Recent updates on the iPad app

- Won't go through details of how the app works as you already have ideas of the app.
- Will go through some of the functionalities recently added (within ~the last year)

for today, I'll cover:

- HWDB Status
- How to get the app
- PID Display
- PID Display in action
- Printing tags
- Spreadsheet uploader
- Stuff already in the dev. version (HVS)

HWDB status

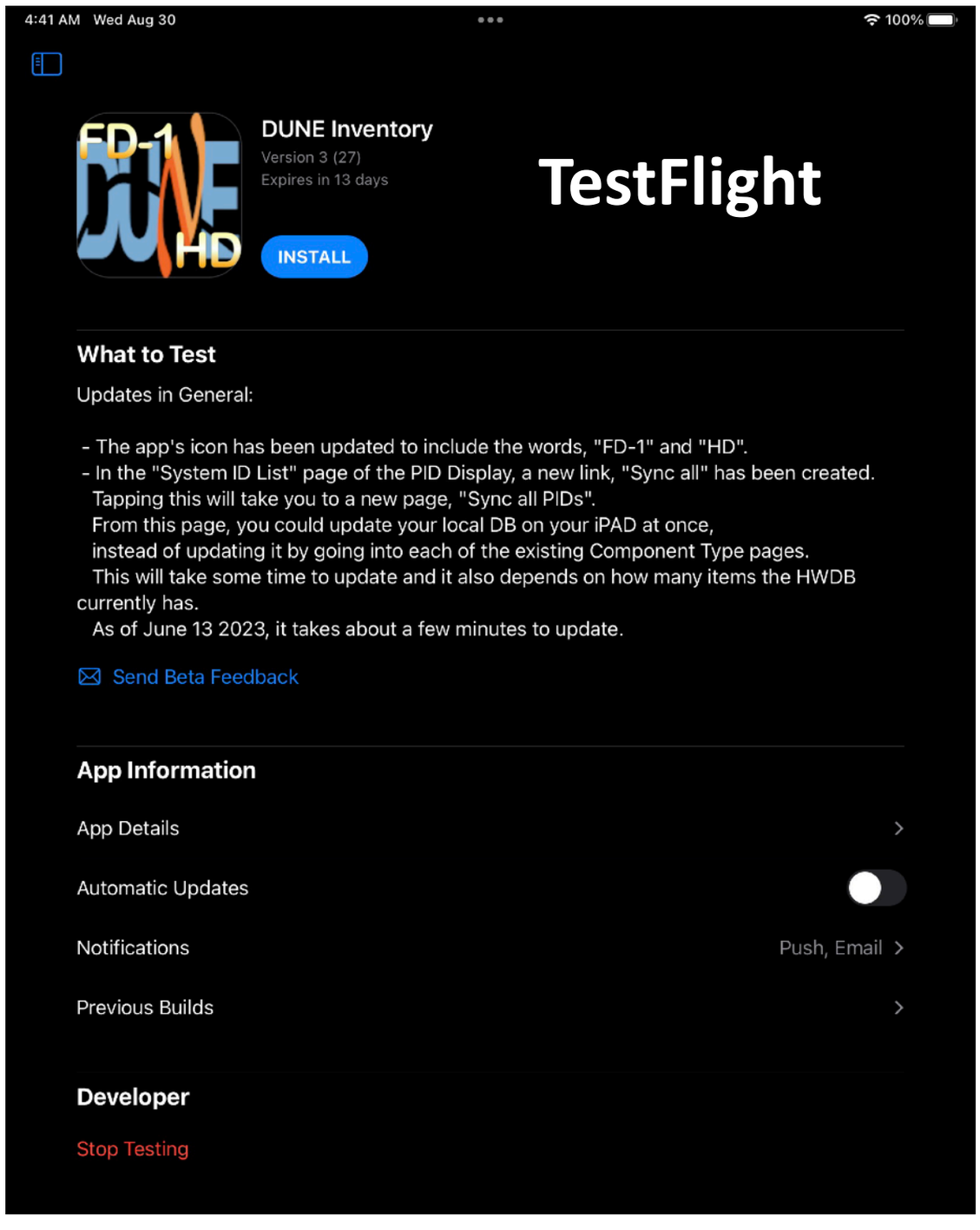
- Some issues were found last week (Friday).

