

NCEP PROJECT CHARTER

01/06/2015

Legacy Forecast Of Global Ensemble Forecast System (GEFS v10.0.0)

Description:

The Global Ensemble Forecast System (GEFS) runs in the NCEP production suite on the NOAA Central Computer System. This system is developed and supported by the Environmental Modeling Center (EMC) and operated and managed by NCEP Central Operations (NCO). The GEFS also serves as a subset of a larger global ensemble system called the North American Ensemble Forecast System (NAEFS). Currently, the NAEFS consists of the NCEP GEFS and the Canadian Meteorological Centre's global ensemble system.

The objective of this project is to improve the probabilistic forecast skill of the GEFS, to reduce tropical storm track mean forecast errors. This objective will be accomplished by continuing running GEFS version 10.0 (2012 implementation version) to allow users (mainly OHD and CPC) to use off-line GEFS 25 years reforecast of version 10.0. This project is additional to GEFS (v11.0.0) upgrade in 3rd quarter of fiscal year 2015. This project will run global ensemble forecast (20 perturbed members + 1 control member) once per day (00UTC) for one year. This project is an NCEP Annual Operating Plan (AOP) milestone for the **3rd quarter of fiscal year 2015**. The milestone maps to NCEP's strategic goal to produce and deliver the best products and services.

Scope:

The scope of the project includes:

- Continue running GEFS version 10.0.0 (implemented on Feb. 2012).
 - Initial perturbations will be cycling every 6 hrs)
 - Forecast (21 members, out to 384 hrs – 16 days) will be running once per day at 00UTC
- Public data access (ftpprod, nomads)
 - ../com/gefs_legacy/prod/...
- Bias correction and GEMPAK
 - N/A
- HPSS archives
 - To consider another archive directory (different from operational GEFS)
 - init to be archived permanently
 - sfcsg to be archived for 1 year
 - sflux to be archived for 1 year
 - pgrb2a to be archived permanently
 - pgrb2b to be archived for 2 years
 - pgrb2d to be archived for 1 year
 - ensstat to be archived permanently

The scope of the project does not include:

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The following areas of scope are uncertain or have not been fully defined:

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Major Deliverables:

Planning

- Project charter
- Scope statement
- Project schedule
- Sign-off package for plan acceptance
- List of subjective assessment participants

Scientific Test and Evaluation

- Subjective assessment results from participants
- Objective verification results
- Computational resource analysis (estimations)

Technical Test and Evaluation

- Code available to NCO
- Network, service and storage capacity analysis
- Product format and content analysis
- Parallel production runs
- Analysis of production resource and schedule impact

Review

- Mid-term and final scientific implementation briefing
- Mid-term and final technical implementation briefing
- Signed implementation approval memorandum

Implementation

- TOC change notification
- Change requests in PMB JIF database
- Final code implemented in production

Justification:

This project will continuously run GEFS legacy forecast (once per day - 00UTC, 21 members, out to 16 days). This project is intended to satisfy our customers (such as OHD, CPC and others) to improve overall forecast skill through the calibration of 25-year GEFS reforecasts those were generated by ESRL/OAR a couple of years ago (off-line, research project).

Organizational Scope:

The organizational scope of the project includes all of the NCO Branches, the EMC Global Modeling Branch, all the NCEP Service Centers, the NWS Telecommunications Gateway (TOC), the NOAA Web

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Operations Center (WOC) and the NWS OS&T. EMC will be responsible for developing the code changes, running retrospective runs and validating the quality of the GEFS changes. The NCO will be responsible for the technical testing, evaluation and implementation of the GEFS changes. The NCO will also be responsible for coordinating the product and volume changes with the TOC, WOC and NWS OS&T. The NCEP all Service Centers, mainly CPC and OHD will be responsible for the subjective evaluation of the GEFS changes. The TOC and WOC will be responsible for allocating and approving the necessary resources needed for the GEFS changes on the downstream ftp servers. The NWS OS&T will be responsible for issuing and approving the change notification to the field.

Risk:

Project Authorization

Appointment of Project Manager:

To achieve the objectives of this project, I appoint Brent Gordon as Project Manager for this project. In this capacity, Brent Gordon has the authority to expend NCO human and financial resources to accomplish objectives of the project.

Project Budget Authority:

In support of this project, I authorize the use of staff time to meet the scope/objectives. A time estimate will be provided for review and approval during the project planning phase.

Project Reporting Frequency:

Status will be reported on a monthly basis or as required by Sponsor.

Project Expected Duration:

A roll-up duration estimate is four months. Actual effort will be determined from the project plan and submitted to the Sponsor for review and approval.

Project Sponsor(s):

Ben Kyger, Director NCEP Central Operations
Hendrik Tolman, Director NCEP Environmental Modeling Center

Signature(s) of the project Sponsor(s) indicates the project charter has been reviewed and approved by the Project Sponsor(s).

Project Sponsor Approval: _____ Date: _____
Ben Kyger, Director NCO

Project Sponsor Approval: _____ Date: _____
Hendrik Tolman, Director EMC

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NTOP Project Number: NCOxx *Look at the RMS project list to get the proper NTOP number (confirm with Sponsor/PMO)*

PMO Project Number: PMOxxx *PMO will assign this number once the project is signed by Sponsor (signed copy goes to PMO)*

Document Information and Revision History

Version	Date	Author(s)	Revision Notes
1.0	01/06/2015	Yuejian Zhu	New