

Minutes from CHPS Forcing Team Call

Wednesday December 31, 2008

Mark Glaudemans, OHD

Participants:

ABRFC – Mike Boehmke
CNRFC – Art Henkel, Alan Haynes
NERFC – Ron Horwood, Jeff Oullett
NWRFC – Don Laurine, Joe Intermill
OHD – Mark Glaudemans, Paul Tilles, Dave Miller
OCWWS –

Next Call:

Wednesday 01/07/2009 12:00 Eastern

number: 866-614-2988; participant passcode: 7565560

[note: no call 1/14/2009; there will be a call 1/21/2009; CHPS Preparation Workshop at OHD 1/27-29]

1) AWIPS2 Grid Form:

Mark mentioned recent AWIPS-II statements about GFE-related grid forms. In summary...Raytheon tentatively announced netCDF will probably still be used in AWIPS2 for ISC, NDFD. Mark quoted bullets from the draft briefing for the Deployment Transition Plan:

- "A2 GFE will read/write netCDF for ISC" [ISC = inter-site coordination]
- "netCDF is during deployment – not long term – netCDF moving to HDF5"
- "A2 GFE grids sent to NDFD in netCDF through initial deployment"
- "netCDF may remain the data exchange format with NDFD"

Although AWIPS-2 is not dictating grid forms for CHPS forcings, it is desirable to align our approaches with the larger AWIPS-2 plans where possible. This is especially true for the grids in GFE, because GFE will be used for generating at least some of the forcings in the CHPS BOC stage and GFE usage may grow further still beyond the BOC era.

2) Forcings Grid Form:

The above statements on AWIPS-2 and HDF5 discourage serious consideration of HDF5 as the format for sending grids to CHPS. It was discussed that the forcings will be sent to CHPS in either GRIB1 or netCDF. There were continued questions as to why grid formats should be a concern given that Deltares stated their willingness to accommodate at least these two formats. Mark stated again that there is benefit in using a single format for grids sent to FEWS, as noted in the previous call minutes. However, for now, the team will not be overly limited on the grid format they produce the grids – they can produce them in netCDF or GRIB. OHD will possibly write grid transformation utilities as necessary.

Mike/ABRFC mentioned usage of xmrng format, particularly for QTE data, and mentioned that they had heard that FEWS can accept xmrng. After some discussion, it was clarified that FEWS can not handle xmrng format grids.

In an effort to identify, but not constrain, the RFCs selection of grid forms, the following post-call action item is being requested:

ACTION: Each RFC will identify the expected projection, spatial resolution, and format of each grid form they plan to use for each of the forcings. Because we are not meeting 1/14/2009, I am asking this for COB Tuesday 1/6 (before the next call) if possible. Please try and submit something – do not worry if you are unsure and think it will change. If you have no idea what you will use or really need more time, please just say so. I will add this information to the evolving matrix of information you have submitted

which already has the planned application used for each grid (i.e. precip, temp, freezing level, PET for obs, fcst).

3) QPE Grids

Discussed activities related to QPE grid development. MPE/DQC is planned for use by NWRFC and NERFC. NWRFC recently sent comments on the OB9 MPE/DQC version which was based on review more detailed than previous reviews. Don/NWRFC noted that it is a “ways away” from being acceptable. OHD will work with NWRFC to resolve the specific issues. Dave Miller will be the OHD focal point for NWRFC.

Don/NWRFC will send the comments to NERFC as they will be evaluating MPE/DQC in the very near future. Jingtao Deng will be the OHD focal point for NERFC.

4) QPF/QTF Grids

Mark discussed the need for RFCs to “move forward” in establishing their methods to generate various grids. OHD will be involved in supporting QPE development for some offices, and will coordinate and possibly writing software for QTE (see next section).

