CGNS Telecon Minutes

Tuesday, 18 September 2018, 10:00am Eastern Time

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

2. 5 June 2018 minutes were approved as published on the website.

3. Steering Committee Issues

   a. Representatives from TTC and U Colorado have not called in to a Committee telecon in over 1.5 years. Rumsey to contact them.

4. Steering committee attendance:
   a. Committee members (telecon last date attended):

   | | |
   |---|---|
   | Airbus | 09/2018 |
   | ANSYS | 09/2018 |
   | Boeing | 06/2018 |
   | Cenaero | 09/2018 |
   | Colo State | 06/2018 |
   | DLR | 09/2018 |
   | HDF | 09/2018 |
   | IL | 06/2018 |
   | NASA LRC | 09/2018 |
   | Numeca | 09/2018 |
   | ONERA | 06/2018 |
   | P&W | 09/2018 |
   | Pointwise | 09/2018 |
   | SAFRAN | 06/2018 |
   | Sandia | 09/2018 |
   | Tecplot | 10/2017 |
   | TTC | 11/2016 |
   | U Colo | 01/2017 |
   | U Kansas | 09/2018 |

5. Discussion
   a. Regarding software status, Breitenfeld is working with Sjaardema on cg_open scalability issues. As before, when there is a lot of metadata (a lot of small reads), the open can be very slow. HDF plans to add a feature in HDF5 where process 0 (whatever read communicator is specified) reads the metadata (everything below a set size). It is not yet clear what HDF5 release this feature might make it into.
   b. Breitenfeld plans to do a new CGNS release soon, carrying over all known issues. The new release will include the recent implementations of both CPEX 0040 and 0041.
   c. Regarding higher order solutions and mesh extensions, Hillewaert discussed the status. The CPEXes are almost ready for parametric interplolation. He needs to set the location(s) where the new features can be placed in the tree. Current plan is to allow it both at the top level as well as locally. A lot of discussion took place regarding the pressing need for nonparametric interpolation. It was decided that a new CPEX is needed for this (i.e., not make it a part of the current CPEXs that are nearly complete). Hillewaert to finalize his current CPEXs. Leicht, Legay, and Hillewaert (and others?) to get together outside of the CGNS committee meetings to initiate a new CPEX for including nonparametric interpolation.

6. Review action items
    a. Continue to review outstanding JIRA items/tasks.
        i. Item carries.
    b. Hillewaert, Poinot, Wang, and Karman to decide about CAD classification and work toward finalizing high order and related CPEXes.
        i. Two new CPEXs are nearly complete: "Encoding sets of functions in generic variables," and "Storage of cell-wise interpolated data and generalisation of the storage of curved grids." But no progress on CAD classification. Bush suggested that <u>a writeup is needed on how best to use current functions to define/describe surface info</u>.
    c. Breitenfeld to update documentation for Intel compilers (serial and parallel) for Windows.
        i. Not done yet, carries.
    d. Guzik to finalize implementation of CPEX 0040.
        i. Done. Implementation is available. Committee decided it was OK to include in the next release, without any sort of formal review.
    e. Breitenfeld to pull in the new CPEX 0041 related API software.
        i. To be done next release.
    f. Baker and Karman to specify how the CGNS standard for P4 high-order mesh definitions needs to be changed in the CGNS docs to be consistent with existing textbook standard. Once they define it, Rumsey to help make the docs change.
        i. Work is ongoing. Item carries.

7. Ongoing action items
    a. Continue to review outstanding JIRA items/tasks.
    b. Breitenfeld to do a new CGNS release, including the software for CPEX 0040 and 0041.
    c. Hillewaert to finalize his CPEXs, so they can be numbered and formally reviewed.
    d. 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.
    e. Breitenfeld to update documentation for Intel compilers (serial and parallel) for Windows.
    f. Baker and Karman to specify how the CGNS standard for P4 high-order mesh definitions needs to be changed in the CGNS docs to be consistent with existing textbook standard. Once they define it, Rumsey to help make the docs change.
    g. Leicht, Legay, and Hillewaert (and others?) to get together outside of the CGNS committee meetings to initiate a new CPEX for including nonparametric interpolation.

8. The next meeting is tentatively scheduled for Tuesday, 6 November 2018 at 10am Eastern.

9. Adjourn

**Appendix A – Attendees**

| | |
|---|---|
| Scot Breitenfeld | HDF Group |
| Bob Bush | Pratt & Whitney |
| Simone Crippa | Airbus |
| Tony Garratt | ANSYS |
| David Gutzwiller | NUMECA |
| Koen Hillewaert | Cenaero |
| Steve Karman | Pointwise |
| Tobias Leicht | DLR |
| Chris Rumsey | NASA Langley |
| Greg Sjaardema | Sandia |
| ZJ Wang | U Kansas |