

NOAA

**National
Weather
Service**

NOAA-NCAR Infrastructure MoA






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Background (NCAR 1)

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- NCAR STRATEGIC PLAN 2014 – 2019:
 - A cornerstone of the research strategy over the next decade will be the pursuit of a more unified modeling approach for both physical processes and model dynamics. Implicit in this effort is more common infrastructure that can be shared across NCAR and the community
 - January 9 2017 : Workshop on the Future of Global Atmospheric Modeling at NCAR
 - Actionable Conclusion: we should work toward a common infrastructure



Background (NCAR 2)

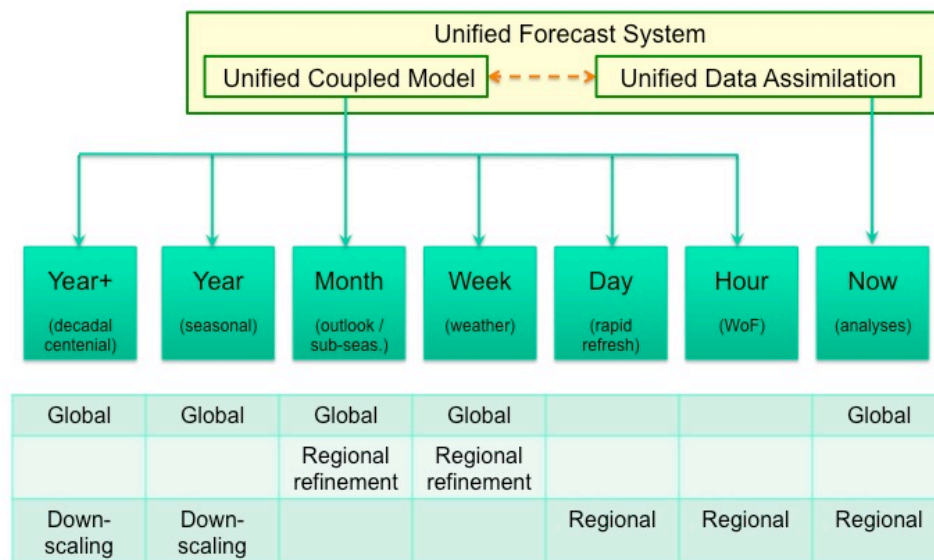


- July 28 2017 : NOAA/NCAR LOI (signed)
 - More in following slides
- January 30 2018: award of NCAR re-investment funds targeted towards an interoperable physics framework
 - CCPP collaboration in parallel to MoA development



Background (NOAA 1)

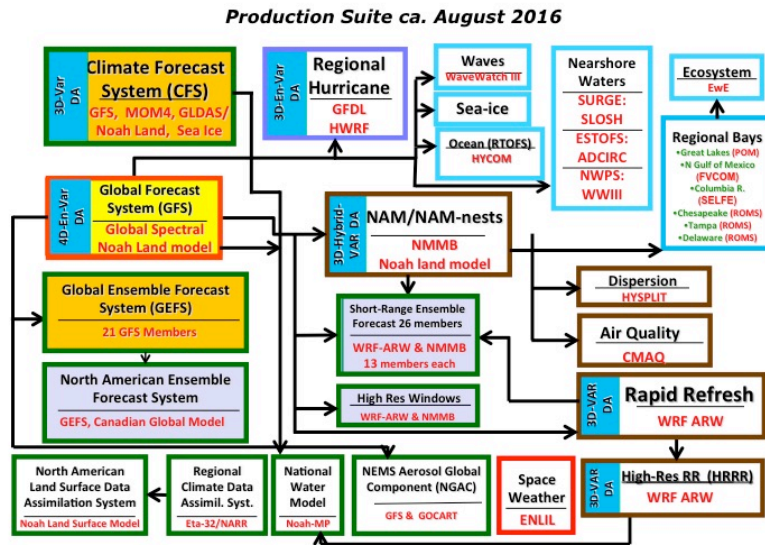
- UCACN and UMAC review: plan, simplify and unify!
 - Resulted in Strategic Vision for NOAA modeling enterprise



