

8. What is the Scope of the DTC?

A vision for the future

WRF Executive Oversight Board

Meeting 2006-1

NCAR, Boulder, CO

5 January 2006

Background: What is the DTC?

Vision

“DTC is a distributed facility where the NWP community can test and evaluate new models and techniques for use in research and operations, in a way that doesn’t interfere with operations”

DTC Implementation Plan, 2004

Goals

- Link Research and Operational Communities
- Speed transition of research results into operations
- Accelerate improvement in weather forecasts
- Develop and test promising new NWP techniques
- Provide an opportunity for NWP community to perform cycled or real-time tests of model and data assimilation systems

Purpose -1

- Provide for a rapid and direct transfer of new NWP research results into operational forecasting
- Evaluate strengths and weaknesses of new methods and models for NWP prior to consideration for operational implementation
- Evaluate strengths and weaknesses of current operational systems

Purpose -2

- Evaluate codes from the community (universities, agencies, private sector) for inclusion in the WRF Contributed and Reference Codes
- Maintain the WRF Reference Codes
- Maintain an archive of observations and model results

Desired Outcomes

The DTC will have...

- Established a repeatable process of testing WRF Contributed Codes for elevation to Reference Code status
- Established an ongoing system for maintaining and supporting WRF Reference Code to the community
- Established a sustained flow of rigorously tested new science and technologies to operations
- Established a process for testing and evaluating new NWP science and technologies and retrospective testing of operational model systems
- Established a working relationship between the research and operational communities

What is Role of DTC in WRF?

DTC is part of the WRF System

What is WRF

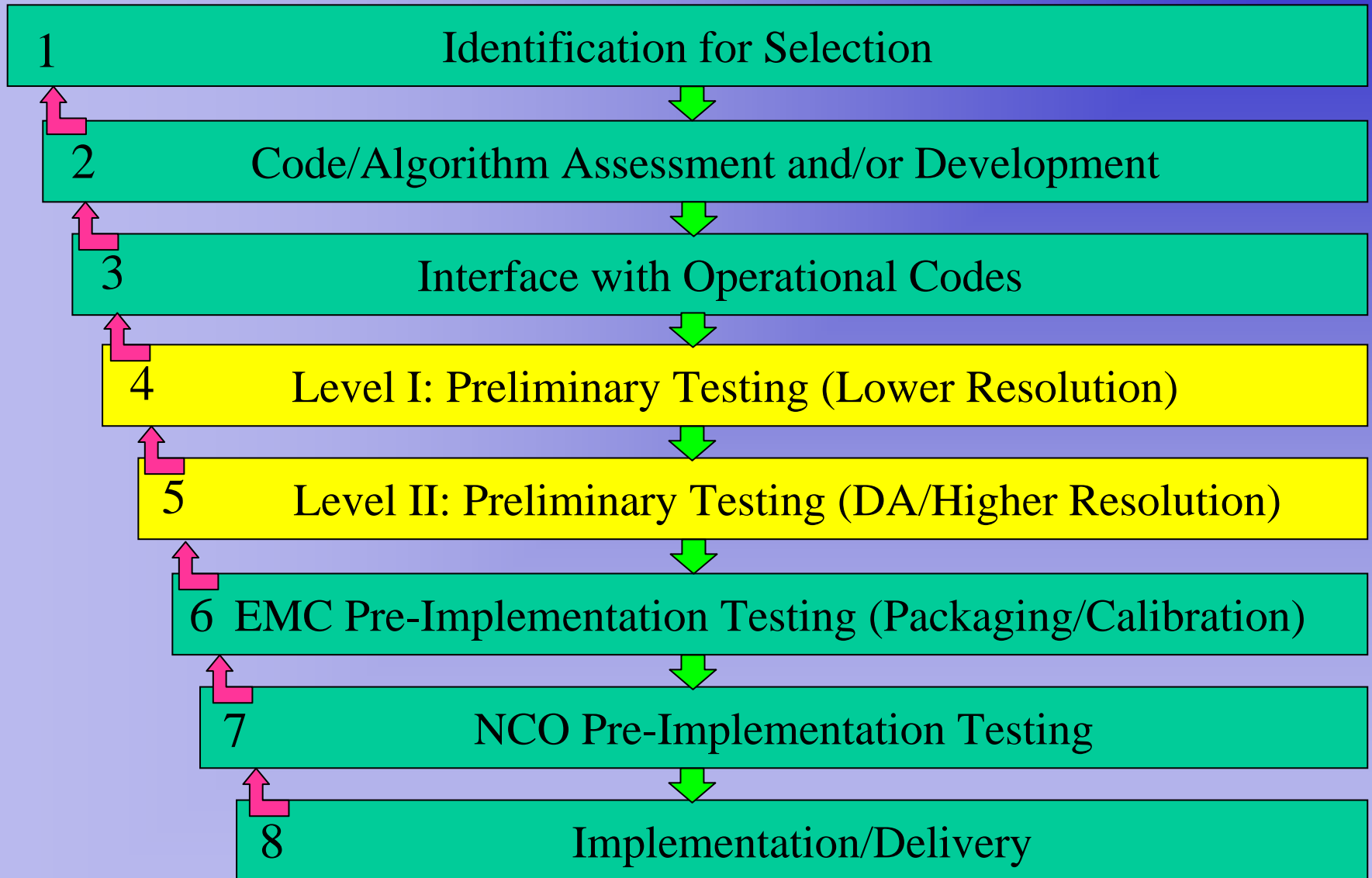
- A system of codes developed and maintained by the NWP research and operational community
- The codes are developed and tested jointly by this community
- Intended to promote a rapid transfer of new NWP technology developed in the research community into operations

