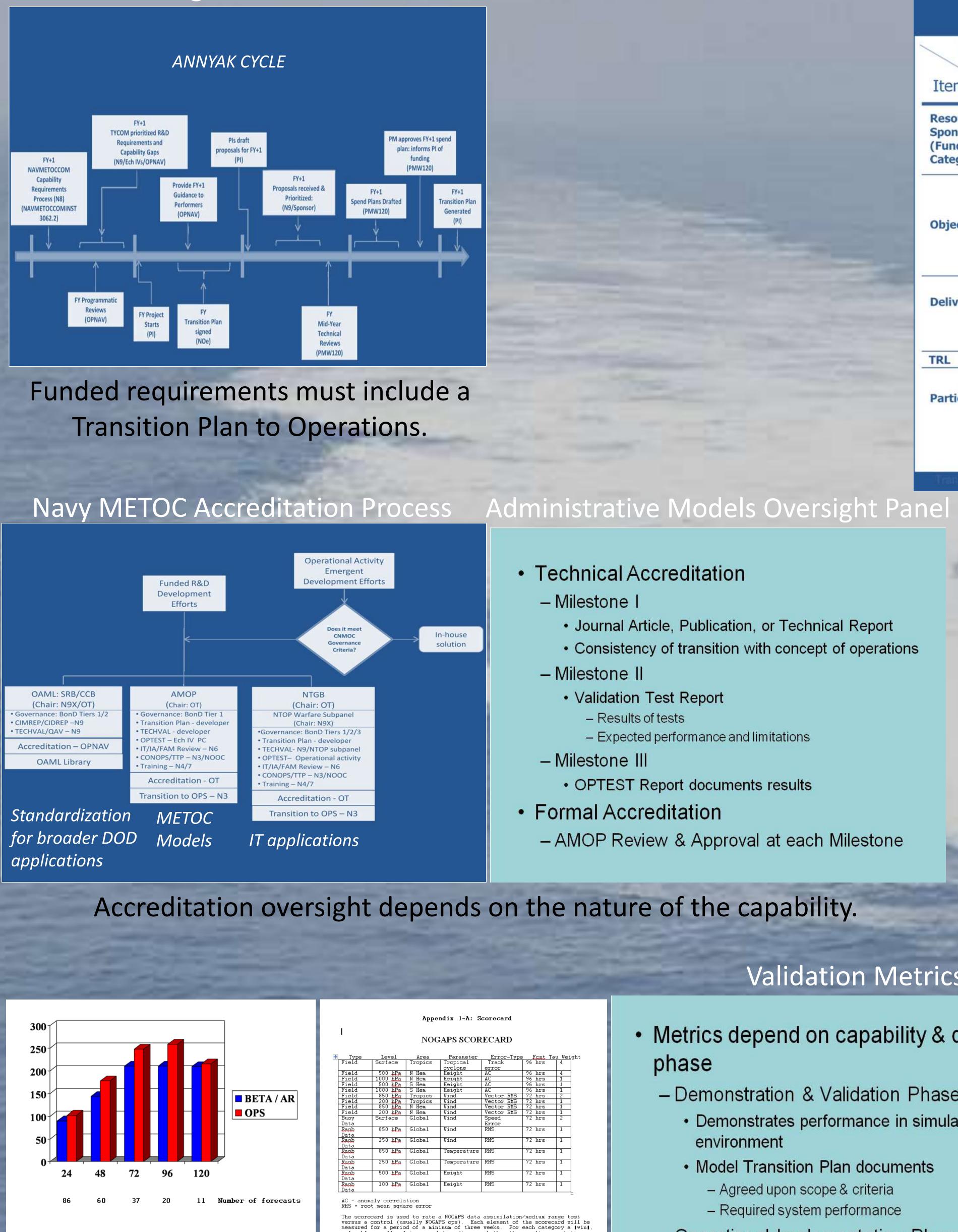


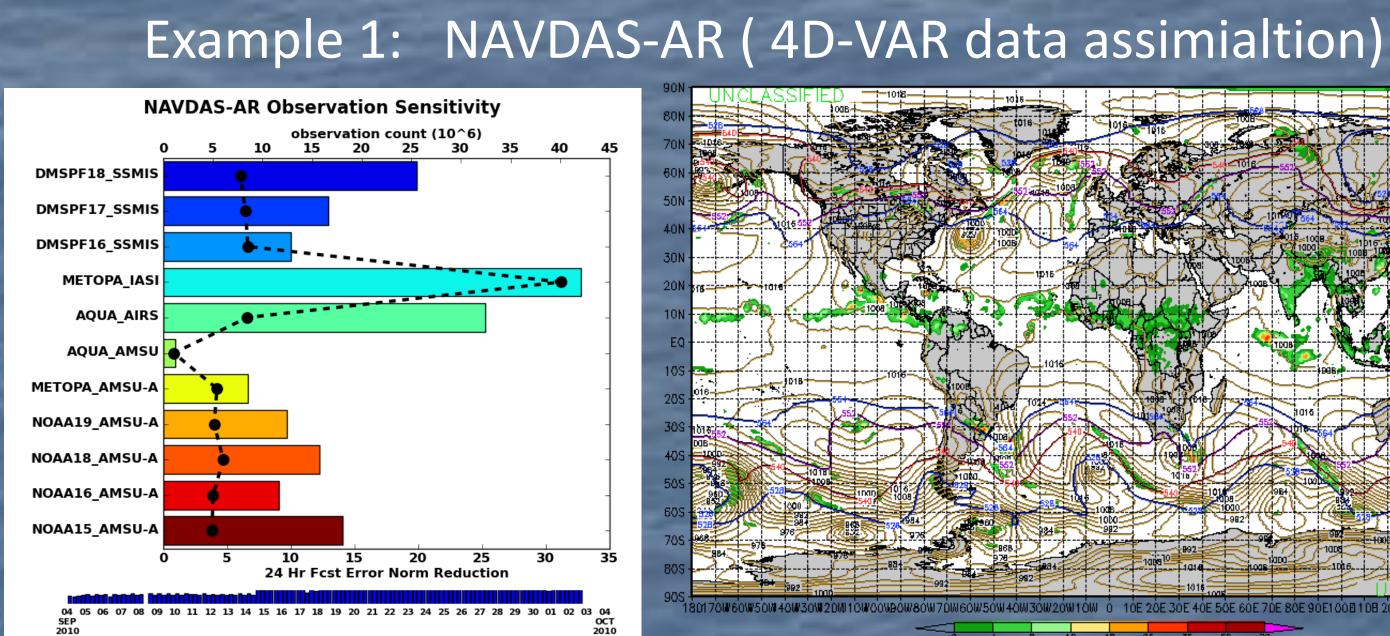
Navy METOC Requirements Management Process



Tropical cyclone track error (in nautical miles) vs tau for NAVDAS-AR (BETA) and NAVDAS (OPS). This a comparison with the number of forecast cases for eac

Metrics are chosen and weighted based on operational impacts.

Trop Tropics (20 S to 20 N U/V Vector Wind Z Geopotential Height



VT: Tue 12Z 21 SEP 10 FNMOC NOGAPS (U): SLP[hPa]/540,528 thk 564,552 thk Line/Prev 6hr Prop Rate [mm/6hr]

Run: 2010091612Z Tau: 120

a [push] or a [loss] is scored depending on whether the results were better than, neutral, or worse than the control and a weight is also assigned. F

the opposite is true, i.e. the control is significantly better, a negative score is assigned. The total score is the sum of all categories with a maximum of 24 points at stake. An aggregate score of 11 or better is considered to be a neutral (or better) overall result and is required to promote a major model

atistically higher with a confidence level of 95 percen

Operational Model Transition Process at FNMOC Charles E. Skupniewicz Mark Swenson

