CGNS Telecon Minutes

Friday, 12 September 2017, 10:00am Eastern Time

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

2. 25 July 2017 minutes were approved as published on the website.

3. Steering Committee Issues
   a. Earl Duque is now primary representative of Intelligent Light (IL), with Brad Whitlock as backup.
   b. Tony Garratt now represents ANSYS in place of Ulrike Wolf.

4. Steering committee attendance:
   a. Committee members (telecon last date attended):
      - Airbus 09/2017
      - Boeing 09/2017
      - Cenaero 09/2017
      - Colo State 09/2017
      - HDF 09/2017
      - IL 09/2017
      - NASA LRC 09/2017
      - ONERA 09/2017
      - P&W 09/2017
      - Pointwise 09/2017
      - SAFRAN 09/2017
      - Sandia 09/2017
      - Tecplot 09/2017
      - TTC 11/2016
      - U Colo 01/2017
      - U Kansas 09/2017

5. Discussion
   a. Latest NSF proposal scored “highly responsive,” yet was not funded. Breitenfeld will email to
      the funders to ask about it, so we can decide whether to try again next year (and if so, what -
      if anything - needs to be changed in the proposal).
   b. Software status (Breitenfeld)
      CGNS is highly reliant on being able to read metadata efficiently (especially for
      many thousands of processors). A fix for this was in HDF 1.10.0. Unfortunately, it was
      unintentionally broken in 1.10.1, but it has been repaired in the latest branch, which will
      go into 1.10.2, due for release in a few months.
   c. Garratt brought up some documentation needs – especially for cmake and compression. Most
      people probably use autotools, not cmake. Garratt to work with Breitenfeld to update
      documentation for cmake and compression. The committee also discussed compression,
      which currently does not work for CGNS with HDF5.
   d. Breitenfeld currently tests CGNS with 5-6 compilers (mostly Fortran). It is all done
      automatically. This does not cost anything, in fact it helps find problems.
   e. Storage of high order solutions extension (Hillewaert)
      Hillewaert has sent a draft to the committee. There are a lot of details, which still need to
be ironed out (preferably via Google Docs) by the subcommittee of experts, which includes some on the CGNS steering committee and some from outside.

f. CPEX 0041 – almost ready to go. Garratt provided a few additional comments from Hann, regarding naming convention, and need for cgsizet, among others. Legay to incorporate Hann’s latest review of CPEX 0041, and send out for final vote.

g. Implementation Strategy
   CPEX 0040 has been approved, but not yet implemented. Guzik has a branch, but needs to be sure all possible usages of rind planes are covered. Guzik to finalize implementation of CPEX 0040. We have not yet identified a person to implement CPEX 0041 (once it is approved). This is complicated by the fact that Legay’s group does not directly use the MLL library. Poinot and Legay to discuss this off-line.

6. Review action items
   a. Continue to review outstanding JIRA items/tasks.
      i. Item carries.
   b. Hillewaert will complete a proposal for storage of high-order grids and data.
      i. A draft is in place, but needs further refinement by a sub-committee.
   c. Breitenfeld to add Windows documentation as appropriate.
      i. Item carries.
   d. Wang and Hillewaert to spell out required clarifications regarding high order element point locations in existing SIDS docs.
      i. All OK, except it would help to have additional clarifying statement. Wang/Rumsey to add statement to the docs about the fact that nodes are uniformly spaced on all edges of high-order elements.
   e. Hillewaert and Wang to determine if existing high order point locations in CGNS are OK.
      i. Done. They are OK as is.
   f. Legay to update CPEX 0041 with Sjaardema’s recent suggestion, then Rumsey to forward to the committee and ask for a vote by early September 2017.
      i. First part done. Second part to be done after next iteration on comments from Hann.

7. New business
   a. Hillewaert would like to add (for future discussions):
      i. For adaptive usage, for example, need to be more directive when referring to CAD
      ii. For scale-resolving simulations, need to specify details about statistics

8. Ongoing action items
   a. Continue to review outstanding JIRA items/tasks.
   b. Hillewaert and sub-committee of experts to continue with proposal for storage of high-order grids and data.
   c. Breitenfeld to add Windows documentation as appropriate.
   d. Garratt to work with Breitenfeld to update documentation for cmake and compression.
   e. Legay to incorporate Hann’s latest review of CPEX 0041, and send out for final vote.
   f. Guzik to finalize implementation of CPEX 0040.
   g. Wang/Rumsey to add statement to the docs about the fact that nodes are uniformly spaced on all edges of high-order elements.

9. The next meeting is tentatively scheduled for Tuesday, 24 October 2017 at 10am Eastern.

10. Adjourn
Appendix A – Attendees

Pat Baker 
Scot Breitenfeld 
Bob Bush 
Simone Crippa 
Tony Garratt 
Stephen Guzik 
Koen Hillewaert 
Scott Imlay 
Pierre Jacques-Legay 
Dimitri Kamenetskiy 
Marc Poinot 
Chris Rumsey 
Greg Sjaardema 
ZJ Wang 
Brad Whitlock 

Pointwise 
HDF Group 
Pratt & Whitney 
Airbus 
ANSYS 
Colorado State U 
Cenaero 
Tecplot 
Onera 
Boeing 
Safran 
NASA Langley 
Sandia 
U Kansas 
Intelligent Light