The WRF Community

- **Research**
 - Conceive and develop new NWP concepts, techniques, and systems
 - Evaluate performance of current operational systems
 - Develop and maintain the Contributed Code system
- **Testbed Centers**
 - Provide a link between research and operations
 - Provide means and resources for extensive model testing in real-time
 - Evaluate and maintain the Reference Code system
 - Provide pre-implementation testing of proposed operational codes
- **Operations**
 - Evaluate and maintain the operational models
 - Prepare NWP guidance from the operational models

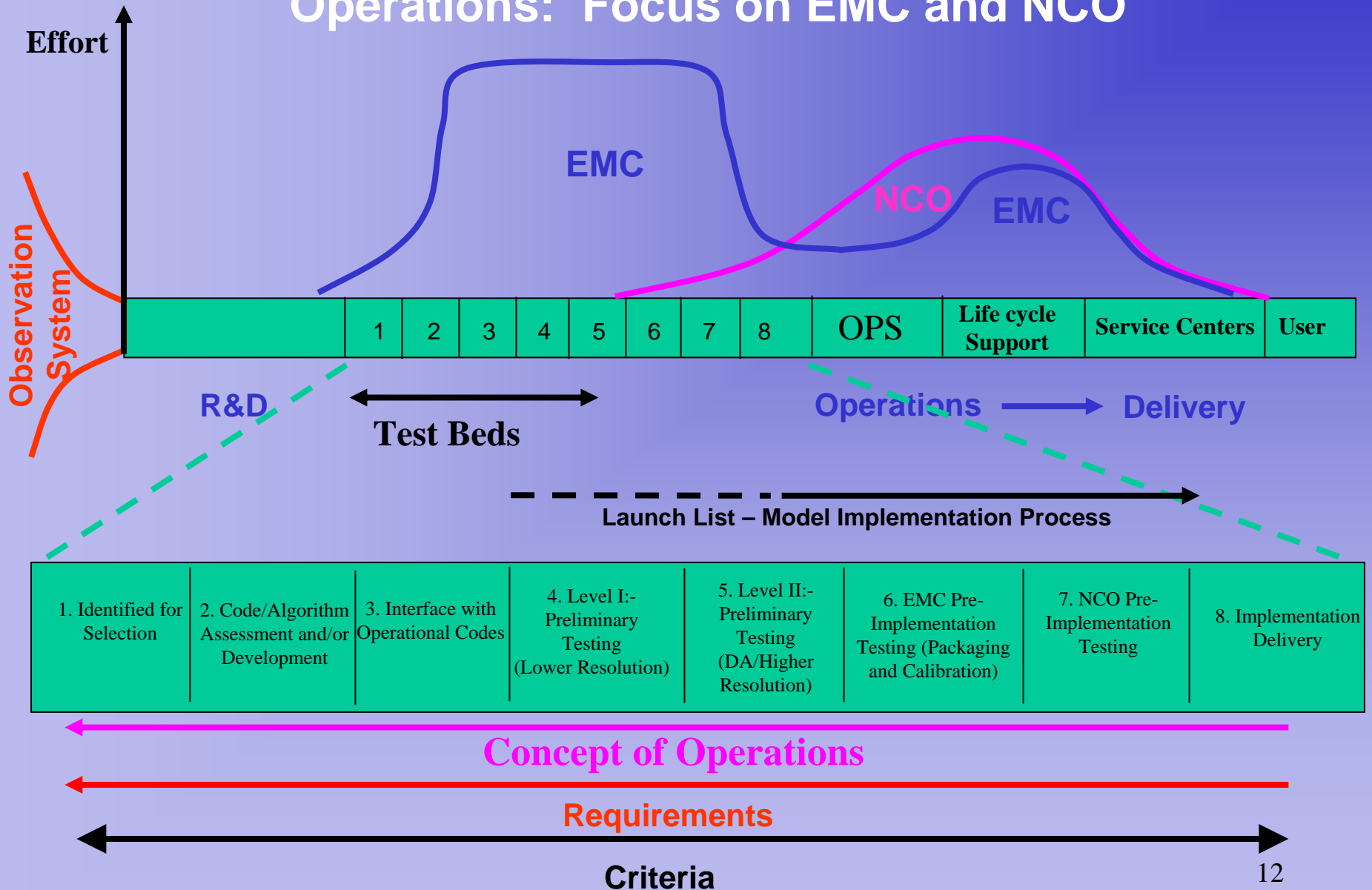
DTC Role in Transition to Operations

NCEP Transition Steps* (Modeling)



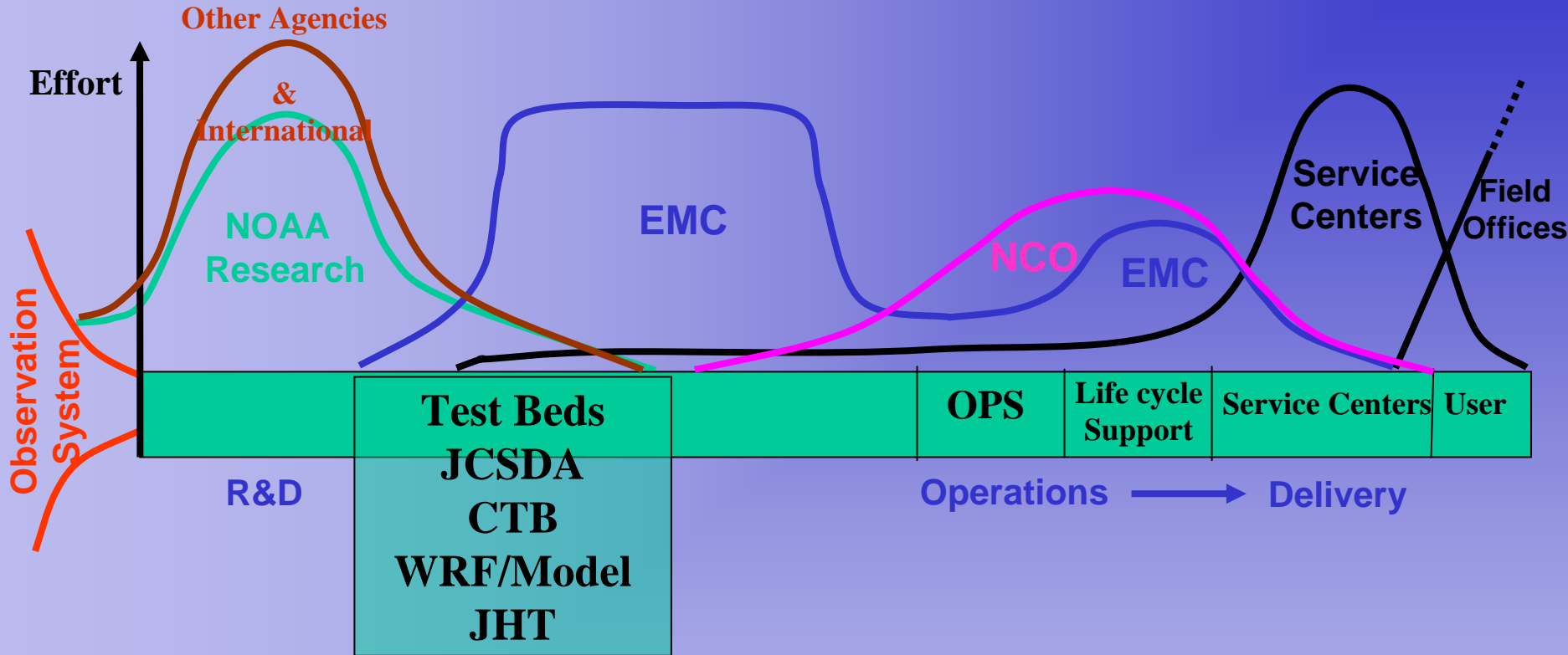
** Similar steps are followed by other U.S. operational centers*

