HFIP Annual Meeting
Welcome

Fred Toepfer

Program Manager

November 8 - 9, 2011

Outline

- Purpose

- Vision/Goal

- Progress to Date

- Priorities

- Computing

- Questions

Purpose of Meeting

- Review progress of Hurricane Forecast Improvement Project

- Approach to designing and planning the Real-Time System for 2012

- HFIP Team reports on activities and achievements

- Discuss HFIP Priorities for FY12

The HFIP Project – Vision/Goals

- Vision
  - Organize the hurricane community to dramatically improve numerical forecast guidance to NHC in 5-10 years

- Goals
  - Reduce numerical forecast errors in track and intensity by 20% in 5 years, 50% in 10 years
  - Extend forecasts to 7 days
  - Increase probability of detecting rapid intensification at day 1 to 90% and 60% at day 5

HFIP Baselines and Goals

Atlantic Basin Baseline and Goals
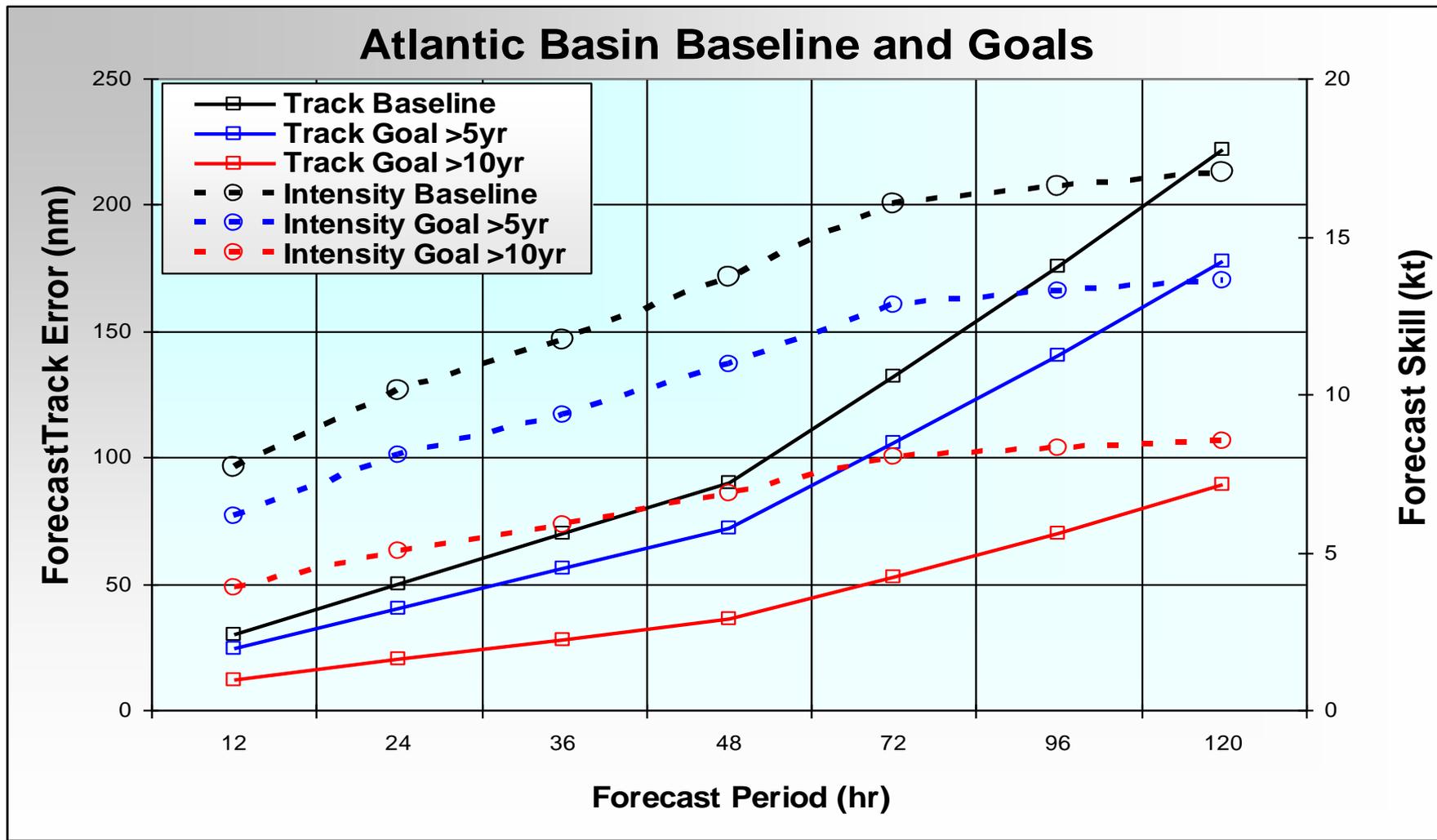
Progress to Date

- Several Universities are making significant contributions to HFIP successes

- DTC is now the repository for all HWRF codes
  - Both research and operational communities drawing from this repository

- NOAA OAR labs strongly engaged in developing future operational systems
  - ESRL - advanced data assimilation methods in hurricane track forecasts
  - AOML, EMC - HWRF development and demonstrating future HWRF DA and model systems

- Strong collaboration with NRL on global/regional model, data assimilation and ensemble development

- Collective effort to complete Stream 1.5 process to select, validate and test experimental models

- The HFIP global ensemble appears to do an excellent job of forecasting genesis out to 7 days lead time

FY12 HFIP Priorities

- Continued development of the Experimental Numerical Forecast System (Real-Time) during hurricane season on Tjet
  - New paradigm for NWS transitioning research to operations

- Continued expansion of computing resources

- Development of Hybrid DA system (NCEP Hybrid) and hurricane model initialization including impact of high resolution data in and around core

- 3km HWRF into operations – include physics for 1-3km models

- Maintain external involvement - University funding

- Explore and develop a hurricane genesis product out to 7 days

- Continue to develop and test ensemble systems

FY2012 Funding

Anticipated Funding for FY12

Dedicated for HPC	$3.000M
OAR Base	~ $6.101M
NWS Base	$13.040M
Total	~$23.141M

HFIP Computing

Current Tjet System

- o Full acceptance by mid-Nov
- o Increased computing power by 50%
- o Increased storage and capacity by 2x

Install Date	Cores	Performance* (Tflops)	Storage (Tbytes)
November 2012	16648	~182	1166

*Official benchmark will be available for the Top500 in May 2012

Computing Alternatives

- Convert HPC dedicated funds to NOAA's operations computing proposal

- Buy-in to R&D system in West Virginia

- Add to computing system at Boulder facility
  - may require facility upgrades

- Invest in Graphical Processing Units (GPUs)

Questions