
DTC Overview

Bill Kuo

September 25, 2009

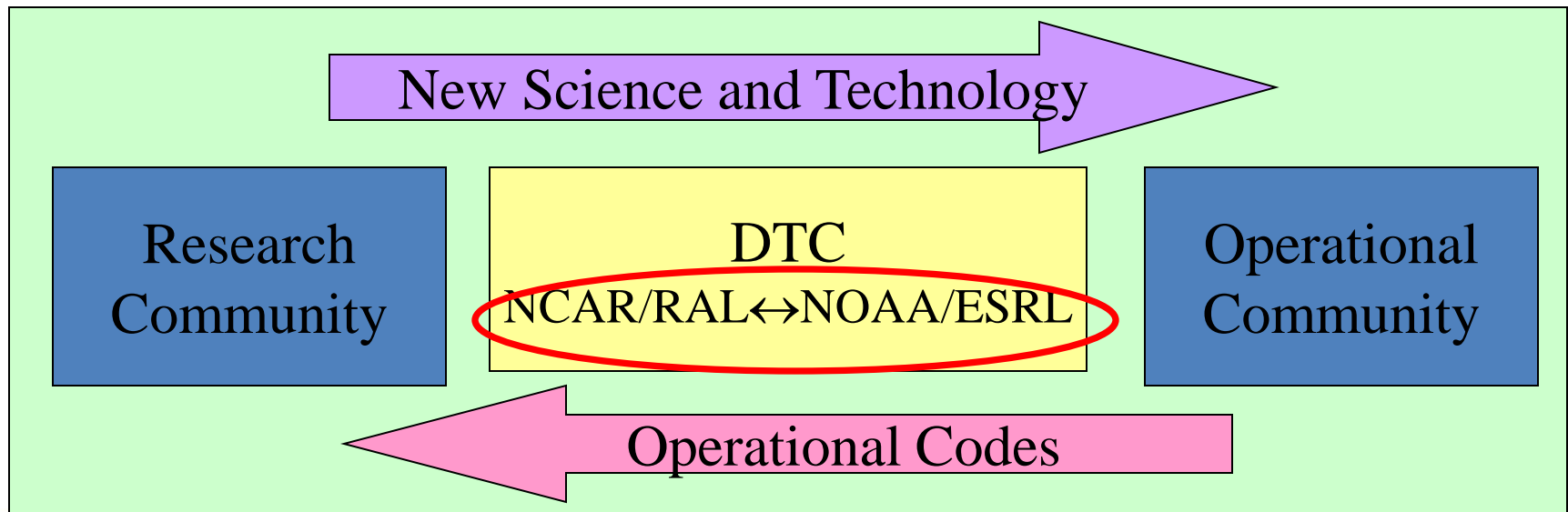
Outlines

- DTC Charter
- DTC Management Structure
- DTC Budget
- DTC AOP 2010 Processes
- Proposed new tasks for 2010
- Mesoscale Ensemble Testbed

