200105 - Core Navigation Data - MDUC

Week 49

1. Kevin Gomes
    a. Experimenting with Kafka to see if it's suitable for LCM bridge route to long term, high message rate storage
    b. Looking at other message technologies as I have a huge concern about the things I'm reading about what it takes to maintain a Kafka instance.

Week 48

1. Mike McCann
    a. Still looking at using HTMX for updating emdb dive records with Data Validation Codes

Week 47

1. Mike McCann
    a. Provided dive and CTD times report for Linda to improve QC of ROV nav data
    b. Looking at using HTMX for a simple form entry of a data_validation_code in EMDB

Week 46

1. Kevin Gomes
    a. Bi-weekly networking meeting for David Packard
2. Mike McCann
    a. Added 2 new cron jobs on emdb: add_new_dives and gen_new_raw_nav
    b. Glad I wrote the Workflow documentation a year ago when I last worked on this code

Week 45

1. Kevin Gomes
    a. Configured the VM created by IS to be a ZeroMQ proxy for the David Packard simulator. The simulator navproc is now forwarding messages outside of what would be the 'rov network' (in theory) to keep the 'other' data clients separate from the ROV network.
2. Mike McCann
    a. Started working on last 3 Bitbucket issues for the ROV nav editing project
    b. Working on getting a development EMDB system working on new laptop
3. Mike Risi
    a. Implemented ROV UHS process and basic simulator based on preliminary specification from MacGregor.
    b. Working on console based debugging tools for navproc messages.

Week 43

1. Kevin Gomes
    a. Stood up new David Packard simulator NUC with Python processes to simulate ship data streams
    b. Created new navproc installation on NUC for the new navproc, logr and new lcm-bridge processes that consume data from simulator, parse into LCM, log to logr files and forward as JSON to ZeroMQ.
    c. IS created VM for Ubuntu that will serve as simulator API for data packets on the science network on the Packard.

    d. Looking at Kafka/TimescaleDB combination as possible data store for high-frequency data from Packard and dashboard support using Grafana.

Week 42

1. Mike Risi
    a. Reviewed completed processes for David Packard with Kevin G.
    b. Working on ROV UHS process based on preliminary specification

Week 40

1. Kevin Gomes
    a. Architecture discussion with Mike about how to best deal with logger monitoring and process management
2. Mike McCann
    a. Got TODO list from Lonny & Linda for Expd and EMDB improvments

Week 39

1. Kevin Gomes
    a. Working on message bridging from navproc once log writing complete
    b. Investigating OpenRVDAS as possible consumer of lcm bridge

Week 38

1. Kevin Gomes
    a. Digging in to the new logr code and got it generating new log files that look just like the old based on the new processes Mike has for the single LCM type.
    b. Picking up the LCM bridge project to see if this could serve as an API that then could be leveraged by Dataprobe successor.

Week 37

1. Mike Risi
    a. Converted more processes to the Navproc Framework.
    b. Developed a 4K lap-box simulator for navproc process development and testing of viewing system changes.

Week 34

1. Kevin Gomes
    a. More work on logr2 code

Week 33

1. Kevin Gomes
    a. Worked with IS to fix some networking issues with navproc simulation hardware (thanks Adriana!)
    b. Getting going on the logr utility again.

Week 32

1. Mike Risi
    a. Finished conversion of Doc Ricketts interface code to Navproc Framework.
    b. Starting NMEA GPS and digiquartz drivers to Navproc Framework.

Week 31

1. Kevin Gomes
    a. Cranking away at logger for single LCM type

Week 30

1. Kevin Gomes
    a. Restarting on this work as proposal review slows down
    b. Refactored to pull out JSON config from main
    c. Refactoring config code to use trigger set to channel level instead of item level
2. Mike McCann
    a. Examining edited nav data flow into Expd's RovctdData for improving midwater STOQS DBs

Week 28

1. Kevin Gomes
    a. Proposals
2. Mike McCann
    a. Diagnosed a duplicate record problem preventing some data loading problems in emdb
3. Mike Risi
    a. Finished conversion of Octans and serial interface processes to Navproc Framework.
    b. Continuing conversion of Doc Ricketts interface code to Navproc Framework.
    c. Worked on input for the 2024 proposal.
    d. Looking into https://github.com/OceanDataTools/openrvdas for full speed data logging on the R/V David Packard.

Week 26

1. Kevin Gomes
    a. Starting the refactor of the logr code based on single LCM type
    b. Moved to spdlog for logging on new logger (highly recommend)

Week 25

1. Mike McCann
    a. Updated emdb with raw nav data from v4400-v4459 to help Linda assign quality flags

Week 24

1. Kevin Gomes
    a. Finally got through the detailed deep dive on data pathways for status items and clarified their usage and necessity so we can decide how to implement same functionality in single LCM type
2. Mike Risi
    a. Continuing work on data acquisition for the R/V David Packard and Doc Ricketts.
    b. Working on porting the Doc Ricketts interface code to use the new framework.

Week 23

1. Kevin Gomes
    a. More work on LCM Bridge application
    b. Traced all code for item status to see if we lose any information with single LCM type

Week 21

1. Kevin Gomes
    a. Working on LCM Bridge again
    b. Working on logr using new single LCM type

Week 20

1. Kevin Gomes
    a. Looking over documents that I got access to in order to understand signal routing

Week 19

1. Kevin Gomes
    a. Refactoring logr to utilize new single LCM type.

Week 18

1. Kevin Gomes
    a. Working on logr code for new single LCM type
    b. More work on lcm-bridge code
2. Mike Risi
    a. The first cut of the navproc framework is done.
    b. Development of the various data acquisition processes that use the framework has begun.

