2023-4-4 Meeting notes

Date

04 Apr 2023, 10:00 AM EST (US)

Participants

- @ Scot Breitenfeld ⭐
- @ Vicky Moschou ⭐
- Scott Imlay
- @ David Gutzwiller
- @ Simone Crippa
- @ Tobias Leicht
- @ Gregory Sjaardema ⭐
- @ David Gutzwiller ⭐
- @ Stephen Guzik ⭐
- @ dmitry.s.kamenetskiy ⭐
- @ Tony Garratt ⭐
- @ Patrick Baker (Has new representative)
- @ Earl P Duque
- @ ZJ Wang ⭐
- @ Christopher Rumsey ⭐
- @ Matthias Möller
- @ Pierre-Jacques Legay ⭐
- Kamenetskiy, Dmitry S
- @ Mickael PHILIT ⭐
- @ Marc Poinot
- @ Koen Hillewaert
- Giorgos Strofylas (BETA CAE) ⭐
- David Garlisch ⭐
- Scott Imlay ⭐

⭐ In attendance

Steering Committee Issues

Discussion topics

Item	Presenter	Notes
Approve 2023/1/10 minutes.	@ Scot Breitenfeld	☑ post the last meeting's minutes to the CGNS webpage. Approved.

high-level editing tools for the documentation page	@ Marc Poinot @ Christopher Rumsey	**Help needed to divide the remaining tasks:** https://github.com/CGNS/cgns.github.io/projects/1 The documentation goes into the source using Doxygen. This work uses the "**Doxygen**" branch. Examples are given for cg_open and cg_version. The aliases used for repeated variable descriptions are in *src/Doxygen/Doxygen.config*. We need volunteers to help with translating the remaining APIs to Doxygen. • A link to the new website is provided on the main cgns web page: https://cgns.github.io/cgns-modern.github.io/index.html. • All the MLL APIs have Doxygen entries, the cgio APIs need to be done next. • An automatic generation of the website through GitHub action is done. ☐ @ Scot Breitenfeld will define a tasks list or project plan with remaining tasks.
Converting CGNSTalk archive to Github Discussion Posts	@ Scot Breitenfeld	Hope to be completed by the next meeting. No updates
Coupled fluid-structure standard addition	@ Scot Breitenfeld	Proposal to standardize fluid-structure simulations submitted, no updates.
Discussion Topic	@ ZJ Wang	Short discussion on past AMR CPEX (0008) and whether AMR should be revisited as a feature-supported CGNS. Some groups may be already using CGNS with AMR, but not known for certain. The need for AMR support in CGNS is unknown. @ Vicky Moschou @ Tobias Leicht @ ZJ Wang to discuss progressing CPEX 0008. ☐ @ Vicky Moschou @ Tobias Leicht @ ZJ Wang to discuss it with interested parties before the next meeting. • CPEX 0008 / Adaptive Mesh Refinement: Again, we are very much interested in the topic and actively working on and with adaptation using element subdivision, leading to hierarchical representations of the mesh. Where I am unsure is whether there actually is a need to store this structure itself, i.e. essentially provide information of how to get from one mesh to another via adaptation. Any resulting mesh with hanging nodes can be represented just as is (e.g. as polyhedral). While I think that it could be beneficial to explicitly express the hanging node / hanging face connectivity (in order to allow to still recognize the elements as (for example) hexes with hanging nodes rather than just any polyhedron) I don't think it would be overly useful to have the actual hierarchical information available in an archival /exchange format like CGNS. I don't know what it would be used for outside of a specific code. But I'm certainly still very much interested in the actual discussion. If this is supposed to be a separate small group discussion (my current understanding), please invite me over… Tobias This work is a low priority for the majority of the past interested parties, this CPEX will be tabled ☐ @ Scot Breitenfeld will update the website to reflect the current state of the CPEX.