NCEP's (Modeling) Transition to Operations: Focus on EMC and NCO



NCEP's Role in the Model Transition Process

EMC and NCO have critical roles in the transition from NOAA R&D to operations



Transition from Research to Operations

Launch List - Model Implementation Process

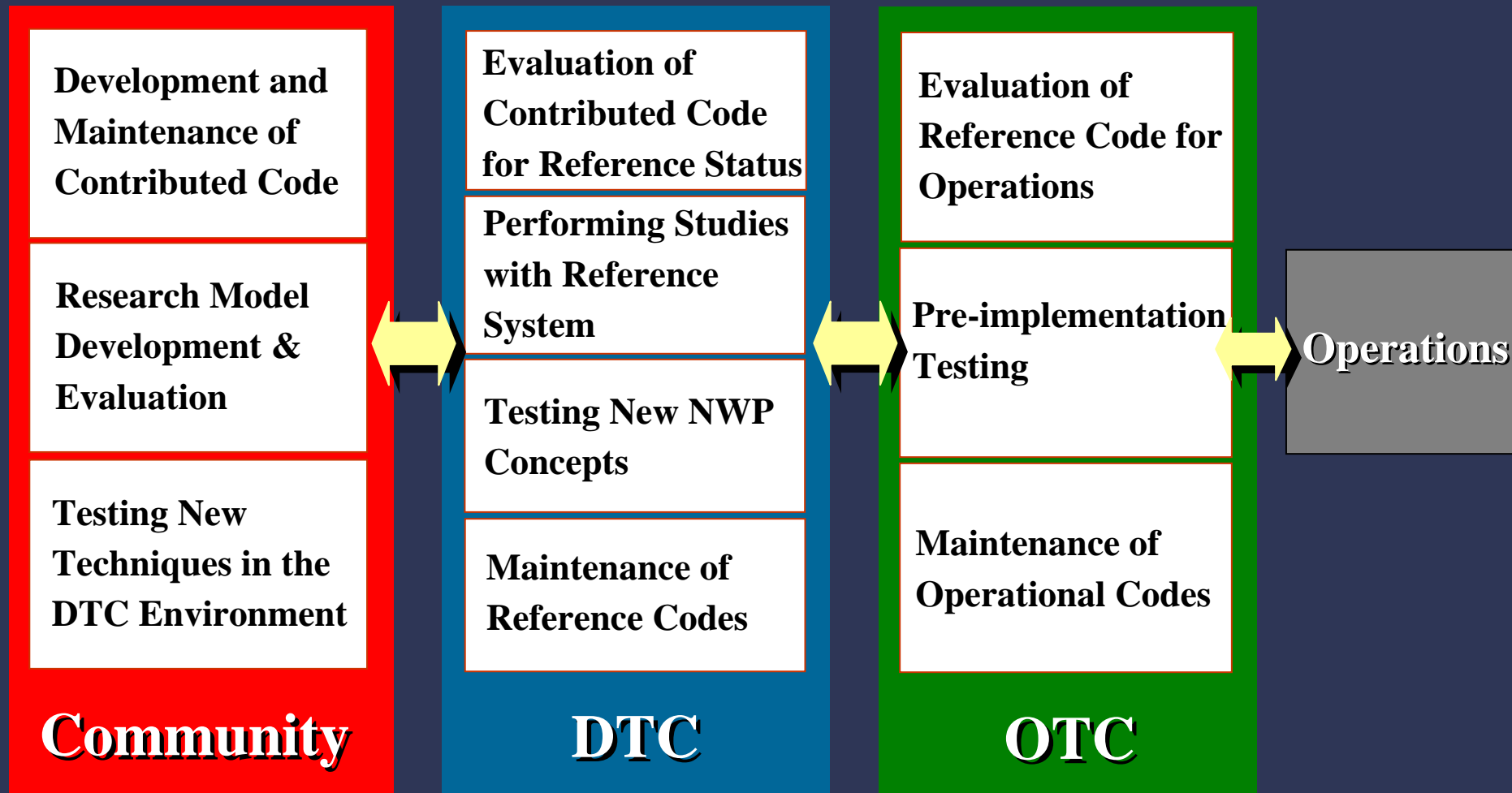
- Forecast/analysis benefits
- Efficiency requirements
- IT compatibility
- Sustainability assurance