Fleet Numerical Meteorology and Oceanography Center, Monterey, California, USA

Navy METOC Technology Transit		
Phase Item	Applied Research /Technology Development	Demonstration/ Validation
Resource Sponsor (Funding	ONR/NRL/Other (6.1/6.2 S&T)	OPNAV or Other Agent (6.4 RDT&E)
Category)	Rapid Transition Process	
Objective	 Initial Development Through Proof-Of- Concept Requirements review 	Technical Validation Developer control • Demonstration (Incl Pseudo Ops Implementation)
Deliverables	 Journal, Publication or Technical Report Draft Transition Plan 	 Source or Executable Code Transition Plan Validation Test Report Preliminary DOD-STD Documentation (SDD&UG) Upgrades/Enhancements Plan
TRL	2-3	4-6
Participants	 ONR PIs NRL Developer Other Navy and Non-Navy S&T 	 NAVMETOCCOM Go Transition Agent Tech Validation Panel Chair: Developer Technical Developer

Technical Accreditation

- Journal Article, Publication, or Technical Report Consistency of transition with concept of operations
- Validation Test Report - Results of tests
- Expected performance and limitations

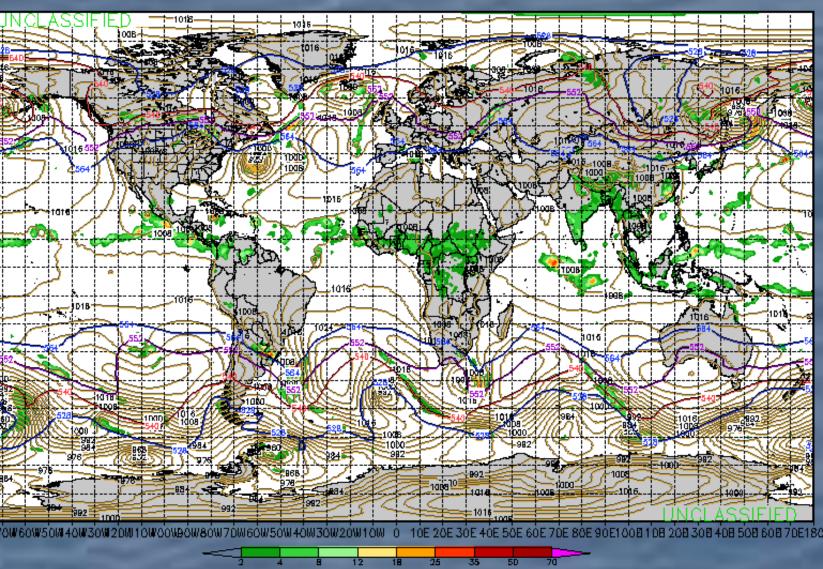
- OPTEST Report documents results
- AMOP Review & Approval at each Milestone

Validation Metrics

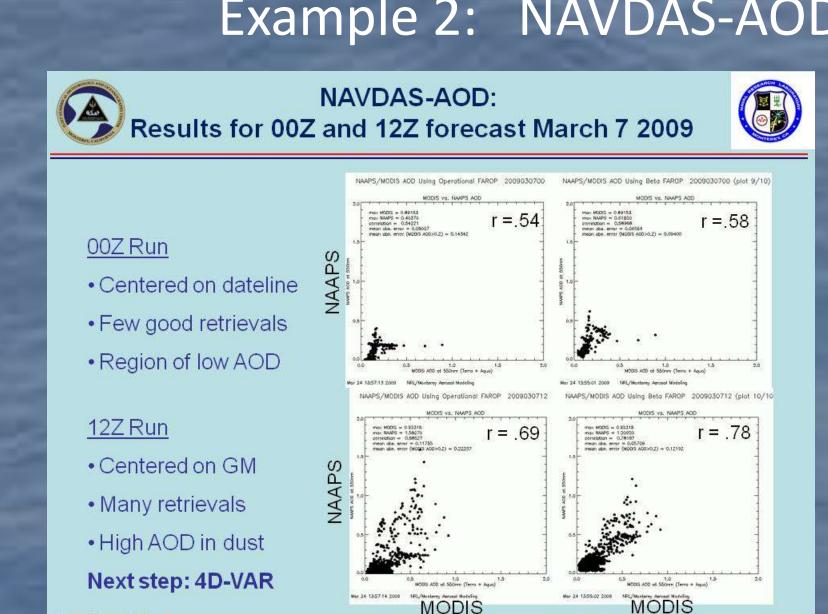
- Metrics depend on capability & development phase
- Demonstration & Validation Phase
 - Demonstrates performance in simulated OPS environment
 - Model Transition Plan documents - Agreed upon scope & criteria - Required system performance
- Operational Implementation Phase
- Verifies value of new capability
- Implementation Panel develops scorecard for tests

leet Numerical....