  - When an Item was posted, along with subcomponents,
    the Item was posted, the subcomponents were linked.. good
    But those subcomponents did not have to be ENABLED.
    (Vladimir is currently looking into this)
  - Another just found out was that
    “PATCH” on Item doesn’t seem to be working.
    (e.g., want to be able to edit an Item’s Specs)

    Got an error (“400 Bad Request”).
    Will communicate with Vladimir on this.

Hopefully these would be fixed this week?

How to get the app



- The app is distributed through Apple's TestFlight.
- Once you provide your email address to us,
  we'll send you an invitation email,
  which contains a link to download TestFlight.
- Once TestFlight is installed on your iPad,
  you can start to download/install our app.
- You will get a notification
  when there is a newer version available.

PID Display

- A new functionality to display a list of various IDs,
  such as SysID, SubSysID, Type ID, PID,
  along with the corresponding;
  - a list of Test Type names,
  - a history of Test results for a given Test Type name,
  - its linked Parent component info, if any, and
  - its sub-component info, if any.

- The Display of SysID list can be reached from anywhere within the app by a two-finger gesture.

PID Display

Close

System ID List

Sync all

The last time when synced: June 13, 2023 at 11:12:44 AM

Sync to HWDB

Show only selected System IDs

System IDs that contain

AND OR

System Names that contain

System ID	System Name
000	Invalid
001	FD1-HD Complete Detector
002	FD1-HD Instrumented Anode Plane (with Elec and photon Det.)
003	FD1-HD Anode Plane Assemblies (bare wire planes)
004	FD1-HD Photon Detection System
005	FD1-HD HVS
006	FD1-HD Calibration
021	DAQ
051	FD2-VD Complete Detector
052	FD2-VD Instrumented Top Charge Readout Planes (CRP) (inc. Elect)
053	FD2-VD Instrumented Bottom Charge Readout Planes (CRP) (inc. Elect)
054	FD2-VD Instrumented Cathode Plane (inc. PD)
055	FD2-VD Top Charge Readout Planes (CRP)
056	FD2-VD Bottom Charge Readout Planes (CRP)
057	FD2-VD Top Vertical Drift CRP Electronics
058	FD2-VD Photon Detector
059	FD2-VD Calibration
060	FD2-VD HVS
080	FD-2-VD HV
081	FD1-HD TPC Elec. and FD2-VD Bottom Elec.

Scrollable

One can reach to this “System ID List” page from anywhere in the app by two-finger swiping (left-to-right) gesture.

- It displays the DB info based on the locally stored info (sqlite).
- One can sync to the HWDB to update the contents of the local DB.
  In this case, it will update only the list of System IDs.

- It has a simple search functionality.
- Also about the “Sync all” icon at the top-right corner…
  Will mention these in later slides

Navigating from "System ID List" to "Subsystem ID List"

Close

System ID List

Sync all

The last time when synced: June 13, 2023 at 11:12:44 AM

Sync to HWDB

Show only selected System IDs

System IDs that contain | AND | OR | System Names that contain

System ID	System Name
000	Invalid
001	FD1-HD Complete Detector
002	FD1-HD Instrumented Anode Plane (with Elec and photon Det.)
003	FD1-HD Anode Plane Assemblies (bare wire planes)
004	FD1-HD Photon Detection System
005	FD1-HD HVS
006	FD1-HD Calibration
021	DAQ
051	FD2-VD Complete Detector
052	FD2-VD Instrumented Top Charge Readout Planes (CRP) (inc. Elect)
053	FD2-VD Instrumented Bottom Charge Readout Planes (CRP) (inc. Elect)
054	FD2-VD Instrumented Cathode Plane (inc. PD)
055	FD2-VD Top Charge Readout Planes (CRP)
056	FD2-VD Bottom Charge Readout Planes (CRP)
057	FD2-VD Top Vertical Drift CRP Electronics
058	FD2-VD Photon Detector
059	FD2-VD Calibration
060	FD2-VD HVS
080	FD-2-VD HV
081	FD1-HD TPC Elec. and FD2-VD Bottom Elec.