Unified Forecast System =
Coupled Ensemble
+ Reanalysis + Reforecast

NOAA Production Suite

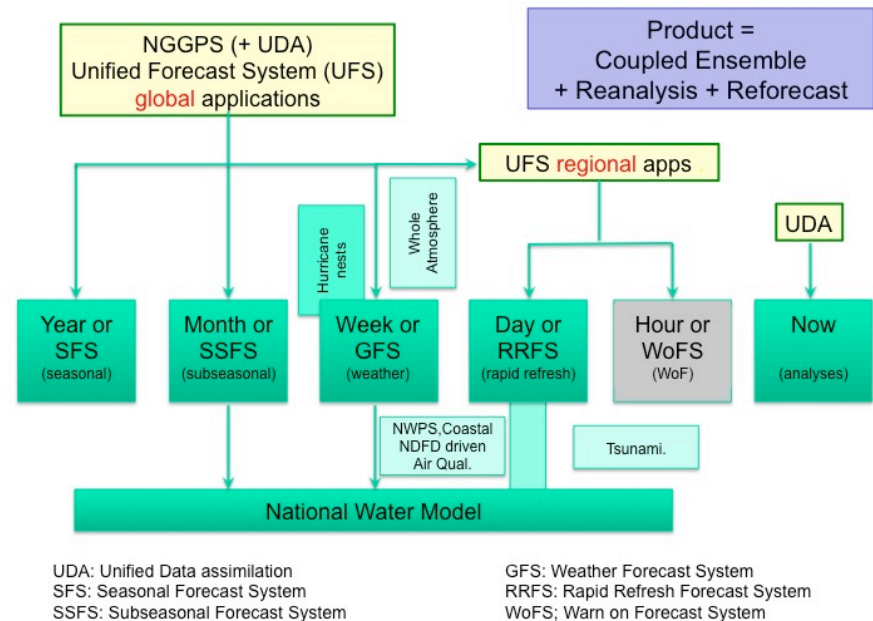
Roadmap Fig. 1



Courtesy Bill Lapenta

Starting from the quilt of models and products created by the implementing solutions rather than addressing requirements

... we will move to a product based system that covers all present elements of the productions suite in a more systematic and efficient way



Roadmap Fig. 2

MoA background

- Team for writing MoA formed in Nov. 2017
 - Full draft agreed upon in April 2018
 - Legal review completed Nov. 2018
 - Partially signed

Hendrik Tolman (lead)	NOAA / NWS / Office of Science and Technology Integration
Fred Toepfer	NOAA / NWS / Office of Science and Technology Integration
Brian Gross	NOAA / NWS / Environmental Modeling Center
Kevin Kelleher	NOAA / OAR / Earth Systems Research Laboratory
Whit Anderson	NOAA / OAR / Geophysical Fluid Dynamics Laboratory
Bill Large	NCAR / Climate and Global Dynamics Laboratory
Mariana Vertenstein	NCAR / Climate and Global Dynamics Laboratory
Chris Davis	NCAR / Mesoscale and Microscale Meteorology Laboratory
Louisa Nance	NCAR / Research Applications Laboratory






MoA background

- Letter of Intent for collaboration between NCAR, NWS and OAR signed July 28, 2017
 - “to develop a Memorandum of Agreement (MOA) that will describe how both organizations will work collaboratively toward the design and construction of a community **unified modeling infrastructure**. “
 - Identified benefits include
 - Synergies
 - Common repositories
 - Access to NOAA operational models

Does not include component models of coupled systems








MoA areas of infrastructure

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- 1) **NEMS / CMEPS** unification for inter-component coupling
 - 2) **CCPP / CPF** unification for intra-component coupling
 - 3) **CIME – CROW** unification for common workflow development
 - 4) Unified testing to assure code is robust and performs as expected
 - 5) Unified model validation through **MET** development and expansion to application for fully coupled systems
 - 6) **Github** based repositories for all infrastructure
 - 7) Modeling support; leveraging, creating if necessary, or adapting support capabilities at e.g. **NCAR** and **DTC**



MoA additional

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- Additional principles
 - No (new) exchange of funding planned, leveraging existing funding of all parties
 - Building upon existing governance, expanding governance per component as needed
 - Five year life cycle, with option to renew
 - Signatories
 - Directors of NCAR and UCAR
 - AAs of NWS and OAR



Thank You

