

Carlos Rueda Sorted By Project

300078 - DMO Divisional Support - AUV

300083 - DMO Divisional Support - LRAUV

- Exchanges with Erik regarding his maintenance tracking feature. (Week 49)

701165 - OVAI

- Meetings. Review of some materials. (Week 45)
- Initial versions of the CMS UI prototype, which is being deployed on a new 'ovaidev' VM that IS created for us. Thanks Joost for the very productive discussions. (Week 46)
- CMS UI prototype now 0.2.2. Started incorporating actual API calls as the services are made available. (Week 49)
- CMS UI prototype now 0.3.7. (Week 50)

901009 - CANON

- Preliminary review of the odss-planning component toward fixing/removing the ESRI base layer deprecation warnings. (something actually affecting a number of our webapps) (Week 4)
- Worked with IS / Peter to bring the MXM dockerized services back up. Thanks Peter. (Week 8)
- TethysDash additions to digest requests from Tom's new "hs2dash" client application, to expose acoustic communications between LRAUV and other assets on the Dash UI; hopefully to be exercised during Ecohab. (Week 10)
- Some MXM related upgrades (Week 10)
- Resuming some work on MXM, starting with dependency upgrades and revision of CD. (Week 16)
- MXM development (Week 18)
- Per Jenny's inquiry, looked into changing the displayed name of a couple of assets on the ODSS map. I did the updates in the mongo database, but somehow they got overwritten after a few seconds, likely by some external process or by ODSS using some cached info. Will discuss with Kevin when he's back from vacation. (Week 35)

901101 - Seafloor Mapping

- Revisiting MB-system docker (looking into OpenGL related issues on macos) (Week 36)

901502 - Passive Acoustic Sensing

- Very productive work session with pyPAM's lead. New release will eventually be published soon. (Week 4)
- Pypam development / productive session with lead person. Some progress testing pypam under Colab and Sagemaker notebooks; also trying to set up an EC2 instance (thanks Duane for your help!), all of this as part of preparations for massive processing in the cloud. (Week 5)
- Soundscape-analysis group meeting (Week 5)
- Pypam development. Group meeting. (Week 6)
- Putting together pypam-based data processing code, starting with parsing of timekeeping files (json) provided by Danelle. Some exchanges with Clea P. (Week 7)
- Group meeting (Week 7)
- Working on pypam-based data processing code. (Week 8)

- Working on pypam-based data processing. Segment concatenation for timekeeping. (Week 9)
- Providing some input re summer intern applications. (Week 9)
- Group mtg. (Week 9)
- Pypam based processing development. (Week 10)
- Met with Karl Watkins re his interest in contributing to pypam development. (Week 10)
- Pypam based data processing for generation of hybrid millidecade spectra data seems now in pretty good shape, with satisfactory testing including cloud based processing (AWS), which Danelle is orchestrating (thanks, Danelle!) (Week 12)
- Meetings. Code refactoring, adjustments, and some minor fixes. (Week 13)
- PyPAM@NCEI meeting (Week 18)
- Processing of Chumash Heritage NMS data. Refinement of software. Looking into proper metadata capture in the generated hybrid millidecade spectra product. (Week 21)
- Enhancements/adjustments to PyPAM based processing software continue. (Week 22)
- Meetings (metadata discussion; Happywhale/AI brainstorming, etc.) (Week 22)
- Implemented handling of partial days in our pypam-based-processing software. Cloud based testing ongoing (thanks, Danelle!). (Week 23)
- Provided well-received input to a PyPAM PR. (Week 23)
- PyPAM-based data processing continues (Week 24)
- PyPAM based software and data processing continue (some aspects taking longer than expected). (Week 25)
- Meeting with NCEI, mainly about metadata to be captured in the netcdf products. (Week 25)
- Some revision of "mysticete symphony" paper draft. (Week 25)
- Daily hybrid millidecade band spectra products have been generated for 2021, 2022, 2023, also with associated summary plots (plotting code provided by John R.). They are being put in a public AWS bucket, most immediately for access by NCEI and Axiom. (Week 30)
- Did some repo cleanup at <https://github.com/mbari-org/>, including removal of our PyPAM fork (I was given additional permissions in the upstream repo). (Week 30)
- Group meeting. (Week 35)
- Preparations for NCEI workshop next week (Week 42)
- Completed notebooks for demonstration at today's (2023-10-25) Soundcoop workshop in Boulder (John R. is presenting, and I'm supporting him remotely). Several obstacles to get to this point due to various unexpected issues (dependency conflicts, incompatible packages in the JupyterLab space, etc.). However, John reports all went pretty well, with "a big impression on people who have been striving for these capabilities for a long time." (Week 43)
- Group meeting (also with couple of external collaborators as usual) (Week 45)
- Group mtg (Week 50)