Close

Subsystem ID List

Selected System ID	Selected System Name
005	FD1-HD HVS

The last time when synced: June 13, 2023 at 11:12:48 AM

Sync to HWDB

Show only selected Subsystem IDs

Subsystem IDs that contain | AND | OR | Subsystem Names that contain

Subsystem ID	Subsystem Name
002	ColdADC
013	TPC HV Assembly
020	CPA
021	Cold cables
022	Cold cables
999	CPA

and from “Type ID List” to “PID List”

Close

Component Type ID List

Selected System ID	Selected System Name
005	FD1-HD HVS

Selected Subsystem ID	Selected Subsystem Name
020	CPA

The last time when synced: June 13, 2023 at 11:12:55 AM
Sync to HWDB

Show only selected Component Type IDs

Type IDs that contain | AND | OR | Type Names that contain

ComponentType ID	ComponentType Name
00021	Mini Resistor Board - T/B Type I
00022	Mini Resistor Board - EW Type I
00025	Brass Hardware - Connection Plate
00032	Profiles - Profile Assembly 74 NOM
00035	Profiles - Profile Assembly 46 NOM
00040	Mini Resistor Board - T/B Type II
00041	Mini Resistor Board - EW Type II
00101	FSS - Top USNDSS/Bott USSDSN Horizontal
00111	Brass Hardware - Electrical T Strap
00112	Brass Hardware - Electrical Strap
00114	Resistive Panel - Upper/Lower
00115	Profiles - Profile Jumper
00118	FSS - Top USSDSN/Bott USNDSS Horizontal
00124	Resistive Panel - Middle
00133	Profiles - Profile One 76 NOM

Close

PID List

Component Type ID	Component Name
D00502000021	Mini Resistor Board - T/B Type I

The last time when synced: June 13, 2023 at 11:13:13 AM
Sync to HWDB

Show only selected PIDs

Spec Key that contain | AND | OR | Spec Value that contain

Data Key that contain | AND | OR | Data Value that contain

Tapping (or clicking) a PID below will copy it to clipboard.
Tapping a Creator will show more detail info of the corresponding Component.
Tapping a Time will show Test Type names of the corresponding Component.
Also those ones in PINK have been already assigned as sub-components.

PID	Creator	Created Time
D00502000021-00013	Stephen Magill	2022-07-21 08:12:28
D00502000021-00012	Stephen Magill	2022-07-21 08:10:07
D00502000021-00011	Stephen Magill	2022-07-21 08:07:13
D00502000021-00010	Stephen Magill	2022-07-21 07:57:18
D00502000021-00009	Stephen Magill	2022-07-21 07:55:07
D00502000021-00008	Stephen Magill	2022-07-21 07:51:51
D00502000021-00007	Stephen Magill	2022-07-21 07:45:02
D00502000021-00006	Stephen Magill	2022-07-21 07:40:57
D00502000021-00005	Stephen Magill	2022-07-21 07:28:37
D00502000021-00004	Stephen Magill	2022-07-21 04:32:08
D00502000021-00003	Stephen Magill	2022-06-27 13:45:57

PID list - 1 (parent/sub-components)

Close

PID List

Component Type ID	Component Name
D00502004501	CPA Plane US

The last time when synced: June 26, 2023 at 9:49:54 AM
Sync to HWDB

Show only selected PIDs

Spec Key that contain | AND | OR | Spec Value that contain

Data Key that contain | AND | OR | Data Value that contain

Tapping (or clicking) a PID below will copy it to clipboard.
Tapping a Creator will show more detail info of the corresponding Component.
Tapping a Time will show Test Type names of the corresponding Component.
Also those ones in PINK have been already assigned as sub-components.

PID	Creator	Created Time
D00502004501-00005	Stephen Magill	2023-02-27 10:14:54
D00502004501-00004	Stephen Magill	2022-07-26 06:58:32
D00502004501-00003	Stephen Magill	2022-07-26 06:41:32
D00502004501-00002	Stephen Magill	2022-06-20 14:42:44
D00502004501-00001	Stephen Magill	2022-06-20 10:07:10

Close

The selected Component

PID	Type Name
D00502004501-00005	CPA Plane US

Creator	Created Time
Stephen Magill	2023-02-27 10:14:54

Specification

```
{
  "Drawing Number" = "PD2-020-AB01";
  "Location ID" = "CPA_0021";
}
```