Week 17

1. Kevin Gomes
    a. Continuing work on LCM bridge to other messaging systems to support API access as well as the possibility of a higher bandwidth data logging technology.
    b. Starting to dig into changes to logr for the new single LCM type.

Week 16

1. Kevin Gomes
    a. Looking at extending Kevin B's work to bridge the gap between LCM and more than just WebSockets
2. Mike McCann
    a. Added Expedition Data comments to popup on EMDB's Dive detail view
    b. Will be meeting on Monday to discuss final steps with ROV nav editing project

Week 15

1. Kevin Gomes
    a. Trying to get some traction back on this by restarting the LCM message bridging and logger transition to single LCM type
2. Mike McCann
    a. Checking with Lonny on monitoring Linda's progress – nightly emdb load jobs are working fine

Week 14

1. Mike McCann
    a. Continuing to monitor successful execution of nightly EXPD and EMDB loads
2. Mike Risi
    a. Working on single LCM type modifications to navroc framework

Week 13

1. Kevin Gomes
    a. Wrote a small Python app that listens for LCM messages, converts them to JSON and pushes over websockets to browsers.
    b. Met with Kevin B and Carlos to talk about LCM web viewer coordination.
    c. Working on coming up with full stack application architecture for data related apps
2. Mike McCann
    a. Continuing to monitor nightly cron job operations populating https://emdb.shore.mbari.org

Week 12

1. Kevin Gomes
    a. Learning CMake to see if that's the build environment I should be using for logr (and other) projects.
    b. Looking at converting the config of logr to JSON from the custom format it currently uses.
    c. Exploring Kafka as an option for high bandwidth data storage in parallel with traditional logging.
    d. Starting to create skeleton of simple LCM simulator
    e. Talked with Mike about more LCM details and the possibility of a web version of LCM spy
2. Mike Risi
    a. Continuing working on single LCM type modifications to framework.
    b. Completed Doc Ricketts navproc interface processes for SMD visit now scheduled for April.

Week 11

1. Kevin Gomes
    a. Light prototyping for use of single LCM type.
2. Mike McCann
    a. Fixed load_edited_into_expd.py so that it reuses existing CleanRovNavLoad records in expd
    b. Watching that nightly emdb and expd database update cron jobs are successful & idempotent

Week 10

1. Kevin Gomes
    a. Looking into creating some simple command line simulators just to help with development
2. Mike McCann
    a. Updating ship_and_rov_core_data_workflow.md with new expd_mapping workflow

Week 9

1. Kevin Gomes
    a. More reverse archeological digging.
    b. Lot's more reverse archeology and documenting in detail here
2. Mike McCann
    a. "By dive" edited ROV navigation data now being loaded into EXPD CleanRovnavData tables
    b. The tracking table (CleanRovNavLoad) can be queried by consumers to know when to update
    c. Linda is making great progress on editing, https://emdb.shore.mbari.org/ looks much better!
3. Mike Risi
    a. Working on framework modifications to accommodate the single LCM type.
    b. Modifying framework to eliminate direct LCM dependencies and make it more middle-ware agnostic.
    c. Continuing to develop the Doc Ricketts navproc interface processes for SMD visit in March.

Week 8

1. Kevin Gomes

    a. Configured all existing NUCs and moved to new server rack so I have single KVM spot where I can work on different versions of the code in different versions of Ubuntu.
    b. Dev machines set up for Qt as well.
    c. Working through and documenting RC logging to get a handle on how the status items are used in logging and further downstream.

Week 7

1. Kevin Gomes
    a. Updating Mac dev environment to better support local dev of navproc/logging
    b. Review of Packard materials to date to start documenting a signal mapping that will be needed to capture all data streams
    c. Tracing downstream use of status items in navproc code.
    d. Build up of Ubuntu 22.04 NUC to see how CoreNav build goes … looks like there is problem with dependencies for libbot2, might cause issues.
2. Mike McCann
    a. Preparing to load edited _by_dive.txt files into EXPD's tracking and CleanRovnavData tables

Week 5

1. Kevin Gomes
    a. Digging through code to try to see downstream usage of 'status' items and how single LCM type impacts logging.
    b. More detailed docs to work on possible simulator build
    c. Purchased new, cheap rack for my office to expand current rack mounts to make room for more equipment.
    d. Since we lost power, I took the opportunity to move all the equipment from the old rack to the new and also installed the simulator NUC there too. All in one nice roll around unit now.
2. Mike Risi
    a. Sprint meetings and reviews
    b. Developing of interfaces for Doc Ricketts telemetry system upgrade

Week 4

1. Kevin Gomes
    a. Updated firmware on the Moxa NPort in my office to prep for both Ventana support and possibly use it for a simple simulator for Packard.
    b. Mid-sprint meeting to discuss status updates

Week 3

1. Kevin Gomes
    a. Updated diagrams and created simplified diagram that Mike sent to the shipyard to make sure we capture physical wiring that is required during construction
    b. Had back-and-forth with serial splitter vendor and received price list and waiting to validate which serial splitters we are actually getting with the boat before purchasing
    c. Meeting to discuss end of sprint 1 and start of sprint 2
    d. Doing archeological work to remember how navproc/logr works to prepare for next sprint
2. Mike Risi
    a. sprint review of single LCM type
    b. starting sprint for new Doc Ricketts UDP interface

Week 2

1. Kevin Gomes
    a. Reworked diagram and documentation on data pathways for planning for David Packard. Meeting tomorrow to discuss.
    b. Trying to procure some hardware to build a simulation environment. Turns out to be NOT cheap.
2. Mike McCann
    a. Created complete set of edited.txt ROV nav files organized by dive
    b. Met with Lonny & Linda to discuss next steps in the nav editing project

Week 1

1. Kevin Gomes
    a. Kick off meeting to discuss planning, project management, and sprint definitions