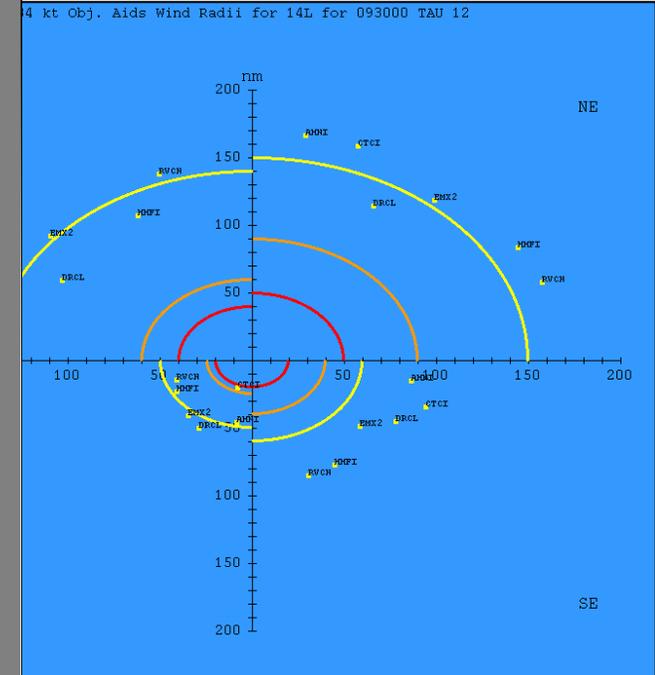
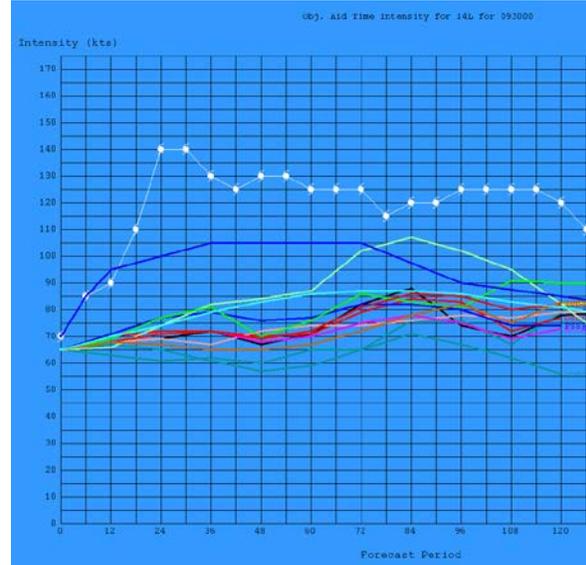
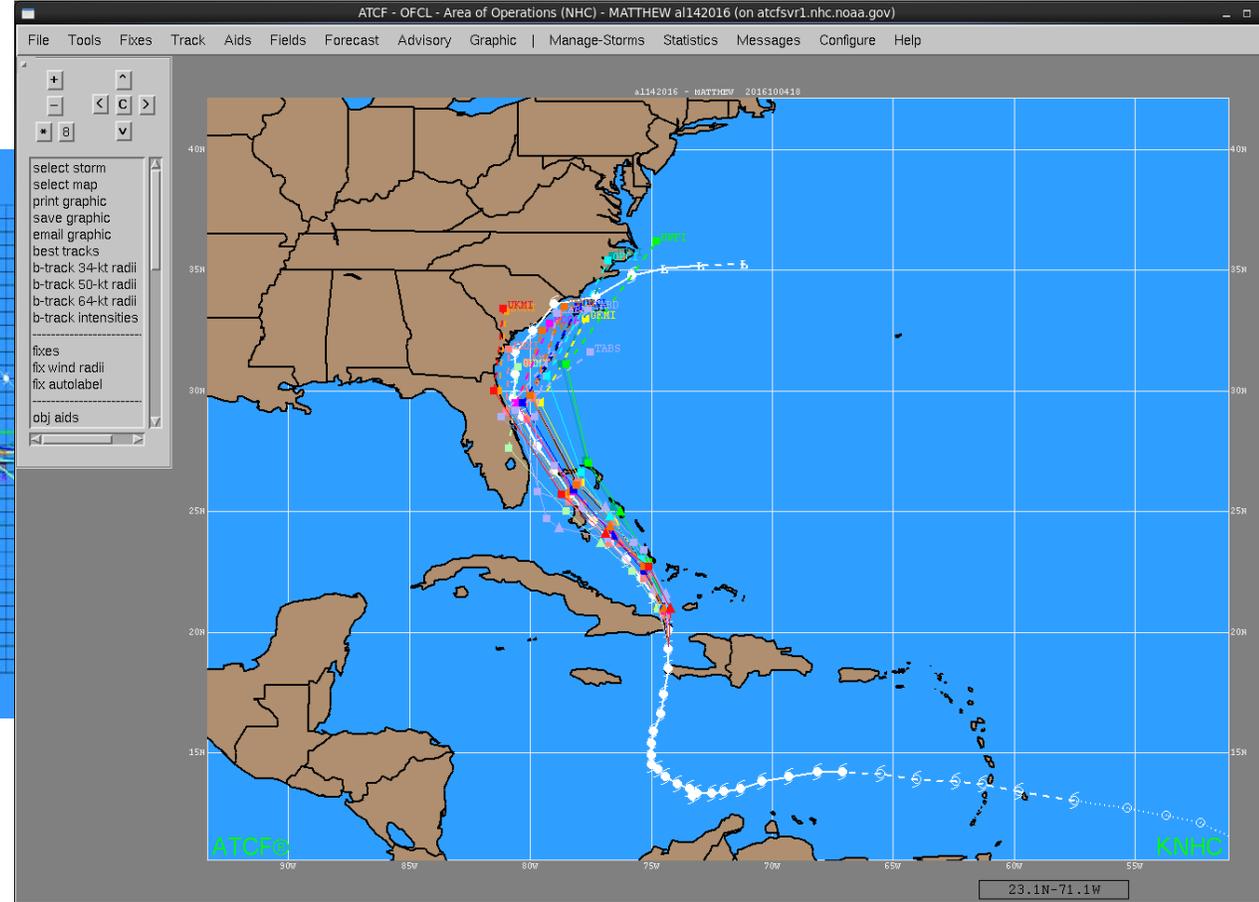