Status update on Accepted CPEX #0045 ➕ **CGNS-182** - CPEX 0045: Polynomial Data and Curved Grid Elements **IN PROGRESS**	@ Koen Hillewaert	The branch CPEX45_high_order has not been updated since Feb 25, 2020. An update from @ Koen Hillewaert on the status is needed. Regarding the two topics that I might want to say something on I have collected some input – feel free to use it (or not): • CPEX 0045: We are still very much interested in this for our DG and DGSEM solution storage. We have been rather slow in adopting the proposed work in progress, though, and now that it has been quite a while since anyone touched things in CGNS I am a bit unsure whether it makes sense to push it now or wait for feedback on the status. We decided for the latter, so in the end I am waiting for Koen to provide feedback on the status of the branch and the way ahead. Please let me know if I am under the wrong impression that this was the agreed next step… Tobias There is currently no one actively working on this, we will keep the project on the meeting agenda but we don't expect any updates.
Open Discussion about backward compatibility issues	@ Scot Breitenfeld	Discussion about backward compatibility issues discovered recently. Ansys, and others, has encountered backward compatibility issues with 4.3.0. All issues with backward compatibility will try to be addressed and fixed before the 4.4.0 release. All interested parties should either create an issue or contact the CGNS developers to ensure their issue has been addressed. ☐ @ Scot Breitenfeld Update the backward capability issues on the website.
Discussion Topic	@ Mickael PHILIT	Proposal to have Monitoring numerical probes description to the standard. Some groups may already use CGNS to do that, but there is a need to have a shared approach. ☑ Committee needs to review the proposal and provide feedback. Feedback was received. ➕ **CGNS-272** - Add support for Monitoring probes in CGNS **TO DO** ☐ @ Mickael PHILIT will resend CPEX, please it review before the next meeting. ☐ @ Scot Breitenfeld Will schedule discussion and vote for next meeting.
Status update on Accepted CPEX #0047 Proposed Data integration Points	@ Mickael PHILIT	Working on the new website before creating a new development branch to prevent duplicating efforts. Started prototyping with python and C and will push a branch on GitHub in the upcoming weeks. (The "C" branch is a slow work in progress) No new updates. Still in progress.

prioritization, review and attribution of JIRA bugs/issues	@ Tony Garratt @ David Gutzwiller	Next release 4.4.0, Kanban: https://github.com/orgs/CGNS/projects/2 **Current status for Ansys**: No issues that are urgent. @ Scot Breitenfeld is working on updating the Multi-dataset APIs in CGNS to use the new array-based API and is testing CGNS with the new HDF5 subfiling feature. @ Scot Breitenfeld Can the APIs default to writing one dataset at a time if CGNS was not built with HDF5 1.14.0? • Added question to the GitHub issue for investigation, https://github.com/CGNS/CGNS/issues/674 @ Scot Breitenfeld Is completing the option of using subfiling for CGNS. Perlmutter, write times: 65,536 ranks, benchmark_hdf5.c, 1 billion elements Independent, single-shared-file: 553.4 s Subfiling: 56.4 s Feature is scheduled for the next release, currently in the **subfiling** branch.

Action items from last meetings

	Description	Due date	Assignee	Task appears on
☐	@ Scot Breitenfeld will define a tasks list or project plan with remaining tasks.		Scot Breitenfeld	2023-4-4 Meeting notes
☐	@ Scot Breitenfeld will update the website to reflect the current state of the CPEX.		Scot Breitenfeld	2023-4-4 Meeting notes
☐	@ Scot Breitenfeld Update the backward capability issues on the website.		Scot Breitenfeld	2023-4-4 Meeting notes
☐	@ Mickael PHILIT will resend CPEX, please it review before the next meeting.		Mickael PHILIT	2023-4-4 Meeting notes
☐	@ Vicky Moschou @ Tobias Leicht @ ZJ Wang to discuss it with interested parties before the next meeting.		Vicky Moschou	2023-4-4 Meeting notes
☐	@ Scot Breitenfeld Will schedule discussion and vote for next meeting.		Scot Breitenfeld	2023-4-4 Meeting notes
☐	@ Mickael PHILIT will resend CPEX, please it review before the next meeting.		Mickael PHILIT	2023-1-10 Meeting notes
☐	@ Vicky Moschou @ Tobias Leicht @ ZJ Wang to discuss it with interested parties before the next meeting.		Vicky Moschou	2023-1-10 Meeting notes
☐			Scot Breitenfeld	2023-1-10 Meeting