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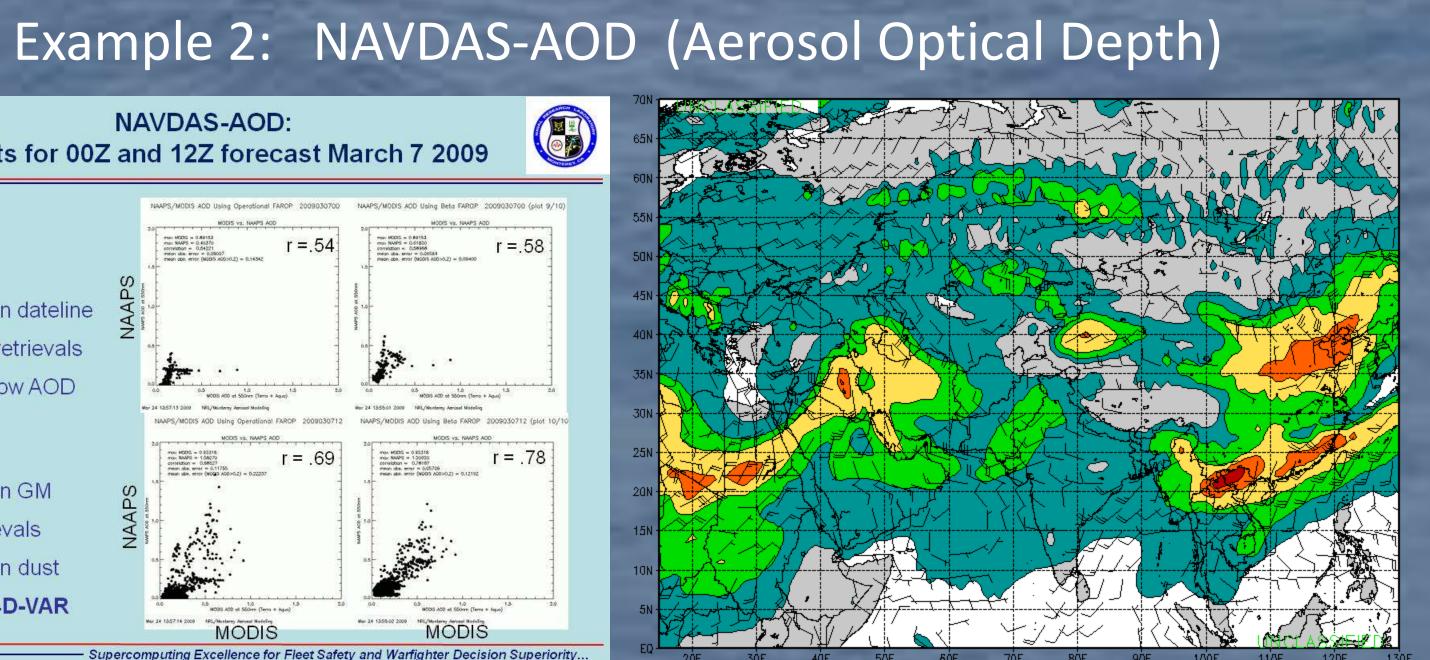


Supercomputing Excellence for Fleet Safety and Warfighter Decision Superiority...

ition Process Operational Operations Implementation CNMOC (O&M,N) **OPNAV** or Other Agent (6.4 RDT&E) CNMOC (OPN, O&M, N) Full Integration Operation & Maintenance Ops control Life-Cycle Support - OPCHECK - OPTEST Technical Support & "Warranty" Service Final DOD-STD Maintainance and Documentation Fixes OPTEST Report 7-9 vernance Panel' NAVO/FNMOC Configuration Implementation Panel **Control Boards** (IP) Chair: Production Technical Develope