ATCF Update



Buck Sampson, Ann Schrader, Mike Frost – NRL
Mark DeMaria, Mike Brennan, Monica Bozeman, Craig Mattocks – NHC
2017 HFIP Annual Review Meeting
17 January 2017

Outline

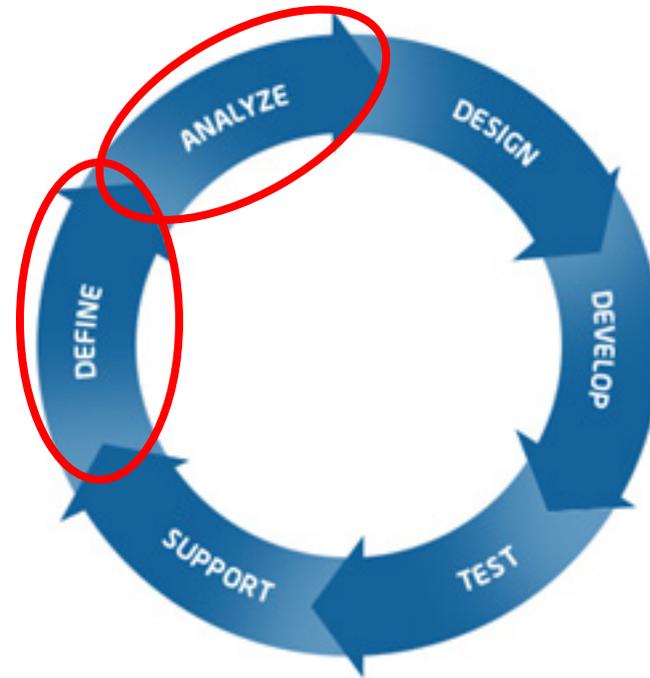
- ATCF overview
- Recent ATCF development accomplishments
 - NRL
 - NHC
- Overview of project to transition ATCF into AWIPS2

Overview

- The ATCF is **the** core TC forecast tool used by JTWC, NHC, and CPHC
- The ATCF is a joint project supported by the U. S. Navy and NWS
- NRL develops and maintains the ATCF GUI and the core functionality of the software (interpolator, database structure, etc.)
- NHC develops and maintains code to create its TC products and manage its local dataflow
 - Also manages ATCF dataflow and advisory product generation for CPHC and WPC backup

Requirements Process

- ATCF uses an iterative life cycle process for development
- Requirements meeting held in November, but requirements are worked on throughout the year