Concept of Operations

Requirements

Criteria

Original DTC Concept



ExOB Meeting Objective #2:

What is appropriate scope of DTC?

Goal #2: Alleviate WRF process deficiency by...

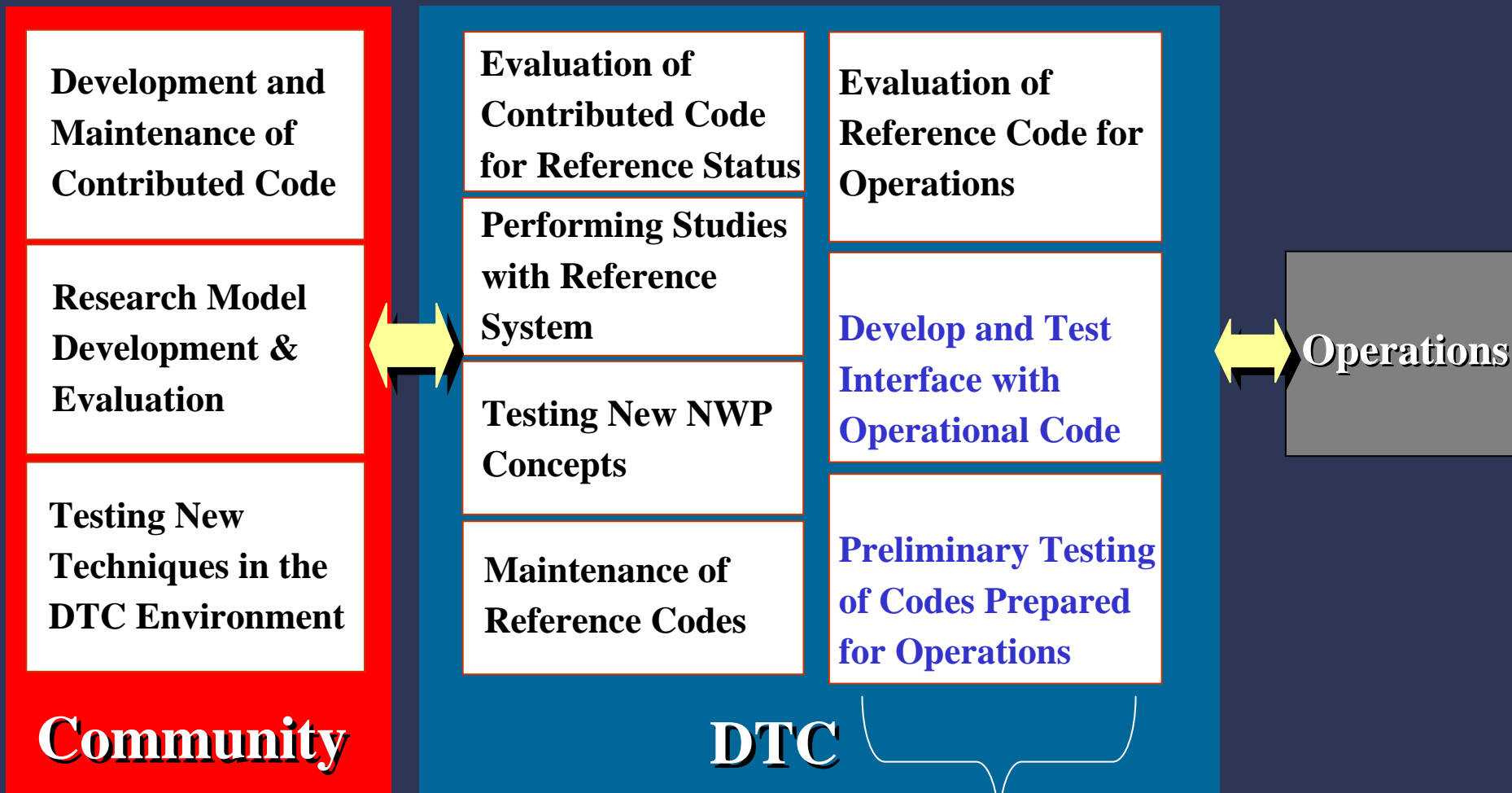
Defining appropriate scope of DTC in terms of