Parent Component

PID	Creator
D00501341001-00003	Stephen Magill

Created Time	Functional Position
2023-06-02 09:02:29	CPA Plane PID

sub-Components

PID	Name	Position	Creator	Linked Date
D00502002000-00007	CPA Panel Assembly PD2 Center	P2 Parts ID	D00502002000-00007	2023-02-27 10:14:55
D00502001000-00007	CPA Panel Assembly PD2 US	P1 Parts ID	D00502001000-00007	2023-02-27 10:14:55

- Tapping the “Creator” column shows more detail info of that Item.
- One could further tap the “Creator” column of a sub-component (or parent) to display info of that Component Type as well.
- Those PIDs in Pink are already assigned as subcomponents to other Items.
  That is, those in Pink cannot be newly assigned as subcomponents.

PID list - 2 (Test info)

Close

PID List

Component Type ID	Component Name
D00502004501	CPA Plane US

The last time when synced: June 26, 2023 at 9:49:54 AM
Sync to HWDB

Show only selected PIDs

Spec Key that contain | AND | OR | Spec Value that contain

Data Key that contain | AND | OR | Data Value that contain

Tapping (or clicking) a PID below will copy it to clipboard.
Tapping a Creator will show more detail info of the corresponding Component.
Tapping a Time will show Test Type names of the corresponding Component.
Also those ones in PINK have been already assigned as sub-components.

PID	Creator	Created Time
D00502004501-00005	Stephen Magill	2023-02-27 10:14:54
D00502004501-00004	Stephen Magill	2022-07-26 06:58:32
D00502004501-00003	Stephen Magill	2022-07-26 06:41:32
D00502004501-00002	Stephen Magill	2022-06-20 14:42:44
D00502004501-00001	Stephen Magill	2022-06-20 10:07:10

Close

The selected Component

PID	Type Name
D00502004501-00005	CPA Plane US

Creator	Created Time
Stephen Magill	2023-02-27 10:14:54

Test Types

Tapping (or clicking) a Name below will show the corresponding Test Data.

Name	Creator	Created Time
CPA_Planes_Assembly QC check	Stephen Magill	2023-02-27 10:14:54

Close

The selected Component

PID	Type Name
D00502004501-00005	CPA Plane US

Creator	Created Time
Stephen Magill	2023-02-27 10:14:54

The selected Test Type

CPA_Planes_Assembly QC check

Submitted by Stephen Magill on 2023-02-27 10:14:54


```
{
  "Alignment Pins L" = 1;
  "Alignment Pins M" = 1;
  "Alignment Pins U" = 1;
  "Bot HV Bus jumpers Front" = 1;
  "Bot HV Bus jumpers Rear" = 1;
  "Bot anti-rot rod" = 1;
  "JBot CONBot" = 1;
  "JBot CONTop" = 1;
  "JTop CONBot" = 1;
  "JTop CONTop" = 1;
  "PP GAPBot" = 8;
  "PP GAPMid" = 8;
  "PP GAPTop" = 8;
  "Sur VISN" = 1;
```


- Tapping the “Created Time” column shows a list of TestTypes.
- Tapping a “TestType name” displays
  the corresponding Test data.
  If multiple entries exist,
  it will display the entire history of that data.

PID list - 3 (simple search capability)

Search through Specifications of each Items.

Close

PID List

Component Type ID	Component Name
D00502000021	Mini Resistor Board - T/B Type I

The last time when synced: June 13, 2023 at 11:13:13 AM
Sync to HWDB

Show only selected PIDs

Spec Key that contain: Serial Number | AND | OR | Spec Value that contain: 105

Data Key that contain: | AND | OR | Data Value that contain:

Tapping (or clicking) a PID below will copy it to clipboard.
Tapping a Creator will show more detail info of the corresponding Component.
Tapping a Time will show Test Type names of the corresponding Component.
Also those ones in PINK have been already assigned as sub-components.

PID	Creator	Created Time
D00502000021-00013	Stephen Magill	2022-07-21 08:12:28

Particularly useful when you look for internal (local) IDs, instead of the official PIDs

or for certain data values.