ATCF is a critical tool that serves a rapidly evolving field

ATCF Requirement Totals

FY16 Completed Tasks	~	80
FY16 Carryover Tasks	~	118
FY17 New Tasks	~	36
Total Open Tasks	~	153

Requirements are stratified by the following criteria:

Mission Critical Requirements – Required ASAP

Mission Significant Requirements – Required to improve critical services

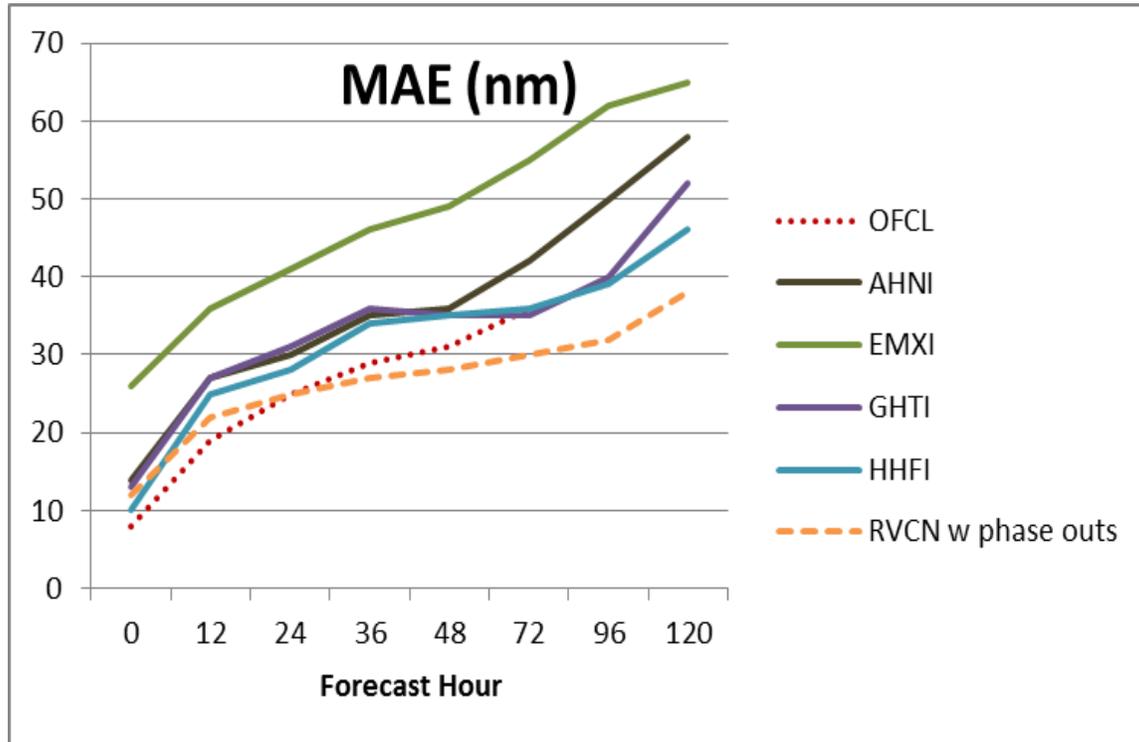
Mission Enhancing Requirements – Desired capabilities

Recent ATCF Accomplishments (NRL)

