



EMC Implementation Plan 2018 - 2020

SIP Coordination Meeting
January 31, 2018



Purpose of the Plan

To describe:

- the major development and implementation projects planned for EMC over the next three years
- how those fit within the broader NOAA Strategic Vision and Roadmap for modeling, and the SIP
- how EMC projects link with other model-related projects internally within NOAA and with the broader U.S. modeling community



Benefits of the Plan

- Facilitates planning for major resource drivers:
 - Budget
 - Personnel
 - HPC
- Identifies linkages with community partners
- Identifies challenges:
 - Scientific
 - Technological
 - External dependencies



Drivers & Motivation

- Incorporate scientific advances into Operational models
- Develop the workforce
- Improve support to the Field
- Simplify the NCEP Production Suite
- Move toward Community-based modeling



Strategies & Approaches

- Unified modeling based on FV3
- Consolidation/optimization of EMC's model suite (incrementally)
- Modernization/optimization of model infrastructure
- Community collaboration:
 - Partnerships with individual EMC projects
 - Broad community partnerships under the Strategic Implementation Plan (SIP)
 - The pending NOAA-UCAR agreement on common infrastructure
 - Enabling collaborative research and development through authoritative code repositories git-based repositories



Major EMC Projects

- Modeling and Data Assimilation (16)
- Verification, Post-processing and Product Generation (4)
- Software Engineering and Infrastructure (7)
- Routine/recurring upgrades (13)
- Aligned with EMC's new organizational structure
- Project Management



Alignment

- Every project is linked to an Annex in the SIP document
- Every project has a linked quad chart describing:
 - Project Information & Highlights
 - Schedule
 - Resources
 - Risks & Issues
- Every Project narrative also includes
 - Dependencies and Linkages to other Projects
 - Core Development Partners and their Roles



Alignment

Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18
SIP v1 development (2018 - 2020)							SIP v1		SIP v2 Development (2019 - 2021)									SIP v2	
		EMC IP v1 Development (2018 - 2020)						EMC IP v1	EMC IP v2 Development (2019 - 2021)									EMC IP v2	



FY 2018 Implementations

- **November 1, 2017:** High-Resolution Window Forecast System/ High-Resolution Ensemble Forecast (HiResW v7/HREF v2)
- **November 8, 2017:** Space Weather Modeling Framework (SWMF) v1.5.0
- **December 13, 2017:** RTMA/URMA v2.6.0
- **Q2 FY 2018:** GLOBAL Wave Model
- **Q2 FY 2018:** Nearshore Wave Prediction System (NWPS)
- **Q2 FY 2018:** Real-Time Global Sea Surface Temperature (RTG SST)
- **Q2 FY 2018:** North American Ensemble Forecast System (NAEFS)
- **Q3 FY 2018:** Rapid Update/ High-Resolution Rapid Refresh (RAP/HRRR)
- **Q3 FY 2018:** FV3GFS Beta (will run as a parallel with operational GFS)
- **Q3 FY 2018:** Hurricane WRF/Hurricanes in a Multi-scale Ocean-coupled Non-hydrostatic model (HWRF/HMON)
- **Q3 FY 2018:** Air parcel transport, dispersion, chemistry, deposition (HYSPLIT)
- **Q3 FY 2018:** Air Quality Model (AQM)
- **Q4 FY 2018:** RTMA/URMA
- **Q4 FY 2018:** Real-time Ocean Forecasting System (RTOFS)



FV3GFS Release Strategy



- Access FV3GFS Project on VLab
 - <https://vlab.ncep.noaa.gov/web/fv3gfs>
- Code repositories set up on VLab GIT
- Community Wiki page, Forums and Developers Pages on VLab

Next Release of FV3GFS (including pre- and post-processing) planned for March 2018 through github.com and/or Vlab Git

The screenshot shows the 'FV3GFS Version 0 Release' page on the Virtual Lab website. The page features logos for GFDL, NOAA, and NCEP. The main heading is 'Announcing the Version 0 Release of the FV3GFS!'. Below this, there is a section for 'NGGPS and FV3 Dynamic Core' which describes the selection of the GFDL's Finite Volume Cubed Sphere (FV3) dynamical core for the new NGGPS atmospheric model. It also mentions that NOAA users and external partners with NWS Virtual Lab access can view release information and developmental details in the FV3GFS Community. A table lists various documents related to the FV3 dynamic core, including a brief overview, transport schemes, control-volume models, integration methods, and nested global-regional dynamical cores. On the right side, there are instructions for non-NOAA users and NOAA users on how to access the FV3GFS Version 0 Release, including links to external partner request forms and community pages. At the bottom right, there is a 'Documents and Media Display' section showing 'Release Version 0 Documents' with 6 documents listed.

- Limited support from EMC to run FV3GFS forecast only experiments on WCOSS, Theia and Jet
- Unified Community Research and Operations Workflow (CROW) under development



Questions?