

Adapted from presentation to CESM board members June 2018,  
co-authored by Bill Large (NCAR)

# NCAR – NWS - OAR Infrastructure MoA

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# Background (NCAR 1)

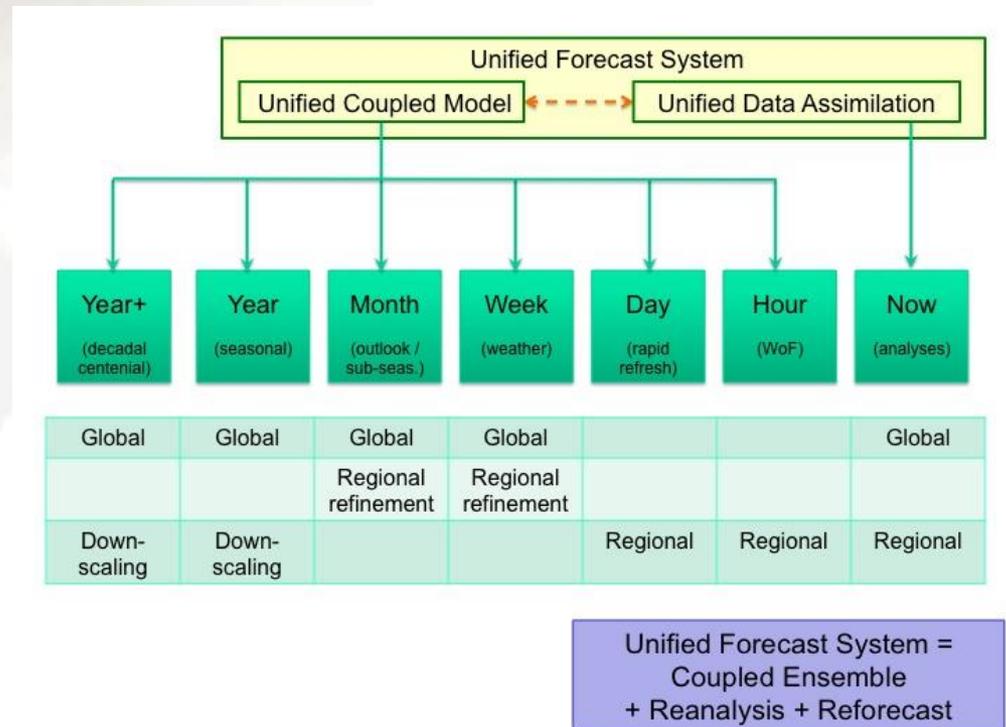
- NCAR STRATEGIC PLAN 2014 – 2019:
  - A cornerstone of the research strategy over the next decade will be the pursuit of a more unified modeling approach for both physical processes and model dynamics. Implicit in this effort is more common infrastructure that can be shared across NCAR and the community
- 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

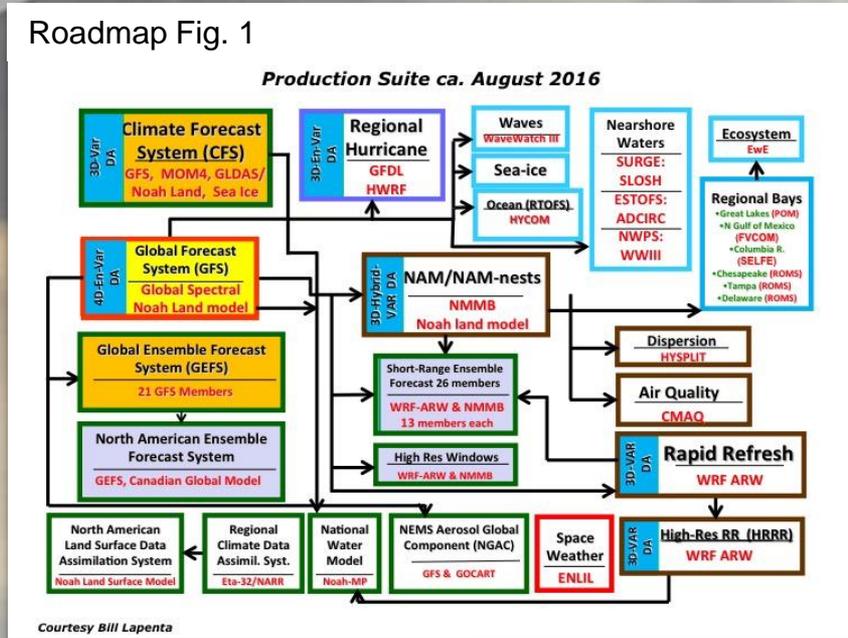
# Background (NOAA 1)

