

CGNS Steering Committee
Telecon Minutes
25 May 2005
11:00 AM Eastern Time

1. The meeting was called to order at 11:05 AM. There were 11 attendees, listed in [Attachment 1](#).
2. The minutes of the 16 March 2005 telecon were approved as posted on the web site.
3. Rumsey announced that Thomas Hauser has been elected as Vice Chair, through January 2007.
 - (a) Rumsey proposed a change to the Charter to accommodate the Vice Chair position to read (as amended) as follows: “At the discretion of the Chairperson, a Vice-Chairperson may be appointed by consensus of the Committee, to assist the Chairperson with his or her duties. The Vice-Chairperson will also be a member of the Committee.” This change was adopted by the Committee. Towne will incorporate into the charter and post.
4. ISO status/discussion
 - (a) Keith Hunten dialed in to report on progress integrating the proposed CGNS AP 237 for Fluid Dynamics into the existing ISO standard AP 209.
 - (b) AP 209 is being upgraded (modularized) and modules based on CGNS and EU work done on the Engineering Analysis Core model in the GEM program will be added. This work has already been harmonized and integrated with the STEP Integrated Resources data models.
 - (c) They are also in the late design phase of a standard binary file format mapping for STEP (based on HDF-5). Hunten is interested in tapping the knowledge of CGNS committee members familiar with the HDF-5 implementation. Rumsey will forward to Hunten the e-mails of the members on the hdf5cgns@ncsa.uiuc.edu mailing list.
 - (d) Hunten will send a copy of his planning documentation to Rumsey, for inclusion as an attachment to these minutes. [See “AP209 Modular Edition 2 Development Proposal” (PDF, 7 pages, 423K), “AP209E2 Planning Model” (PDF, 2 pages, 96K), and “First Order Estimate of AP209E2 Modularization and Extension Tasks” (PDF, 11 pages, 158K).]
5. Status of previous action items:
 - (a) Hauser will provide Rumsey a list of issues that need to be discussed with the NCSA (HDF5) people.
 - Not done. Action item carries.
 - (b) Pointot will work on completing SIDS-to-HDF5 documentation; Wedan, Rumsey, Towne, Koziol will be reviewers. Need to incorporate new extensions.
 - Pointot has completed the documentation and sent to Towne. Towne will upgrade with 2.4 additions and post after V2.4 comes online.

- (c) Michal will check with other Boeing people to see if they can test EM extension.
 - There does not appear to be interest to test. Action item dropped.
- (d) Wedan will make change in CGNS HDF5 software so viewer can read (see) character strings in the HDF5 files.
 - Status unknown. Action item carries.
- (e) Wedan will complete changes for V2.4 and will announce when ready.
 - Not done yet. Action item carries.
- (f) Michal will write a first draft proposal to handle polyhedral cells.
 - Begun, but Allmaras brought to Committee's attention that there is an existing way to handle these. Rather than cell-based, connectivity can be defined via face-based (with parents defined). Allmaras will write up an example and send to Rumsey to pass on to the Committee. We may want to add example to SIDS. Michal's action item dropped.
- (g) Rumsey will send a request for a vote for vice-chair via e-mail.
 - Done.
- (h) Rumsey will contact Day and Cawley about AIAA balloting status.
 - Done. AIAA is progressing, but there are still several committee members who have not sent in their ballot, as of 5/17/05: Allmaras, Benyo, Enomoto, Hauser, Legensky, Pottiez, Power, Stuckert, and Weber. They have been reminded by Cawley to do so.
- (i) Wedan and Hann will discuss license issue off-line, consult with legal people, and make decision.
 - Hann reported that their legal people are looking at it, but it is unlikely they will give definitive advice. No decision made yet. This item moved to "open item" list.
- (j) Karman agreed to modify existing SIDS doc on element type definitions and send to Towne.
 - Done. Bruce can implement the additional PYRA element, but apparently there is a problem with forward compatability (if try to read 2.4 file with older version of CGNS, will have error). For now, Bruce will comment out, but this is an item that needs to be implemented when we are willing to lose forward compatability. This item added to "open item" list.
- (k) Wedan will change the MLL to return element list instead of point list when appropriate.
 - Status unknown. Action item carries.
- (l) Rumsey volunteered to plan "Intro to CGNS" for Reno 2006, and to identify others to help.
 - Pointot volunteered to help, but won't be at Reno, so it may be better to plan for the Summer 2006 AIAA meeting. Action item carries (in modified form).

6. Documentation issues and CGNSTalk issues:

- (a) V2.4 documentation is ready to go, as soon as the software comes on line.

- (b) Towne will check to see if old documentation is stored on SourceForge. He will make sure future “old versions” also get put there.

7. Software status/discussion:

- (a) Poinot had reported a problem on CGNSTalk regarding `BCDataSet` and `adfviewer` checker. Wedan found bugs causing this and has corrected them in CVS version. It will be correct in official V2.4 when it comes on line.
- (b) Further discussion on modifying Rind to allow for unstructured grids (Norris and others are interested.) Wedan has a fix, but CGNS loses forward compatability with it. For now, these fixes are commented out. Norris will try to work with the fixes and see if they meet his needs. Also, this item will be added to “open items” list and will be officially implemented when we are willing to lose forward compatability.
- (c) Hann reported on his idea to decouple the MLL from ADF and HDF5. He wants to be able to use ADF and HDF5 interchangeably. Hann will send his proposed changes to Poinot, Rumsey, Wedan, and Allmaras, to get their opinion on it. Anyone else interested can contact Hann about it.

