CGNS Steering Committee

Telecon Minutes
15 March 2001
2:00 Eastern Time

Telecon Number: (304) 345-7506 - participant code: 686358

The meeting was called to order at 2:00 Eastern time. There were 14 Attendees, listed in Attachment 1.

Charter/Membership – It was noted that the Charter and web pages have not been updated to include the new 'voting' Steering Committee members elected at the January meeting. Diane Poirier will update the Web site, and Bob Bush will update the charter. Alan Shih, from Catalpa Research joined the telecon and introduced himself. He is interested in becoming an active member of the committee.

Issues – It was decided to have an informal meeting at the AIAA summer conferences in Anehiem Calif. Bob Bush will arrange to have a meeting room assigned one evening.

There was some discussion of what we should be planning for the next AIAA Aerospace Sciences meeting in Reno next year. Dave Edwards agreed to arrange for a User's meeting, potentially to include a panel discussion to get things moving.

Bob Bush asked if there was interest in publishing CGNS as an AIAA Standard. There seemed to be general agreement that this would be a good idea, but some reservations about what documentation, administrative or other burden it might place on the committee. The committee generally felt that they were in favor, provided there was not a substantial burden put on the committee. Bob Bush will report this back to the AIAA CFD Committee on Standards, who asked the question.

ISO Status – Ray Cosner could not attend, but sent a detailed discussion, see Attachment 2. This e-mail also contained several questions for the committee from the ISO organization. Short responses to the questions are:

1. The committee does not feel that rind data is redundant, and in fact may be required information to uniquely construct the boundary information. It was also noted that the information is optional, and does not need to be present for codes or applications that do not use the information. However, for codes that use it, it provides information that cannot be constructed from other existing data.

2. The committee was not sure what was meant by 'associative geometry'. It may be the Family_t data that associates the grid to an underlying CAD definition, in which case CGNS does have the definition needed. However, there may be more implied by 'associative geometry', and we may need to have a broader discussion.

3. The committee could only recall degenerate block types being specified in the boundary conditions only. That is, where the BCType specifies how to treat a degenerate face (e.g. average adjacent points in some specified direction, or define a normal for the degenerate surface to search along). Thus the degenerate block types are not so much specified as how the degenerate data is to be interpreted and treated. Also, this data is optional. Has the ISO committee found another specification we did not think of, and is this a problem?

4. The committee did not understand this question. The name gives the number, other than for n-gons. Where is the redundant info? There should be further discussions in this area.

5. The committee was not aware of an "index_range_ok" entity, and so have no input.

Logo Status – John Chawner indicated that the logo has been revised and is ready for review, approval and posting. John will (already did) mail it to the committee for review and comment. We hopefully can approve it at the June meeting, and have it posted on the web soon thereafter.

Documentation – Charlie Towne was not available for the telecon, but sent a summary of the documentation. His report is attached as Attachment 3.

Software Support – Bob Bush reported that while there has been some initial activity aimed at defining support and staffing for a software focal point, things are moving slowly. However, the committee had several suggestions for moving forward in the interim.

1. Encourage additional use of the Listbot, using it to increase the availability of expert advice and suggestions. We also encourage knowledgeable people to sign up and provide this advice as time allows.

2. Diane Poirier is still getting many e-mails. She will begin forwarding them to the Listbot and other members of the committee as appropriate.

3. Diane Poirier is still willing to maintain the web site.

4. Intelligent Light is willing to take on the focal point role, but require funding in order to fully commitment.

5. The definition and refinement of extensions can and should continue even in the absence of a software focal point. The extensions should be refined to the level that they are ready for inclusion in the SIDS documentation, and the File Mapping document. It is up to the originator, and any ad hoc committee that can be formed to make sure these continue to progress.

6. Doug McCarthy agreed to draft and propose a Steering Committee contribution strategy to obtain the necessary funding. This proposal should be circulated among the various member organizations to determine the feasibility of gaining the funding.

7. There was much discussion on the open source status of the software. While the source is ‘open’ we currently have no mechanism for others to contribute to the development. One role of the software focal point should be to establish such a mechanism. Two potential version control mechanisms were mentioned: CVS and IVMS. CVS is public domain and should allow multiple developers to contribute to the development effort. IVMS is an inter-net based version control software developed by the NPARC Alliance. Both are layered over RCS, so migrating from one to the other should be possible. If anyone is willing to invest the time to set up a version control system for the development source it would be appreciated. Once set up, it should allow multiple developers to contribute extensions to the software. Members are encouraged to look into this as it would allow continued growth of CGNS in the interim between identifying focal points.

Extension Status – There was brief discussion of the various extension proposals. Many are somewhat stagnant and need to be re-invigorated. Currently we rely on the originator to keep them moving.

- Hierarchical structures – Patel
- Chemistry – Bush
- Rotating Coordinates – Bush
- Spray/2phase flow – Darian
- Hanging Nodes – Edwards
- Wall Functions
- Turbomachinery BC’s
- API Link support

- User defined arrays – Rumsey
- Utilities – Hall

Additional – Release Status – Diane Poirier indicated that we are ready to release V2 beta2 as the production V2.