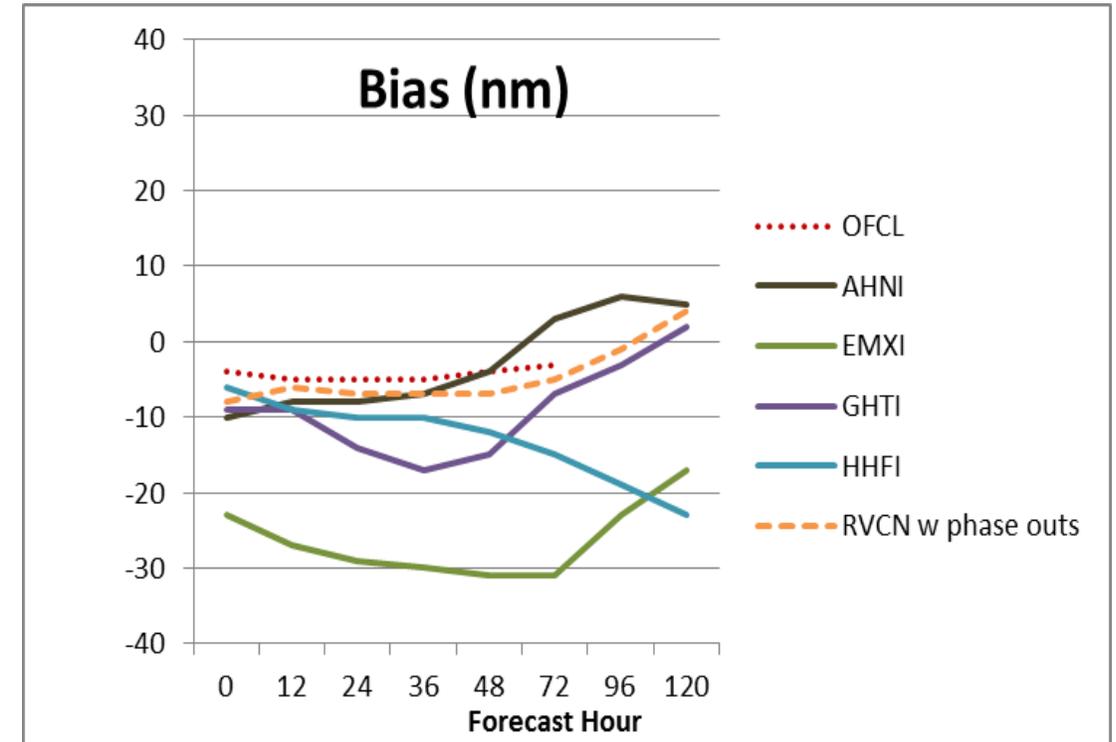
- NRL has completed several development items requested by NHC for 2017 (partially funded by HFIP):
 - Enabled a forecaster-selected flag in the GUI to allow creation of advisory products for Potential Tropical Cyclones
 - Developed and built 64-bit version of ATCF GUI for operations in 2017
 - Added capability for NHC to submit up to 8 HWRF requests for a given cycle
 - Implemented ability to create wind radii forecast consensus aid (RVCN)
 - Improved performance (by a factor of 100) of the aid interpolator for long-lived storms
 - Added ability to overlay NHC watch/warning breakpoints on the ATCF map
 - Made several bug fixes and minor enhancements

Recent ATCF Accomplishments (NRL)

Wind radii consensus (Sampson and Knaff 2015)



Atlantic 2012-2014 R34 mean absolute error of individual NWP model aids and official forecast