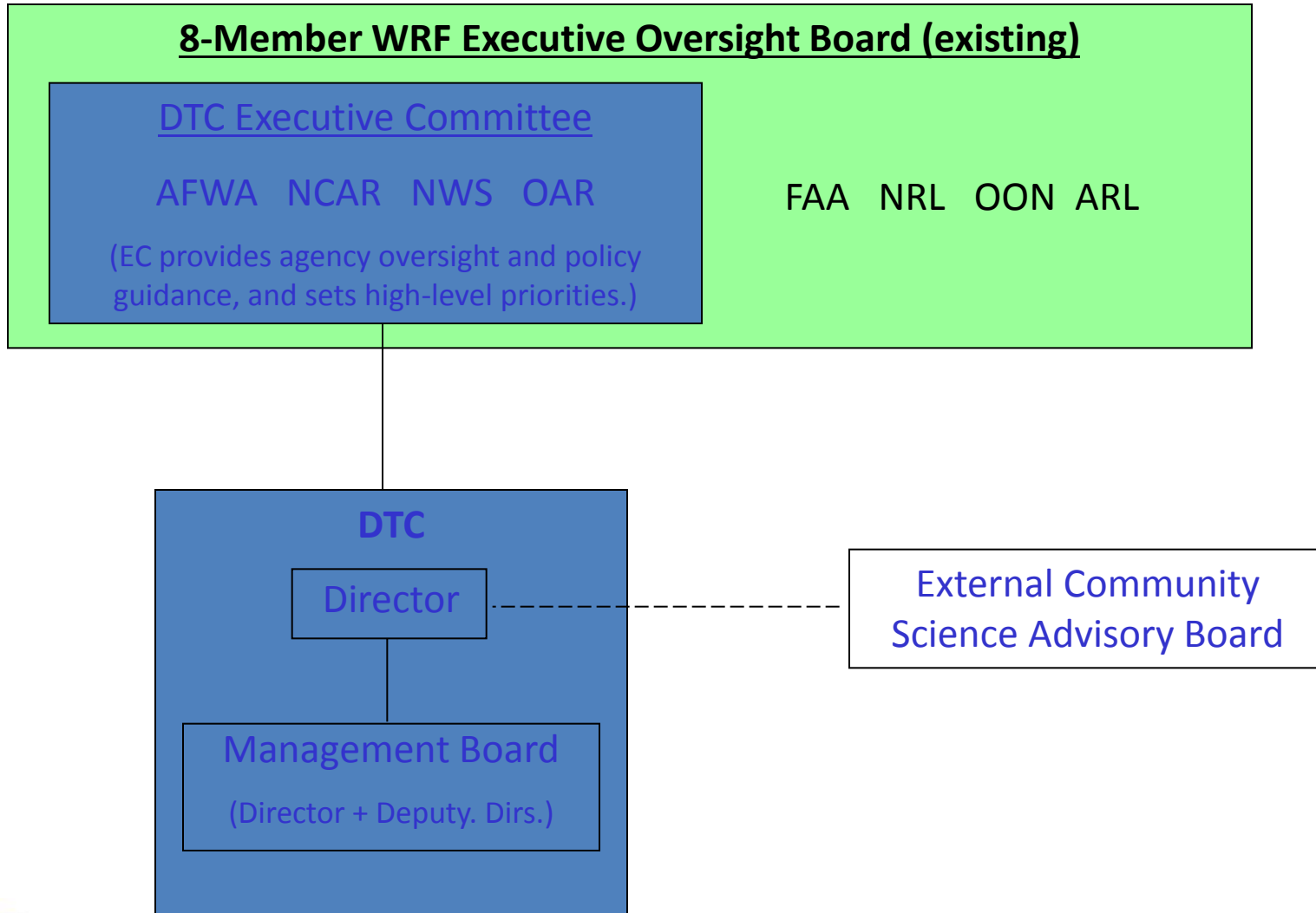
Fundamental Purpose of DTC

To serve as a bridge between research and operations to facilitate the activities of both halves of the NWP Community

- **Research:** functionally equivalent operational environment to test and evaluate new NWP methods over extended retrospective periods
- **Operational:** benefits from DTC T & E of strengths and weaknesses of new NWP advances prior to consideration for operational implementation



DTC Management Structure*



*Blue indicates structure established by proposed DTC Charter



DTC Executive Committee

- DTC is governed by the DTC Charter.
- DTC Charter has been signed 15 Sep. 2009
- According to the DTC Charter, Executive Committee (EC) has the oversight authority over DTC.
- The DTC EC will (most likely) consist of:
 - NWS: Don Berchoff (OST)
 - OAR: Sandy MacDonald (OAR, ESRL)
 - AFWA: John Murphy
 - NCAR: Eric Barron
- DTC budget and annual operating plan need to be approved by the DTC EC.

