

and corresponding ECMWF-interim NWP data. The NWP data (atmospheric and surface state) are needed as input for the RTTOV radiative transfer model (used within the Bayesian cloud detection), for ARC SST retrieval, and to complete auxiliary fields in the output files.

The original ARC SST dataset is available from the NERC Earth Observation Data Centre [3] and comprises 18 years of data from the start of ATSR-1 data in August 1991 through to the end of 2009, as Level 3 daily averaged products (note also that whilst these are netCDF, they are not GDS compliant). This dataset was extended to the end of the Envisat mission under the ESA Climate Change Initiative project. The ARC dual-view retrievals meet a target (for climate change analysis) of regional biases to be less than 0.1 K, when compared to drifting buoys, over the majority of the global oceans [4] and stability better than 5 mK year⁻¹ compared to tropical moored buoys between 1994 and 2010 to 95% confidence [5]. The (A)ATSR ARC L2P products being generated are full resolution products.

Envisat-format Products

Full reprocessings are also taking place for AATSR, ATSR-1 and ATSR-2 Envisat-format products; the reprocessed L1B Envisat-format products will be used as inputs to the ARC L2P processor.

(Note that the SSTs contained within the Envisat-format L2 NR products have also been improved via the use of ARC-based coefficients in this reprocessing; please refer to the User Notes referenced above for further information.)

Official Release of Reprocessed Data

Once all parties involved in quality control are satisfied that the full (A)ATSR reprocessed dataset is as complete as possible and the quality assessment has been completed, a recommendation will be made by the AATSR Quality Working Group that it is ready for release.

ESA will inform the users of the official release of the reprocessed data; this will also include the final report on the QC of the data. All things having proceeded as expected, this shall cover the ATSR-1, ATSR-2 and AATSR data in all formats, meaning that users will have access to an improved, near-continuous dataset of accurate SSTs spanning 20 years.

It is anticipated that the full (A)ATSR archive will be released mid-2013.

References

[1] Merchant, C. J. *et al.* (2008) Deriving a sea surface temperature record suitable for climate change research from the along-track scanning radiometers. *Adv. Space Res.* **41**, 1–11.

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[3] Embury, O. and Merchant, C. J. (2011) ARC (AATSR Reprocessing for Climate) data; 2011; NERC Earth Observation Data Centre; available from:

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<http://dx.doi.org/10.1016/j.rse.2011.02.028>

[5] Merchant, C. J. *et al.* (2012) A 20 year independent record of sea surface temperature for climate from Along-Track Scanning Radiometers. *J. Geophys. Res.* **117**, C12013.

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