

CGNS Steering Committee
Meeting Minutes
10 January 2007
7:00 PM Pacific Time

1. The meeting was called to order at 7:00 PM. There were 11 attendees, listed in [Attachment 1](#).
2. The minutes of the 4 October 2006 meeting were approved as posted on the web site.
3. Steering Committee membership changes and updates
 - (a) Current membership level: 22 members (3 new members within last year: Pacific Northwest National Labs, Thaerocomp, and Tecplot).
 - (b) Committee chair position
 - i. Rumsey's second 2-year term officially ends as of Jan 2007.
 - ii. Thomas Hauser, current vice-chair, asked to extend the term for one more year, and delay being voted into this position until Jan 2008.
 - iii. Committee members voted in favor of this proposal.
4. Status of previous action items:
 - (a) Towne will update the Steering Committee Charter to add Tecplot, and Rumsey will update the website.
 - i. Done.
 - (b) Towne will e-mail AIAA the latest version of the SIDS, to insure it is up-to-date.
 - i. Done. Rumsey spoke with Craig Day and Michele Ringrose at Reno, and they asked him to e-mail them a reminder about the status of the SIDS as AIAA Recommended Practice.
 - (c) Hauser will send parallel version of CGNS with HDF-5 to van der Weide, Poinot, and Wedan to try out.
 - i. Not done yet. Action carries (slightly modified). Hauser needs to coordinate with Wedan before putting parallel version on SourceForge as beta release.
 - (d) Rumsey will post new proposal for Regions on website and ask for comments.
 - i. Done.
 - (e) Wedan will contact Poinot and look into adding string definitions header file as part of the official CGNS distribution.
 - i. Done. The header file has been added to CVS repository.
 - (f) Rumsey will send Alabi information about what AIAA needs to get the ball rolling on a possible AIAA short course for CGNS.
 - i. Done.
 - (g) Hauser and Alabi will pursue AIAA short course effort, with possible help from Wedan, Rumsey, and Poinot.
 - i. In process. New action item associated with this is given below.
 - (h) Wedan will make the fix recommended by Montreuil in cgnstools for IRIX64.

- i. Done.
 - (i) Poinot will test the HDF5 external link capability.
 - i. Action item carries.
 - (j) Allmaras will send revised face-based proposal to Rumsey for posting on website.
 - i. Done.
 - (k) Wedan will cut a new point release (2.5) soon, to include all of the new capabilities.
 - i. Done.
 - (l) Wedan will write MLL documentation on all the recent changes related to 2.5 and send to Towne for posting.
 - i. Done (sent to Towne). Rumsey to get verification from Towne when the MLL documentation on all the recent changes related to 2.5 is posted.
5. Open items (see number 15 below)
- (a) No discussion.
6. Possible CGNS short course for AIAA
- (a) After our June 2006 tutorial, AIAA asked us if we were interested in expanding it to become an AIAA short course — this would align with AIAA's desire to promote standards.
 - (b) Process is:
 - i. We fill out AIAA Course Profile Form, which includes outline of the course, instructor names, who the target audience is, etc.
 - ii. AIAA needs to have everything settled and in order prior to June 2007, in order to start marketing for the January 2008 meeting.
 - iii. We develop the course in detail, including course notes.
 - iv. About 1 month prior to course date, AIAA decides if it is a “go” or “no-go” (i.e., if there are enough attendees). Typically, if about 5 or more have signed up by 1 month in advance, it is a “go”, because typically it fills up sufficiently after that. The AIAA goal is to have at least a dozen or so students.
 - v. AIAA will make copies of all the course notes, put them in binders, and deliver them to the course site.
 - vi. AIAA pays travel and an honorarium to the instructors; instructors can decide what to do with the money (some keep it, some fold it back in to the TC that sponsors the course).
 - (c) Patricia Carr is the AIAA contact person.
 - (d) The idea is that this would be part tutorial, part hands-on programming and learning to use CGNS. AIAA would ask that students bring their own laptops. Network connections can be provided by AIAA.
 - (e) Hauser and Alabi agreed to lead this effort. Hauser and Alabi will finish completing the AIAA Course Profile Form by March 2007, and will start putting together the course in detail after that. Rumsey, Wedan, and Poinot, said that they can possibly help serve as instructors. We are shooting to hold the first course at Reno in January 2008.
7. ISO/STEP

- (a) Hunten provided [slides on status](#) (PDF, 12 slides, 58K). There are still some remaining tasks to be completed before ISO ballot to be sent out.