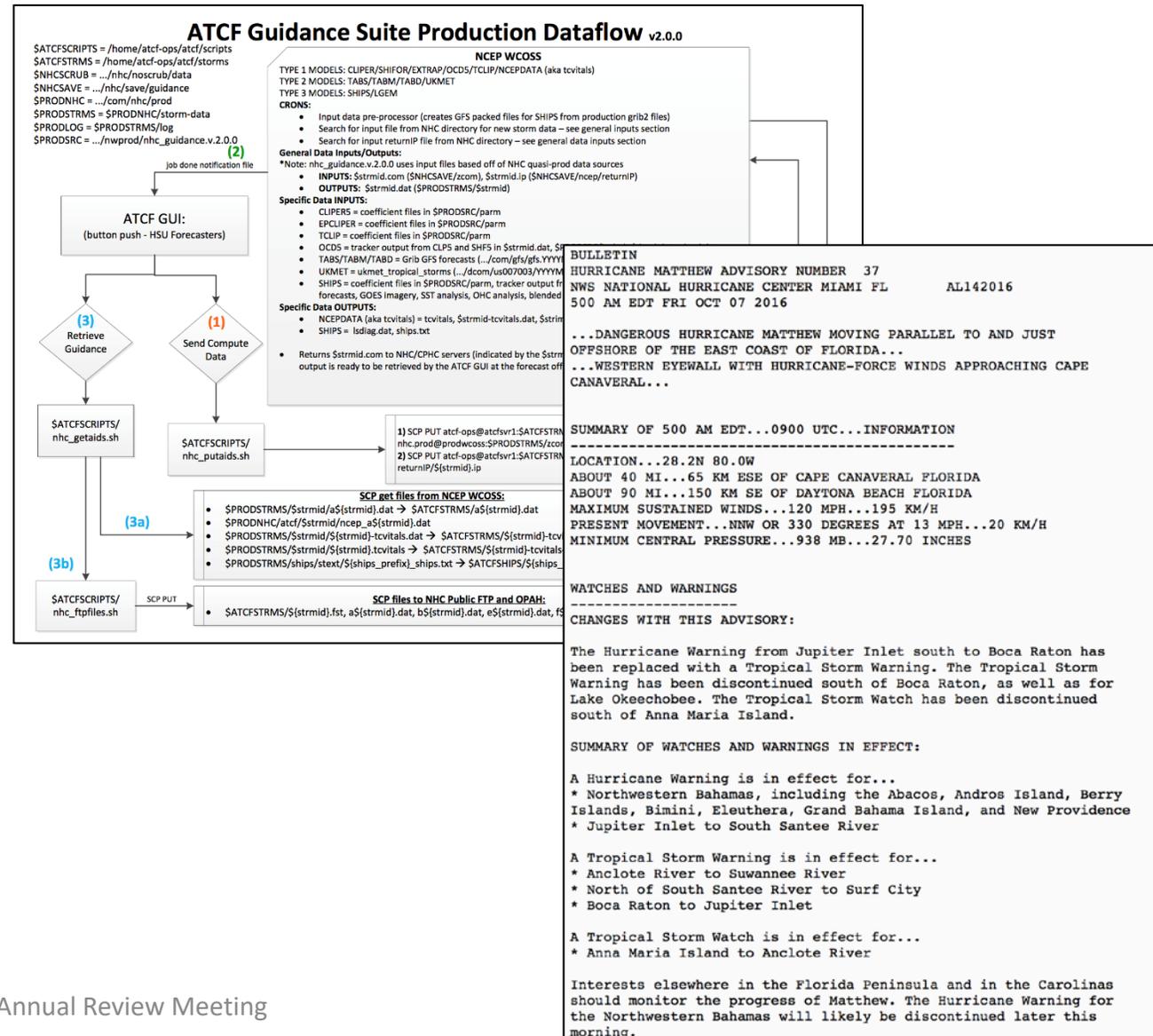


Atlantic 2012-2014 R34 bias of individual NWP model aids and official forecast

Numbers of forecasts are 2628, 2436, 2172, 1892, 1644, 1212, 904, and 636 at 0, 12, 24, 36, 48, 72, 96 and 120 h, respectively

Recent ATCF Accomplishments (NHC)

- Numerous modifications of NHC advisory code to allow issuance of advisory products for potential tropical cyclones in 2017
- Several NHC/CPHC text products transitioned to mixed-case
- Major dataflow changes to support NHC and CPHC
 - Keeping up with frequent evolution of NCEP supercomputer configuration
 - Ingesting new guidance (COAMPS-TC from NRL, UKMET ensemble, etc.)
 - Standardize fix ingest dataflow between CPHC, NHC, and WPC
- Numerous minor changes and bug fixes to improve product quality
- Updated Monte Carlo wind speed probability model



ATCF Capabilities in AWIPS2

- The ATCF has been a workhorse for NHC and JTWC for more than 2 decades
 - Flexible system that has adapted to changes in forecast requirements
- Future developments
 - ATCF is outside of the infrastructure supported by NWS (AWIPS2)
 - *Asset and Liability*
 - *Limits coordination with WFOs and COOP capabilities*
 - *NHC helps support CPHC and WPC*
 - IT security requirements may conflict with ATCF dataflow
 - *Already an issue with submitting NHC guidance suite to WCOSS supercomputer*
 - JTWC procuring AWIPS2 systems for data/model display
 - HFIP funded ATCF in AWIPS2 project

ATCF in AWIPS2 Progress/Plans

- FY15
 - 2 contractors funded for ~6 months to write requirements document
 - Close coordination with NHC/HSU and NHC/TSB
- FY16
 - Project charter developed, signed by NHC, NCO and AWIPS Program Office
 - Project kickoff meeting July 2016
- FY17
 - Full time NCO contractor hired (Bruce Hebbard)
 - A/B deck import/export functions developed
 - Primary GUI within AWIPS2 under development
 - FY17 milestone to display track/intensity guidance from A/B decks in AWIPS2
- FY18-19
 - Continued HFIP contractor
 - Possible JTWC support to accelerate development, incorporate DoD requirements
 - Possible implementation of initial capabilities in AWIPS2 baseline

More Information

- [ATCF FY17 Meeting Notes](#)
- [ATCF Genesis Process](#)
- [ATCF Document Repository](#)