Close

PID List

Component Type ID	Component Name
D00502000021	Mini Resistor Board - T/B Type I

The last time when synced: June 13, 2023 at 11:13:13 AM
Sync to HWDB

Show only selected PIDs

Spec Key that contain: | AND | OR | Spec Value that contain:

Data Key that contain: Resistance | AND | OR | Data Value that contain: 2.3

Tapping (or clicking) a PID below will copy it to clipboard.
Tapping a Creator will show more detail info of the corresponding Component.
Tapping a Time will show Test Type names of the corresponding Component.
Also those ones in PINK have been already assigned as sub-components.

PID	Creator	Created Time
D00502000021-00013	Stephen Magill	2022-07-21 08:12:28
D00502000021-00011	Stephen Magill	2022-07-21 08:07:13
D00502000021-00008	Stephen Magill	2022-07-21 07:51:51

Can/will add more search options per requests in the future.

PID Display -4 : Sync-all page

- Instead of updating these Lists on each pages, we now have a page where one can update all at once.

- It takes SOME TIME to sync them all.

- Of course, it depends on the amount of the contents the DB currently holds.

- For now, it takes only ~2mins.

PID Display in action

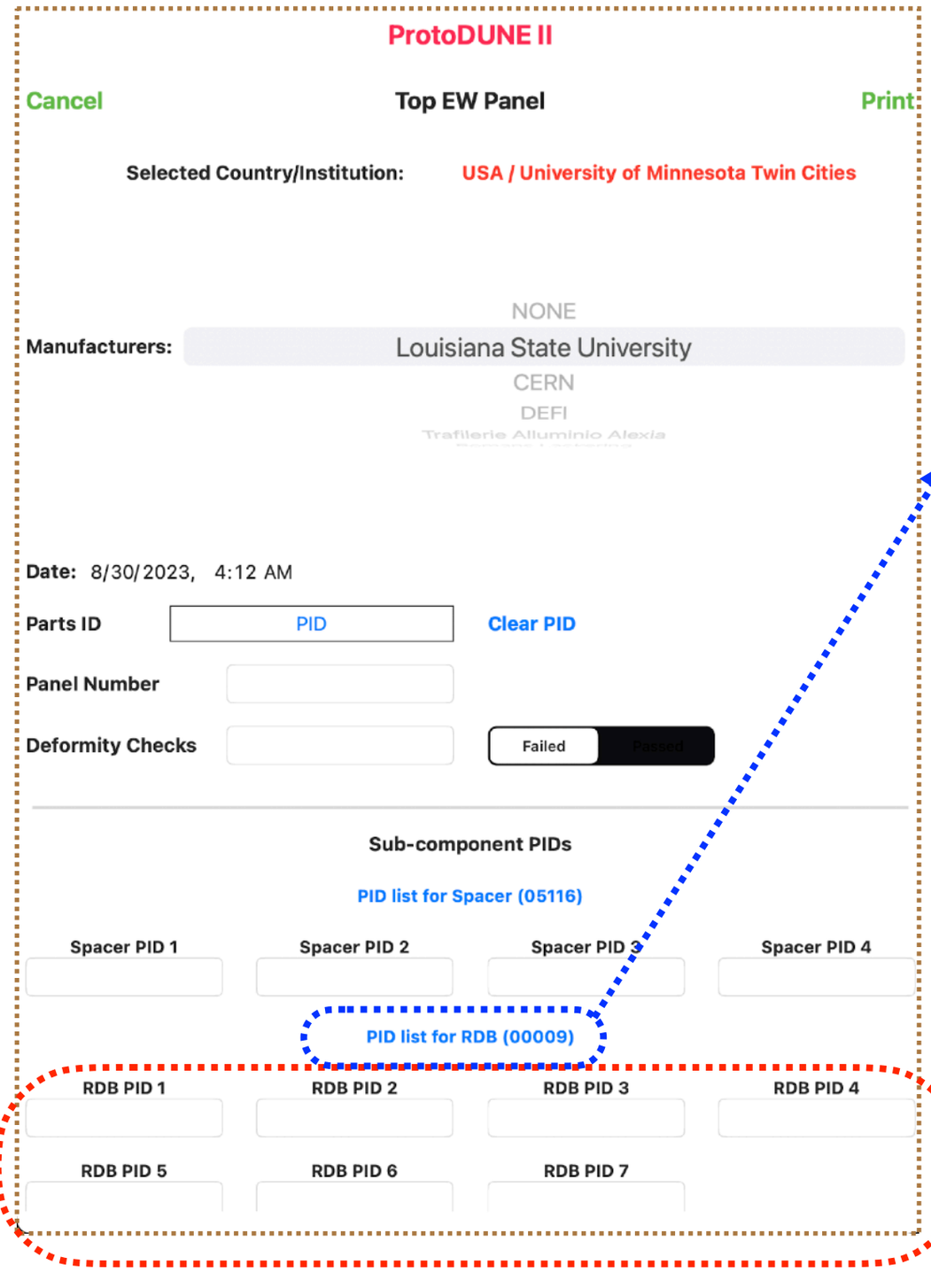
So how would this PID display help in practice, besides just displaying PIDs?