8. Documentation

- (a) Typo found and corrected in MLL for `conn_write_short`.
- (b) Definition of `PYRA_14` has been discovered to be wrong and needs to be fixed in SIDS: the 14th node should be at the center of the bottom face, not in the center of the pyramid. Committee members felt the change should be made (i.e., that it was unlikely to affect anyone). Also, Poirier sent an e-mail a month ago to CGNSTalk asking for anyone possibly affected by the change to e-mail the committee (no one has). Rumsey will send Towne the change to `PYRA_14` for fixing in the SIDS.

9. Software

- (a) Discussion about need for going to Version 3.0
 - i. Committee overall felt there is no reason to upgrade to new versions on a regular schedule. In other words, we should only be compelled to upgrade when necessary. For Version 3.0, this means we would do it when changes force us to lose forward compatibility, or when a large (significant) change is taking place that seems to warrant a major number change.
 - ii. Right now one item still needed that would currently lose forward-compatibility is the addition of a `PYRA_13` element definition (first noted by Karman). However, Wedan has a proposal (see “Extensions” section below) that may fix a lot of things, including this issue.
- (b) Wedan is working on adding a new layer between MLL and ADF. This will allow easily writing HDF-5, ADF, or XML, as desired, at run-time!
- (c) MLL will not permit writing a normal list without also writing normal index (`cg_boco_normal_write`), but `NormalIndex` is not an option for unstructured. Rumsey will send Wedan original e-mail about this issue (originally brought up by Guzik), and Wedan will see if there is a change needed in the MLL call `cg_boco_normal_write`.
- (d) Fix for `adf2hdf.c` (originally brought up by Mason) has been made in 2.4-4.
- (e) Fix for `cgnscheck` related to History node (originally brought up by Macounba) has been made in the CVS repository.
- (f) Van der Weide noticed very slow I/O on some parallel file systems. Wedan and van der Weide will communicate, and Wedan will look into the issue of very slow I/O on some parallel file systems.

10. HDF-5

- (a) Hauser reported on status of parallel version. He needs to coordinate with Wedan before it can be posted to SourceForge.

11. Extensions

- (a) Rumsey noted that very few committee members responded to e-mails asking for comments on the proposed extensions.

- i. The extension approval process currently does not work smoothly, because it is difficult to get committee consensus when only a handful of people look at new proposals. The following is our current "process" as specified in the Charter:
 - A. Proposal is submitted by a Technical Team
 - B. Proposal is presented in an open and public forum
 - C. Open forum reviews the proposal
 - D. Steering committee has final authority for approval by consensus or by 2/3 majority if necessary
 - ii. Currently the "Technical Team" is usually an individual, and the "open forum" is through both CGNSTalk as well as the website "Proposals for Extension" page.
 - iii. The biggest problem is step C, when it is difficult to get more than a handful of people to really thoroughly look at the new proposals.
 - iv. Suggestion made: assign extensions to a sub-committee for review (between steps C and D), then have sub-committee report to full committee, at which point full committee can vote.
- (b) Face-based storage proposal (from Allmaras)
- i. A Technical Team made up of committee members previously worked with Allmaras to refine this proposal.
 - ii. However, Wedan introduced a new formulation that may work either in place of, or in addition to, the current proposal. The idea is to replace `Type = MIXED, Element = NGON_n + nnodes, node1, node2, ...` with `Type = NGON_n, Element = nnodes, node1, node2, ...`. With this change, we will be free to add new element types. And to handle face-based, we could have `Type = NFACE_n, Element = nfaces, face1, face2, ...`. Thus, one could readily identify a face-based storage system by looking at the element set type.
 - iii. Therefore, this proposal is on hold for now. Allmaras will study Wedan's new formulation as it relates to face-based, and will make a recommendation. It may be necessary to hold another sub-committee telecon to discuss it.
- (c) Regions proposal (from Rumsey)
- i. This proposal addresses need to be able to store data at subsets of the entire zone (such as skin friction) without "cheating" and using `BC_t`, and without having to put it in a separate `CGNSBase_t`.
 - ii. Again, only a few people have reviewed it, so it is difficult to know how to reach consensus.
 - iii. Rumsey will try to form a sub-committee to perform a more thorough review of this extension before moving forward with it. This will also test to see how well the sub-committee idea works as part of the extension approval process.