Diane Poirier is eagerly anticipating being unavailable for several weeks due to the arrival of a new addition to their family! We all wish her the best and look forward to hearing the news!

Attachment 1 – Attendees

Bob Bush	Pratt & Whitney
Chris Rumsey	NASA Langley
Armen Darian	Boeing Space
David Edwards	Intelligent Light
Michel Delanaye	NUMECA
John Chawner	Pointwise
Greg Power	USAF/AEDC
Don Roberts	Amtec
Dave Schowalter	Fluent
Francis Enomoto	NASA Ames
Alan Shih	Catalpa Research
Kevin Mack	ADAPCO
Diane Poirier	ICEM-CFD Engineering
Doug McCarthy	Boeing Commercial

Attachment 2 - E-mail from Ray Cosner on ISO Approval Status

Bob,

Due to a travel commitment, I will not be participating in the CGNS telecon on March 15. Here's the latest on the ISO-STEP project.

The ISO-STEP project has progressed through Gate 2 - New Work Item Proposal. This standard has been assigned the name "AP 237: Fluid Dynamics". We will be producing (probably) five documents:

1) AP 237, the top-level standard for fluid dynamics data

2) Part 1xx (100-series, number not yet assigned), specialized components of the standard applicable only to CFD. In the future, other 100-series parts will be produced with specializations for flight test data, wind tunnel data, and other categories of fluid dynamics data. These will all be components of AP 237.

3) Part 52, generic data structures for mesh-based data - both structured and unstructured mesh. This will be referenced from AP 237 and Part 1xx.

4) Part 5b (50-series, number not yet assigned), general product data management information for numerical analysis results. This will be referenced from AP237 and Part 1xx.

5) A "Usage Guide" which is more of a free-form document, intended to familiarize the reader with the concepts and the implementation. If you ever need to become knowledgeable quickly about an ISO standard, I recommend you start with the Usage Guide for that standard. Not all standards have one, however.

Drafts of all these parts exist now, except for the Usage Guide. However, only Parts 52 and 5b are in a state which we think could be final. The current drafts of AP 237 and 1xx were marked up at meetings in December and February, and those markups have not yet been incorporated into revisions of the documents.

Our Fluid Dynamics proposal was supported by US, UK, Sweden, Germany, Switzerland, Australia and Japan - these I know of, and probably there were several others that I don't yet know of because the official results of the vote have not yet been conveyed to me. At this stage in the process, we had to have five "yes" votes and no "no" votes.

The next stage of the process will be to present a full draft for detailed review. With Parts 5b and 52, we hope to reach this point in April. For Part 1xx, we are shooting for the summer, and for the top-level AP 237, sometime in the fall.

Here are some questions which have been raised. I would ask the CGNS

Steering Committee to consider these questions.

1) Do we need to provide for rinds? This seems like redundant information that (a) can be easily created by an application code as needed and (b) is related to a specific code, i.e., different codes will require different rind characteristics (excluding the large number of codes which don't require a rind at all). The rind can be retained in the standard if it's needed, but there is a desire not to include data in the standard which can be easily recreated from other data in the standard, or data which has no relevance except to a specific application code.

2) Does the CGNS Steering Committee have plans to extend CGNS to include associative geometry, in a time frame that is compatible with the schedule I have outlined above?

3. Is it necessary to identify as discrete types of structured grid blocks the degenerate block types which include collapsed faces or edges? Currently, all these degenerate cases are listed and given separate identifiers but we are not sure this is needed.

4) Is there a need to include the vertex count associated with each unstructured cell type. This seems to be redundant information that is easily derived.

5) Do we need the entity "index_range_OK" ?

As I indicated during my presentation to this Committee on January 9, I plan to refer these and future questions regarding intellectual content to this Committee, since it is my goal to keep the ISO-STEP standard as close as possible to CGNS.

At this point, it seems possible to think of having a final, approved international standard by perhaps late 2003 or early 2004.

Thank you for your continued support.

Attachment 3 - E-mail from Charlie Towne on Documentation Status

Bob,

Sorry, but I won't be able to dial in for tomorrow's telecon. Here's a summary of the documentation changes since the last meeting, and the current status.

- The documentation web pages have been moved to the GRC web server. The documentation page at the CGNS web server looks basically the same, but links now go to the GRC server.

- HTML versions have been added for the:

  - Overview (but the content is old and should be updated)
  - User's Guide
  - File Mapping Manual

- The "hard-copy" versions of the Overview and File Mapping documents have been converted to LaTeX

- The File Mapping Manual has been updated for consistency with the current version of the SIDS.

- The Mid-Level Library documentation is being re-organized, and basically follows the organization used in the "Detailed CGNS Node Descriptions" section of the File Mapping Manual. Both an HTML and LaTeX "hard-copy" version will be available. The first cut at this should be ready tomorrow or Friday for review, I assume by you, Diane, and Chris (and anyone else who's interested enough).

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