

Development of the International Maritime Meteorological Archive (IMMA) Format

Presentation for ETMC-I/Doc. 4.1
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Format goals

- Facilitate data entry — exchange — archival
- Flexible and extensible
 - historical
 - contemporary
- Practical to implement and manipulate
- Useful for end users
- Storage efficiency and documentation

Early log from US Maury Collection (1815)

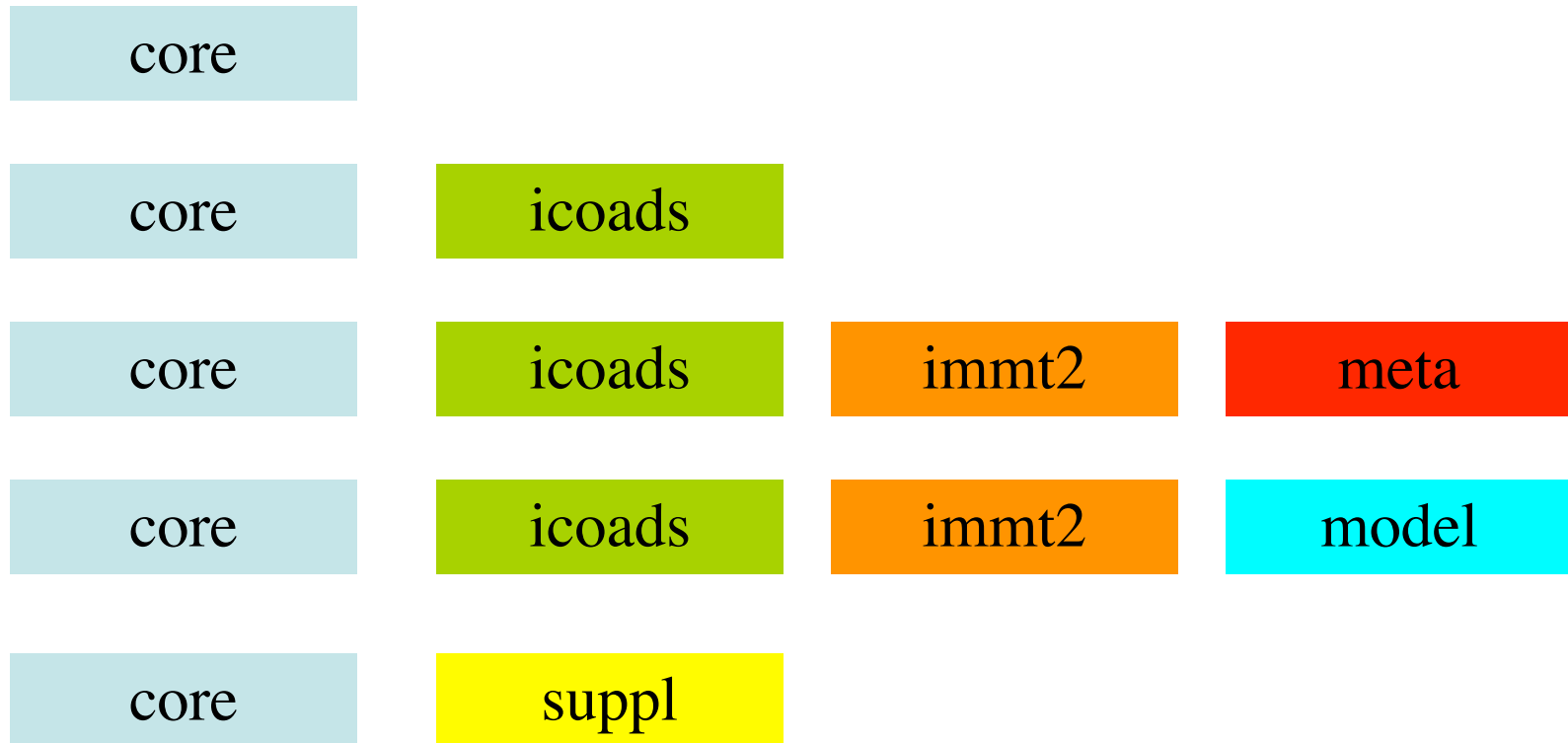
textual wind/weather, magnetic wind dir., etc.