12. Other issues

- (a) Rumsey presented a **year-end summary** (PDF, 4 slides, 16K) of what we accomplished and where we stand.
 - i. We had a lot of significant accomplishments in 2006! In particular, the Tutorial session and Panel discussion held at the AIAA meeting in San Francisco went

extremely well.

ii. There was only very limited discussion on some of the major points under "New/additional emphasis needed?" In other words, the following are still open issues:

- A. Funding for software support? (AIAA short course may be able to provide some, but it is typically a very small amount - like order \$1000 per year)
- B. How to improve proposal-for-extension process?
- C. How do we go about developing an official certification process?
- D. Website improvements/upgrades needed?
- E. How to overcome vendor and user inertia?

- (b) Wedan again noted that anyone interested in contributing **as a developer** to CGNS can be given developer access to the SourceForge repository. Please contact Wedan or Rumsey if you are interested!
- (c) Hauser attended NOAA oceanographic workshop in Boulder Colorado in mid-October to discuss CGNS. They are very tied to NET-CDF. Wedan pointed out that when he finishes the new layer between MLL and ADF, it would be relatively easy to add the capability to write a CGNS file using NET-CDF if desired. Hauser plans to contact a group at BYU, who already have an API but there may be a way to bring CGNS and their method together.
- (d) Next Steering Committee telecon will be held sometime in March 2007.

13. Meeting was adjourned at 9:30 PM.

14. Summary of **action items**:

- (a) Rumsey to e-mail Craig Day and Michele Ringrose, to remind them to look into the status of the SIDS as AIAA Recommended Practice.
- (b) Hauser to coordinate with Wedan and put parallel HDF-5 version of CGNS on SourceForge as beta release.
- (c) Poinot will test the HDF5 external link capability.
- (d) Rumsey to get verification from Towne when the MLL documentation on all the recent changes related to 2.5 is posted.
- (e) Hauser and Alabi will finish completing the AIAA Course Profile Form by March 2007, and will start putting together the course in detail after that.
- (f) Rumsey will send Towne the change to PYRA_14 for fixing in the SIDS.
- (g) Wedan will see if there is a change needed in the MLL call `cg_boco_normal_write` (from Guzik e-mail).
- (h) Wedan and van der Weide will communicate, and Wedan will look into the issue of very slow I/O on some parallel file systems.
- (i) Allmaras will study Wedan's new formulation as it relates to face-based storage, and will make a recommendation. It may be necessary to hold another sub-committee telecon to discuss it.
- (j) Rumsey will try to form a sub-committee to perform a more thorough review of the Regions extension before moving forward with it. This will also test to see how well the sub-committee idea works as part of the extension approval process.

15. 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) Keep track of / resolve HDF-5 “to-do” list ([Attachment 2](#)).
- (b) Keep track of progress with ISO/STEP.
- (c) Need for official certification process (test for compliance)
- (d) Need to add Karman’s additional PYRA element type to allowed list (in software and in SIDS)
- (e) Need to upgrade / update User’s Guide as appropriate (such as additional specific examples)

Attachment 1: Attendees

Steven Allmaras	Boeing Commercial
Thomas Hauser	Utah State
Scott Imlay	Tecplot
Chris Nelson	Innovative Technology Applications
Greg Power	AEDC
Chris Rumsey	NASA Langley
David Vaughn	CD-Adapco
Kurt Weber	Rolls-Royce
Bruce Wedan	ANSYS/ICEM CFD
Edwin van der Weide	Stanford University

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)
- Assess compression capability of HDF-5
- 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
- Resolve “link-of-links” problem: will require HDF-5 fix by NCSA (beta implementation of “external links” is in the works — likely complete in early 2006?)