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



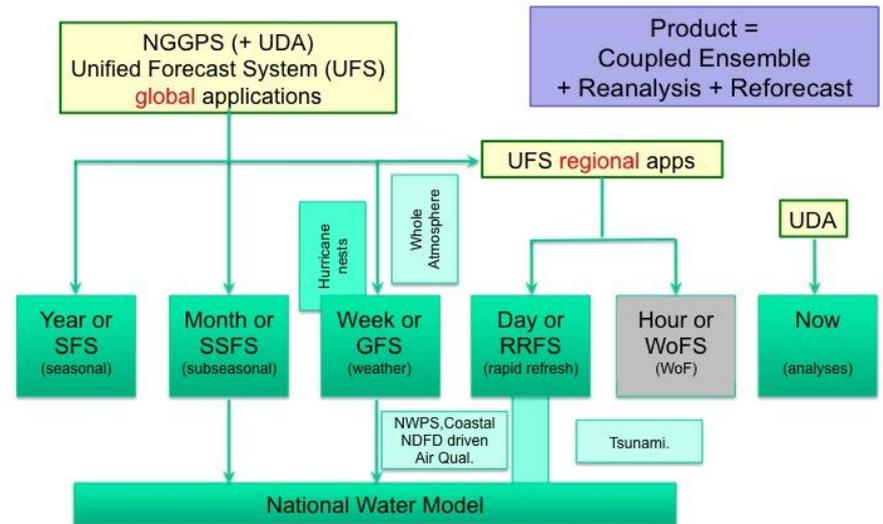
# NOAA Production Suite

Roadmap Fig. 1



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

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



UDA: Unified Data assimilation  
SFS: Seasonal Forecast System  
SSFS: Subseasonal Forecast System

GFS: Weather Forecast System  
RRFS: Rapid Refresh Forecast System  
WoFS; Warn on Forecast System

Roadmap Fig. 2



# MoA background

x Team for writing MoA formed in Nov. 2017

- Full draft agreed upon in April 2018
- Legal review completed Nov. 2018
- Signed by all parties, Jan. 2019

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

x 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

- 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

## x 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
  - Dr. Antonio Busalacchi, Director UCAR
  - Dr. Vanda Grubišić, Interim Dir. NCAR
  - Dr. Louis Uccellini, Director NWS
  - Mr. Craig MacLean, AA OAR

 Date: 4/5/18  
Dr. Antonio J. Busalacchi, President, UCAR

 Date: 10/31/18  
Dr. Vanda Grubišić, Interim Director, NCAR

FOR NOAA

 Date: 12/20/18  
Dr. Louis W. Uccellini, Assistant Administrator for Weather Services NOAA, and  
Director, National Weather Service

 Date: 1/30/19 am  
Mr. Craig MacLean, Assistant Administrator, NOAA Oceanic and Atmospheric Research

# MoA Next Steps

## x Formal technical POCs on MoA

- Hendrik Tolman (NWS, OSTI)
- DaNa Carlis (OAR, OWAQ)
- Chris Davis (NCAR, MMM)
- Jean-François Lamarque (NCAR, CGDL)

x The POCs are developing a “light” annual management cycle focusing on gaps in governance and alignment of resources

# MoA Next Steps

## x Progress so far

- Setting up time line of interactions between funding managers across organizations
  - Nearly complete, bi-annual interactions?
- Looking into management of seven areas
  - Use governance where exist
  - Only build where needed
  - Under way
- Comprehensive mapping of all NWS and OAR funding into SIP and MoA projects
  - Nearing completion

Thank You