- > Services provided**
- > Required staffing**
- > Commensurate resource level**

Refer to Briefing #7, slide 4, for list of goals associated with ExOB meeting objectives.

Proposal for Goal 2: The New DTC Concept

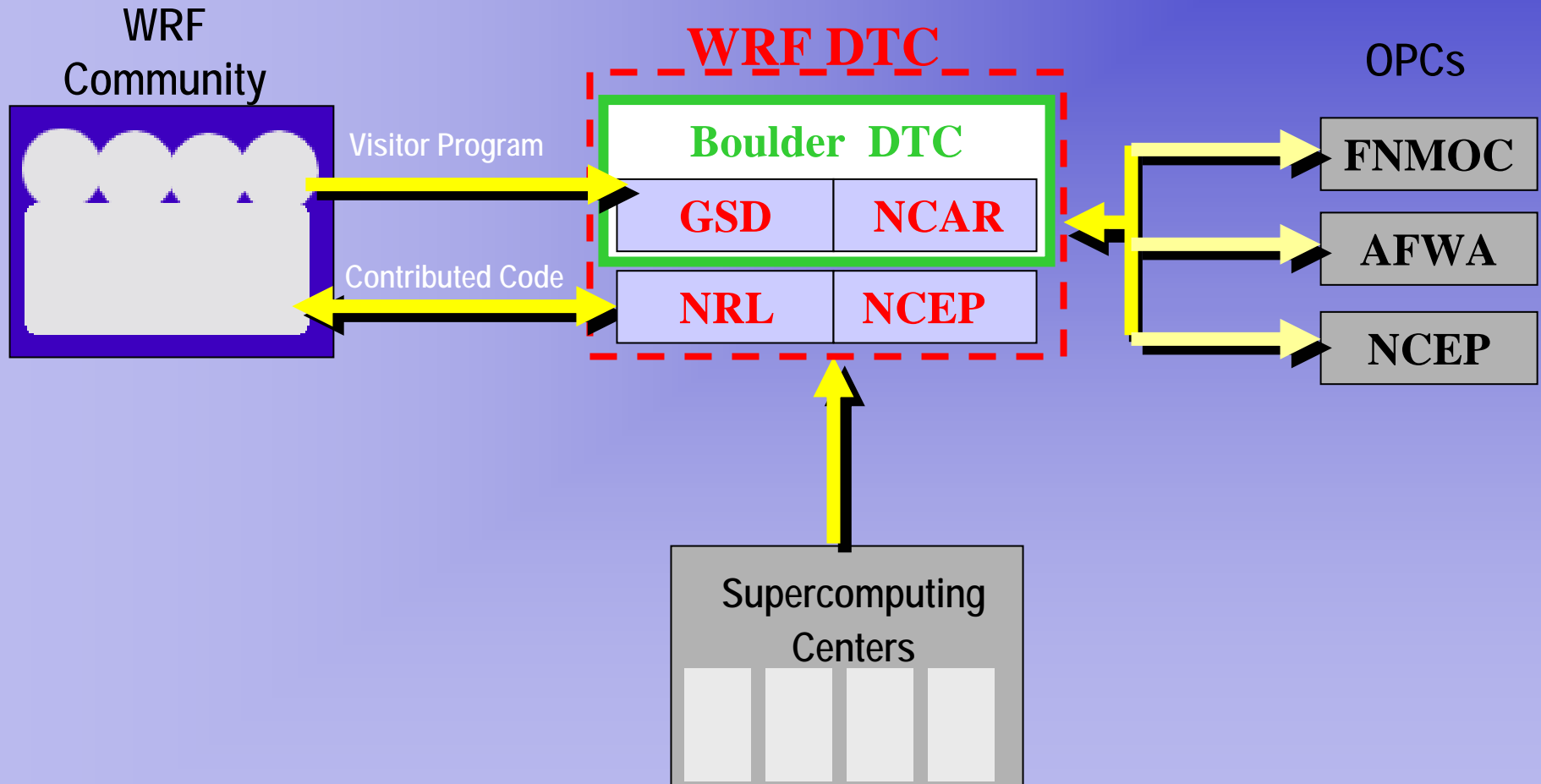
New Services Provided



See Steps 1-5, Slide 12

The DTC Architecture

Proposal for Goal 2: Add new DTC node at EMC to facilitate code transition activities



Proposal for Goal 2:

**Expand Staffing and
Commensurate Resource
Level in Specific Areas to
Provide Services under New
DTC Concept**

(see slide 19)

Initial DTC Staffing & Resource Requirements (per year cost in thousands)

	FTE	Burdened \$
Administration		
Director+Deputy Director	1.50	555.00
Administrative Assistant III	1.00	95.00
Travel		50.00
Office space (5,613 sq ft)		198.00
Journal Publications		15.00
Office supplies		2.00
Computer workstations at DTC		20.00
HW/SW maintenance on computers		10.00
WRF Web Page Support	0.25	40.00
subtotal	2.75	985.00
Test and Evaluation		
Testing & Evaluation of Cont/Ref code	2.00	402.00
Testing & Evaluation of Operational Code	2.00	402.00
Verification Development and Maintenance	2.00	402.00
Transition to Operations	2.00	410.00
