ATSR Core Group

Summary of the 18th meeting, held on 5th May 2000 at Rutherford Appleton Laboratory

Present:

Prof D Llewellyn-Jones (Univ. of Leicester) - Chairman
Mr P Capp (NRSC)
Dr M Edwards (Univ. of Leicester)
Dr P Goryl (ESRIN)
Dr B Greco (ESRIN)
Dr A Harris (UKMO)
Mr N Houghton (RAL)
Dr B Maddison (RAL)
Dr C Mutlow (RAL)
Dr J Settle (ESSC)
Dr H Tait (ESTEC)
Mr A Underwood (NRSC)
Dr S Wilson (NERC)
Dr A Jolly (NERC) - Secretary

Present for RAL presentations:

Dr J Ballard (RAL)
Dr J Murray (RAL)
Dr T Nightingale (RAL)

Apologies:

Mr T Guymer (SOC)
Dr S Laxon (UCL)

ESA Status Report

AOCS campaign ERS-2 is now piloted with one gyro (gyro 5), and no major impact has been observed on the data quality (SAR/Wind/RA). The change to using only one gyro at a time was implemented to extend the satellite's life.

Missing Exabyte communication tool A web interface for PAF's (and RAL) to report missing or damaged exabytes will be operational by the end of May.

ATSR NRT From 1 January to 31 March 2000, about 5050 GBT and about 920 ASST products have been downloaded. Very few (about 13) GSST products have been downloaded in this time. 68 users are registered. The system is capable of carrying ABT products if RAL agrees to provide the collocation software.

ATSR ASST server This is regularly updated with the TSS and RAL ASST.

LRDAF status Approximately 5440 orbits have been transcribed and sent to RAL. Starting with phase C, April 1992, ESA have transcribed until 8th May 1993. All transcribed orbits have been processed by the ATSR Browse System (ABS). The 2nd, faster LRDAF chain hardware is currently at ESRIN, but further progress awaits testing of the system.

The planned order of processing is:
April 92 - May 93 (Phase C, 35-day repeat) has been processed, and they will continue by processing
June 93 to December 93. After this, they will process the Phase B (3-day repeat, "ice phase") data, **December 91 to March 92**, but doing this backwards so that the record is extended in a continuous manner.
July 91 to November 91 will be processed next, backwards, which is Phase A (3-day repeat, "cal phase").
January 94 onwards (3-day ice and 176/168 day geodetic phases) will be processed after this. No processing will be done beyond **22 March 95**.

The order of reprocessing is being driven mainly by the Met Office as the first major user needing the data. RAL noted that their early existing tapes are starting to fail. They also had expected that

reprocessing would continue up to June 96. ESRIN responded that while they were only committed to reprocessing up to 22 March 95, RAL can ask for more tapes.

AATSR Operation Processor (OP) status A Factory Acceptance Test (FAT) was held using Test Data Set 6 (TDS6) from the Prototype Processor (PP) in March 2000. TDS6 represents the baseline version of the AATSR processing chain. In general, good agreement was observed between the two processors, and most discrepancies were the result of known issues with the PP/TDS6. The OP contract with ELCA is now in its maintenance phase. During this time their aims are to: close the few remaining discrepancies; update the processor for an operating system upgrade; update the L2 algorithms to bring them into line with the current version of SADIST (ABT precision and SST coefficients). ELCA need a new TDS from the PP for this next phase, which is in preparation by RAL. There will be no further upgrades to the AATSR processing system until the end of the commissioning phase.

Data media Currently data is distributed to users on exabytes. This makes inefficient use of exabytes and many users experience incompatibility problems. ESRIN would like to switch to using CDs to distribute data. SADIST file names are not compatible with CD standard ISO9660, but JOLIET standard could be used instead. The ACG were in agreement that the use of CDs as distribution medium is preferred. RAL identified Jack Abolins as contact point for ESRIN. RAL and ESRIN will decide the timescale to implement the transfer to data distribution by CD. RAL will advertise the change over to data availability on CD on the website.

RAL Progress Report

Items arising

RAL have provided PODAAC with the intercomparison data set. PODAAC are implementing a method to keep track of who accesses it, and it should be live by the next ACG meeting.

Marianne Edwards and Tim Nightingale have arranged to visit Bill Miller at SOC on 8th May to talk about mounting SISTeR on RVS ships. Tim Nightingale is also in discussion with BAS about mounting it on their ships. RAL are also moving ahead with discussions with Peter Minnett on radiometer validation of ATSR and MODIS. Further action is needed on this item, including making contacts in the oil industry to consider mounting SISTeR on a fixed oil platform.

Record of software and engineering events for ATSR-1 has been placed on the website.

No longer any possibility of triple cross-calibration of ERS-1, ERS-2 and ENVISAT as ERS-1 has ceased to operate!

Quarterly Report

Good progress was recorded this quarter and is presented in the quarterly report document. Updates and discussion/actions arising are noted here.

An “ATSR Images: Frequently Asked Questions” document has been drafted and will be placed online as soon as possible.

If anyone has not received a copy of the ATSR special edition of EOQ, please let RAL know and they will order some.

SISTeR instrumentation - “weatherproofing” measures (shutter system) have been added to the plans for modifications to SISTeR.

RAL will add a few lines, explaining the status of data processing (including the retranscripted ERS-1 data), to the website.

In the first week of May there has been a problem with the jukebox during ingestion, which is believed to be a KPAR problem. The problem will be investigated, but RAL IT staff are currently pre-occupied with problems caused by the “I love you” virus. RAL are keen to fix the problem quickly to prevent a backlog building up. RAL will provide figures (including dates) on population of the ABF at the next meeting.

