMENTATION GROUP

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**RARS IMPLEMENTATION GROUP
First Meeting
(Geneva, 3-4 July 2007)**

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Region	Processing Centre	HRPT Station Name	Location (Lat, Lon)	HRPT Station Identifier on GTS_(EUMETCast ID)	Availability and Reception Capability		
					Current	End-2007	End-2008
Europe (EARS)	Darmstadt	Kangerlussuaq	66.98°N, 50.67°W	30_kan	NOAA	NOAA / Metop	NOAA / Metop
		Lannion	48.7°N, 3.5°W	140_lan	NOAA	NOAA / Metop	NOAA / Metop
		Maspalomas	27.78°N, 15.63°W	20_mas	NOAA	NOAA / Metop	NOAA / Metop
		Monterey	36.35°N, 121.55°W	70_mon	NOAA	NOAA	NOAA
		Svalbard	78.13°N, 15.23°E	150_sva	NOAA	NOAA / Metop	NOAA / Metop
		Wallops Island	37.8°N, 75.3°W	80_wal	NOAA	NOAA / Metop	NOAA / Metop
		Oman	23.61° N 58.54° E	190_mus (TBC)			NOAA / Metop
		Moscow (TBC)	55°45N, 37°37E	180_mos (TBC)			NOAA / Metop
		La Reunion (TBC)	20.87 S, 55.46 E	170_std (TBC)			NOAA
South America	INPE Cachoeira Paulista	Fortaleza	Lat 03° 44' 04" S Long 38° 33' 43" W	fcm		NOAA	NOAA
		Natal	Lat 05° 48' 10" S Long 35° 14' 20"W	chm		NOAA	NOAA
		Cachoeira Paulista	Lat 22° 40'S Long 45° 00'W	cpt		NOAA	NOAA
		Brasilia	Lat 15° 47'S Long 47° 55'W	inm		NOAA	NOAA
		Cuiba	Lat 15° 33'S Long 56° 04'W	cba		NOAA	NOAA
		Manaus	Lat 03° 01' 24" S Long 60° 03' 18" W	sva		NOAA	NOAA
	Cordoba	Córdoba	Lat 31.52°S Lon 64.45°W	etc		NOAA	NOAA
		Marambio	Lat 64.23°S Lon 58.63°W.	ebm		NOAA	NOAA