Unidata Policy Meeting

Key Program Status

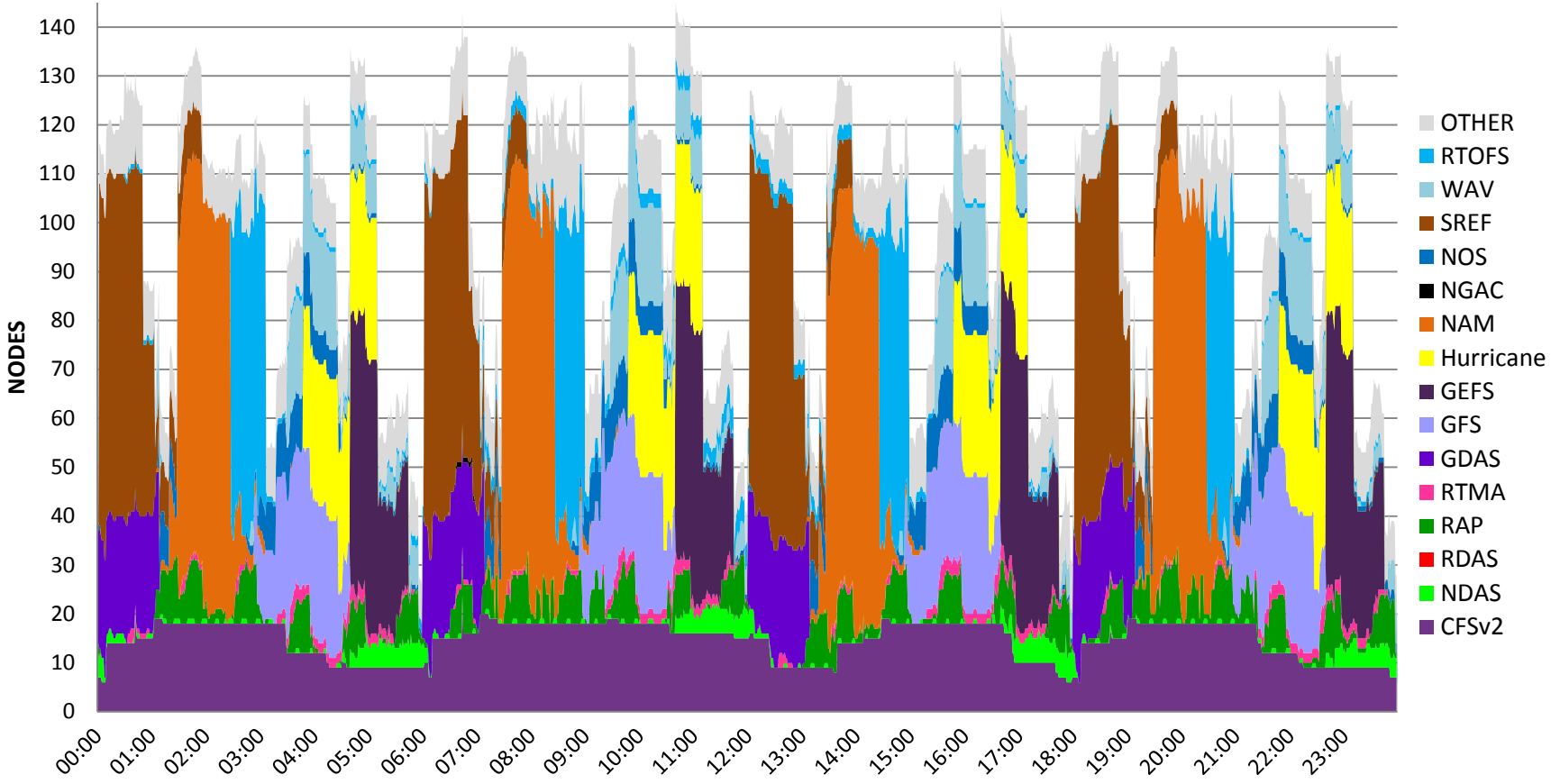
May 14, 2013

"Where America's Climate, Weather, Ocean and Space Weather Services Begin"

