



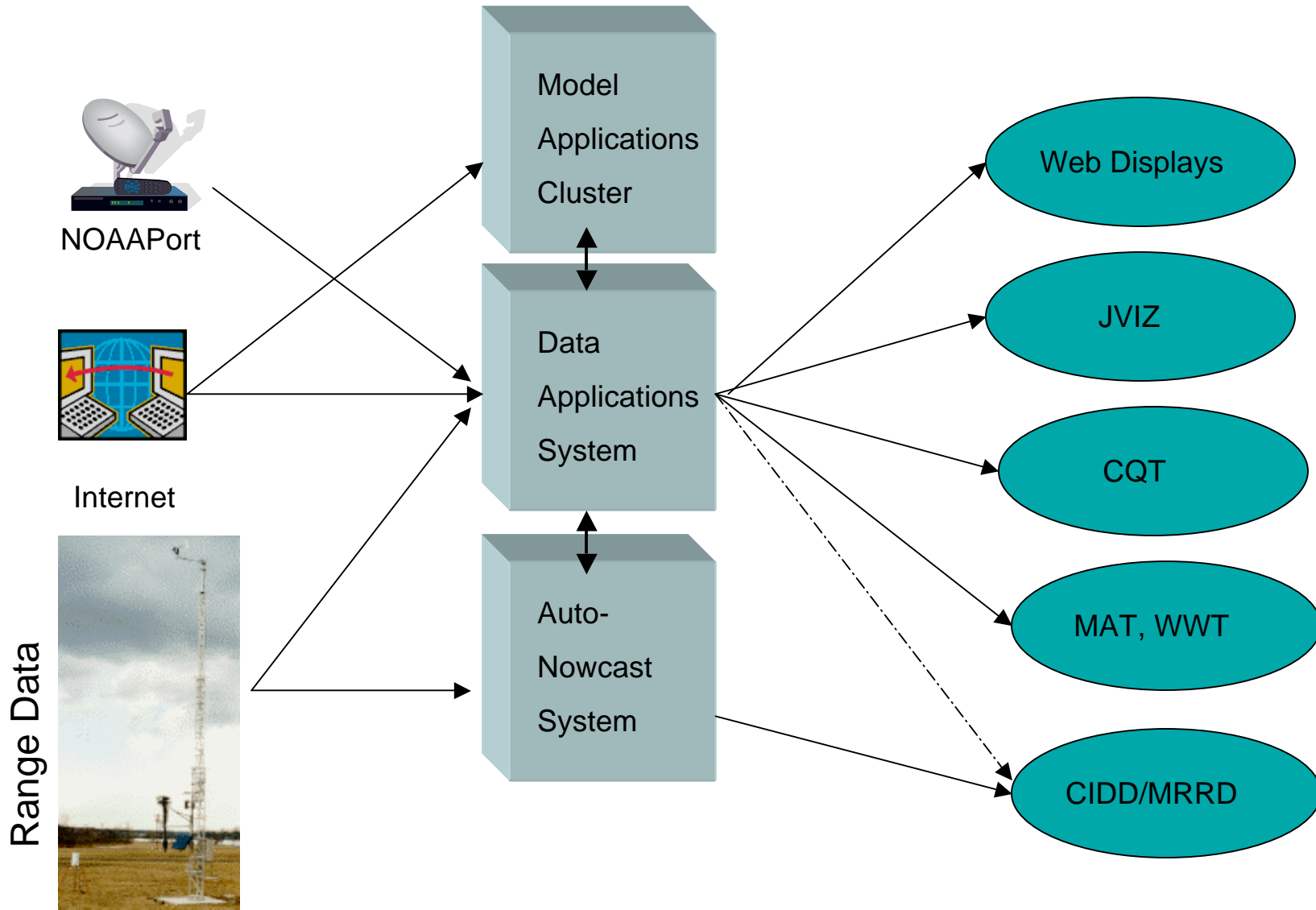
RTFDDA Engineering



- System Architecture
- Input Data
- Cycle Timing



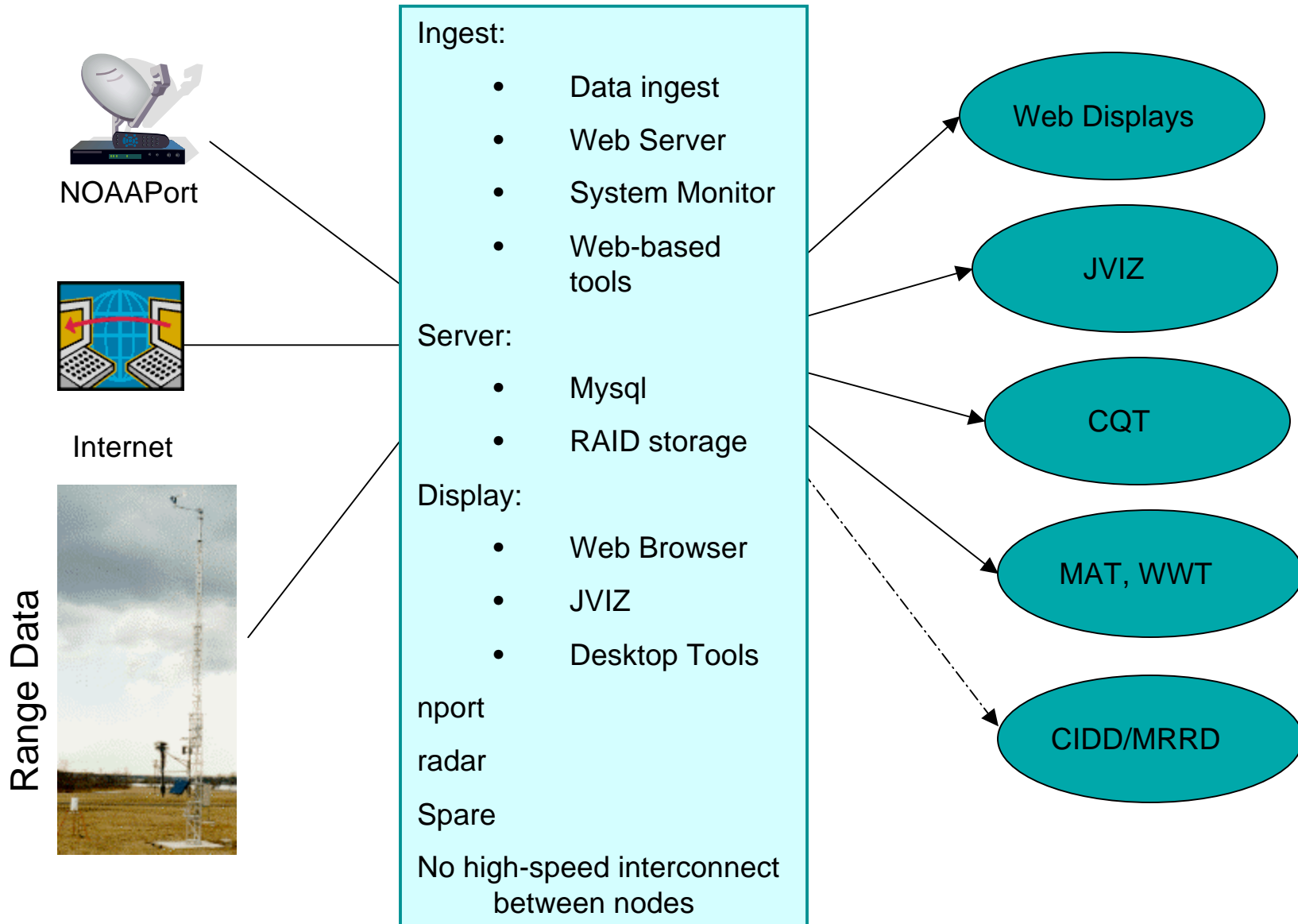
4DWX System Architecture





4DWX System Architecture

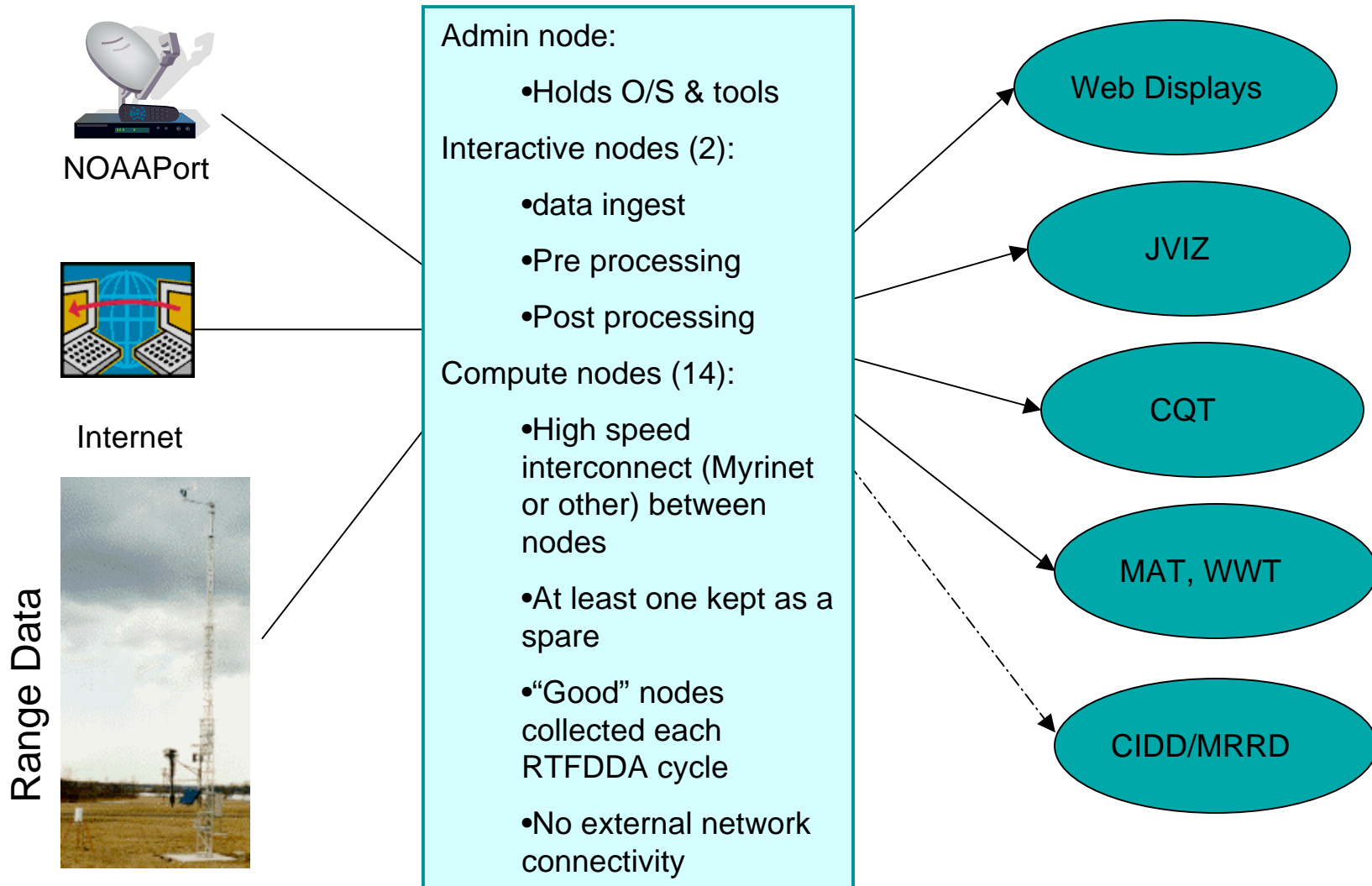
DAS





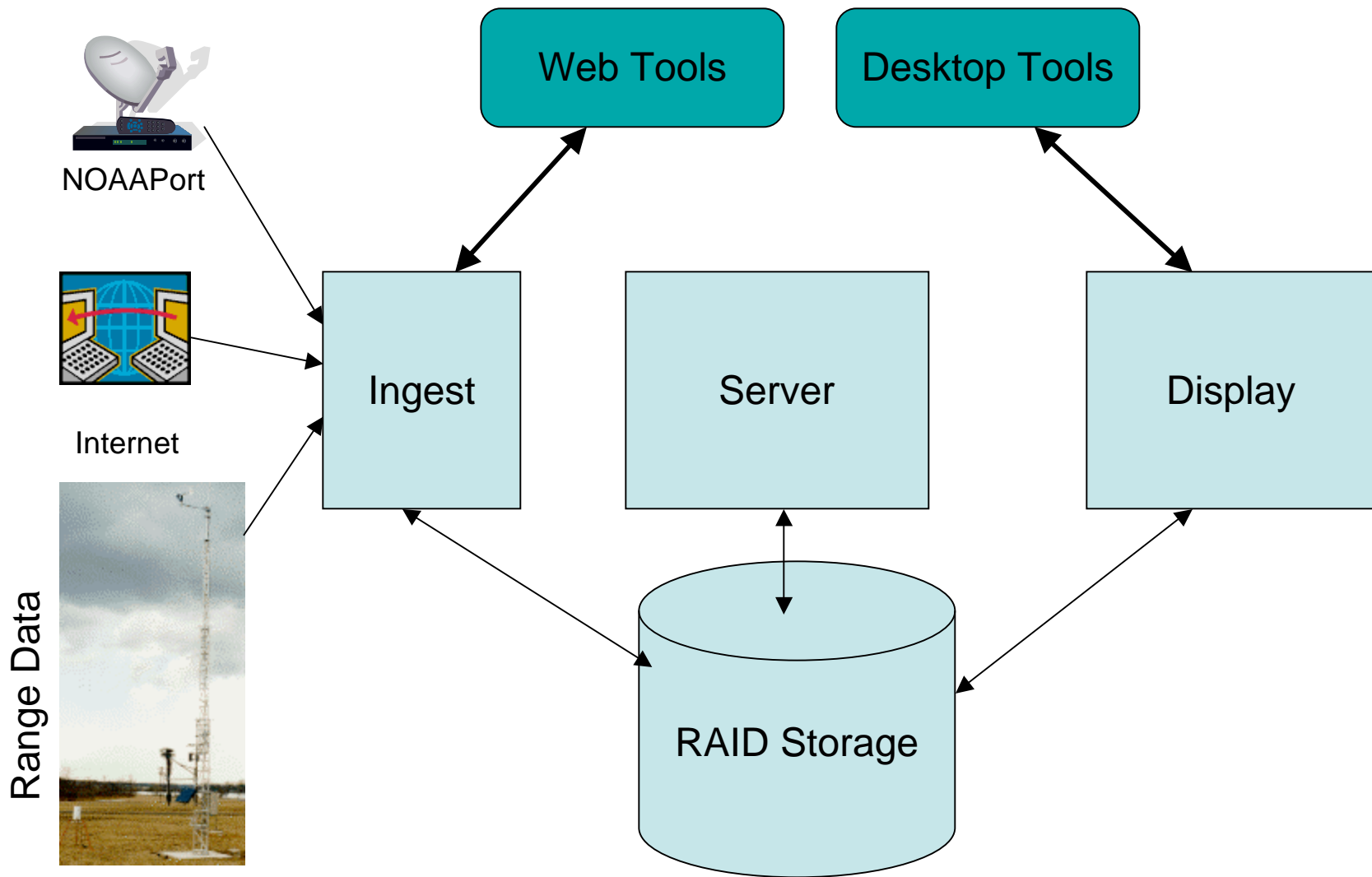
4DWX System Architecture

MAC





DAS Architecture





RTFDDA Data



- Initial and Boundary Conditions
 - NAM
 - GFS
 - Sometimes other models – ECMWF, NNRP
 - From NCEP FTP servers
 - NOAAPort broadcasts a reduced set of these data which are not sufficient (vertical resolution and missing fields) for model initialization
 - 00Z NAM/GFS is used as input to RTFDDA 05Z
 - 12Z NAM/GFS is used as input to RTFDDA 17Z



RTFDDA Data



- Observations datasets
 - More observations are always being added
 - The data sources adapt as new data is added
 - Range data is always used and very important for local scale phenomena
 - Some obs are gathered at NCAR and distributed to the ranges
 - Some obs are gathered independently at each range
 - Only observations that measure direct model variables are currently used in the RTFDDA obs-nudging scheme (temp, wind, rh, etc)