subtotal	8.00	1616.00
WRF Support to the Community		
NMM Support/Documentation/Port	3.00	606.00
NAM	1.00	202.00
Hurricane WRF	1.00	202.00
Rapid Refresh	1.00	202.00
ARW Support/Documentation	1.00	202.00
Visitor Program Support	2.00	312.00
Data Flow and Archival	2.00	312.00
Ensemble Modeling and Postprocessing Support	1.00	207.00
Visiting Scientists Program		500.00
subtotal	9.00	2139.00
WRF Modeling System Support		
Software Version Control	0.50	80.00
CMI Software Support	1.00	200.00
NWP Science Support	1.00	200.00
Assimilation System Support	2.00	400.00
subtotal	4.50	880.00
TOTAL Costs	24.25	5620.00

Recommended ExOB Action

Response to Goal 2:

- **Adopt the proposed concept presented above for expanded scope of services provided by DTC and establishment of a new DTC node within EMC. (*see slides 16 and 17*)**
(responds to 2nd ExOB meeting objective)
- **Adopt the proposed staffing and commensurate resource level to provide the services contained in the new DTC concept (*see slide 19*)**
(responds to 2nd ExOB meeting objective and satisfies 6th capability of Goal 1, shown on slide 5 of brief #7)

End

Backup Slides

Final (FY12) DTC Staffing & Resource Requirements (per year cost in thousands)

