CHARTER
for the
EARTH SYSTEM PREDICTION CAPABILITY

A. Purpose of the Charter

The Nation's security and economic well-being relies upon accurate global analysis and prediction capabilities for the physical environment over time scales of a few days to a few decades. Such need is amplified by the recent trends in climate change affecting commerce, infrastructure and energy. All earth system domains - atmosphere, ocean, cryosphere, land and space must be included. The scope of the challenge necessitates broad participation from the US Weather, ocean, space and climate science community.

The purpose of this agreement is to establish an initial federal program to collaborate, between US Federal and non-Federal agencies including research and operational communities for the development and operational implementation of a national earth system prediction capability. Building from the initial operational collaboration that resulted in the global atmospheric weather model ensemble "National Unified Operational Prediction Capability" (NUOPC), the Earth System Prediction Capability (ESPC) will retain the basic architectural foundations (common requirements, architecture, and standards) but greatly expand the scope to include high-resolution, coupled ocean, land, ice and space modeling to produce tactical, strategic and decadal predictions. This can only be accomplished by building an alliance with the Nation's climate modeling community. This effort will require a multiple year investment of science and technology and research and development with compatible acquisition and operational strategies. Long term investment will be essential to maintain our information and prediction superiority.

This Charter establishes the initial basis for collaboration, goals, membership, roles and responsibilities, and decision making authority. As a means to advance the goals of this charter an important milestone will include the engagement and support of the USGCRP as related to their modeling activities. It also establishes a Development Team for achieving these goals.

B. Goal

Establish a program to meet broad but specific agency requirements for an earth system analysis and prediction framework to support one-day to decadal, global prediction at appropriate horizontal and vertical resolution including the atmosphere, ocean, land, cryosphere and space.

The Earth System Prediction Capability will include:

1. A national approach to an earth system numerical prediction capability providing advanced data assimilation, forecast model physics and computational efficiencies.
2. A common set of agency requirements and standards while providing agency specific mission capabilities.

3. Provision to support a national research agenda for highly accurate, global, high resolution, coupled atmosphere, ocean, land, cryosphere and space prediction from daily to decadal periods.

4. A cooperative development effort encompassing Federal, private and academic organizations.

The Earth System Prediction Capability is expected to be a framework supported and managed by a consortium comprised of Federal and non-Federal components. This framework will include in-situ and remote observations, data management, advanced numerical modeling and communications. The ESPC consortium will promote basic and applied research to develop, test and deploy innovative technologies. The consortium will also coordinate the implementation of this capability within multiple operational production centers.

C. Membership

The ESPC membership will incorporate development efforts from various sectors of the U.S. including Federal, private, and academic groups. It will be composed of two levels of participants, Principal Partners and Stakeholders. Principal Partners will be those agencies/organizations that substantially participate in the ESPC research, development and/or operational implementation and maintenance.

Principal Partners (Initial)

a. Department of Commerce
   - National Oceanic and Atmospheric Administration (NOAA)

b. Department of Defense
   - U.S. Navy
   - U.S. Air Force

The Partners will also engage and seek input from those agencies/organizations with vested interest in the ESPC (Stakeholders), who may provide recommendations on issues involving research, development and operational needs as well as Implementation/maintenance.

D. Roles and Responsibilities

Management

Due to the expansive scope and duration of the ESPC development effort, management will require direct involvement of multiple organizations with broad oversight by agency principals. Agency Principals will initially consist of Assistant Administrator for Weather Services and Deputy Assistant Administrator, for Oceanic and Atmospheric Research, NOAA; Oceanographer of the Navy, Head Battlespace Sensing for the Office of Naval Research, and Director of Air Force Weather. Agency Principals will exercise direct programmatic and fiscal oversight through an Executive Steering Group (ESG) composed of senior agency representation designated by the Agency Principals. Agency Principals will act as the adjudicative body for all issues unresolved by the ESG. The ESG will appoint a Project Manager and determine the

appropriate make-up of the management architecture for the ESPC. The Project Manager is directly responsible to the ESG for management of the ESPC development and overall direction of the management architecture.

Development Team

Over the course of the ESPC development, it is expected that the actual agency representation (participation and membership) will vary. Initially a Development Team will be composed of subject matter experts representing the Department of Commerce (NOAA), and the Department of Defense (Navy and Air Force). Subsequent partnerships and collaborations are expected to include other interested Federal agencies as well as private and academic organizations.

The initial goals of the Development Team will be to design the programmatic architecture supporting the ESPC, develop a Project timeline to include Phases of development and milestone decision points, and initiate a collaborative research and investment strategy.

E. Termination Date

This Charter will remain in effect until dissolved by the Executive Steering Group. Any Partner may withdraw from this Charter with 90 days written notice provided to the other Partners.

F. Signatures

Date 18 June 10
RADM David W. Titley
Oceanographer of the Navy

Date 22 Oct 2010
Dr. John Hayes
Assistant Administrator for Weather Services
National Oceanic and Atmospheric Administration

Date 23 Jun 10
Dr. Fred[redacted] Lewis
Director, Air Force Weather

Date 27 OCT 10
Dr. Frank Herr
Head, Ocean Battlespace Sensing
Office of Naval Research

Date 25 OCT 2010
Mr. Craig McLean
Deputy Assistant Administrator
Oceanic and Atmospheric Research
National Oceanic and Atmospheric Administration