NWS Hydrology Forecast Verification Team
Teleconference Notes
02/23/2009

Agenda

- Presentation of the raw model strategy by Mary Mullusky to prepare for the ARC/HIC meeting
- Presentation of RFC input on raw model and forecast users by Julie Demargne

Questions, Comments and Actions

Mary's presentation

Slide #2: the proposed objective would be to define a national standard raw model to assess the value added by the RFC forecasters (both hydro-meteorologists and hydrologists) to the hydrologic forecasts. The quality of operational forecasts issued by the RFCs would be compared to the quality of raw model forecasts to see the value added by the RFCs. To inter-compare the verification results at different RFCs, the raw model definition would need to be similar for all RFCs. Since the RFCs have very different forecast points, models, and processes, the RFCs would define other flavors of the raw model that take into account their particularities and that would be used for their own verification purposes.

Slide #4: the first standard raw model application to be used at all the RFCs would correspond to the forecast process that could be set up at a national center to provide for all RFCs automated forecasts with the best quality. Forecasters input is included only for setting up the forecasting system to be automatically run (which could include new calibrated parameters or new rating curves based on measurements).
A second raw model application would be defined to evaluate only the impact of the forecaster run-rime mods on the forecast quality.

Slide #6: following this discussion with the RFCs, Mary M. and Julie D. will give a presentation to the ARC/HIC meeting on 02/25 to get their agreement on the requirement and objectives for raw model application. The Verification Team will continue to discuss the different proposals on raw model applications to analyze the different objectives and issues the RFCs may have with raw model definitions. Julie D. and Mary M. will summarize the RFC input and develop a proposal of standard raw model definitions and corresponding verification objectives.

Julie's presentation

There was a consensus that we would need different forcing inputs to the raw model runs in order to separate the impact of the forcing input forecasts on the quality of the

hydrologic forecasts: one run with forcing input forecasts (e.g., from pre-defined models external to the RFCs), the other run with no forcing input forecasts (i.e., no QPF and average temperature).

The team also agreed that there were at least two different sets of model states to be potentially used for initialization: 1) the model states to be determined automatically by running a retrospective simulation run, which would start with the operational model states and run continuously for a warm-up period (the length of the period will be defined by the RFCs); this set of automated model states would not include any of the forecaster input; 2) the model states that are similar to the ones used for the operational forecasts, which could be defined by using the carryover saved 5 days prior to the current date; these model states would integrate past manual modifications made by the forecasters and seemed appropriate when assessing the value added by the forecasters with run-time mods on a day-to-day basis.

Regarding the forcing input forecasts, the goal is not to evaluate the impact of the meteorological forecasters/centers outside the RFCs on the forecast quality. Even if HPC QPF have been modified by human forecasters, they are provided to the RFCs to be automatically ingested as forcing input forecasts; therefore these meteorological forecasts could be included in one of the standard raw model definitions, without any modification done manually by the HAS at the RFC. Each RFC would define the models from which forcing inputs will be ingested in the standard raw model. The definition would be done for each forecast point and for all the time steps of the forecast period (e.g., 10 days); different model outputs could be used for different lead times, but this choice would be defined in advance by each RFC, to represent the best automated forecasting scenario. Also it seems necessary to have each RFC define the blending period for each point as part of the raw model run definition.

The issue of regulated points is quite difficult, as NWRFC and SERFC underlined. There could be either some exception of a few run-time mods to be included to derive realistic forecasts for the regulated points. Otherwise, the RFCs could define “normal” operating rules to be applied automatically, but these estimations are usually very different from the actual releases. The other options would be to ignore reservoirs or to run the raw model only for unregulated flows.

Slide #9: the information on the user groups and their level of sophistication is needed for the team final report to define standard verification products for each user groups.
Action: for each RFC, please send to Julie D. the user groups and corresponding level of sophistication by 03/17/09 if this information was not provided before.

The next team meeting will be on **March 23rd, 2 pm – 3:30 pm EDT**.