	FTE	Cost
Administration		
Director+Deputy Director	2.00	700
Administrative Assistant III	1.00	95
Travel		50
Office space (5,613 sq ft)		198
Journal Publications		15
Office supplies		2
Computer workstations at DTC		20
HW/SW maintenance on computers		10
WRF Web Page Support	0.25	40
subtotal	3.25	1130
Test and Evaluation		
Testing & Evaluation of Cont/Ref code	3.00	603
Testing & Evaluation of Operational Code	3.00	603
Verification Development and Maintenance	2.00	402
Transition to Operations	2.00	410
subtotal	10.00	2018
WRF Support to the Community		
NMM Support/Documentation/Port	4.00	808
NAM	1.50	303
Hurricane WRF	1.00	202
Rapid Refresh	1.50	303
ARW Support/Documentation	2.00	404
Visitor Program Support	2.00	312
Data Flow and Archival	2.00	312
Ensemble Modeling and Postprocessing Support	1.00	207
Visiting Scientists Program		1000
subtotal	11.00	3043
WRF Modeling System Support		
Software Version Control	0.50	80
CMI Software Support	1.00	200
NWP Science Support	1.00	200
Assimilation System Support	2.00	400
subtotal	4.50	880
TOTAL Costs	28.75	7071

Proposed Growth of the DTC budget FY08-FY12

Administration												
Director+Deputy Director		1.50	555.00		2.00	700.00		2.00	700.00		2.00	700.00
Administrative Assistant III		1.00	95.00		1.00	95.00		1.00	95.00		1.00	95.00
Travel			50.00			50.00			50.00			50.00
Office space (5,613 sq ft)			198.00			198.00			198.00			198.00
Journal Publications			15.00			15.00			15.00			15.00
Office supplies			2.00			2.00			2.00			2.00
Computer workstations at DTC			20.00			20.00			20.00			20.00
HW/SW maintenance on computers			10.00			10.00			10.00			10.00
WRF Web Page Support		0.25	40.00		0.25	40.00		0.25	40.00		0.25	40.00
subtotal		2.75	985.00		3.25	1130.00		3.25	1130.00		3.25	1130.00
Test and Evaluation												
Testing & Evaluation of Cont/Ref code		2.00	402.00		2.00	402.00		3.00	603.00		3.00	603.00
Testing & Evaluation of Operatiional Code		2.00	402.00		2.00	402.00		3.00	603.00		3.00	603.00
Verification Development and Maintenance		2.00	402.00		2.00	402.00		2.00	402.00		2.00	402.00
Transition to Operations		2.00	410.00		2.00	410.00		2.00	410.00		2.00	410.00
subtotal		8.00	1616.00		8.00	1616.00		10.00	2018.00		10.00	2018.00
WRF Support to the Community												
NMM Support/Documentation/Port		3.00	606.00		3.00	606.00		3.50	707.00		4.00	808.00
NAM		1.00	202.00		1.00	202.00		1.50	303.00		1.50	303.00
Hurricane WRF		1.00	202.00		1.00	202.00		1.00	202.00		1.00	202.00
Rapid Refresh		1.00	202.00		1.00	202.00		1.00	202.00		1.50	303.00
ARW Support/Documentation		1.00	202.00		1.00	202.00		2.00	404.00		2.00	404.00
Visitor Program Support		2.00	312.00		2.00	312.00		2.00	312.00		2.00	312.00
Data Flow and Archival		2.00	312.00		2.00	312.00		2.00	312.00		2.00	312.00
Ensemble Modeling and Postprocessing Support		1.00	207.00		1.00	207.00		1.00	207.00		1.00	207.00
Visiting Scientists Program			500.00			500.00			1000.00			1000.00
subtotal		9.00	2139.00		9.00	2139.00		10.50	2942.00		11.00	3043.00
WRF Modeling System Support												
Software Version Control		0.50	80.00		0.50	80.00		0.50	80.00		0.50	80.00
CMI Software Support		1.00	200.00		1.00	200.00		1.00	200.00		1.00	200.00
NWP Science Support		1.00	200.00		1.00	200.00		1.00	200.00		1.00	200.00
Assimilation System Support		2.00	400.00		2.00	400.00		2.00	400.00		2.00	400.00
subtotal		4.50	880.00		4.50	880.00		4.50	880.00		4.50	880.00
TOTAL Costs		24.25	5620.00		24.75	5765.00		28.25	6970.00		28.75	7071.00