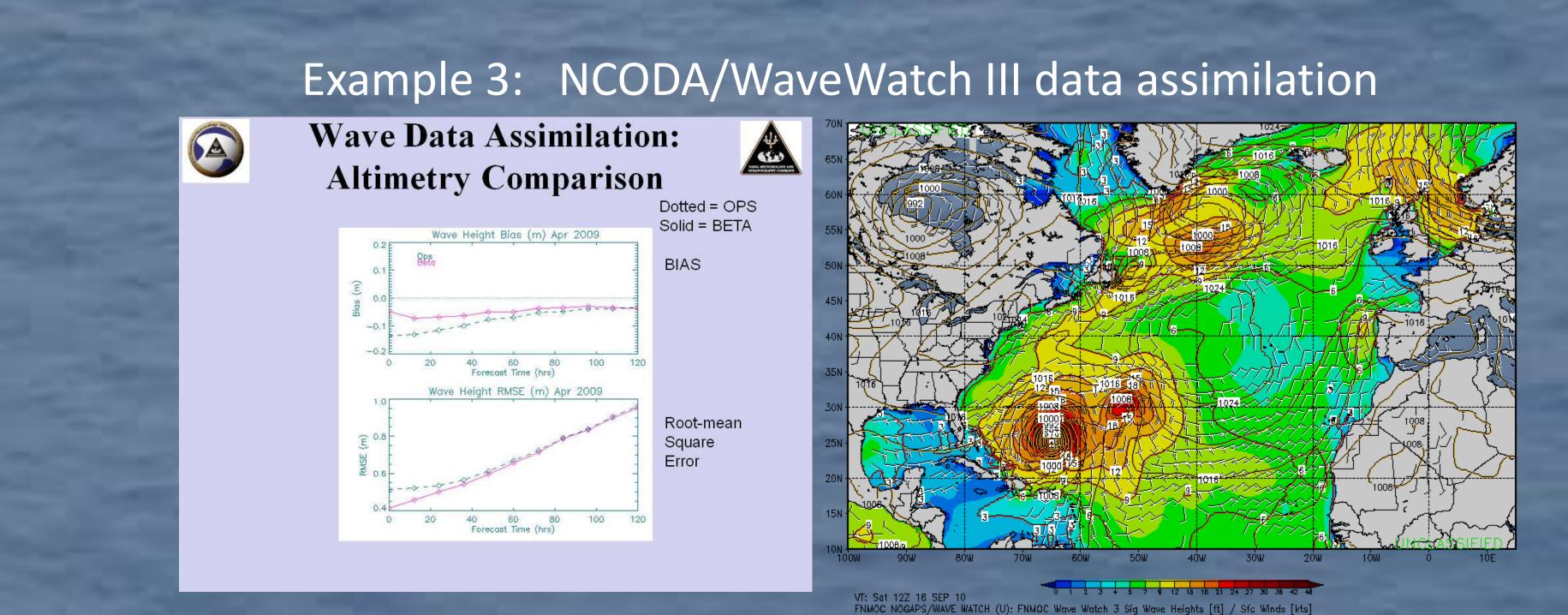
FNMOC Challenges

- Complicated computational environment that encompasses
- Data collection
- Data assembly
- Data assimilation
- Forecasting
- Post-processing
- Dissemination
- Must comply with Information Assurance standards of Department of Defense



VT: Mon 06Z 12 APR 10

VT: Mon 06Z 12 APR 10 FNMOC FAROP (U): Aerosol Optical Depth and 925mb winds [kts] 060 HR FCST