901513 - Targeted Sampling by AUVs

- Looked into the docker issue on TSAUV upon the recent patches. In this case, only the images were all lost, but, fortunately, it was just a matter of relaunching the services and now <http://tsauv.shore.mbari.org/gpdviz> is also back up. (Week 8)
- Team exchanges re preparations for having SMC-2 ready for deployment. No dates yet. (Week 9)
- Starting real front detection and tracking exercises offshore with programs running on the wave glider (SV3029). So far so good! (but the frequent broken connection becomes a real hassle especially now during testing and necessary tuning). (Week 19)
- For the first time, successful running of the front detection and tracking software offshore on the wave glider (SV3029). However, as emailed to the team: "by moving the program to run onboard we certainly gain in terms of avoiding data/commanding latencies, but we also lose some nice "infrastructure" features that we enjoyed and were very useful when running on shore. One key new element here (as hinted on slack) is probably having some sort of a more stateful program such that any parameter changes could be requested and acted

on with minimal intervention (something a la TethysDash/LRAUV). Nothing trivial in principle, but I'll be thinking about how to incorporate some of that from the point of view of the tracking code." (Week 21)

- Group meeting scheduled to discuss next steps for front tracking on the wave glider. (Week 22)
- Group meeting to delineate status and next steps; good prospects but also challenges ahead. (Week 23)
- Possibly new tracking exercise by early October (Week 36)
- Tested the Iridium connection that Chris and Tom have set up. Actual date for a next tracking exercise offshore still TBD. (Week 45)
- Although short, we had a successful front tracking exercise last week with code running on the wave glider. (great team effort with Chris W., Tom O., Yanwu) (Week 49)

902101 - LRAUV Technology Development and Fleet Operations

- Lots of TethysL work, with various fixes, adjustments, and additional features mainly intended to facilitate migration of XML scripts to TethysL. (hopefully to be resumed soon with the help of XML authors and the new LRAUV member joining at the end of this month). (Week 4)
- Some exchanges with Jim J., and input to the google doc re bugs and possible additional (or missing?) features in the new dash UI implementation. (Week 4)
- TethysL VSCode extension now with ability to auto install its requirements, java and tethysl, if not found on the target machine. (but windows continue to be tricky, what a surprise! ;). (Week 5)
- TethysL system is now 2.6.21. Also, the TethysL VSCode Extension page has been updated to reflect all the recent improvements. Quinn Shemet and I had a very productive first introductory session, including a quick overview of the xml-to-tl migration process. (Week 6)
- Brief meeting with Karen re new dash ui implementation. (Week 6)
- Various exchanges in the lrauv-ux channel re new UI implementation, in particular, I have emphasized the need for a more "formal spec" of the logic to provide various vehicle status information pieces in terms of the required support from LRAUV/TethysDash for the associated API for the new UI. (Week 7)
- Did some testing of the new UI while updating the google doc accordingly. (Week 7)
- Enabled a functional, but preliminary TethysDash Slack App. Thanks Steve for the testing and great feedback. WHOI also interested. Awaiting reactions from LRAUV folks. (Week 7)
- Dash System is now 4.30.1. (Per exchanges with WHOI, it includes more relaxed requirements for "dlist" generation, only requiring the startEvent for the deployment.) (Week 7)
- TethysL: Updated the "Other editors" section in the documentation. In short, besides VSCode (which remains the primary target for powerful features), there is also basic syntax highlighting support for all JetBrains IDEs (including Fleet), TextMate, Vim, Emacs, Bat, and Sublime. (Week 7)
- TethysDash: Implemented a new /data/<variableName> endpoint. This is not simply like the usual /data endpoint restricted to the particular given variable, but it will inspect as many dataProcessed events as needed to gather the data points for the specified time frame. Steve has started using it for the depth sparkline he recently added to the widget. ("That will eliminate like 100 lines of really convoluted code :^"). I presume the new UI implementation will also be using this new endpoint. (Week 8)
- Exchanges with Tom and Brian re acoustic comm and how to reflect it on the Dash. Also asking Mike G. for assistance. (Week 8)
- Some exchanges with Yanwu and Mike G. regarding certain mission constructs as used (or misused?) in circle_sample.xml. (Week 8)
- TethysL is now 2.7.4 (with fixes in the vscode extension regarding the automatic installation of its own requirements, including java). (Week 8)
- TethysL work. (Week 9)
- Some more discussion and progress with Tom, re Brian's request to somehow reflect acoustic communications on the dash, but still some pending unclear aspects. (Week 9)
- TethysDash: For Tom's "h2dash" application, /api/hotspot is now the API endpoint, which now has initial support for digesting SBDs, among other various changes. Some style adjustments in Dash4 for the display of events associated with this new endpoint. (Week 12)