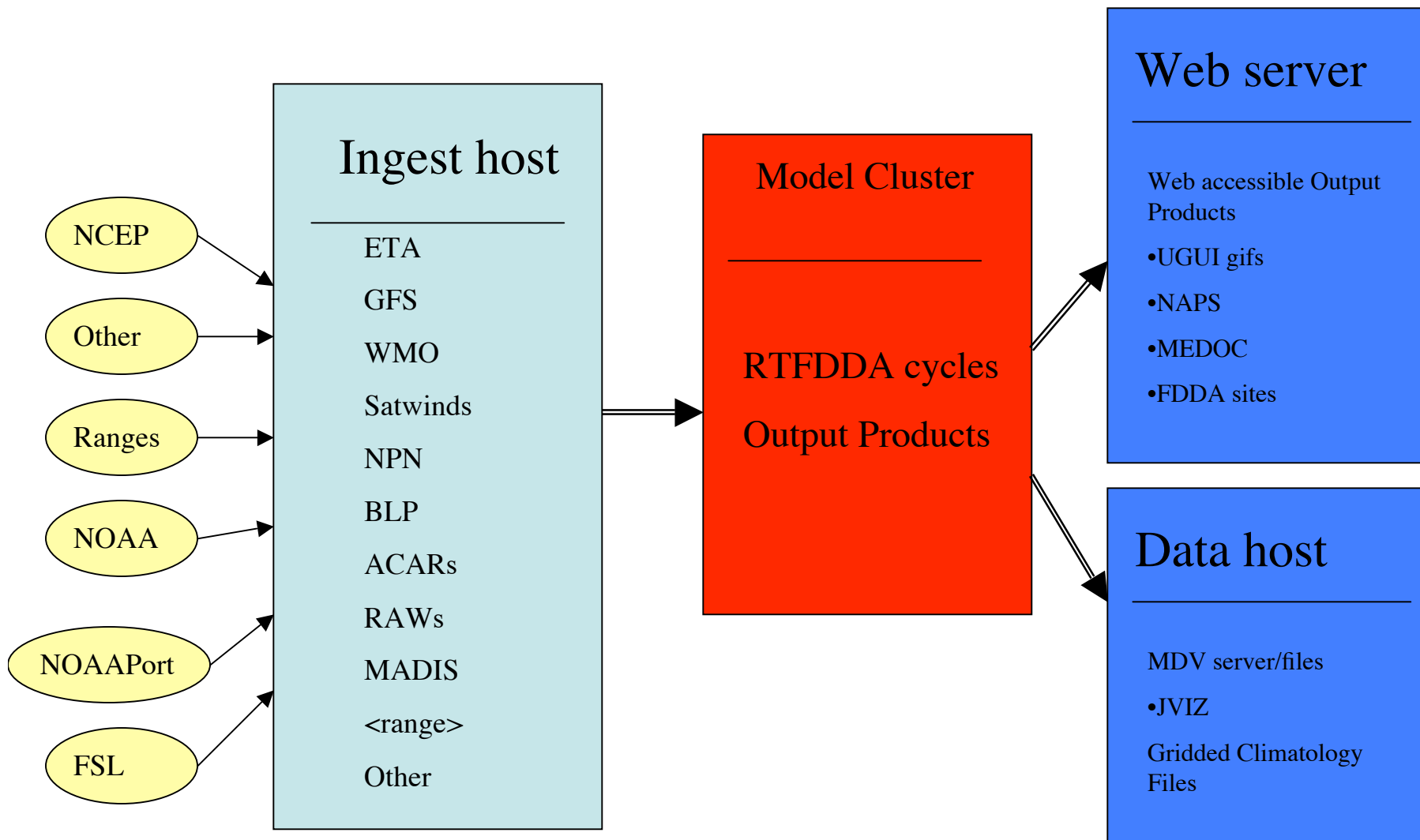


RTFDDA dataflow

“in general”



