

CGNS Steering Committee
Telecon Minutes
10 May 2006
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 22 March 2006 meeting were approved as posted on the web site.
3. Steering Committee Membership changes and updates
 - (a) no changes or updates
4. Status of previous action items:
 - (a) Towne will add Pacific Northwest National Laboratory to Steering Committee Charter.
 - done
 - (b) Rumsey will forward Allmaras's documentation on face-based storage method to Fisher, Poinot, Hann, Weber.
 - done, but no responses yet - see section 11(b) below
 - (c) Wedan will write documentation for SIDS and MLL as appropriate on Rind-for-unstructured and send to Rumsey, Norris, and Towne.
 - in process - action item carries
 - (d) Wedan to write up documentation on `cg_free`.
 - not done yet - action item carries
 - (e) Poinot and Rumsey will work on making a poster and flyer for the SF tutorial session, and will forward to steering committee prior to printing.
 - done - it is being printed now and will be ready for the conference
 - (f) Rumsey will look into advertising the SF tutorial session at CFD-Online.
 - done - advertisement posted to CFD-Online
 - (g) Alonso will forward to Rumsey some preliminary ideas on levels of compliance for vendors, related to problems he has encountered.
 - not done yet - action item carries
 - (h) Rumsey will send Fisher more information about SF Panel discussion.
 - done
 - (i) Towne will check with AIAA on the status of the latest Recommended Practice document.
 - as of March 24, AIAA said it would come out shortly. Towne will e-mail AIAA again to check on the status of the Recommended Practice.
 - (j) Hauser will send parallel version of CGNS with HDF-5 to Alonso and van der Weide to try out.
 - not done yet - action item carries (including Poinot and Wedan as recipients)

(k) Rumsey will forward all new proposals for extension to Steering Committee for comments.

- done - comments from committee members due by May 31

(l) Rumsey will have Einstein's FSI proposal posted to the website.

- done

5. Planning for San Francisco AIAA meeting

(a) Panel discussion will be "CGNS Practical Applications in CFD", under auspices of Fluid Dynamics TC, Monday June 5, 1PM. We currently have 4 panel members attending for sure: Poinot (ONERA), Hann (Ansys-CFX), Fisher (Boeing), and Ladeinde (Thaerocomp). Cayre (SNECMA) and Sudre (Eurocopter) could not get approval to come, but they have been asked to submit their slides in advance so someone else can try to give them. Rumsey will give Panel Discussion Intro, and Hauser will lead discussion at the end.

(b) Regarding evening tutorial (Wed June 7 at 7:00PM in Pacific D), the five tutors are: Rumsey, Wedan, van der Weide, Hauser, Poinot. Things appear to be well in hand.

(c) Rumsey will schedule a small Telecon the week of May 22 for the tutors and panelists, in case there are any issues that come up that need to be discussed.

6. Open Items (see number 15 below):

(a) No discussion

7. ISO/STEP

(a) Nothing new to report.

8. Documentation

(a) Discussion led by Wedan regarding an interpretation of the SIDS that a few people seem to be making, that is counter to what we believe was intended. They are writing the number of elements as the total number of volume *and* surface elements. They are doing this so that they can write `FlowSolution` data for both the volume and surface elements. `CGNSCHECK` interprets the number of elements as the number of "highest order" elements, so it is issuing a warning error. Also, for example, in `CGNSBase_t` the `celldim` is being set to 3, yet some zones have only surface elements in them. After discussion, it was decided that the SIDS should not be changed in these regards. It appears that there is a capability missing in the SIDS that some people are working around, and hence the misinterpretations. (Van der Weide writes his surface information to a separate CGNS file in order to be able to visualize it.) This missing capability is likely related to the earlier issue (see previous recent minutes) related to "source terms" or "regions." See also Sayre's Proposal for Extension (on website) titled "Element Regions." Wedan and Rumsey will initiate a new proposal for extension, perhaps based on Sayre's existing proposal but also including structured grids, to try to deal with the need for writing data to smaller and/or possibly lower-order regions.