☐	**Scot Breitenfeld** @ **Will schedule discussion and vote for next meeting.**		notes
☐	@ Scot Breitenfeld to update the web page.	Scot Breitenfeld	2022-3-29 Meeting notes
☐	@ Scot Breitenfeld will follow-up with @ Koen Hillewaert to find out the status.	Scot Breitenfeld	2022-3-29 Meeting notes
☐	@ Scot Breitenfeld will email committee an update, and @ Tobias Leicht may take over the discussion if needed.	Scot Breitenfeld	2022-3-29 Meeting notes
☐	Committee needs to review the proposal and provide feedback. @ Scot Breitenfeld to send out a reminder.	Scot Breitenfeld	2022-3-29 Meeting notes
☐	@ Scot Breitenfeld will enter a Jira issue to make the examples provided by CGNS to be updated to reflect the best practices (in terms of CGNS format description usage).	Scot Breitenfeld	2021-3-2 Meeting notes
☐	@ Scot Breitenfeld will enter a Jira issue to add to cgnscheck to not only validated the format, but also give a best practices analysis of the chosen CGNS format description and to suggest an alternative format if needed.	Scot Breitenfeld	2021-3-2 Meeting notes
☐	@ Scot Breitenfeld will enter a Jira issue to add to cgnsconvert the option to take the best practices suggestion from cgnscheck and convert the CGNS format description to that suggestion.	Scot Breitenfeld	2021-3-2 Meeting notes
☐	@ Mickael PHILIT will create a Jira issue for remaining documentation tasks which need to be completed before switching to the new documentation so we can enlist others and to coordinate the effort.	Mickael PHILIT	2021-3-2 Meeting notes
☐	@ Mickael PHILIT and higher-order developers (@ Tobias Leicht @ Koen Hillewaert) will meet to discussion the remaining issue between the CPEX0047 and higher-order methods.	Mickael PHILIT	2021-3-2 Meeting notes
☐	SIDS structure is complete in the documentation prototype but the translation process is quite slow. Help requested.		2021-3-2 Meeting notes
☐	@ Scot Breitenfeld or @ Christopher Rumsey should investigate if the cgns archive can be translated to forum posts or made available on cgns.org, which would make it viewable to web search engines.	Scot Breitenfeld	2021-3-2 Meeting notes

Decisions

Page Title	Decisions
2019-11-12 Meeting notes	⑂ BETA-CAE was added to the steering committee
	⑂ The cgio_read* will be dropped in the next release of the CGNS library.

**2020-12-8
Meeting notes**

Meeting notes Approved.

Passed: move to Github discussions when it's out of beta and retire the use of lists.nasa.gov. The notice should be posted to cgnstalk before the transition to discussions.

Passed: Release all cgns.org documentation into the public domain.

**2021-3-2
Meeting notes**

Passed: move to Github discussions when it's out of beta and retire the use of lists.nasa.gov. The notice should be posted to cgnstalk before the transition to discussions.

Passed: Release all cgns.org documentation into the public domain.

**2021-6-15
Meeting notes**

Passed CPEX #0047

**2021-9-7
Meeting notes**

Approved to include in the CGNS's example code.

**2022-10-11
Meeting notes**

Approved to move from Jira to GitHub issues.

**2022-3-29
Meeting notes**

Removal of CU-Boulder from Steering Committee (Thomas Hauser is now at NCAR). Passed

New Business

Any new CGNS funding proposal opportunities? Nothing was identified at the meeting.

Schedule next meeting

11 Jul 2023, 10:00 AM EST (US)

Adjourn