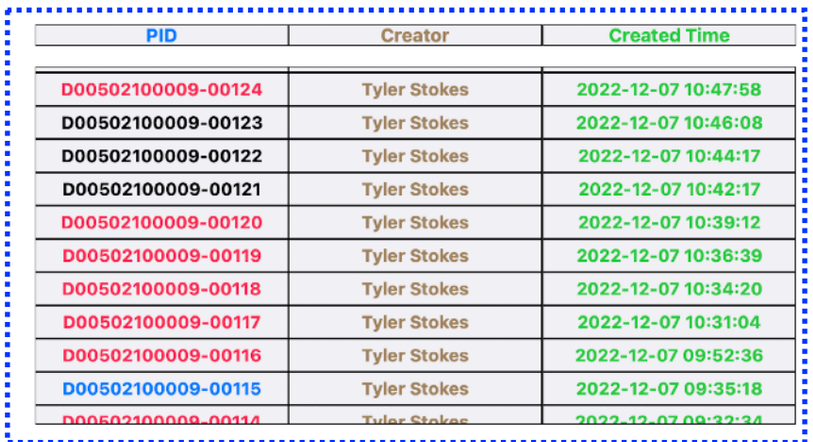
We use this functionality to help users to identify/assign PIDs of subcomponents.

PID Display in action

One example: For Top EW Panel Assembly

- **Need to attach 7 RDBs (along with other parts, of course)**
- **Select the corresponding Type ID link.**





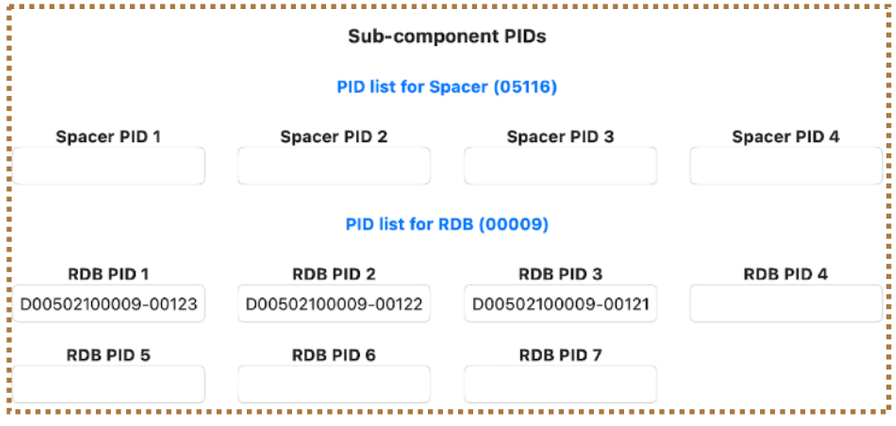
PID	Creator	Created Time
D00502100009-00124	Tyler Stokes	2022-12-07 10:47:58
D00502100009-00123	Tyler Stokes	2022-12-07 10:46:08
D00502100009-00122	Tyler Stokes	2022-12-07 10:44:17
D00502100009-00121	Tyler Stokes	2022-12-07 10:42:17
D00502100009-00120	Tyler Stokes	2022-12-07 10:39:12
D00502100009-00119	Tyler Stokes	2022-12-07 10:36:39
D00502100009-00118	Tyler Stokes	2022-12-07 10:34:20
D00502100009-00117	Tyler Stokes	2022-12-07 10:31:04
D00502100009-00116	Tyler Stokes	2022-12-07 09:52:36
D00502100009-00115	Tyler Stokes	2022-12-07 09:35:18
D00502100009-00114	Tyler Stokes	2022-12-07 09:32:34

This opens a PID list page for that selected Type ID.

