

# Community Code Contributions & Transitions

Hui Shao

Developmental Testbed Center (DTC)

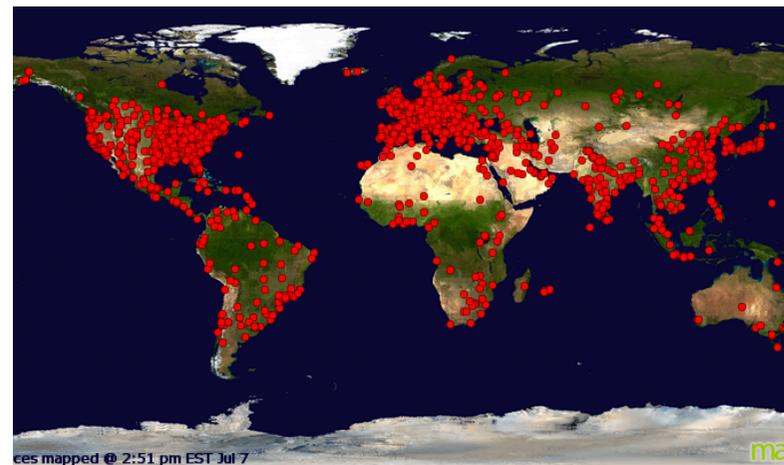
July 13, 2017

The DTC-EMC-JCSDA GSI/EnKF Tutorial, 11-14 July, 2017



# Applications of GSI and EnKF

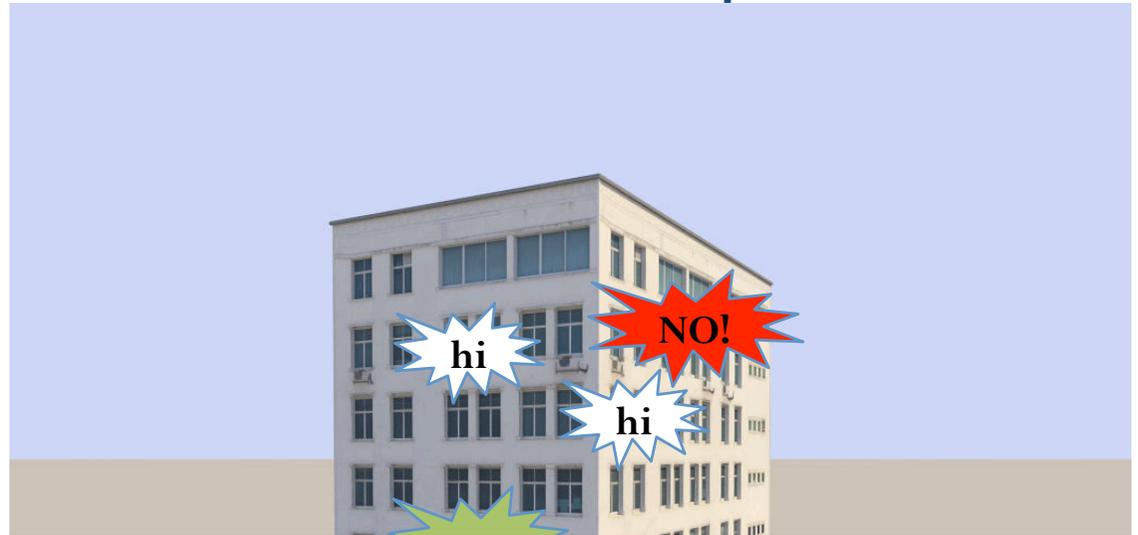
- Used in multiple real-time operational applications in U.S.
  - NCEP: Global Forecasting System (GFS), North American Mesoscale system (NAM), Hurricane WRF (HWRF), Real-Time Mesoscale Analysis (RTMA), etc.
  - NOAA: Rapid Refresh (RAP), High-Resolution Rapid Refresh (HRRR)
  - NASA: Goddard Earth Observing System (GEOS)
  - Others
- Community systems being used by operational agencies, universities, the private sector, in the U.S. and international community