NCAR



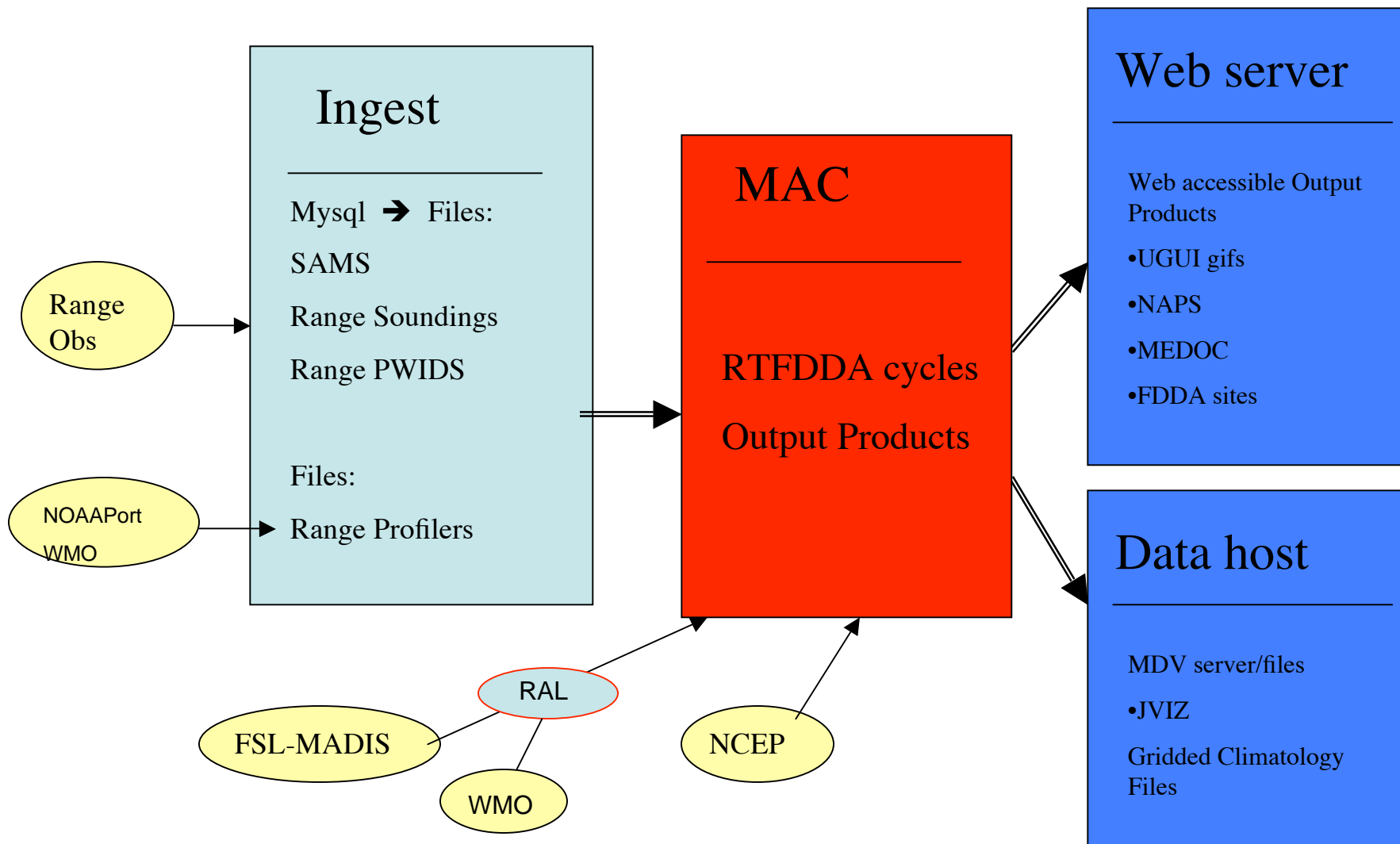


RTFDDA dataflow

ATEC range



NCAR





NCAR

RTFDDA Cycles

Current ATEC RTFDDA configurations run cycles every 3 hours, at 02Z, 05Z, 08Z, etc. This timing is based on data availability.

- 1, 2 or 6 hour cycle intervals are sometimes used
 - For rapid real-time updates (1 or 2 hour cycles)
 - For longer forecast output options (6 hour cycles)
- Precise cycle timing depends on
 - cluster compute-power
 - forecast length goals
 - data availability
- Output products generally use “the latest available” for the requested valid time
 - This assumes that the latest available is the most accurate



Cycle Output

