

IPTDS Subcommittee Annual Meeting

January 4, 2023, 9am-12pm PST

Microsoft Teams Meeting

Attendees: Alan Brower (PTAGIS), Brady Allen (BPA), Daniel Wilson (PTAGIS), Marika Dobos (IDFG), Don Warf (PTAGIS), Derrek Faber (ODFW), Gabriel Brooks (NOAA), John Tenney (PTAGIS), Kory Kuhn (YKFP), Megan Shearer (CTWSR), Kyle Meier (Biomark), Randy Johnson (CCT), Roger Clark (PTAGIS), Sebastian Dudek (PTAGIS), Matthew Stilwater (WDFW), Ryan Kinzer (NPT), Carley Simpson (ONA), Jeff Fryer (CRITFC)

Meeting started with quick introductions of the group, including two new members: Megan Shearer and Matthew Stilwater.

Actions:

- Derrek will send Raspberry Pi SOP to subcommittee for review, Kyle will add secure settings for modems to the document
- Gabriel will test and report on power consumption of headless Raspberry Pi
- Nicole will adjust the timer tag graph to display better for users with many sites
- Don will send the PTAGIS SOP for VTT settings to Gabriel to help develop one for instream sites
- Ryan will give a presentation about PIT Cleaner at the next meeting
- PTAGIS will send out a survey to gauge interest in IPTDS content for the 2024 workshop
- PTAGIS will work with Kyle to support data from BioProbe

Review Raspberry Pi SOP

Gabriel gave an overview of the Raspberry Pi device and recent supply chain issues. Derrek then outlined the steps necessary to get the device set up, ready for remote communications and M5 installed. He will send the draft document to the subcommittee for review. [Presentation](#).

John asked if the cell modems in use get hit by outside traffic when set up for remote communications.

Kyle said that Biomark locks down any port that is not needed on a day-to-day basis, along with turning off ICMP. He also noted that if any standard ports are open they will be hit constantly.

Gabriel wondered if whitelists on cell modem could be used to prevent others from connecting to them. He also asked if anyone else in the group was interested in setting up a Raspberry Pi at one of their sites. If not, he will set one up and test power consumption to report back to the Subcommittee.

PTAGIS Report and Metadata Management Tools

Nicole gave a quick demo of updates to the metadata management tools and diagnostics reports.

- A timer tag report is available on the production website that shows in table and graph form the count of timer tags detected per day.
- I5 v1.5.0 was released just before Christmas and contains an update to process and include NRPs in files submitted to PTAGIS. The server was also updated to harvest the noise values from them.

- NRPs are not stored by standalone IS1001 readers, so this will work for Master Controllers only at this time

Kyle clarified that the IS1001 does not store NRPs, but a BLE or USB data recorder will store them. Standalone IS1001 does store the SRP which includes instantaneous noise value at the time the status report is generated.

A member asked if PTAGIS could provide a similar graph for current. It is definitely possible, but we would need to produce updates to I5 and the server parser to make that happen.

Gabriel said it would be useful for the Subcommittee to produce an SOP for VTT settings to make this report more useful and asked if PTAGIS has an SOP for that. Don said he would be able to send the SOP to Gabriel for help in creating one for instream sites.

After some discussion about the best way to display different diagnostics, Kyle suggested that they just be displayed as we get them, rather than try to adjust the scales and axis so that 100 is always good and 0 is always bad. Users will need to know and understand what each parameter is.

Randy noted that if there are too many sites, the graph display is not very useful. Nicole will work on an update to the graph to improve it.

Nicole also showed updates to the web-based metadata management tools that allow interrogation site contacts to be updated for multiple sites at one time and a way to update a site configuration (adding/removing/changing antennas at a site). PTAGIS is also working to combine all the metadata management tools into a way to request a new interrogation site.

PNAMP Fish Monitoring Work Group PIT Tag Array Task

Gabriel gave an update about the last meeting of the PNAMP Fish Monitoring Work Group (FMWG) PIT Tag Array Task meeting from fall 2022. Marika gave presentation outlining the topics related to PIT tag arrays in which the FMWG is interested.