8. HDF-5 status/discussion:

- (a) Status of HDF5 I/O slowdown for many nodes, and larger file sizes than ADF: no significant progress known. Discussion group is `hdf5cgns@ncsa.uiuc.edu`.
- (b) A new issue brought up on CGNSTalk by Poinot (link of links, or mount of mounts for HDF5) turns out to be a problem with CGNS software. Poinot has a fix, but needs to discuss it with Wedan. Poinot and Wedan will work to resolve this issue.
- (c) Brief discussion held regarding where we are heading regarding ADF and HDF5. Allmaras brought up the point that even ADF allows different formats (IEEE-big, IEEE-little, etc.) Do we want to maintain capability for both ADF and HDF5 and allow users to use either interchangeably (as with Hann’s idea)? Poinot has the opinion that we need to have one format (HDF5) that is “preferred” or “official” or “default”, to avoid confusion among users, especially if they transfer files to others who don’t use the CGNS MLL. This issue will be revisited at our next meeting.

9. Extensions status/discussion:

- (a) Rumsey brought up a recent exchange (with McMorris, Brouillet) regarding a need for `GridLocation = FaceCenter` for zone-to-zone connectivity (for use primarily with unstructured grids). Michal is also interested in this capability, but they currently use a non-CGNS method internally. No one is sure what issues there are associated with this change, or how much effort would be involved to make a change to the SIDS and software. Rumsey will send McMorris & Brouillet e-mail addresses to Michal, and Michal will contact them.

10. Other issues:

- (a) Review status of open items:
 - Rumsey mentioned that HDF-5 “to do” list may need revisiting at some point.

- Certification process is already underway on at least 2 fronts: *adfviewer* has a check capability, and Poinot is developing an XML capability (website will eventually be available).
- (b) No formal CGNS meeting will be held at Toronto AIAA conference. Because September is so far away, next telecon will be scheduled sometime during the summer (probably July).
11. Meeting was adjourned at 12:25 PM.
12. Summary of **action items**:
- (a) Towne will incorporate Vice-Chair changes into the charter and post.
 - (b) Rumsey will forward to Hunten the e-mails of the members on the *hdf5cgns@ncsa.uiuc.edu* mailing list.
 - (c) Hunten will send a copy of his planning documentation to Rumsey, for inclusion as an attachment to these minutes.
 - (d) Hauser will provide a list of issues that need to be discussed with the NCSA (HDF5) people.
 - (e) Towne will upgrade Poinot's SIDS-to-HDF5 documentation with 2.4 additions and post after V2.4 comes online.
 - (f) Wedan will make change in CGNS HDF5 software so viewer can read (see) character strings in the HDF5 files.
 - (g) Wedan will complete changes for V2.4 and will announce when ready.
 - (h) Allmaras will write up an example of how to use existing standard for unstructured face-based connectivity, and send to Rumsey to pass on to the Committee.
 - (i) Wedan will change the MLL to return element list instead of point list when appropriate.
 - (j) Rumsey and Poinot to coordinate some type of "Intro to CGNS" for Reno 2006 or for AIAA's summer 2006 meeting.
 - (k) Towne will check to see if old documentation is stored on SourceForge. He will make sure future "old versions" also get put there.
 - (l) Norris will try to work with the (currently commented) Rind-for-unstructured fixes and see if they meet his needs.
 - (m) Hann will send his proposed changes for decoupling the MLL from ADF and HDF5 to Poinot, Rumsey, Wedan, and Allmaras, to get their opinion on it.
 - (n) Poinot and Wedan will work to resolve issue of "link of links" problem with our HDF5 implementation.
 - (o) Rumsey will send McMorris & Brouillet e-mails to Michal, and Michal will contact them about need for `GridLocation = FaceCenter` for zone-to-zone connectivity.
13. Summary of **open items** from prior meetings (these are different from action items, in that they are open or unresolved issues that we want to keep track of, but there are no specific actions required of anyone at this point in time):
- (a) Resolve HDF-5 "to-do" list ([Attachment 2](#)).
 - (b) Eventually resolve any differences between SIDS and ISO/STEP.

- (c) Question of need (or preference) to have alphanumeric sorting of everything (like is currently done for zones)
- (d) Need for developing certification process (official test for compliance)
- (e) Need to make decision about CGNS license (keep existing one, or switch?)
- (f) Need to add Karman's additional PYRA element type to allowed list (in software and in SIDS)
- (g) Need to allow Rind for unstructured (in software and in SIDS)

Attachment 1: Attendees

Steve Allmaras	Boeing - Seattle
Armen Darian	Boeing - Rocketdyne
Dan Dominik	Boeing - Rocketdyne
Richard Hann	Ansys/CFX
Keith Hunten	Lockheed Martin
Todd Michal	Boeing - St. Louis
John Norris	Ctr for Sim of Advanced Rockets (U of Illinois)
Marc Poinot	ONERA
Chris Rumsey	NASA Langley
Charlie Towne	NASA Glenn
Edwin Van der Weide	Stanford

Attachment 2: Tentative to-do list in association with HDF-5 switchover

- Complete and test parallel implementation
- Complete and test API capability to automatically detect and switch between ADF and HDF-5 (transparent to user?)
- Assess/minimize impact on software vendors using CGNS
- Make changes recommended by HDF-5 to improve usability with HDF-5 (e.g., character strings as opposed to character arrays)
- HDF-5 must fix “creation tracking”
- Assess compression capability of HDF-5
- Create SIDS-to-HDF-5 documentation (Poinot?)
- CGNS configure scripts will need to be modified to check for availability of appropriate HDF-5 libraries.
- Possibly add flag-based options when opening CGNS files. For example: “follow links” vs. “don’t follow links”; “use ADF” vs. “use HDF-5”; “translate file automatically” vs. “leave the file as-is”; “compress” vs. “don’t compress”.
- Look into eliminating need for ID’s from MLL