CGNS Steering Committee
Meeting Minutes
6 January 2003
7:00pm
Reno, Nevada

Call to order - Bob Bush called the meeting to order at 7:00.

Attendance - There were 17 attendees, listed in Attachment 1.

Approval of minutes of last meeting - The minutes were approved as posted on the web.

Charter Business - Chris Rumsey of NASA Langley was elected as new chairperson of the CGNS steering committee. He will serve a 2 year term.

ISO Status - Ray Cosner provided an overview of the ISO standard development effort. Hierarchically, the CGNS model consists of the following parts. At the top is AP 237 (Fluid Dynamics Data). Under this is Part 110 (CFD Models), which was at one time removed, but then restored in Oct 2002. Under this are Part 50 (Mathematical Constructs) - which already exists under ISO, Part 52 (Mesh Based Data), and Part 53 (Numerical Analysis). Under these 3 parts is Part 21 (Clear-Text Encoding) - which already exists under ISO.

By Ray's estimates, if all goes well AP 237, and Parts 52, and 53, and 110 will be voted as draft international standards by Jun 03 - Mar 04, and voted as international standards by Jan 04 - May 05 (2/3 vote needed from 19 countries). An alternative to Part 21 will need to be tackled in the future if the ISO standard is to include binary representation of data (currently the ISO standard is ASCII). The committee had some discussion about this issue. It was suggested that the committee advocate HDF 5 to replace ADF as the binary representation. HDF 5 has many tools and capabilities, including parallel capabilities. Also, ISO committee members are already leaning that way. Ray would like to hear from anyone by the end of February 2003 if they have any concerns or issues about HDF 5. Chris Rumsey agreed to solicit an e-mail exchange about HDF 5 between Powers, Edwards, Michal, Cosner, Bush, and Poinot.

The use of gzipped XML was also discussed as a possibility for ASCII representation.

Ray again suggested the need for a workshop (at Lockheed, Ft Worth) for CGNS steering committee members to go through the ISO documents in detail. This workshop was originally suggested for Fall 2002, but was postponed. It was also suggested that a subcommittee be formed to go through Part 52 in detail, and make sure that it is still aligned with the latest CGNS SIDS constructs. Chris Rumsey agreed to solicit input from Bussoletti, Poirier, Michal, Bush, and Cosner on this issue.

Ray informed the committee that he has a new job within Boeing, and he will need to identify a new project leader at some point in the future to take over the CGNS ISO effort.

Documentation - Craig Day (standards engineer at AIAA) announced that the printed version of the SIDS document (Recommended Practice R-101-2002) is complete and is available from the AIAA on-line store. Charlie Towne could not be present, but indicated to the Chairman via e-mail that once the AIAA version is complete, he will update our version, labeling it as a Draft Recommended Practice and adding a link to the AIAA on-line store web site. He will also make the AIAA version available as a PDF file.

Towne made a note that the Recommended Practice is basically version 2.1.6 of the SIDS document, dated 2 Nov 2001, and corresponds to CGNS software release 2.0, Rev 3. Version 2.1 of the software was released in May 2002; version 2.2 in beta, and may become "official" soon. The Recommended Practice thus doesn't include the data structures for chemistry or user-defined data (in version 2.1 of the software), or the data structures for axisymmetry, rotating coordinates, special grid connectivity properties, special boundary condition properties, or gravity (in version 2.2 beta of the software). It also doesn't include various corrections and clarifications that have been added in the last year or so. Charlie suggests that once version 2.2 of the software becomes official (i.e., non-beta), that we update the AIAA Recommended Practice. The revised documentation for Version 2.1 is now installed on the web in the default locations. The older documentation is still available via other links.

Extensions - John Bussoletti mentioned that currently the SIDS is lacking in some respects for unstructured CFD representation. For example, there is no official place to store number of edges. These can be placed under UserDefined for the time being. Also it was mentioned that the SIDS currently does not allow an unstructured GridLocation to be anything other than Vertex or CellCenter. Bussoletti said that he planned to eventually propose some changes to the way SIDS handles unstructured data sets, as official extensions.

Related Software Status - David Edwards reported that Intelligent Light recently won an SBIR Phase 1 from NASA that involves CGNS usage in post-processing large data sets.

Bruce Wedan reported on the status of adfviewer and related tools. He is still working on documentation of this software. Through e-mail, Charlie Towne mentioned that he plans to update the web documentation to include adfviewer. But he would like to wait until documentation for the additional utilities that Bruce wrote can also be made available, especially since they can be accessed through ADFViewer.

At the last Telecon, it was agreed that Version 2.2 would be removed from beta status as of January 2003. However, Bruce has recently made a lot of minor changes to the API beta software, so the decision to remove the beta status has been deferred for the time being and will be taken up again at the next telecon.

The use of SourceForge as a possible location for distributing CGNS software (and for having outside users upload modifications and additions) was discussed. For example, Kessler uses SourceForge to distribute CGNS++ (C++ interface for CGNS). Bruce Wedan agreed to look into this possibility.

Issues - New ideas were solicited for directions that the CGNS committee should take this year. Some of the ideas (and needs) that surfaced were as follows:

- Discussion of need for FORTRAN 95 extension - but we already have 2 mid-level libraries (C and C++) ... too many? Hard to control multiple versions?
- Need for a tool to check for SIDS-compliance
- Parallel implementation needed
- May need better definition for chemistry - Mori Mani may eventually help to define extensions as he delves deeper into it
- Need for a move to HDF 5 as the binary representation
- Need to keep existing users engaged - need more CFD codes to implement and actively use CGNS

Summary of Action Items -

1. Chris to initiate discussion for feedback on HDF 5, with Powers, Edwards, Michal, Cosner, Bush, and Poinot.
2. Chris to initiate team to evaluate Part 52 with Bussoletti, Poirier, Michal, Bush, and Cosner, to make sure it conforms (maps) to the latest SIDS document.
3. Bruce to complete documentation of adfviewer and its new tools. Charlie to put this documentation on the web site, when Bruce finishes it.
4. Bruce to look into SourceForge as a possible alternative to distributing CGNS software.

Attachment 1 – Attendees

Bob Bush	Pratt & Whitney
Dan Dominik	Boeing
Chris Rumsey	NASA Langley
David Edwards	Intelligent Light
Chris Nelson	JE Sverdrup - AEDC
John Dannenhoffer	Syracuse University
Greg Power	AEDC
John Bussoletti	Boeing
Ray Cosner	Boeing
Todd Michal	Boeing
Allan Grosvenor	NUMECA
Siansay Padhiar	Pointwise, Inc.
Theresa Benyo	NASA Glenn
Manuel Kessler	University of Stuttgart
Paul Batten	Metacomp Tech.
Mori Mani	Boeing
Bruce Wedan	ICEM CFD