Product description for Radarnet IV 5km single site rain rate images

Purpose

- To understand the detailed nature, purpose and function of the product
- To identify the sources of information or supply for the product
- To describe the required appearance of the product
- To identify the level of quality required of the product
- To enable activities to develop and quality control the product to be identified
- To define the people or skills required to develop and check the product.

Composition

- *Identifier*:
  rSS*xxx*5km_*hhmm*.dat
  where *hhmm* is the data validity hour/minute and *xxx* is a 3-character identifier for the radar site.
  ham = Hameldon Hill
  che = Chenies
  pre = Predannack
  war = Wardon Hill
  jer = Jersey
  cob = Cobbacombe Cross

- *Title:*
  Single site radar based rain rate data, on a 5km grid

- *Purpose*:
  To provide users and customers with an estimate of surface precipitation rate, based on 5km data obtained from UK a single radar site, processed using optimum quality control and correction procedures.

- *Composition:*
  This product is a Nimrod format binary data file made up of a header and data block (see Nimrod file format document for details).

- *Derivation:*
  What are the source products from which this product is derived?
  - This product is derived from polar format radar data, originally sourced from a single radar site located in the UK
  - Data are quality controlled and corrected and reprojected to a cartesian grid (UK National Grid)
  - The domain that this product covers is limited to 250 km range from the radar location.

- *Format and Presentation*:
  - The product conforms to the Nimrod file format definition (see Nimrod file format document for details).
  - File size for each product is 20528 bytes
  - Data volume per site, per day is ~5MB (~30MB for the 6 sites currently provided)

- *Allocated to*:
  The product has been derived on the Radarnet IV system. The Radarnet IV system was developed by the Radar Development team in TAS and is maintained by Production (Operational Applications).

- *Quality criteria*:
  The product quality is routinely assessed using available rain gauges and ground truth. A number of quality measures are derived (probability of detection, false alarm rate, bias, root-mean-square difference (RMS) and root-mean-square factor difference (RMSF). Service level agreements exist with key customers for

required/target scores for the RMSF statistic. It should be noted that development projects are ongoing to incrementally improve product quality in order to meet customer requirements.

- *Quality method*:
  The main quality checking method for this product is routine evaluation using rain gauges as ground truth. This type of quality checking can only be performed over a minimum duration of one hour, and preferably longer. For quality assurance of single products, visual inspection can be performed.

- *Quality check skills required*:
  A knowledge of radar meteorology, a familiarity with radar hardware characteristics and experience in using radar based precipitation products are the skills required to check data quality. The Radar Data Quality Manager, based in Production (Observation Supply) is best placed to assess quality.

Quality criteria

- Is the purpose clear and consistent with other products?
- Is the product described to a level of detail sufficient to plan and manage its development?
- Is the composition of the product more like a requirements specification than a description of the contents/elements of a product?
- Is responsibility for the development of the product clearly identified?
- Is responsibility for the development of the product consistent with the roles and responsibilities described in the project management team organisation and the project Quality Plan?
- Are the quality criteria consistent with the project quality standards, standard checklists and Acceptance Criteria?
- Can the quality criteria answer the question: 'How will I know when work on this product is finished as opposed to stopped?'
- Are the types of quality check required able to verify that the product meets its stated quality criteria or not?
- Have people with the right knowledge and skills written the Product Description?