Minutes from CHPS Meeting Thursday July 15, 2010

Attendees:
ABRFC – Billy Olsen
CNRFC – Rob Hartman, Chris Mayo
NERFC – Rob Shedd
NWRFC – Harold Opitz, Joe Intermill
NOHRSC – John Halquist
Deltares – Peter Gijsbers
OCWWS HSD – Randy Rieman, Xiaobiao Fan
OHD – Jon Roe, Chris Dietz, Lee Cajina, Dave Kitzmiller

Pre-reading:

- Support Log distributed via chps_ops on July 14, 2010

1. Health check on Support Log (major issues, show stoppers)

   The Lag/K problem (#277) shows up on the 3rd worksheet ("Fixes to be Tested") but it's not fixed. The reason for the problem is because we're using the code differently in CHPS than in NWSRFS, which used to send data in 30-day chunks but now FEWS sends 1 year at a time. We need to change either FEWS or OHD's code to iterate on smaller chunks. Whatever solution we come up with must be well designed, not a band-aid – perhaps it makes more sense to rewrite the Lag/K? CNRFC needs this for operations so we can't afford to delay a solution. Any office who wants to do retrospective runs to validate their hydrology will experience the problem; it takes 10 minutes to run just one segment and is very frustrating. CNRFC must complete their validation before the next build. Lee will investigate potential solutions (short and long term) and will also assess resource needs. Xiaobiao will move this issue to the front page of the Support Log (open issues) until we figure out what the solution is and when we can get out a fix. Peter will check to see if looping can be turned on for historical runs.

   ABRFC: no new items

   NERFC:

   No new items. Making progress with some mods issues. The performance issue is annoying; sometimes a forecast point takes 5-10 seconds to display. It seems to vary depending on what processes are running – for example, it's always slow when spatial displays are up. Andre has been working with CNRFC/PeteF on performance and has concluded that although cache files are designed to improve performance, they seem to hinder performance after a while. A temporary solution in the patch is to remove the cache files weekly; the September release will contain a more permanent fix. The same fix will address increasing FSS response times at startup.

   NWRFC:

   Nothing new. Making progress on the SSARREG issues, particularly with respect to the apparent randomness. The dual IDs in mods has been straightened out. Configuration changes seem to have helped. Still an outstanding issue regarding importing mods – system seems to mix and match current versus former regulations. The item reported by JoeI ("Time Series Selection/Toggle graph issue") is being looked at by Andre and could be in the next patch or next release.

Update on the FSS crashes at NW: cause appears to be a failure of some code to properly release semaphores (semaphores are mainly used to synchronize access to shared resources such as memory); it isn't clear yet which code is the culprit. The o/s has a pool of semaphores; if code using semaphores exits "disgracefully" then the pool builds up orphaned semaphores to the point where the o/s has none to distribute. The problem could be in FEWS code, or could be elsewhere. NWRFC cannot reproduce it at will. It could be related to the number of logical FSS instances (they have 3 at NW). None of the other RFCs are seeing this. It's possible to move an FSS or two over to the REP but then you might introduce a different set of problems.

NE and NW both have a more recent version of Java (versions 19 and 20). Version 21 came out 2 days ago. Deltares doesn't know whether to recommend upgrading yet, but v21 is probably quite stable. Deltares and/or RandyR should probably test first; they will confer about it and possibly include an upgrade in the patch with some instructions.

NE has not experienced any spontaneous OC crashes recently. They saw a few after the June release was installed but none in the last 2-3 weeks. NW has seen none since the June release was installed.

NE did experience one memory freeze but they are still on 512MB memory; this is definitely too low and Deltares will allocate more – the disadvantage is that increasing memory for the OC reduces memory availability for other applications.

On a separate issue…. NE removed the commands from the FEWS.sh script as asked by Deltares but they noticed no change in behavior.

Action: Peter and RandyR to determine if RFCs should upgrade to v. 21 of Java as part of the next patch.

2. BOC blending techniques – what about the CAT-II?

The CAT RFCs agree with PeterG's proposal to use Deltares blending transformations for equivalents to BLENTEMP, BLENPREC, FUTPRECIP, and SKIPBLEND. OHD needs to do some work for REGULATE. All are needed for the September release. How have we come this far without blending techniques?? None of the RFCs have implemented them yet; it's always been on the task list we just didn't get to it yet.

Is there any risk the CAT-II won't be able to use the proposed equivalents? It's minimal. If you look at the numbers produced by the transformations there can be some small differences; however if you really must get identical results then it's possible to get a solution with FEWS.

Action: none.

3. Status of June release, and various OHD/FEWS patches

Summarized best by a table:

	CAT	CAT-II
June release (FEWS+OHD)	√	X
OHD patch 2.3.1 (correct ESPADP file	√	X (don't

format, #233, #265)		distribute to CAT-IIs until fully tested by CAT)
ESPADP Beta (improved config file strategy) 2.3.2b2	Only at NW and CN	X
OHD patch <#2> (#280; possibly include ESPADP Beta)	X	X
FEWS patch 100715	X (but probably release by end of this week)	X
FEWS patch <#2> (nothing on the books yet)	X	X

Action: RandyR will distribute June release to the CAT-IIs.

4. Any other items?

CNRFC has decided to delay their decision (whether or not to go operational with CHPS in October); PeteF is on leave. The decision is delayed until July 28.

ABRFC still expects to go operational in August but has no firm date yet. They have been slightly delayed because of their recent flooding.

NERFC is yet to finalize their initial timeline; the earliest they'll go operational is probably ~January 2011.

NWRFC will re-evaluate next week, hoping their 'trial' operational period will run from ~mid-August through October. They are still resolving configuration issues and would also like to test the ESPADP fix. Training for USACE has been rescheduled. Don Cline applied some pressure to senior Corps management, which seems to have had a desired effect; the USACE has now proposed an alternative to VNC which is FIPS 140-compliant. NW and USACE plans to test the interface next Tuesday. Harold continues to talk daily with the Corps.

We can't predict future operational support needs (#FTEs) until we can gather/analyze support response times for one or more RFCs using CHPS operationally. The goal is to have by October 2010 a defensible argument for increasing the number of FTEs in OCWWS HSD; or a conclusion that OHD and OCWWS already have adequate support resources.

Dr Dasarath Jayasuriya from the Australian Bureau of Meterology is visiting OHD today. He will be talking with Jon and Chris about the status of CHPS. The BoM is building a business case concerning adoption of FEWS for their operational forecasting.

Dave Kitzmiller announced he's holding a seminar next week to summarize the CAT's analyses on gridded forcings, and to initiate discussion of a proposal to develop a "statistically stable gridded precipitation record". Dave has a few remaining questions for CNRFC. The discussion about developing an Analysis of Record (AOR) will be limited to precip/potential evaporation and won't address temperature. Has Dave engaged with the NWS AOR or RTMA projects? Yes. Jamie Vavra (OST) recently briefed Berchoff (Dir, OST). The AOR is high on the NWS budget

list but from a Hydro perspective Harold and John Ingram (both on the IAT) should speak with a single voice.

Action: none.

Next meeting: Thursday July 22, 2010