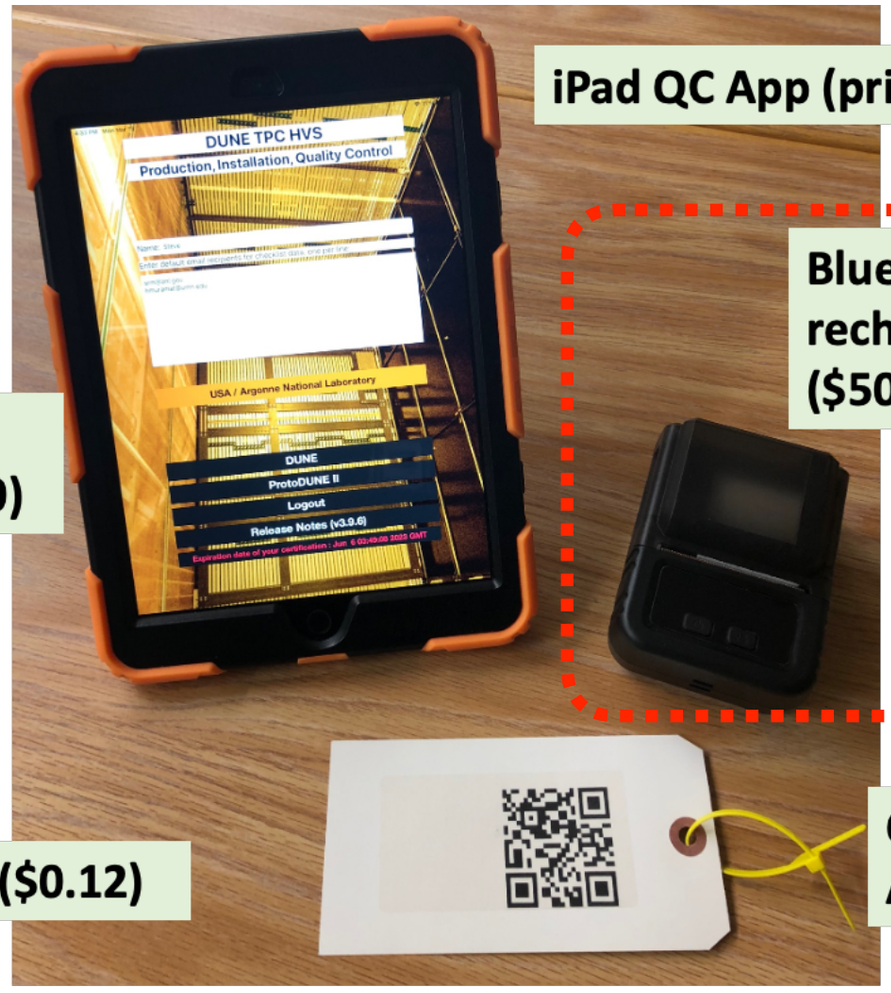
There, one could keep tapping those PIDs that are available (in blue).

Those selected then will turn into black.

When returned to the "Top EW Panel" page, the corresponding subcomponent PID boxes are already filled.



Printing Tags



iPad QC App (priceless)

iPad with cover ($630)

Bluetooth portable rechargeable printer ($50)

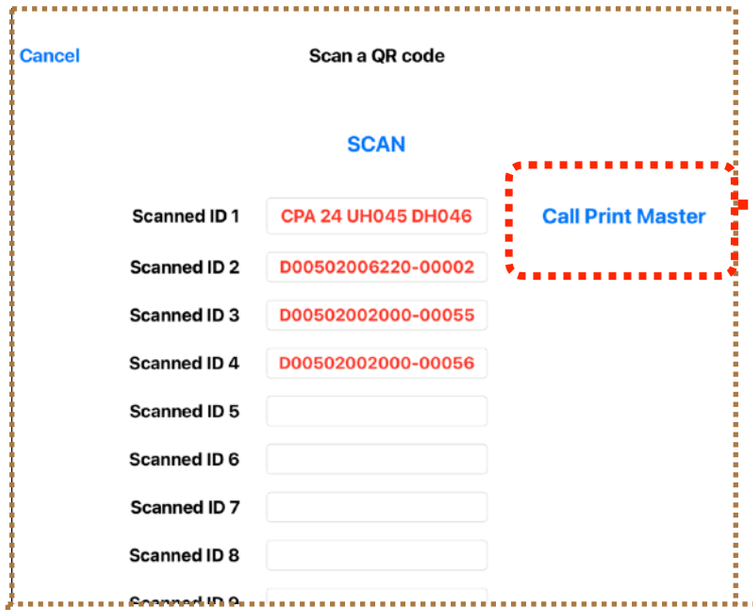
Labels ($0.12)

