Recommendations from breakout group 2
Session 2 (Thu, 10/25/2012)

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Our group

Rules of engagement for collaboration - I

- Learn about Wave Watch copyright system
- Community developers should strive to
  - Contribute their developed code back to GSD unless it is very specific to users' system
  - Assess rationale for changes that are user-specific (strive for merging them whenever possible)
  - Supply differences with tarfiles of differences
  - Implementation new development in a way that allows it to be turned off until sufficiently tested

Rules of engagement for collaboration - II

- Make test cases available online
- Current case: Windsor tornado and day of release Colorado
- Future proposed cases
  - Hosted by user or by ESRL (can have link to case)
  - US and international cases,
  - High-res and low-res
  - Cases to confirm if LAPS implementation is correct and cases for scientific study
  - These are just public cases - proprietary cases need to go elsewhere

Code Repository

- Make revision control system externally available
  - Post weekly build tarfiles online
  - Post updates online (diffs from previous tarfile, so it is smaller)
  - Have LAPS in SVN repository available for check out (read only)
  - Open SVN for commits to branches by trusted collaborators

Testing

- Devise testing protocols (FAB developers with help from main developers)
  - Developers need to run some tests before proposing new developments
  - Should not make it too burdensome for developer
  - Tests to see if results match conceptual model
  - Null tests: should not change certain answers

Documentation

- Streamline
- Add documentation about variational LAPS and data formats(esp LSO)
- Add illustrations
- Clarifying the text so it is not wordy or outdated
- Add/replace PDF to ASCII and html formats
- Offer tutorials (onsite? online? webinar?)
- Users can contribute ☺

Observational data

- Include LIDAR as data source for backscattering and radial velocity
- Prioritize which new satellites should be brought into LAPS (polar orbit (AIRS))
- Include ingest of
  - Lightning data (csv?, NetCDF?)
  - COSMIC GPS radio occultation – gives vertical profiles of vertical, moisture (low horizontal resolution)
  - Scatterometer (feed into LSO or NetCDF interface?)
  - Sonic anemometers (investigate if they can be brought into MADIS or if they have to be separately ingested?
- Facilitate community discussion for format for new datasets

Bottlenecks (optimization and parallelization)

- Optimize or replace Gridgen (Perhaps replace gridgen model with WPS-geogrid. Baby step: gridgen now has the ability to read WPS output)
- LGA
  - Determine if further optimization needed
  - Time LGA wrt background models
- Parallelize the variational optimization routines

Verification

- Complement current verification with the following
  - Create interface with community tools such as MET (Model Evaluation Tools)
    - Determine if MET-Viewer read ascii files produced by current LAPS Vx package
    - Connect LAPS with MET