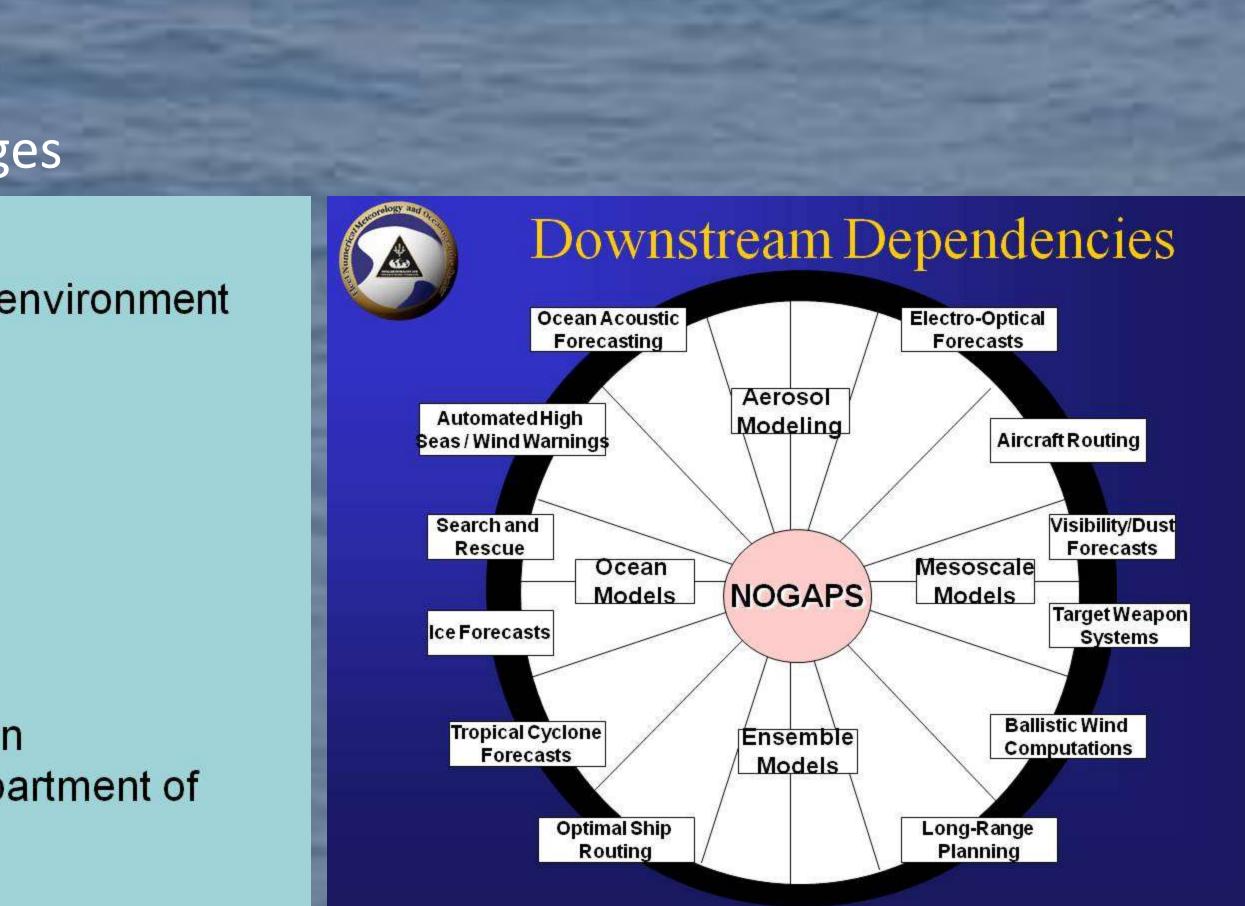


First Conference on Transition of Research to Operations: Successes, Plans and Challenges

Best Practices

- Responsibility for each transition clearly assigned
- Testing of changes takes place in parallel to operations
- Operations should not be disrupted
- Testing on systems configured similar to the targeted environment
- Continuous, strong interaction between R&D and operations
- Feasibility must be demonstrated through the entire operational process. Considerations include:
- Networks, Routers, and Communications circuits
- Database Servers
- Reliability and Operational protocols
- Disc, I/O, and CPU resources
- Load Leveling
- Strong interface with customers to inform considerations for dissemination, use, & impact of new products

Providing R&D access to FNMOC systems shortens schedule and reduces costs.



Input and Output interfaces must work for both R&D and Operations.

Run: 2010091612Z Tau: 48

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