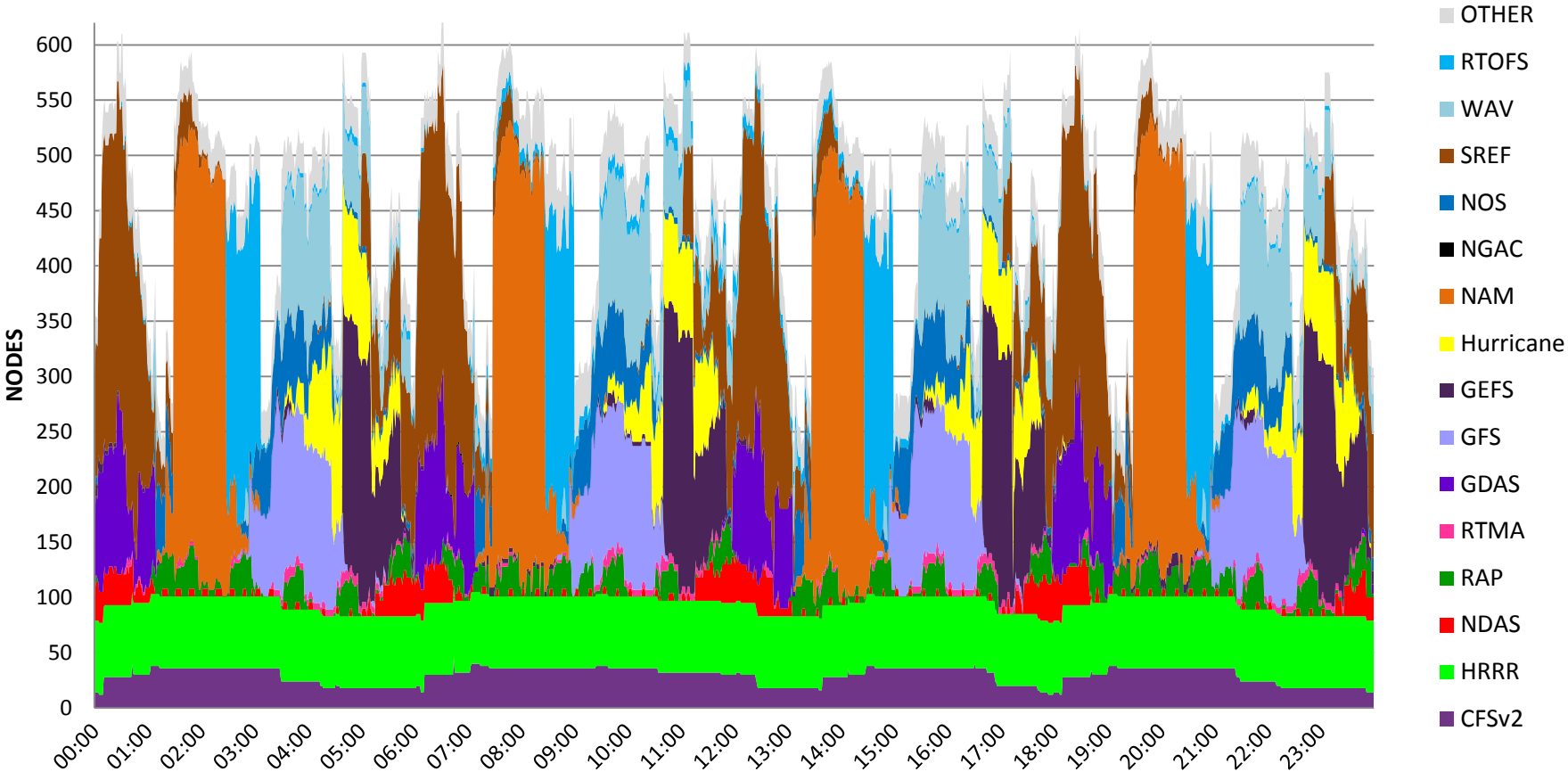
Agenda

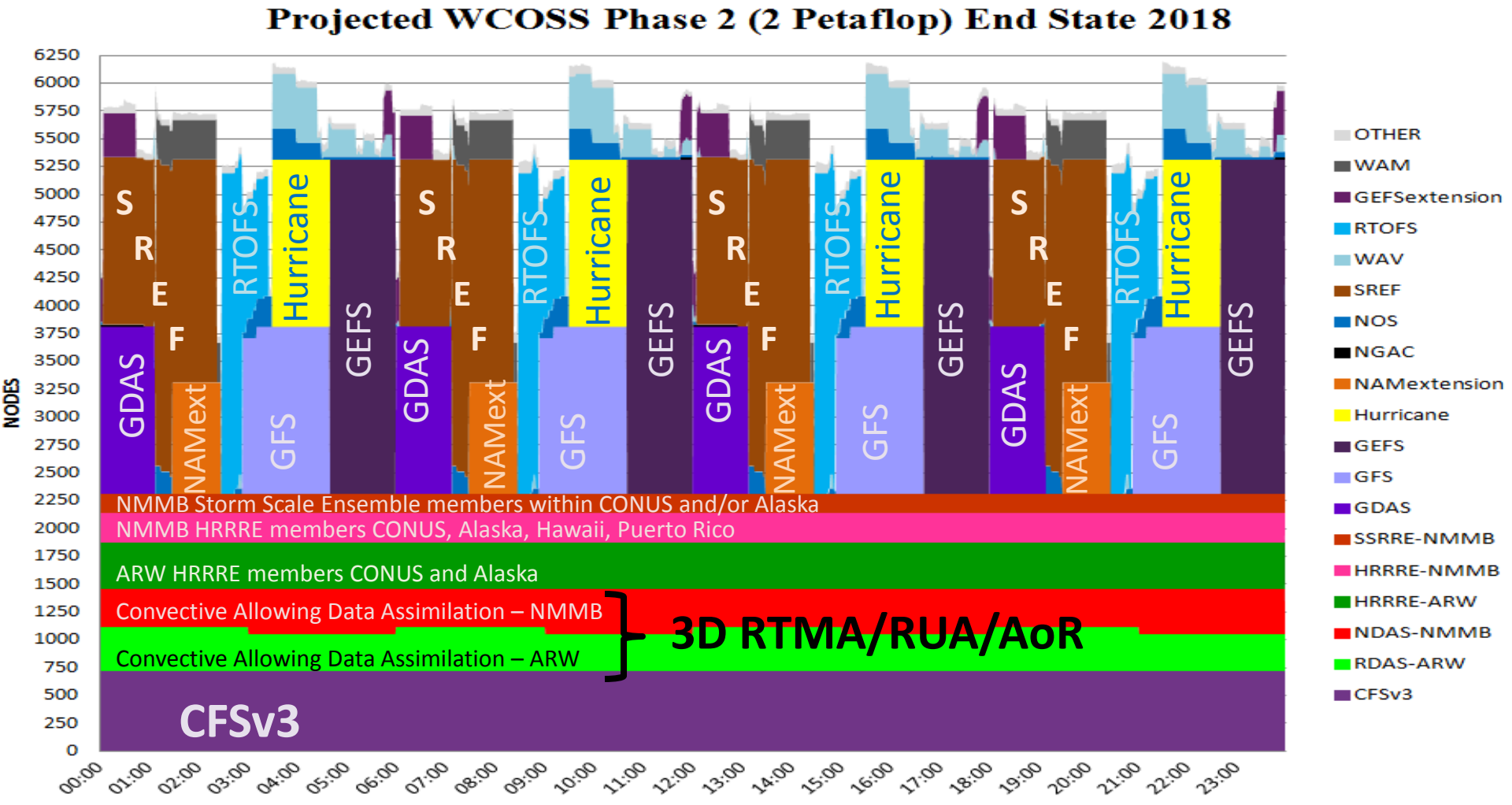
- **Sandy Supplemental**
- **Integrated Dissemination Program**
- **AWIPS2**

