Strategic Implementation Plan (SIP) for a Community-based Unified Forecast System

Data Assimilation Working Group

Presented by

Tom Auligné, JCSDA

Presented at SIP Coordination Meeting

January 31, 2018; College Park, MD

Data Assimilation WG
Membership

- *Tom Auligné (JCSDA) ***
- *Jeff Whitaker (ESRL/PSD) ***
- *Ron Gelaro (NASA/GMAO) ***
- *Daryl Kleist (NCEP/EMC) ***

  - *Co-Chair ***

- John Derber (NCEP/EMC)
- Ricardo Todling (NASA/GMAO)
- Steve Penny (UMD)
- Yannick Trémolet (JCSDA)
- Nancy Baker (NRL)
- Youngsun Jung (OU)
- Curtis Alexander (ESRL/GSD)
- Andrew Collard (NCEP/EMC)
- Chris Snyder (NCAR/MMM)

- **SIP project accomplishments to date:**
  - Full cycling of NEMS-FV3GFS, interpolation to gaussian grid priors and increments back to cubed sphere within model – skill of cycling FV3GFS comparable to opnl GSMGFS
    - – Includes stochastic physics, all-sky assimilation, NSST and 4DIAU.
    - – Preparing for reanalysis production (2000—present at reduced resolution for initializing reforecasts) starting in April.

- **Initial JEDI 'functional' prototype**
  - Model interface for FV3 (+TLM/ADM from GMAO)
  - Full-ensemble B: Model-agnostic localization on model native grid
  - Read/write obs. + metadata via extended NetCDF diag files
  - Interpolation from model native grid to observation locations
  - Model-indep. obs. oper. for RS-T, radiances (AMSUA), and sea-ice
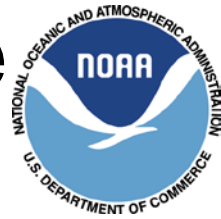 - JEDI passes the 'graduate student' test   docker

- **SIP project issues:**
  - Issues with FV3GFS in the stratosphere/upper troposphere
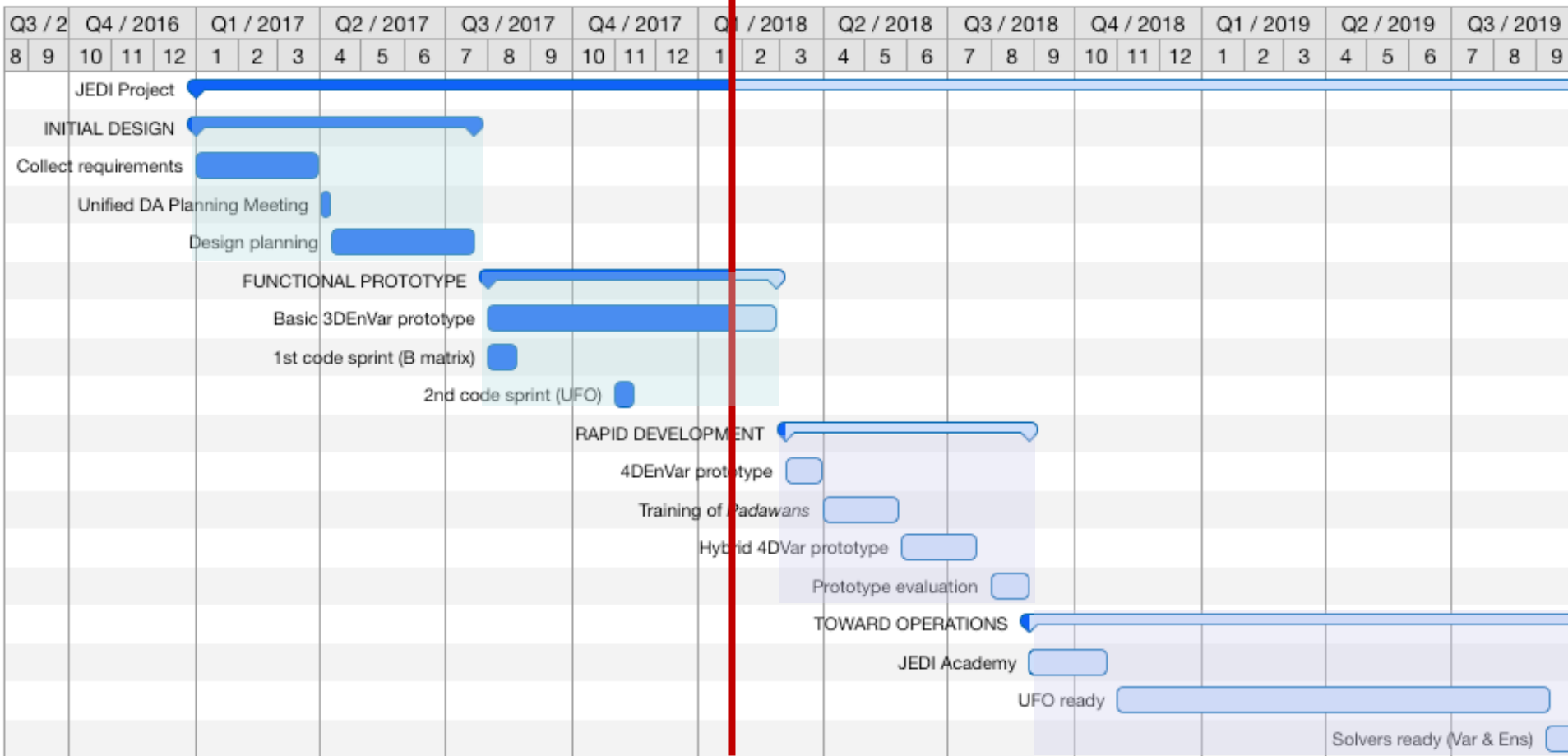 - Access, portability, readability of FV3GFS (recent help from GMTB)

JEDI Project: Ambitious Timeline
4 FTEs (Core) + 5 FTEs (>30 *in-kind* staff)

- JEDI Project = 30+ people distributed across NWS, OAR, NESDIS, NASA, NRL, NCAR (+ international partners)

- Rapid progress achieved via use of modern software, collaborative tools and JCSDA series of code sprints

- Need better integration with FV3GFS modelers