

1. Agenda: WRF ExOB Meeting 3

13 April 2005

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| 1. | Welcoming Remarks and Introduction (E. Hartwig, NRL/DC) | 11:00 – 11:10 am |
| 2. | Overview – WRF Program Status (N. Seaman, PC) | 11:10 – 11:45 am |
| 3. | Review Status of Action Items from Meeting 2 (N. Seaman, PC) | 11:45 am – 12:10 pm |
| | BREAK | 12:10 – 12:30 pm |
| 4. | Working Lunch: DTC briefing; Annual Operating Plan (R. Gall, DTC) | 12:30 – 1:15 pm |
| 5. | Army Research Lab. – Introduction and Prospective Contributions to WRF
(Pamela Clark, ARL) | 1:15 – 1:45 pm |
| 6. | WRF - ESMF Integration: Strategies and Discussion (N. Seaman, PC) | 1:45 – 2:30 pm |
| 7. | WRF Five-Year Plan – Development and Status (N. Seaman, PC) | 2:30 – 3:00 pm |
| | BREAK | 3:00 – 3:15 pm |
| 8. | Executive Session (AIP changes, WRAB nominations, DTC TOR,
ESMF impacts) | 3:15 – 4:30 pm |
| 9. | Adjourn | 4:30 pm |

Recent Key Accomplishments of the WRF Collaboration

- **Implemented first operational WRF models – 21 Sept 2004**
 - **NCEP running both WRF cores daily in its Hi-Res. Window domains**
- **Created distributed WRF Development Testbed Center**
- **Created DoD Operational Testbed Center**
- **Conducted real-time WRF winter forecast experiment at DTC-Boulder**
 - **5-km CONUS domain, 2 cores**
 - **Major collaborative effort by NCAR, FSL, AFWA and NCEP**
- **Developed strong WRF-DTC working relationship with NCEP**
 - **Transition projects undertaken at request of NCEP/EMC**
- **Established WRF as basis for stronger collaboration among U.S. OPCs**
 - **Concept of Operations signed (April '05)**
 - **WRF Joint Implementation Plan for North America**
 - **WRF Joint Ensemble Prediction System**

Previous Key Accomplishments of the WRF Collaboration

- **Rapid expansion of WRF user community**
 - Over 2000 registered users worldwide by June 2004
- **Rapid expansion of WRF research and training opportunities**
 - 173 scientists attend 2004 NCAR's WRF Users Workshop
 - 335 cumulative attendees of NCAR's WRF-ARW tutorials by 2004
- **Extensive WRF retrospective testing at Boulder DTC**
 - 2000 runs, all seasons, multiple domains and configurations
 - Collaborative effort by NCAR, NCEP, FSL, AFWA and NAVO
- **WRF real-time testing conducted at NOAA's Storm Prediction Center**
 - Forecaster evaluations over past 3 Spring seasons
 - Over 80 participants from U.S., Canada and Finland ('03 & '04)
- **Nearly two years of real-time testing with two cores at NCEP's EMC**
- **Several physics codes from international community interoperable in WRF**

Important Phase 1 Tasks Remain

- **Phase 1 Strategy**: “**Develop and implement** WRF as the next-generation mesoscale NWP modeling system, infrastructure and process to...
 - **Activate inter-organizational collaborations between research and operations.**
 - **Streamline the transfer of new science into research and operations.”**

- **Extend community user support to both WRF cores**
- **Expand opportunities for academic community involvement**
- **Implement WRF into operations at AFWA**
- **Evolve COAMPS to WRF-based version at NRL & FNMOC**
- **Establish/implement WRF coding and documentation standards**
- **Complete/implement WRF 5-Year Plan**
- **Develop plans for Phases 2 and 3 of WRF program**

Phases 2 and 3 – New Beginnings

- **Phase 2 Strategy**: “Use the WRF process and infrastructure to **sustain** the flow of new science and technology into the WRF modeling system to improve operations and to open new research opportunities.”

First steps...

- Build “2nd-generation” WRF codes to simplify user applications
 - > Streamlined WRF infrastructure, WRF SI, others
- Establish comprehensive user support through DTC

- **Phase 3 Strategy**: “**Extend** WRF collaboration into other modeling areas of mutual interest—e.g., Ocean modeling, Global modeling, Diagnostic and Statistical post-processing.”

First steps...

- Develop and implement roadmap to merge WRF and ESMF
- Develop and test WRF-based global-to-regional modeling systems

What WRF ExOB actions are requested?

1. Army Research Lab request to become WRF signatory agency
 - Modification of WRF Agreement in Principle
2. Approval of nominations to WRF Research Applications Board
3. Approval of DTC TOR, and forwarding for signatures

Backup slides

WRF Vision

WRF is...

an inter-organizational partnership to create and sustain...

- The **next-generation mesoscale NWP modeling system** for research and operations
- A **common modeling infrastructure** that facilitates operational NWP collaboration, scientific “interoperability” and accelerates the transfer of new science from research into operations
- A **repeatable process** that continuously infuses innovations and capabilities into the community mesoscale NWP modeling system

WRF Three-phase Strategy

- **Phase 1**: **Develop and implement** WRF as the next-generation mesoscale NWP modeling system, infrastructure and process...
 - To activate inter-organizational collaborations between research and operations
 - To streamline the transfer of new science into both research and operations
- **Phase 2**: Use the WRF process and infrastructure to **sustain** the flow of new science and technology into the WRF modeling system to improve operations and to open new research opportunities
- **Phase 3**: **Extend** the WRF collaboration into other modeling areas of mutual interest—e.g., Ocean modeling, Global modeling, Diagnostic and Statistical post-processing