CGNS Telecon Minutes

Tuesday, 23 September 2016, 10:00am Eastern Time

1. The meeting was called to order by ZJ Wang at 10:05am eastern time. Attendees are listed in Appendix A.

2. July 5, 2016 minutes were approved as published on the website.

3. Steering committee issues:
   a. Committee members (telecon last date attended):
      a. Airbus 12/15
      b. ANSYS 12/15
      c. Boeing 9/16
      d. Colo State 9/16
      e. HDF 9/16
      f. IL 9/16
      g. NASA LRC 9/16
      h. ONERA 9/16
      i. Pointwise 7/16
      j. P&W 9/16
      k. Tecplot 12/14
      l. TTC 12/14
      m. U Colo 4/16
      n. U Kansas 9/16
      o. SAFRAN 9/16
      p. Cenaero 9/16
   b. GE was removed from Steering committee.
   c. Cenaero added to Steering committee (Koen Hillewaert was introduced).
   d. SAFRAN added to Steering committee (Marc Poinot moved there from ONERA).
   e. ONERA is remaining a Steering committee member (Pierre-Jacques Legay is the new representative – was introduced).
   f. Tecplot and TTC have not called in to a steering committee telecon in nearly 2 years. Rumsey to contact them.

4. Discussion
   a. Software status
      i. Some commits have been merged; there have been some active commits from outside our core group (Sjaardema).
      ii. Discussion about when to do next official release. There are only minor bug fixes since last release, but it's usually good idea to release at least once per year. Decided to elevate issue of Fortran make failing on Windows to "blocker" status, until we can figure out what it will take to get that taken care of. Rumsey to communicate with interested parties from CGNSTalk about problem compiling with Fortran for Windows.
   b. Re: storage of high order schemes, there was considerable discussion on this subject. Hillewaert will work to develop and vet ideas for storage of high-order data in conjunction with others, and will bring back a proposal to the committee.

5. Review action items
   a. Review outstanding JIRA items.

i. There are currently 40 items on the "to do" docket; they include some compiler issues, machine-dependent issues, etc.

b. Breitenfeld to write a recommendation regarding what packages are best to use with CGNS, and Rumsey to post in on the Download page.
   i. This is essentially done. Breitenfeld has the recommendation, but still needs to put it in the readme file; Rumsey has already posted the recommendation to the Downloads webpage.

c. Hauser to provide update of NSF and DOE proposals
   i. (As reported offline to Rumsey): Exascale proposal was funded, but at a reduced funding level. The impact of this reduction is not yet known.
   ii. Deadline for next NSF SSE proposal is February 2017. Team discussed this and decided to re-work the old (unfunded) NSF submission, and re-apply. Rumsey to forward the old NSF proposal to the team, and ask for suggestions.

6. New business
   a. Question re parallel performance: Breitenfeld has done benchmark on 4096 processors; performance was reasonable:

```
!  Cetus@Argonne National Laboratory: IBM Blue Gene/Q, GPFS
!  (Note: uses Multi-dataset APIs)
!  Number of Elements = 8,589,934,592
!  Number of Nodes    = 51,539,607,552
!  Resulting File Size = 3.375 TiB
!
!  Total Time to Run Program (@4096 processors) 1379s
!  Total Time to Write Coordinates: 215s (71s in MPI IO)
!  Total Time to Write Elements: 71s (0.04s in MPI IO)
!  Total Time to Write Fields: 216s (72s in MPI IO)
!  Total Time to Write Arrays: 143s (71s in MPI IO)
!  Total Time to Read Coordinates: 237s (71s in MPI IO)
!  Total Time to Read Elements: 79s (0.04s in MPI IO)
!  Total Time to Read Fields: 237s (78s in MPI IO)
!  Total Time to Read Arrays: 158s (79s in MPI IO)
```

   b. Re: Poinot's CGNSTalk question about DimensionalExponents, Bush recommended to expand the enumerates for Units (a relatively simple CPEX).
   c. Question about current inability to write NGONs (NFACEs) in parallel. We need a new proposal to fix the current inability to write NGONs (NFACEs) in parallel. Poinot suggested separate array with number of points for each element, rather than lumping this into the array that carries the actual points.

7. Ongoing Action Items
   a. Continue to review outstanding JIRA items/tasks.
   b. Rumsey to communicate with interested parties from CGNSTalk about problem compiling with Fortran for Windows.
   c. Hillewaert will work to develop and vet ideas for storage of high-order data in conjunction with others, and will bring back a proposal to the committee.
   d. Rumsey to forward the old NSF proposal to the team, and ask for suggestions.
   e. Need a new proposal to fix the current inability to write NGONs (NFACEs) in parallel.

8. The next meeting is tentatively scheduled for Tuesday, 29 November 2016 at 10am Eastern.

9. Adjourn

Appendix A – Attendees

Scot Breitenfeld	HDF Group
Bob Bush	Pratt & Whitney
Stephen Guzik	Colorado State
Koen Hillewaert	Cenaero
Dimitri Kamenetskiy	Boeing
Pierre-Jacques Legay	ONERA
Marc Poinot	SAFRAN
Chris Rumsey	NASA LaRC
ZJ Wang	U Kansas
Brad Whitlock	Intelligent Light