

IVAD Progress Workshop – 13 June 2014

Agenda: 2 June 2014

This in-depth, one-day workshop provides an open forum to explore the progress and lower-level technical issues associated with the International Comprehensive Ocean-Atmosphere Data Set (ICOADS) and its Value-Added Database (IVAD). The primary focus will be data flows, software, and other technical issues surrounding the International Maritime Meteorological Archive (IMMA) format¹, its linkage with the IVAD database, and participations with external data providers. The IVAD team seeks to clarify the current status and define the next steps to attain an operational IVAD system. Introductory presentations will be followed by workshop open discussion. Agenda topics include IVAD prototype status, IMMA format and related IVAD changes, current and collaborative software development, review of physical parameter libraries, and the IVAD system and services as a development component for ICOADS.

Meeting Agenda

- 0) Introduction [Smith]
 - a) Working arrangements
 - b) Terminology
 - i) Review accompanying tech sheet describing record types, etc.

- 1) IVAD progress
 - a) Status of prototypes
 - i) Air temperature adjustments [Berry]
 - ii) Estimated wind adjustments [Smith, Li]
 - iii) Enhanced Cloud Reports [Kent]
 - b) Status of submission/extraction from IVAD database system – [Worley]
 - c) Exercising IVAD – Pseudo-flux testing [Smith]

- 2) IVAD discussion topics
 - a) NCAR database system [Worley]
 - i) IVAD attachment linking and extraction issues
 - ii) User access
 - b) Prototype questions [Smith, Kent, Berry]
 - i) Assignment of ARC and content of ARC documents
 - ii) Representation of uncertainties (controlled vocabulary of types)
 - iii) Future custom IVAD attachment (similar to ECR attachment)

- 3) Adding new records to ICOADS [Freeman, Woodruff, Worley]
 - a) UID management and assignment
 - i) Delayed-mode data
 - ii) Near real-time data
 - b) How to submit new data (IMMA1 or IVAD)
 - i) NCAR (worley@ucar.edu) is planned as the receiving point for all input IMMA and IVAD records.
 - ii) Input data will be screened for IMMA1 legality, have ICOADS QC/trimming flags added, deck/SID assigned (if missing), and UIDs assigned.
 - iii) Input data will be mirrored at NCDC eventually

¹ For reference, long and short versions of the IMMA0 (version 0) documentation are available at <http://icoads.noaa.gov/e-doc/imma/>, and planned revisions for IMMA1 at <http://icoads.noaa.gov/ivad/documents.html>

- 4) IMMA format topics [Woodruff, Freeman]
 - a) Proposal for a higher-level “how to” manual for translation into IMMA format, tentative chapters [Freeman]:
 - i) Key role of transpec to document how values map to imma1 [Woodruff]
 - (1) Value of a template
 - ii) How to use {rwimma1}² (<http://icoads.noaa.gov/software/rwimma1>) and possibly a new, more modular approach [Woodruff]
 - (1) Program naming and minimum commenting suggestions
 - (2) Overview of COAPS modifications to {rwimma1} for SAMOS conversion [Elya]
 - iii) The purpose and construction of the Supplemental data attachment (Suppl attm)
 - (1) “Best practices” use of Suppl attm
 - (a) Alternative approach, e.g. by NCAR: omit Suppl attm but include UID-like pointer information to source records within WOD13)
 - (2) Examples of past approaches
 - (a) Spreadsheets
 - (b) Flat files
 - (c) BUFR
 - (d) Data reduction (e.g., SAMOS high-resolution data)
 - (3) Critical role for accompanying documentation
 - iv) Existing and future FORTRAN libraries
 - (1) How to use {lmrlib} (<http://icoads.noaa.gov/software/lmrlib>)
 - (a) Overview of {lmrlib} [Woodruff]
 - (2) Building on {lmrlib} to create additional and modernized capabilities
 - (a) Standardizing moisture calculations [Kent, Berry, Woodruff]
 - (i) Review of existing ICOADS routines
 - (ii) Review of international standards (Ref WMO No. 8)
 - (iii) Developing WMO No 8 conversion routines for various Tair and humidity combinations.
 - (iv) Developing better methods for intercomparison and validation of moisture variable calculations
- 5) Future capabilities for ICOADS and IVAD [Smith]
 - a) Collaborative software development
 - (1) Approaches
 - (2) Other languages (Java, Perl, MATLAB, etc.)
 - (3) Possible development environments
 - (a) Github
 - (b) Server sandbox
 - b) Management and access to user provided records linked to UIDs
 - i) Example from HOSTACE
 - ii) Records tied to ICOADS UID, but not managed by {rwimma1}
- 6) IVAD administration [Smith]
 - a) Sustaining support for IVAD
 - i) Dedicated funding vs. leveraged support
 - b) New prototypes
 - c) Working group under ICOADS Steering Committee terms of reference

² Note: {curly brackets} denote software in ICOADS documentation; those followed by “.f” are Fortran programs, others may be Fortran libraries.