Tim Nightingale gave a short presentation about ROSSA 98 and NAURU 99 deployments of SISTeR. Better agreement was found here between SISTeR and ATSR using the pre-Merchant SST coefficients (but not tested against the newest coefficients).

RAL will add a comment on the website to make it clear that data is not just available from MRF locations, but from the rest of the world too.

The ACG agreed that RAL should gzip files on the FTP site to speed up data transfer and increase capacity. RAL will add a link to show where gzip and winzip software can be obtained.

Presentation on consolidated ABT and SST work, and the planned SST CD

Jo Murray gave a presentation of progress during the last quarter.

COCO - consolidation software This has been adapted to deal with “gap” data, and COCO2 now produces dual-view daytime data in the North Atlantic.

Evaluation and development of SST Retrieval Coefficients Dual-2/Dual-3 SST retrieval biases identified with original coefficient set.

ATSR SST generation software This has been completed and documented and is fully operational. It selects marine cloud-free ABT data from the full consolidated data set, and these are then divided into daily files which are available on request. SST retrieval is then carried out to generate daily SST files. Finally, it generates global maps at various temporal and spatial resolutions using GOSTA climatology as check.

ATSR-2 SST CDROM The CD is to contain daily SST files, spatio-temporally-averaged global maps, documentation and software. The daily SST files will have straightforward names containing the date, and will be approximately 9.5Mbytes per daily file. This allows approximately 2 months data per CD. Zipped data would be half the size. The maps will consist of monthly half-degree maps, monthly ten-arcminute maps and 5-day one-degree maps. These will be based on dual 2-channel night and day SSTs, generated from data which pass a 6K from GOSTA climatology check, as in the original ATSR-1 CD. However, when all ATSR-2 data are available, these will be used to generate an ATSR ‘skin’ climatology to be used instead. Documentation will consist of Latex and Postscript source for booklet, platform-specific information, instrument log information and internet links for up-to-date information. Software to be included will be template reading software for data files in IDL, Fortran, C and Matlab, and an IDL program to perform spatio-temporal averaging. Again, internet links will be given for up-to-date software.

Current status RAL are ready to issue a CD with July-September 1999 data. Planned improvements are: convergence of coefficient sets; North Atlantic daytime dual-view gap resolved; improved cloud clearing; skin climatology based on all available ATSR data. Proposed interim arrangement is to make data from 1999 onwards available via Internet.

Related Activities ATSR1/ATSR2 comparison based on June - December 1995. ATSR/AVHRR Blended SST Analysis Project (CAASTA). Generation of ATSR monthly Skin climatology. Skin/bulk SST variability study.

Product Control Board (PCB) Report

PCB met on 23rd March. The PCB endorsed RAL’s practice of stating coefficients in a consistent order, and praised Andrew Birks’ work to settle the SST coefficients.

PCB plans to meet again in late May, but may delay this to accommodate consideration of the SST CD before its release.

AATSR Current Status

The Chairman visited ESTEC and viewed ENVISAT, and recommends this as an impressive sight.

Currently, there is concern over the mechanical coolers, manufactured by Matra Marconi Space. These have been used in many satellite systems, however following three cooler failures on another

program, a defect associated with a batch of coolers has been identified. As AATSR employs 2 coolers from the same batch, a decision must be made as to what action to take.

Other aspects of the ENVISAT mission (Ground operations and flight operations support) are in good order.

AATSR Calibration/Validation

Marianne Edwards has been in post at Leicester University as the programme validation scientist. The core validation programme will consist of the commissioning phase ("is the instrument performing to specification?") and validation during the mission (assessing the upper limits of achievable accuracy).

Validation will be of SST and land surface temperature (LST). For SST, there will be 3 levels of validation - gross errors' early indication, "spot values" for validation of gridded data from autonomous measurements and precision validation using instruments like SISTeR and M-AERI. For LST there will also be 3 levels - vicarious comparisons with other satellite sensors (e.g. AVHRR), campaigns to collect ground-based measurements and additional projects from the wider science community.

Meetings have been held, or will be shortly, with DETR, Land Products Working Group, ESTEC, RAL, MERIS team, AATSR SAG, PCB, ATSR Australian Science Team, ESRIN.

A rehearsal will be held in September for the co-ordinated validation programme to be input to ESA.

A measurement protocol document is being written.

The ACG flagged that there is no mention of aircraft data for validation of AATSR. This was taken on board and will be explored.

Australia meetings

The Chairman issued a separate report on meetings held during 3-7 April 2000, in Australia, concerning the AATSR and ATSR programmes. The meetings involved the Australian ATSR Science Team (convened by Ian Barton) and David Llewellyn-Jones, Chris Mutlow, Marianne Edwards, Philippe Goryl. Several of the conclusions from this report were discussed by the ACG.

ESA said that there were various options which could be considered to deal with the problem of the "missing 4 orbits" which coincide with daytime imagery of Australia. ESA will contact Ian Barton to discuss this further.

Promotion of ATSR

The ERS-Envisat Symposium will be held at Gothenburg, 16-20 October 2000. Deadline for abstract submission is 10th May. Earth Observation Quarterly no. 64, a special issue on ATSR, was issued in April 2000. ESA thought it unnecessary to hold a dedicated ATSR session at the October ENVISAT meeting, as it is well represented in other sessions. RAL have encouraged users to make presentations.

RAL have made a press release on 5th May on the topic of ice shelf breakage. An article is expected to appear in the Sunday Times (7th May) and will be available on the ATSR website after this.

Trevor Guymer reports that the ATSR fliers have been received at SOC for distribution with the next issue of the CLIVAR newsletter.

Next Meeting

The next meeting will be held on **Wednesday 19th July** at **MRC Head Office, London**.