# Code Management

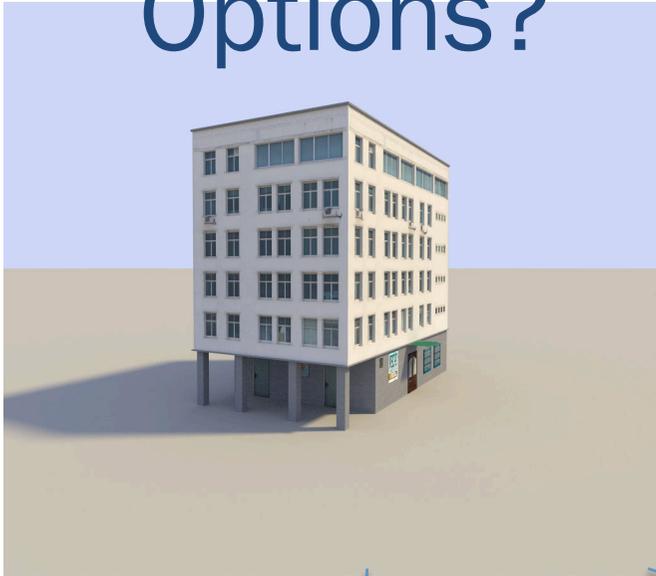
## – Centralized or “contained” development

- Code development pertaining to limited developers
  - Need to be “internal” or become “internal” first for development coordination
  - Concise, efficient, and straightforward, especially when applications are limited



- Disadvantages
  - Relatively isolated from the rest of research community
  - May cause miscommunication even among internal groups as well as with external developers/users
  - Less coordinated with more distributed development and applications