- New Dash UI: set up a tethydash2 service and apache proxy for launching this new UI. Updated landing page <https://oceanids.mbari.org/> to include a link to it. Assisted Karen with dev env. (Week 12)
- New dash ui (aka dash5): Regenerated Google Key API for TethysDash due to public exposure in dash5 code. Implemented a dash5 fix. Slack exchanges. Assistance to Karen. (Week 13)
- TethysDash system: Changing build/release workflow so each component (backend, frontend, okeanids homepage) gets packaged in its own docker image. This new scheme offers a more flexible and streamlined release workflow (e.g., sometimes only one component, say, the UI, is updated, so no need to also rebuild/repackage the backend component along with it). Moving repos to GitHub toward a more uniform setup mechanism as with several of my other applications. Also, enabling continuous deployment for TethysDash (using watchtower as with the MXM system, but even more efficiently, that is, via explicit API request from the GitHub actions workflow, instead of by polling for updates from the server – see overhead bullet below). (Week 15)
- Bug fix in the backend. (Issue noted on Dash4 – thanks Yanwu for reporting). (Week 15)
- Dash4: By “popular demand,” new LRAUV coloring feature so users can override the color reported from the tracking database: (Week 15)
- LRAUV UX: some slack/github exchanges. (Week 15)
- TethysDash system: New release/CD scheme in place, with the customized backend component for MBARI being the only pending one. (Week 16)
- LRAUV UX: slack exchanges. (Week 16)
- TethysDash system: (Week 18)
 - Fixed bugs (some discovered while exercising WHOI instance), and implemented dash4 enhancements suggested by users. (Week 18)
 - New multi-image release/deployment scheme now in place for us (MBARI instance), and documentation being put together describing the new scheme for WHOI (thanks to Ryan G., for the feedback) and any other instances out there in the future. (Week 18)
- ESPComponent: discussion with Quinn re issue noted during Brizo deployment. (Week 18)
- Renewed TethysDash API Keys for the odss2dash service. (Week 19)
- Dash4: users can now define circles for the map using the “stations” feature. 99% of the needed support was already there; just needed to introduce some special property (radiusMeters) to display a regular Circle, and not a marker as with a more standard “station”. (Week 19)
- TethysDash: code adjustments/fixes (both backend and dash4 frontend). (Week 21)
- TethysL: revisiting the “operator associativity/precedence” aspect in the traditional XML schema and corresponding evaluation logic on the LRAUV, where this is done in very peculiar way, so we need to properly do translation to TethysL to preserve the intended semantics to the extent that is practical. Mike Godin has provided some input regarding the LRAUV logic, but I’m still unsure as to his actual availability moving forward. (Week 21)
- WHOI has installed the new separate-image-per-component release scheme of the TethysDash system! This is great as we now have a single release scheme to maintain moving forward. (Week 22)
- TethysL: lots of work here culminating in a significant 2.9.1 release. Coordinating with Quinn toward resuming migrations, reviewing documentation, delineating assistance to users, etc. (Week 22)
- TethysL is now 2.9.2, especially toward further facilitating migrations from xml. (Week 23)
- Assisting Karen with issues related with the Google Elevation API. (Week 23)
- Work sessions with Rob M. and Quinn regarding assistance for new elements in the lineCaptureHoming mission. (Week 24)
- TethysL: With Quinn, delineated a next set of migrations, which will be basically in a bottom-up fashion: migrate common “inserts” (eg, Insert/Science.xml, etc.), then other missions. (Week 24)
- Provided assistance/guidance regarding Dash4’s use of Google APIs. (Week 24)
- LRAUV/TethysL: revisiting ModuleToXsd.py toward determining possible strategies for either its replacement (with proper mechanism in TethysL itself) or retargeting it to generate JSON instead of XSD. (Week 25)
- Exchanges with WHOI regarding git-related issues affecting their operations (apparently they made direct changes to the lrauv-config clone, which is only to be managed by TethysDash). Added email notification to

the admins in case of failure at TethysDash init time, and added and pointed them to a new section in the documentation: <https://docs.mbari.org/tethysdash/git/> (thanks Brian K. for reviewing). (Week 30)