Restitution from <i>O'Keefe</i> towards <i>Sumatra</i>																	
H.	K.	HK.	Courses.	Winds.	Lee.	Remarks											
1	4		SE	SE		<p><i>Thursday June 15th 1815</i></p> <p>begins with fresh gales & squally at 4 30 let all reefs out the main topsail set main top galant shill at 8 let the reef out the fore topsail & set the main top mch. fludding sails at 8 30 set line do</p> <p><i>Middle Part</i></p> <p>Moderate gales & at times squally at 10 30 2 in main top mast fludd sails & four do set main sail & 1/2 do at 5 30 in main top galant sail & hoisted the main sail</p> <p><i>Little Part</i></p> <p>buoyed at 9 am set main top gal ant sail & set main sail</p>											
2	4		SE	SE													
3	4		SE	SE													
4	4		SE	SE													
5	4		SE	SE													
6	4		SE	SE													
7	4		SE	SE													
8	4		SE	SE													
9	4		SE	SE													
10	4		SE	SE													
11	4		SE	SE													
12	4		SE	SE													
							Course.	Diff.	Diff. Lat.	Dep.	Lat. by D.R.	Lat. by Ob.	Varia.	Diff. Long.	Long. in	Long. by Ob.	
							488	197	6m 197	SE	36 40	36 47	30 7	22 2	33 20	West	
Friday June 16 th 1815																	
H.	K.	HK.	Courses.	Winds.	Lee.	Remarks											
1	4		SE	SE		<p>Begins with fresh gales & rough at 3 fresh fore top galant sails & begin at 3 am in fore part top galant shill at 4 pm double reef the main topsail</p> <p><i>Middle Part</i></p> <p>Begins at 10 with squally at 4 am in main shill</p> <p><i>Little Part</i></p> <p>at 2 30 2 in fore part shill & the 1/2 do hoisted fore & main top sail fludd the main is at 2 30 1 double reef the fore main do & set them at 4 30 close reef fore & main</p>											
2	4		SE	SE													
3	4		SE	SE													
4	4		SE	SE													
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10	4		SE	SE													
11	4		SE	SE													
12	4		SE	SE													
							Course.	Diff.	Diff. Lat.	Dep.	Lat. by D.R.	Lat. by Ob.	Varia.	Diff. Long.	Long. in	Long. by Ob.	
							488	198	6m 198	SE	37	37	0 0	33 51			

Format implementation

- Fixed-field Ascii format (like IMMT)
- Missing data = all blanks in any field
- Core:
 - most universal and commonly used variables
 - fixed-length: 108 characters
 - sufficient alone for many users
- Plus attachments (attn)
 - specialized fields not in core
 - may be used to improve, repair, and recreate core

Record types (core + attms)



Machine-transportable Fortran read software available:
www.cdc.noaa.gov/coads/software/

Current/pending format elements

(new attms to be defined as needed)

Element

- Core
- ICOADS attm
- IMMT-2/FM 13 attm
- Model QC attm
- Ship metadata attm
- Historical attm
- Supplemental attm

Application

all marine data
ICOADS (QC flags, etc.)
contemporary ships
VOSCLim ships
WMO–No. 47 metadata
(under development)
free-form original data

Usage status

Operational:

- Climatological Database for the World's Oceans 1750-1854 (CLIWOC)
- VOSCLim project (at NOAA/NCDC)
- ICOADS “real-time” (RT) 1998-2002
 - GTS message string → suppl attm

Pending:

- ICOADS “delayed-mode” (DM) 1784-1997

Future development areas

- Finalize historical attm
 - Beaufort force numbers
 - magnetic wind directions, different compasses
 - unadjusted barometer/attm thermometer
 - tenths of sky clear/cloudy
 - etc. (difficult to predict fields needed)
- Attms for buoy data (FM 13)/metadata
- Submission to JCOMM