# Options?



Less coordinated



No coordination

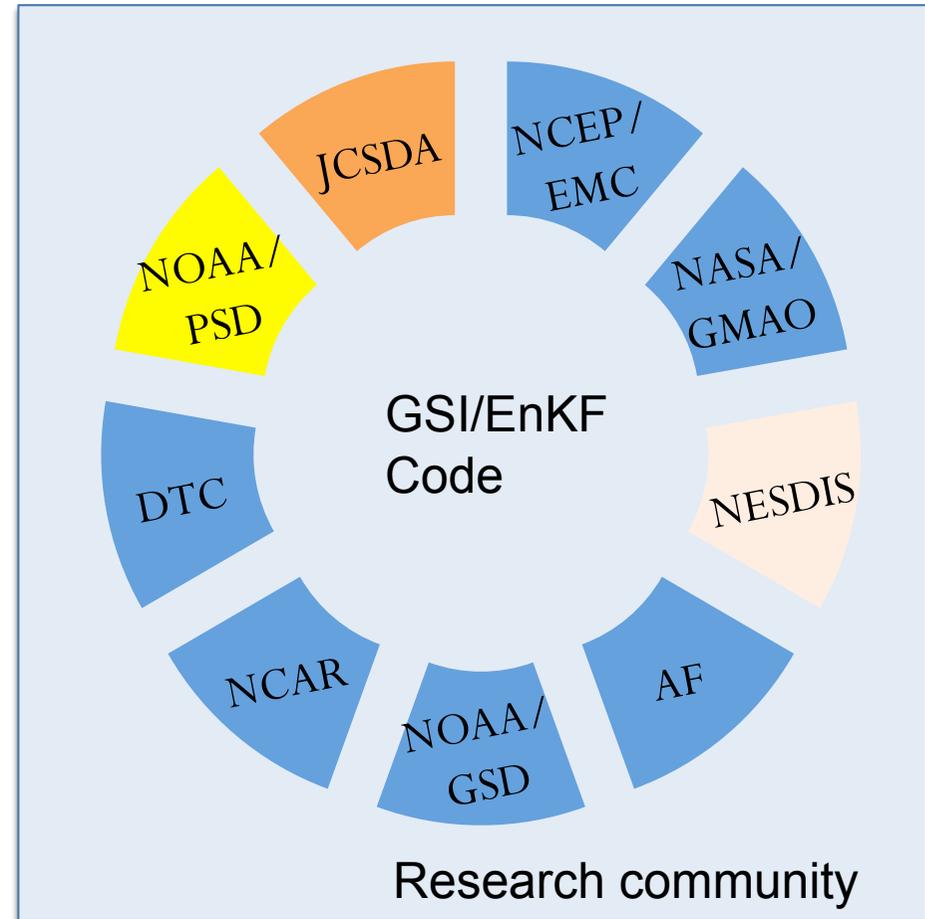


Coordinated, more tolerance with options

Coordinated and more concise and focused

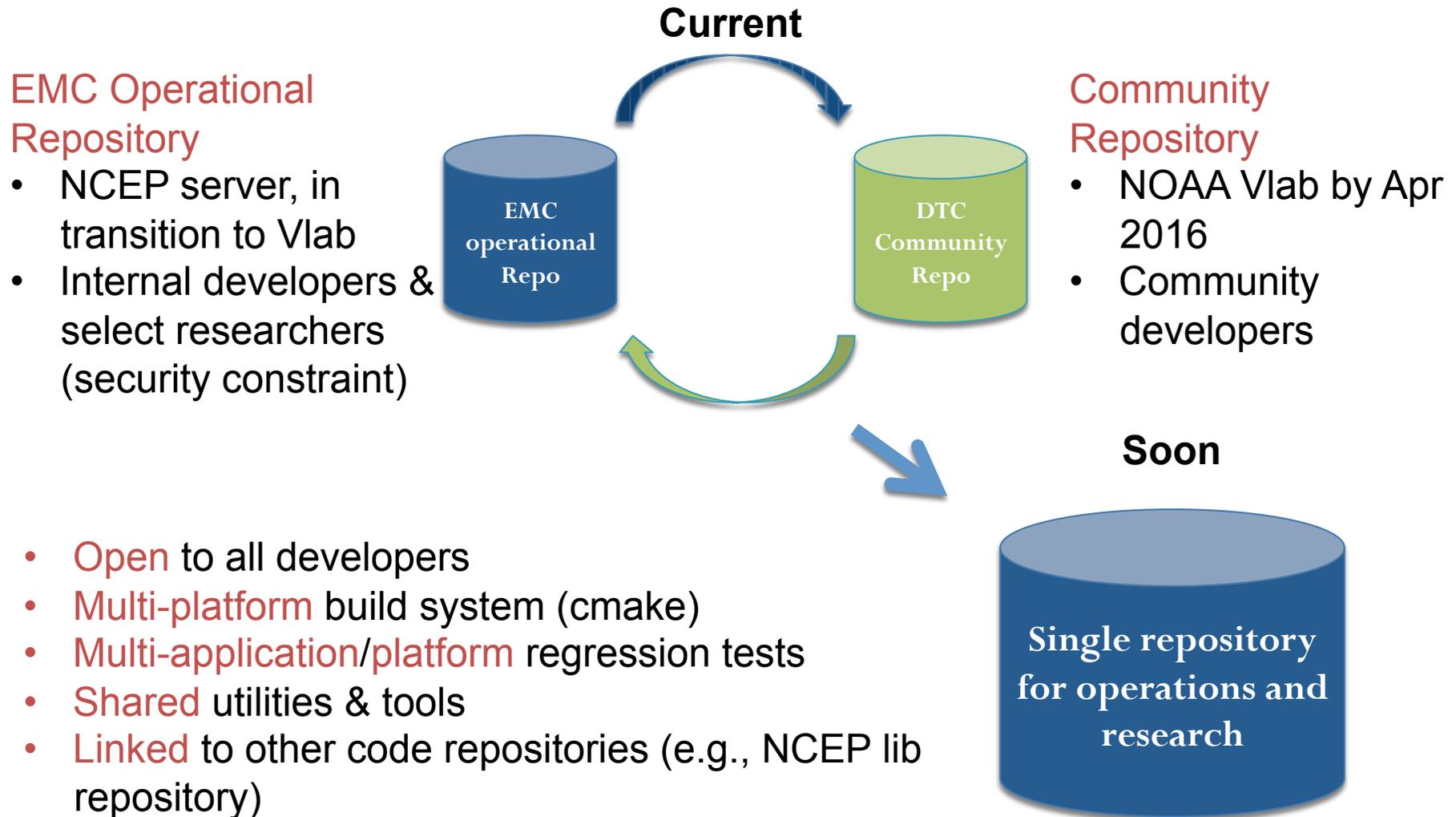
# GSI/EnKF Data Assimilation Review Committee

- Code is managed by the Data Assimilation Review Committee, formed in 2010
  - Include major code development teams and operational applications (e.g., GFS, RAP/HRRR, ...)
  - Coordinate code development
  - Review code changes
- All members and the general research community have direct access to the code (through code repository and/or the public releases) and, meanwhile, **can** contribute to code development.

