QC App

- Who are involved:
  - Minnesota group: Hajime, Bill Miller, Ron Poling, Greg Pawloski, Aaron Mislivec, and Marvin Marshak.
  - Valley City State: David DeMuth and Matt Lein.
  - UNICAP, Brazil Ernesto Kemp.
  - FNAL: Ladia Jakubec (Far Site Logistic manager. We consult with him).
  - Argon: Steve Magill.

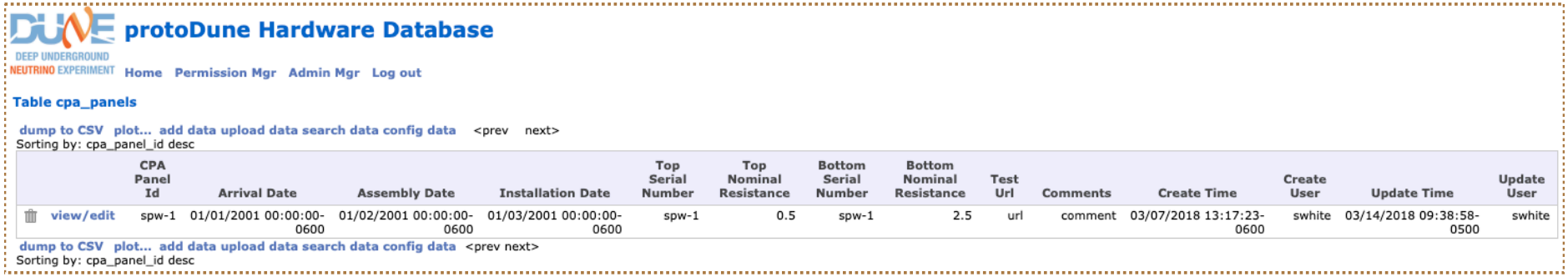
What is it and why are we doing this?

- We wanted to come up with a generalized API that sends "filled QC check lists" to the DUNE-hardware/QC DB. Steve Magill has provided us such check lists.
- The stored info in the DB will be there forever and can be referenced in the future if/when necessary.

- One idea was to use a tablet that can fill such check lists and send the info (in csv format) to the DB.
- We (led by Matt who is a CS/Physics student, visiting Minnesota this summer from Valley City State) have started the development of such app that runs on an iPad.

DUNE-hardware/QC Database

- To test, we have been playing with the dev. version of proto-DUNE hardware DB that is hosted by FNAL. (postgreSQL)



protoDune Hardware Database

DEEP UNDERGROUND NEUTRINO EXPERIMENT Home Permission Mgr Admin Mgr Log out

Table cpa_panels

dump to CSV plot... add data upload data search data config data <prev next>

Sorting by: cpa_panel_id desc

	CPA Panel Id	Arrival Date	Assembly Date	Installation Date	Top Serial Number	Top Nominal Resistance	Bottom Serial Number	Bottom Nominal Resistance	Test Url	Comments	Create Time	Create User	Update Time	Update User
view/edit	spw-1	01/01/2001 00:00:00-0600	01/02/2001 00:00:00-0600	01/03/2001 00:00:00-0600	spw-1	0.5	spw-1	2.5	url	comment	03/07/2018 13:17:23-0600	swhite	03/14/2018 09:38:58-0500	swhite

dump to CSV plot... add data upload data search data config data <prev next>

Sorting by: cpa_panel_id desc

- This is a little bit off topic, but:
  - It is not finalized yet on which DB(es) format would be employed.
  - Or who would host this DB and where.

These need to be finalized/approved by the Computer consortium.
But the development of such app could start independently.

iPad

- We chose this iOS device based on its superiority on stability/security over the other OS.
- It works with user-friendly touch screen.
- It is a computer, can store saved info (temporarily) and send it.
- Initially, thought we could use its attached camera to scan bar-codes. Found out that the camera was too slow, but also couldn't scan when multiple bar-code stickers were very close to each other.

We'll use a wireless scanner, instead (more on this from Matt). Nevertheless, we should be able to use its camera when needed (e.g., when you receive a damaged package. Take a photo which can immediately upload to the DB).

Setups and Requirements

(these are not finalized, yet, of course)

- We have been using 2019 iPad 6th generation (not mini/pro), with 128 GB storage. The screen size is 9.7 inch.
- It does not have to be super fast, of course. But we do recommend to use a sufficiently large screen, at least 9.7 inch. It is much easier to type in.
- For now, we are in the Apple Developer Program, which allows us to share our App with "beta Testers", so that our app doesn't show up in the Apple App Store, as long as our app is in the beta stage. In the future, we'll try its "enterprise" version that allows us to distribute app to anybody in our company.
- Currently, we assume the iPad has a network connection through either WiFi or Cellular.
- In the hall at the 4850 level, we are envisioning to have a local PC (server) that lets iPads connect to the outside (DB), if strong WiFi signals are not available through out the entire hall.

To do

- We are at the point that we need to decide what tables (and columns) in the DB should be.
  No need to finalize them, yet.
  But creating a few of such realistic tables would be a help so that we can test to upload.
  Currently, we are thinking to create a table of each of the parts that have a checklist (e.g., this allows us to produce plots of distributions of the resistivity measurements of the all CPA resistive panels).
- We have just begun to discuss about possible part-numbering scheme.
- Once the app is more or less finalized, we would like to start to communicate with other consortia.
- In the Spring of 2020, when a test construction starts at Ash river, we would like to test our app there.