There are three main areas of focus:

- PIT arrays (work with IPTDS on this one)
 - Location, hardware, operations
 - Data management
 - Bridging gaps between bios, IPTDS and FMWG
- PIT tagging tools (sharing and applying existing tools and challenges)
 - Tagging design tools
 - Power analysis for PIT tagging sample sizes
 - PIT tag uploading tools
- Analyses (sharing and applying existing methods and challenges)
 - Estimating site efficiencies
 - Data cleaning tools
 - Escapement, SARs, survival, movement
 - Dealing with low number of detections or detectability
 - Managing other related data such as water temp, flow, outages, linkage to bio data

Potential Products from the task:

- PIT tagging and data mgmt. tools
 - Links and descriptions of tools on PNAMP
 - Making R codes available through GitHub or other
 - Allow tools to be customizable for site-specific needs
 - What tools are still needed?
- Analysis
 - Workshop to share methods?

Gabriel suggested bringing together IPTDS data users at the next workshop to get a better idea of the types of tools that would be useful.

Ryan talked about working with Kevin See and to put together an R package that would format and clean PIT tag data for the DABOM model and the tradeoffs in building tools for a specific use vs for wider community use. Many needs are very specific and it is hard to build tools that can be used by many researchers.

Marika said that working to take a more specific tool and adapt it to broader use could be an outcome of the FMWG task.

Kyle said that Biomark is currently working on pulling together many tools for using PIT tag data for use by customers and others that will be available on GitHub by end of the 2nd quarter.

Ryan agreed to give a presentation on his tool at the next IPTDS Subcommittee meeting.

2024 PIT Tag Workshop Planning

John said a PIT Tag Workshop is planned for Jan/Feb 2024 and he requested feedback from Subcommittee members on the workshop format (in-person vs virtual) and if the Subcommittee would like to host a session or hands-on training.

Members agreed that in-person was preferable and there did not seem to be any issues with agency travel to the event.

Gabriel indicated that Subcommittee will want to do something, but figuring out the best topics to cover would be crucial. John proposed that PTAGIS send out a survey with some question specific IPTDS topics to help gauge interest.

Biomark BioProbe

BioProbe v3 is a data logger board that was developed to replace the CR1000 for sites with FS1001M transceivers. Was intended to be for internal use only, but Biomark has hand-built about 200 units and is making them available to customers.

It serves as a datalogger for FS1001M and environmental sensors. It can be developed to work with almost any sensor and stores data in CSV format. It also formats the PIT tag data from the mux similar to IS1001 formats. See [presentation](#) for more details about the device.

Randy asked about the possibility of adding DO sensors to sites. Kyle said they don't have a specific sensor for DO, but if it is important to the Basin Biomark can develop it.

Kyle is working on documentation for the BioProbe and all other devices available through Biomark to be finished in the next 6 months. Biomark website will also be restructured to make it easier to find documentation.

Feature Requests for IS1001 Device Firmware

Gabriel requested to add a feature to IS1001-MC to be able to shut down a reader without physically accessing to help with troubleshooting issues on the flexible cable array that is used in the estuary (site code TWX). Biomark is going to work on adding this modification to the firmware, so would be a good time to consider other feature requests.

John asked about adding the ability to assign antenna IDs so that multiple MCs could be used at one site without duplicating antenna IDs. Kyle indicated that there are only a few sites in the basin that use multiple MCs and Biomark is doing the data collection for those sites and has a solution in place to handle those cases.

Users are encouraged to contact Gabriel if they have any firmware modification requests.

Wrap-Up / Select Chair

Derrek Faber volunteered to be the subcommittee chair for 2023. Carley agreed to remain co-chair. Gabriel will attend the 2023 PTSC annual meeting to brief them on subcommittee activities.

Next meeting tentatively planned for April 2023.