But for the other forcings (especially QPF/QTF), RFCs will be using either GFE or local apps for the grid generation. OHD may provide grid transformation software but it is critical that RFCs begin or continue efforts to create these grids. As Don/NWRFC properly noted, and as stated in previous call minutes, RFCs must demonstrate the ability to create usable grids for FEWS on a routine basis. First, RFCs will need to display these grids within FEWS, and second, FEWS must extract data from these grids for use in model operations.

To track these activities, CAT RFCs will be asked to report on their progress towards generating these grids. This will begin NLT the 1/21 call. Mark will also begin initial coordination with Deltares to identify specific methods for ingesting the grids.

Jeff/NERFC mentioned the desire to have unified software for handling the QC of all weather elements (including snow) used to generate required forcings grids. Mark agreed that this is a desirable goal. In the future, a unified tool such as an enhanced GFE could provide such a solution. Given the tight schedule and limited resources, this is not possible for now unfortunately. A combination of baseline applications (MPE/DQC, GFE) and local apps (MM, other) is envisioned for BOC.

5) QTE Grids:

Continued discussion regarding how to replace the to-be-retired MAT preprocessor. Mark repeated group ideas involving creation of mean temperature grid in lieu of MAT preprocessor and/or possible use of RUC analysis to supplement data. Ron/NERFC mention prospect of using RUC model info to fill data-sparse areas. Ron also noted the cold bias that the MAT preprocessor yields for the NERFC area.

Some possible solutions involving OHD software support are:

- a) modify MPE/DQC to handle hourly temperature data, even if indirectly. Currently it only handles 6-hour instantaneous and 24-hour max/min temperature data. The DQC preprocessor could be changed to use the hourly instantaneous values to determine a 6-hour mean and the mean values would be what DQC operates upon. It is not clear if this approach would produce results which are scientifically valid. As noted by Don/NWRFC, discussion with Dave/HSMB could help in understanding the implications of following this approach.
- b) add post-processor after MPE/DQC to replicate the functionality of the existing MAP preprocessor, but modify it to produce gridded fields. This approach would be complicated by the fact that

precipitation data outside of the 24-hour window being considered is needed, as noted by Don/NWRFC.

Jeff/NERFC mentioned that it would be helpful to have the second option (new algorithm) available even if the first option (migrated old algorithm) were chosen. That would allow comparison of the two estimates.

Mike/ABRFC noted that they are looking at a method using MSAS data, and possibly even RUC data. ABRFC does not plan to use MPE/DQC.

Art/CNRFC noted that they will continue to use MM/DQC. Presumably this means they would generate gridded data from MM/DQC for input into FEWS and would not use point/station temperature data from MM/DQC. It is assumed that CNRFC is comfortable with the usage of instantaneous (i.e. at 6-hour increments) values to represent mean values, given that the MAT preprocessor will no longer be available to determine mean period values.

6) QZE/QZF Grids:

Discussed freezing level QZE data available from RUC. A follow-up email provided D2D screen captures of RUC13 and RUC80 freezing level, surface temperature, and terrain grids. Currently, the DailyQC utility software derives freezing level indirectly from temperature data defined by pressure levels. Using the local app AGRID and perl scripts, the freezing level data for virtual stations is then derived. From there it is QC'ed and rendered to a grid. It seems that we can get better data, and get it more directly without much scripting, by switching to use the RUC13 freezing level data. Comments on this potential change are needed from CAT folks that use freezing level data.

No discussion on QZF has taken place.

Other Notes/Actions:

- 1) ESP Forcings: This is still an area that needs more investigation and discussion.
- 2) PET Information: As stated before, I am assuming that we will need to provide any grids for PET, as the current info embedded within the calibration is expected to be available. I need to confirm that this info is indeed preserved within the migrated SAC-SMA calibration data migrated into CHPS.
- 3) NPVU: It has been decided that NPVU will purchase a workstation and install GFE. They plan to begin parallel operations in Spring 2009, with operational conversion in Summer 2009. Grids from RFC GFE use can be distributed to NPVU using ISC methods. This change is part of an overall strategy to reduce the grid generation/conversion burden