CCS (80 Teraflop) Current State 2013



Projected WCOSS Phase 1 (200 Teraflop) End State 2015




Projected WCOSS Phase 2 (2 Petaflop) End State 2018
NODES
6250
6000
5750
5500
5250
5000
4750
4500
4250
4000
3750
3500
3250
3000
2750
2500
2250
2000
1750
1500
1250
1000
750
500
250
0
00:00
01:00
02:00
03:00
04:00
05:00
06:00
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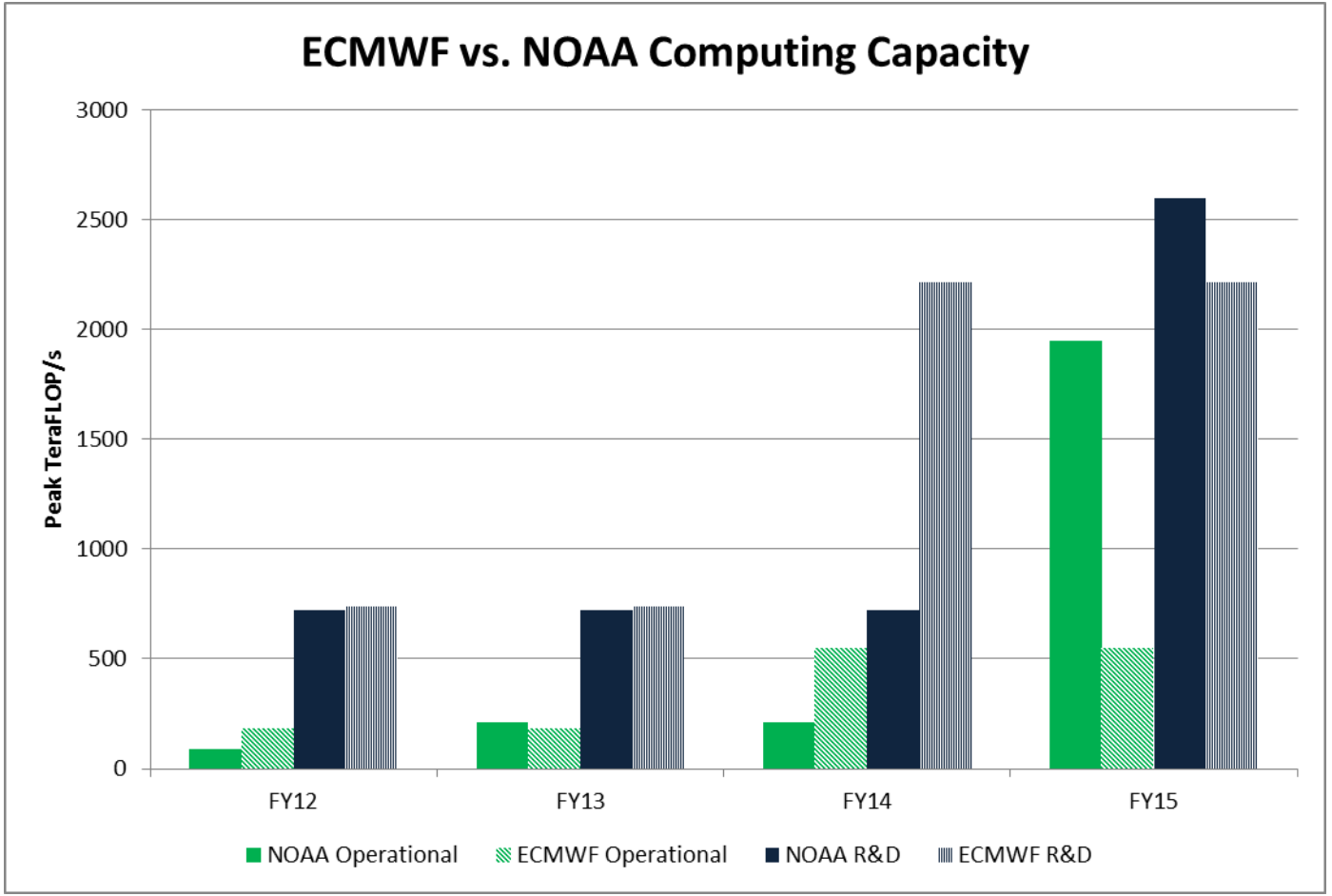
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
SREF
GDAS
NAMext
RTOFS
GFS
Hurricane
GEFS
NMMB Storm Scale Ensemble members within CONUS and/or Alaska
NMMB HRRRE members CONUS, Alaska, Hawaii, Puerto Rico
ARW HRRRE members CONUS and Alaska
Convective Allowing Data Assimilation – NMMB
Convective Allowing Data Assimilation – ARW
3D RTMA/RUA/AoR
CFSv3
OTHER
WAM
GEFSextension
RTOFS
WAV
SREF
NOS
NGAC
NAMextension
Hurricane
GEFS
GFS
GDAS
SSRRE-NMMB
HRRRE-NMMB
HRRRE-ARW
NDAS-NMMB
RDAS-ARW
CFSv3