9. Software

- (a) Poinot's CGNS string definition header file: can possibly be added to website's list of Contributed Utilities, or eventually incorporated and used by MLL itself. Wedan will look at Poinot's string definition header file and determine the best course of action.
- (b) Problem of using relative pathnames when links are involved (from Norris through CGNSTalk): this issue still exists. It will be revisited if it crops up as a persistent problem for more users.
- (c) Memory leaks (found by Muller, Poinot) have been fixed by Wedan. Newest release 2.4.4 has the correction.
- (d) Strange behavior of partial write routine (from Allmaras through CGNSTalk): no one has responded to this issue yet. Wedan will look into the partial write problem (found by Allmaras), and Rumsey will contact its authors (at Intelligent Light) to ask about it.
- (e) Issue brought up by Hann: is current limit of 32 characters too small? Is it possible to add a capability to also store longer strings, and/or have the MLL recover longer string data? This would take a significant amount of coding changes to implement — there does not seem to be an easy solution. Decided to table the issue for now.

10. HDF-5

- (a) Question came up about status of Hauser's beta release for parallel HDF-5.
 - Poinot and Wedan are also interested in trying it. Hauser should send to Alonso, van der Weide, Poinot, and Wedan to try out when ready.
 - After this, it should be made available on SourceForge.

11. Extensions

- (a) There are several new proposals for extension - Committee members should send comments (to Rumsey) on these by May 31
 - Averaging Interfaces - (Magnan)
 - Face Center Connectivity - (deVito)
 - Multiple zone connectivities for time-dependent - (Rumsey)
 - Fluid-structure interaction with deformable boundaries - (Einstein)
- (b) Regarding Allmaras' face-based storage method for SIDS, no comments have been received yet. Poinot told Rumsey (offline) that he had some comments from people at ONERA that he could make available in early June. Rumsey will e-mail the participants interested in the issue of Allmaras' face-based storage method (Fisher, Poinot, Hann, Weber) and solicit their feedback again.

12. Other issues:

- (a) Next telecon will be held sometime during the summer.
- (b) Note of interest: Einstein has CGNS writer for isosurfaces in MEVISLAB. They will eventually be mapping cell types and gene expressions to these.

13. Meeting was adjourned at 11:55 AM.

14. Summary of **action items**:

- (a) Wedan and Rumsey will write documentation for SIDS and MLL as appropriate on Rind-for-unstructured and send to Norris and Towne.
 - (b) Wedan to write up documentation on `cg_free` (in MLL).
 - (c) Alonso will forward to Rumsey some preliminary ideas on levels of compliance for vendors, related to problems he has encountered.
 - (d) Towne will e-mail AIAA again to check on the status of the Recommended Practice.
 - (e) Hauser will send parallel version of CGNS with HDF-5 to Alonso, van der Weide, Poinot, and Wedan to try out.
 - (f) Rumsey will schedule a small Telecon the week of May 22 for the tutors and panelists, in case there are any issues that come up that need to be discussed.
 - (g) Wedan and Rumsey will initiate a new proposal for extension, perhaps based on Sayre's existing proposal but also including structured grids, to try to deal with the need for writing data to smaller and/or possibly lower-order regions.
 - (h) Wedan will look at Poinot's string definition header file and determine the best course of action.
 - (i) Wedan will look into the partial write problem (found by Allmaras), and Rumsey will contact its authors (at Intelligent Light) to ask about it.
 - (j) Committee members should send comments (to Rumsey) on 4 latest Proposals for Extension by May 31.
 - (k) Rumsey will e-mail the participants interested in the issue of Allmaras' face-based storage method (Fisher, Poinot, Hann, Weber) and solicit their feedback again.
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
Bob Bush	Pratt & Whitney
John Chawner	Pointwise
Armen Darian	Pratt & Whitney - Rocketdyne
Dan Dominic	Boeing - IDS/PW
Richard Hann	ANSYS/CFX
Greg Power	USAF/AEDC
Chris Rumsey	NASA Langley
Charlie Towne	NASA Glenn
Edwin van der Weide	Stanford University
Bruce Wedan	ANSYS/ICEM CFD

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?)