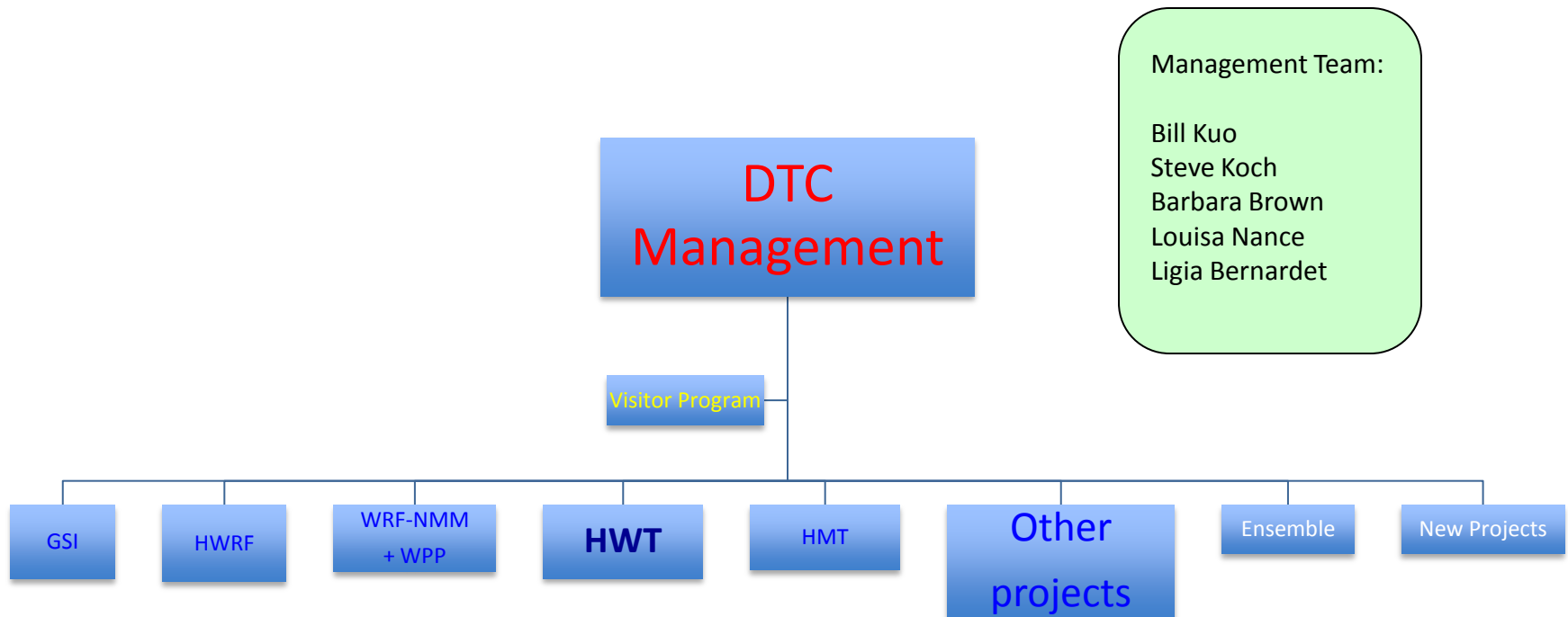
Management Structure

- Management by DTC Director (Bill Kuo / NCAR) and Deputy Director (Steve Koch / NOAA)
- Priorities set by funding agencies with guidance from Advisory Board

According to the DTC Charter

Executive Committee	Members from funding agencies	Appoints DTC director, executive oversight
Management Board	Director, deputy directors, members from funding organizations	Annual operating plan and budget
Advisory Board	Members from operational and research communities	Strategic direction and objectives

DTC is managed by tasks



DTC is managed by tasks. Each task has a task lead, who is responsible for defining and executing the task. Most tasks are collaborative efforts between staff members of NCAR/JNT and ESRL/GSD. Members of the DTC management team will provide oversight for the various tasks.

Annual Operating Plan - 09

- WRF (NMM) + WPP community support (Jamie Wolff)
- Reference Configurations implementation (Jamie Wolff)
- WRF Rapid Refresh vertical level T&E (Jamie Wolff)
- MET support and development (Tressa Fowler)
- GSI community support (Hans Huang)
- HWRF community support (Ligia Bernardet)
- HMT-DTC: verification of precipitation forecast, ensemble prediction and verification (Ed Tollerud)
- HWT-DTC: Evaluation of cloud-resolving model predictions (Tara Jensen)
- NAM-GFS precipitation forecast comparison (Jamie Wolff)
- National Workshop on Mesoscale Probabilistic Prediction (Bill Kuo)
- Publication of core test results (Louisa Nance, Ligia Bernardet)
- Visitor program (Louisa Nance)
- High-Resolution Hurricane Test (Ligia Bernardet, Louisa Nance)

Most tasks are collaborative efforts between GSD and NCAR staff, parenthesis only shows the task lead or co-leads.



THE DEVELOPMENTAL TESTBED CENTER (DTC)



DTC Budget

- The DTC total budget for FY 09 is about \$2.8M:
 - \$1M from NOAA core
 - \$925K from AFWA
 - \$325K from NOAA USWRP
 - \$250K from NCAR
 - \$280K from GSD
 - \$50K from NSF – visitor program
- DTC is expecting to receive \$2M new money from NOAA core in FY 2010, bringing the total to \$4.8M
- With such a large budget amount, a more rigorous procedure is required for budgeting and AOP process.

New DTC Tasks in FY 2010

- EMC modeling systems are migrating toward the NEMS software framework. DTC needs to participate in the migration of WRF NMM and ARW systems to the new framework and develop expertise in NEMS and ESMF.
- Conduct high-resolution hurricane intensity and structure forecast experiments – in close coordination with HFIP program.
- Establish mesoscale ensemble testbed to evaluate various components of a mesoscale ensemble forecast system – in collaboration with EMC, SPC, ESRL, and NCAR.

NOAA Alternative Language

- Conduct high-resolution (4-km grid) ensemble forecast experiments using most promising alternatives from operations and research communities. (2011-2012). These new experiments will test the ability of model ensembles to reduce overall forecast errors and minimize forecast uncertainty.

AOP 2010 time lines

- Following the DTC ensemble workshop, hold a DTC Task Lead Meeting on 1 October 2009.
- Submit the DTC AOP 2010, including budget and task description (provided by task leads) to DTC Management Board by 19 October.
- Submit the DTC AOP 2010 to the DTC Executive Committee by 9 November 2009.
- Hold DTC Management Board Meeting and EC meeting in the week of 30 Nov – 4 December 2009.
- Based on final DTC budget, revise the task plans to meet the budget constraints.
- Task leads then execute tasks according to revised plans.

Mesoscale Ensemble Testbed

- We need to define such a testbed:
 - Target Resolution (cloud-scale?)
 - Retrospective runs (vs. real-time runs)
 - Test and evaluation procedures
 - Selection of critical problems to study
 - Collaboration with partners
 - Transition to operation (EMC)
 - Provision and support of ensemble codes
 - Governance (and advisory board)
 - Visiting scientist program



Questions?