ECMWF vs. NOAA Computing Capacity
Peak TeraFLOP/s
3000
2500
2000
1500
1000
500
0
FY12
FY13
FY14
FY15
NOAA Operational
ECMWF Operational
NOAA R&D
ECMWF R&D

Global Deterministic

System	Current	Q2FY14	Q1FY18
GDAS	80 member @ 55 km	80 member @ 35 km	4DHybrid 80 member @ 17 km
	Analysis @ 27 km	Analysis 16 km	Analysis 13 km
	64 Vertical Levels	64 Vertical Levels	128 Vertical Levels
ECMWF	4Dvar 25 member @ 80km	4Dvar 25 member @ 50km	4Dvar ? member @ 40km
GFS	27 km to 7.5 days	13 km to 10 days	10 km to 10 d
	55 km days 7.5 to 16	35 km days 10 to 16	17 km days 10 to 16
	64 Vertical Levels	64 Vertical Levels	128 Vertical Levels
ECMWF	16km to 10 days	16km to 10 days	10 km to 10 days
	137 Vertical Levels (6/13)	137 Vertical Levels	137 Vertical Levels

Hurricane

System	Current	Q2FY14	Q3FY15	Q1FY18
Atmosphere	27:9:3 km, 42 levels	27:9:3 km, 61 levels	18:6:2 km, 64 levels	2 km, 128 levels
Ocean	POM (2 ATL and 1 EPAC basins)	MPI POM (1 Trans-Atlantic and 1 EPAC basin)	HYCOM (1 Trans-Atlantic and 1 EPAC basin)	Global HYCOM
Waves	None	None	WAVEWATCH III	WAVEWATCH III
Data Assimilation	Static GSI with vortex initialization	One-Way Hybrid with TDR/FL and clear sky satellite DA	One-Way Hybrid with TDR/FL and clear and cloudy radiance DA	Two-way hybrid 3D/4D En-Var with TDR/FL and all sky satellite radiance DA
Hurricane Physics	Ferrier MP with explicit convection	Advanced MP with Meso-SAS	Advanced MP and land-air-sea-wave interactions	Advanced MP and land-air-sea-wave interactions
Basins	NATL, EPAC	NATL, EPAC	NATL, EPAC	All Tropical Ocean basins

Mesoscale Ensemble

Current	Q2FY14	End of Phase 2 / 2018
WRF-ARW, WRF-NMM, NMMB	WRF-ARW & NMMB	WRF-ARW & NMMB
7 each= 21 members 16 km	10 each= 20 members 12 km	10 each=20 members 12 km (parent)
35 levels 6 hourly to 84 hr	35 levels 6 hourly to 84 hr	50/60 levels 6 hourly to 84 hr
Irregular convective guidance 6/5/4 km 6 hourly run to 48/60 hr for CONUS, AK, HI, PR	Hourly HRRR 3 km to 15 hr for CONUS Upgrade irregular convective suite to 3 km still 6 hourly to 48/60 hr CONUS, AK, HI, PR	Hourly HRRRE 3 km to 18 hr for CONUS, AK, Hi, PR 6 hourly extended to 60/84 hr
Single placeable Storm Scale sub-nest ~1.5km 6 hourly to 36 hr	Single placeable/movable Storm Scale sub-nest ~1.5km 6 hourly to 36 hr	Multiple placeable/movable Storm Scale sub-nests: 1 km hourly to 18 hr and 6 hourly to 36 hours

Integrated Dissemination Program

- Install NextGen Prototype on NCWCP infrastructure 9/3/2013
- Complete IDP Phase 1 build out at primary site - Q1FY14
- Conduit, FTPPRD, NOMADS redeployed ~ Q2FY14
  - Enhancements begin
- IDP Phase 2 build out at primary site - Q3FY14
- IDP build out at backup site - Q4FY14

AWIPS2

- In our 6th year of transition and still have a way to go
- The families are almost reunited
  - But NCEP remains the uncle that shows up for Thanksgiving!
- The current contract expires in two years
- Many lessons learned
  - The team is very committed to our customers
  - We can overcome most technical hurdles
  - Having full control over our destiny made planning easier
  - Should have spent more time on requirements

Thank you…