- Addressing various requests. Dash4 is now 4.52.6. (Week 35)
- As noted on the Irauv-operations slack channel: “fyi I just signed off several of you as PIC or On-Call associated with Brizo/Galene/Makai. As a reminder, it is now expected that operators explicitly sign off while entering an estimate of actual time spent during the watch-standing. My manual signing-off above is to facilitate the “transition” to the new protocol” (Week 35)
- TethysL is now 2.9.93. Since 2.9.0, significant release for users with no access to the Irauv-application codebase but still needing the latest information (from master or other relevant branch/git reference) for mission validation. (Week 36)
- TethysDash system is now 4.53.0. (Week 36)
- TethysL is now 3.5.1. (Week 42)
- TethysL is now 3.5.2. (Week 43)
- Provided feedback to Yanwu re his PAM mission (based on diagnostics provided by TethysL). (Week 43)
- TethysDash backend is now 4.54.4. (Week 43)
- WHOI has upgraded to the latest dash frontend and backend versions. (Week 43)
- TethysL is now 3.6.0. (Week 45)
- TethysDash backend now 4.55.0, including adjustment for WHOI as requested. (Week 45)
- Dash 4.55.2 with more adjustments/fixes related with the handling of changed/unchanged mission boolean parameters. Thanks Quinn S. for reporting. (Week 46)
- Sent email to a number of LRAUV mission authors kindly asking for their review of tethys language documentation updates, recently contributed by Mike Godin: (Week 46)
 - <https://docs.mbari.org/lrauvmissions/tethys/> (Week 46)
 - <https://docs.mbari.org/lrauvmissions/behaviors/> (Week 46)
- Submitted TETHYS-704, a proposal for an adjustment in the LRAUV, intended to make TethysDash handling of missions more robust. (Week 46)
- Some exchanges with WHOI re Steve’s widgets. Steve has now incorporated mission parameter defaults as provided by TethysDash API. (Week 46)
- TethysL is now 3.7.3. Along with couple of previous versions, new features include: (Week 49)
 - New “express migration” VSCode command (thanks Quinn for the great suggestion) (Week 49)
 - Dispatch of semantic tokens, and expanded “Outline” section in VSCode (Week 49)
 - Some bug fixes, and lots of code cleanup. (Week 49)
 - I’m also quickly revisiting some previous exercises to do the direct loading of tethysl missions in the LRAUV to estimate effort for this goal next year. (Week 49)

902204 - Scalable Robotics

- Brief conversation with Giancarlo toward planning. (Week 4)
- Short meeting with Giancarlo. (Week 6)
- Meetings. (Week 9)
- Met with Eric M. (Week 10)
- Met with Giancarlo to delineate a task related with a webapp to visualize LCM data streams. (Week 12)
- Implementing a webapp to expose LCM messages. It connects via websocket to Kevin B.’s lcm-websocket-server. Initial testing by replaying LCM log files. (Week 13)
- Completed and demoed initial webapp prototype, very well-received. Again, one more successful use of the amazing Quasar framework (and Vue3). (Week 15)
- Delineating and starting 2nd iteration on the webapp prototype (thanks Giancarlo and Sebastián for the productive discussions). (Week 15)
- Sprint 6 “Webapp GUI MiniROV prototype” almost in place (Week 16)
- The web GUI “worked great” during the deployment last week. It now has initial support for base images: user indicates URL, positioning, and opacity for each. (Week 18)

- Started setting up the two components for the GUI, lcm-websocket-server and the webapp itself, on our new 'compaslabdev' VM. (Week 18)
- For base images, now also processing the associated "world file" (.tfw) for auto-positioning on the map. (Direct geotiff ingestion is still proving tricky.) (Week 19)
- Discussing some possible next set of elements for the webapp. (Week 21)
- Group meeting. (Week 23)
- Group meeting. (Week 25)
- Adjustments to the GUI prototype, including underlying use of a yaml file for the definition of platforms (in terms of associated LCM channels, attributes, etc.), whose structure is very preliminary. (Week 30)
- Discussions about a possible request for additional work hours this year, depending on other projects that may not need initially requested allocation (tbd), and about planning for 2024. (Week 30)
- Dial maintenance release (now 0.4.0). (Week 42)
- Dial webapp: Working on keeping a recent history of platform positions so they can be displayed upon a reload of the page. Some significant refactoring is involved, which is needed in general toward other future enhancements, especially in terms of performance. (Week 43)
- Dial is now 0.5.7, with lots of new features, and some documentation (wip). Have a look at some screenshots. Here's one provided by Giancarlo this week:

(Week 45)
- Some Dial documentation updates. (Week 46)
- End of year review mtg. (Week 50)