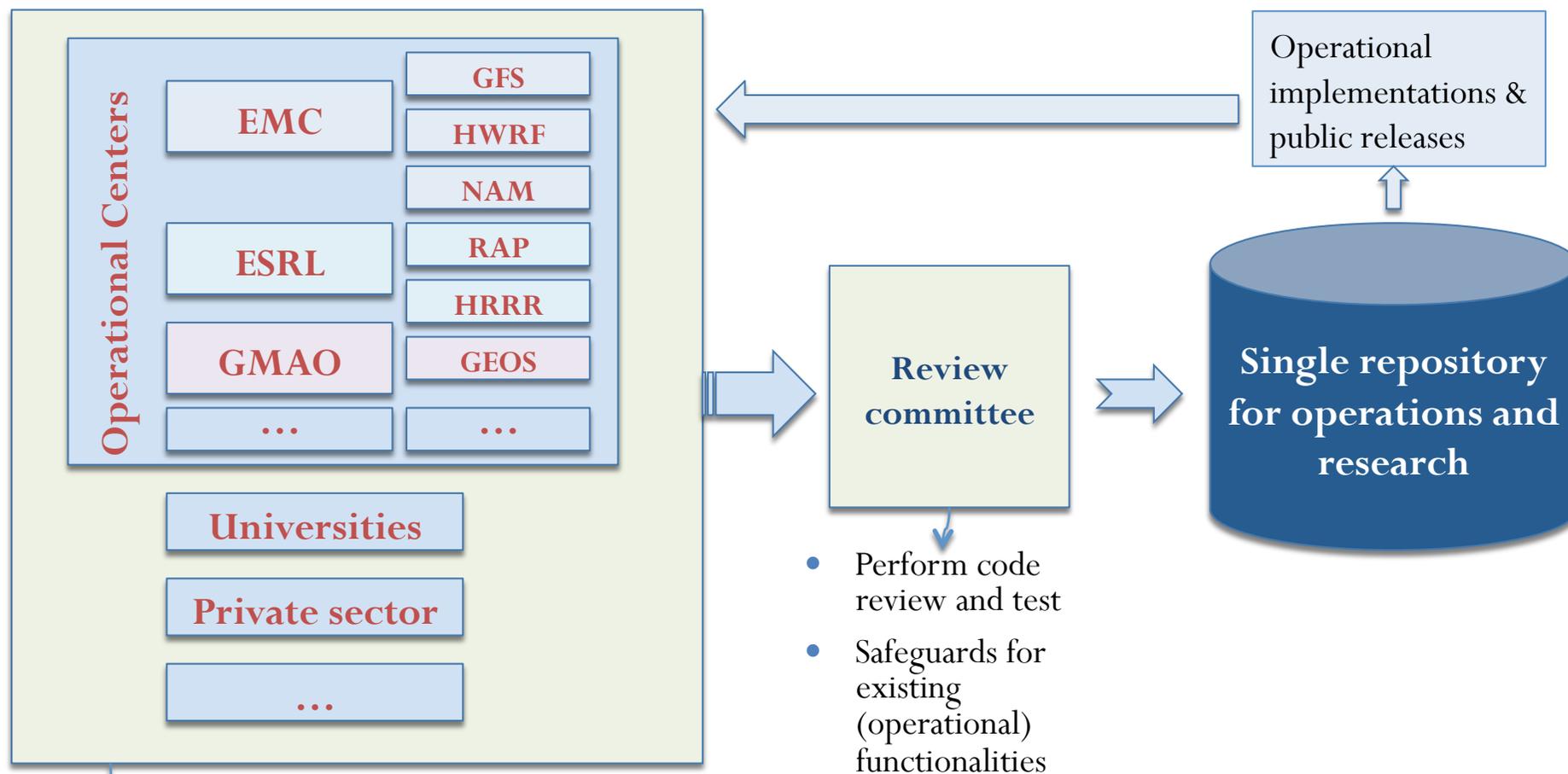


- Members since 2010
- Members added in 2015
- Member added in 2011
- Member added in 2016

# Code Repository for GSI and EnKF



# Code Review/Transition Procedure



- Active developers:
  - Coordinate code development through communications with committee members
  - Share code development through code repository
  - Perform user specific and/or application dependent code tests

# Assisting Research Contributions

- Public releases (through the DTC GSI and EnKF user's website)
  - Documentation
  - Tutorials
- Repository access
  - Currently, EMC and DTC both have repositories in Vlab (The DTC repository is open to the general community). Eventually, we'll merge the two repositories into one.
  - If you already have NOAA credentials (i.e., NOAA email), please contact either EMC or the DTC ([gsi-help@ucar.edu](mailto:gsi-help@ucar.edu)) for repository access
  - If not, please contact the DTC ([gsi-help@ucar.edu](mailto:gsi-help@ucar.edu)) first for the Vlab access. Then either EMC or DTC will add you to one of the code repositories.
- Code transition support:
  - Communicate with and get support from any of the committee members
  - DTC visitor program (the DTC provides salary and travel support):
    - Proposals to work directly with the GSI system and/or the NOAA EnKF system are strongly encouraged.
    - Year-around applications
    - Apply via the DTC visitor program website: <http://www.dtcenter.org/visitors/>

DTC DA webpage:

GSI: <http://www.dtcenter.org/com-GSI/users/>

EnKF: <http://www.dtcenter.org/EnKF/users/>

