CGNS Telecon Minutes

Tuesday, 22 January 2019, 10:00am Eastern Time

1. The meeting was called to order by Bob Bush.  Attendees are listed in Appendix A.

2. 6 November 2018 minutes were approved as published on the website.

3. Steering Committee issues:

   None

4. Steering Committee Attendance (telecon last date attended):
   Airbus          09/2018
   ANSYS           01/2019
   Boeing          11/2018
   Cenaero         11/2018
   Colo State      01/2019
   DLR             11/2018
   HDF             01/2019
   IL              01/2019
   NASA LRC        11/2018
   Numeca          01/2019
   ONERA           06/2018
   P&W             01/2019
   Pointwise       01/2019
   SAFRAN          11/2018
   Sandia          01/2019
   Tecplot         10/2017
   TTC             11/2018
   TU Delft        01/2019
   U Colo          01/2019
   U Kansas        01/2019

5. Discussion and Review Action Items
   a. CPEX 0040 – Guzik reported that the rind indexing  programming is complete in a feature branch and ready to be pulled into the develop- branch.  Breitenfeld has done a quick review, but the changes are extensive and requested additional reviews before pulling into the develop branch for release.  Gutzwiller and Sjaardema will review CPEX 0040 this week and feedback to Breitenfeld.  Breitenfeld will include move to the develop branch next week.  Breitenfeld plans to release 3.4.0 by mid-February.  Guzik indicated that the documentation should be complete and updated on the web by the end of the week.
   b. CPEX 0041 – code is in develop branch and will be released with version 3.4.0.  Some documentation is still required.
   c. Hillewaert was not present, but sent draft CPEX documents for higher order functions.  Hillewaert will set up a meeting to review the draft Higher Order CPEX documents next week.  Duque indicated that ilight is working HO.  Wang requested he check the Hillewaert proposal will meet their needs.
   d. Hillewaert to finalize his CPEXs, so they can be numbered and formally reviewed.
   e. Baker and Karman have some changes for P4 higher order changes and will send them to Rumsey to make docs change.
   f. Breitenfeld and Sjaardema reported that "compact data storage" is implemented a feature branch of CGNS and will be pulled to the develop branch after the release of 3.4.0.  There may be some updates required to the new parallel CGNS APIs to accommodate CPEX 0040.

g. Breitenfeld reported that HDF5 has been updated to automatically do a single read by one processor and broadcast if all processors reading the same dataset in its entirety. This is auto-detected and will fix a CGNS parallel bottleneck (with no changes other than building with HDF5 v 1.10.5).

h. Gutzwiller indicated that NUMECA is in the process of replacing all their internal data representations with CGNS. The transition has highlighted some current issues with CGNS for large unstructured multi-block cases. Some of the issues appear to be MPI version issues. He has work-arounds for the most immediate needs, but has found a potential bug in the partial writes. He has created a use case that can be added to the regression database for continued testing. Breitenfeld will test this case and see if he can reproduce the issues.

i. Scot and ZJ asked Thomas Hauser of the status of the NSF project at U Colorado. There seemed to be much activity last year, but things have gone quiet. Thomas has not heard anything lately, but will look into it and send a status.

6. Ongoing action items
   a. Continue to review outstanding JIRA items/tasks.
   b. Guzik will update the documentation for CPEX 0040 by 25 Jan.
   c. Gutzwiller and Sjaardema will review CPEX 0040 coding and feedback to Breitenfeld by 25 Jan.
   d. Breitenfeld will move CPEX 0040 to the develop branch by 1 Feb.
   e. Hillewaert will set up a meeting to review the draft Higher Order CPEX documents by 1 Feb.
   f. Baker and Karman have some changes for P4 higher order changes and will send them to Rumsey to make docs change.
   g. Breitenfeld will add Gutzwiller large unstructured multi-block partial write test to the regression test suite and see if he can reproduce the issues.
   h. Breitenfeld to do a new CGNS release, including the software for CPEX 0040 and 0041.
   i. Hillewaert, Poinot, Wang, and Karman to decide about CAD classification. May need new writeup on how best to use current functions to define/describe surface info.
   j. Breitenfeld to update documentation for Intel compilers (serial and parallel) for Windows.
   k. Hauser to check status of NSF project and report to committee

7. The next meeting is tentatively scheduled for Tuesday, 26 March 2019 at 10am Eastern.

8. Adjourn

**Appendix A – Attendees**

| | |
|---|---|
| Scot Breitenfeld | HDF Group |
| Bob Bush | P&W |
| Earl Duque | Intelligent Light |
| Tony Garratt | ANSYS |
| David Gutzwiller | NUMECA |
| Stephen Guzik | Colorado State |
| Thomas Hauser | U Colorado |
| Steve Karman | Pointwise |
| Roel Tielen (for Matthias Moller) | TU Delft |
| Greg Sjaardema | Sandia |
| ZJ Wang | U Kansas |