902302 - DEI

Out of Office

- Early January (tentative): vacation.
- January 2–12: vacation.
- 1/30 sickness (not covid per rapid testing)
- Couple of days working from home due to a cold and while determining covid situation; fortunately a PCR test was negative.
- ~1 day this week: vacation (school spring break)
- Possibly ~2 days working from home next week due to desk upgrades in the office
- Possibly ~2 days working from home this or next week due to office layout upgrades
- June 5 : vacation (important family related business)
- June 9, July 4–17 : vacation
- June 5: vacation (important family related business)
- June 9: vacation
- July 4–17 (still tentative): vacation
- July 4–17 or Mid August (still tentative): vacation
- July 5–7, 15: vacation
- August 9–28: vacation
- July 21: sick
- August 8–28: vacation (out of the country)
- Working from home August 29-31.
- Oct 2–4: [QCon](#) (tentative)
- Nov 20–22: vacation
- Oct 16-19: 1-2 days working remotely (school break)
- Nov 15: (virtual) Generative AI (AI Barcelona)
- Nov 27–30: Working from home some of these days
- Nov 15-16: (virtual) Generative AI (AI Barcelona)

- Dec 5, 22, 26–28: vacation
- Jan 11: vacation

Overhead

- Providing performance review input (Week 2)
- HR Hiring committee (Week 4)
- Trying to help Brian with LRAUV Gazebo simulation dockerization (Week 4)
- HR Recruitment specialist committee / interviews (Week 5)
- HR Recruitment Specialist hiring committee (interviews/discussion) (Week 6)
- Annual performance review (Week 6)
- IE group mtg (Week 6)
- Peter notifies me there's some docker-related issue with 'tsauv' upon the recent patches; the gpdviz service is currently down... Then, I "discovered" that MXM is also down. Planning to have a closer look at both machines and keep in touch with Peter. (Week 7)
- IE meeting (Week 7)
- Attended Internal seminar: Computer Vision Navigation for Space Applications (Week 7)
- HR candidate interview (Week 10)
- Some initial exploration of OpenAI API (fine-tuning and embeddings) for potential use in MBARI applications. As a possible ref, this domain specific ChatGPT example looks interesting. (Week 10)
- HR candidate interviews. (Week 12)
- Worked with Peter re his docker engine changes, all OK and with smooth relaunch of all services on mxm, tethystest, and tsauv. (Week 12)
- HR recruiter hiring. (Week 13)
- Q1 check-in. (Week 13)
- IE meetings (technical focus). (Week 15)
- Created this watchtower-cd repo, to consolidate a basic guide to setting up continuous deployment (CD) using Watchtower and GitHub Actions. (Week 15)
- Refined my QDarkMode vue3/quasar2 component, so it not only switches dark mode on and off, but also handles an "auto" mode, which automatically synchronizes with the OS setting. Here's in use in the Okeanids homepage, which I recently updated in general: (Week 15)
- SE-EAD interviews (Week 18)
- SE-EAD interviews and input to Kent. (Week 19)
- ACM TechTalk: LLM and the end of programming (really serious stuff) (Week 19)
- SE-EAD interviews. (Week 21)
- IE mtg, abstract discussion/feedback. (Week 21)
- SE-EAD hiring discussion. (Week 22)
- Attended some DOEST presentations (I found Steve H.'s really fascinating) (Week 23)
- ESIP: Fixed issue with the AllegroGraph container in the COR system. (COR has been running "impressively stable" for 15 months. Just now the AG container required a restart.) (Week 23)
- IE meeting - cybersecurity discussion (Week 23)
- Director's dialog. (Week 24)
- Per <https://bitbucket.org/blog/ssh-host-key-changes> (as announced by Bitbucket for a while) did SSH related adjustments on tethysdash2, tethystest, docs, my local env, and ... also tethyshub (as it seems nobody else is paying attention there). (Week 25)
- DEI seminar. (Week 25)
- ACM Webinar about LLM/Copilot and programming. (Week 25)
- Proposals. (Week 30)
- Technology evaluation: Reimplementation of the odss2dash service in Rust. (Week 30)
- Soundscape group meeting to discuss proposal phase 2. (Week 35)
- Input to Brett re hour allocation reduction for LRAUV proposal phase 2. (Week 35)

- Post-doc review committee. (Week 35)
- Input to Mike M. re capstone student project / EXPD modernization proposal. (Week 36)
- Postdoc review mtg. (Week 36)
- LLM class, review of materials (potential application for MBARI projects). (Week 36)
- Transfer of hours from project 300078 to 902204 confirmed (thanks Mandy). (Week 36)
- Merlin Sound ID seminar. Very interesting discussion with Grant van Horn in the afternoon (also with John Ryan). (Week 46)
- Export regulation training (Week 50)