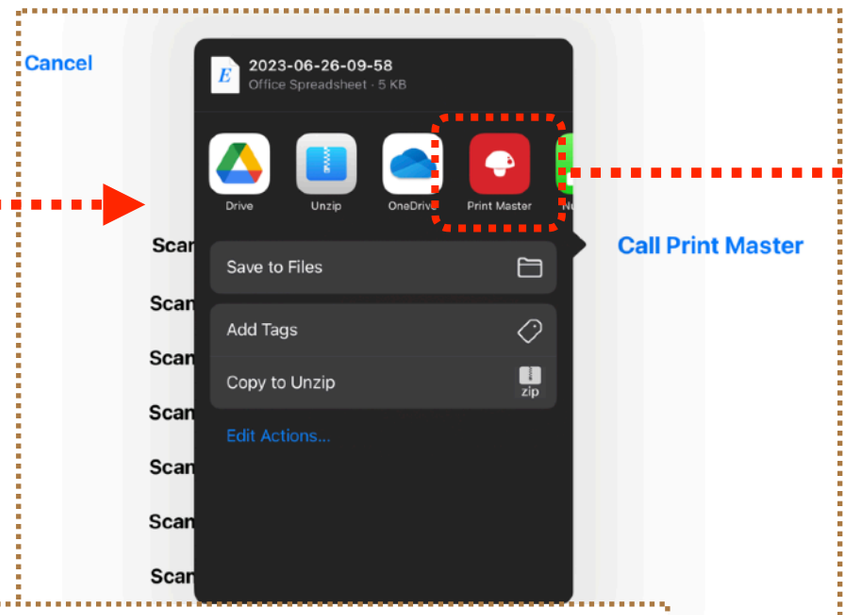
QR code Printer App (free)

The CPA group is planning to use portable printers to print parts tags, which can be attached (and detached) to individual parts and/or shipping crates.

We can now directly print the generated PIDs from the app.

Printing QC-codes





Once a PID(s) is generated

(and could be multiple PIDs; e.g., subcomponents)

we share it with the “Print Master” app

that comes with the printer.

Within “Print Master” app,

one can edit/compose

before it is printed.

Excel project

- This is something what our Python-app is already doing it.
  We wanted to add a similar functionality to our iPad app.

- QC testers must prepare an Excel sheet (for now only single sheet),
  which contains various QC test data.

  The app then takes it and upload them to the HWDB at once.

- Still working on this.
  Would like to more or less finish this within the two next weeks.

- **Description of how to upload a sheet including an example spreadsheet, is provided within the app.**

Description of Excel file uploader

Close

General Rule

- In each upload, you can specify only one Type ID.
- Currently only one sheet is accepted.
- If you want the HWDB to generate a new PID, leave the PID column in your spreadsheet empty. Or you could specify a particular PID(s) to PATCH the corresponding Item(s).

Procedure

1. Select a Type ID.
2. Select a Manufacturer.
3. Select a Test Type Name.
4. Select your spreadsheet, which could reside locally on your iPad, iCloud, or OneDrive.
   An example sheet is shown below:
   * Column labels must be given in the top row.
   * Must have a column that represents PID of the component you are trying to upload.
   * Must have a column that defines an Item (e.g., "Termination Board #").
   * May have columns that represent PIDs of subcomponents (e.g., SUB PID 1, 2).

1st half columns of an example sheet

Termination Board #	Drawing #	Main PID	SUB PID 1	SUB PID 2
1	PDF-22-5810		Z00100100046-00094	Z00100100046-00093
1	PDF-22-5810			
1	PDF-22-5810			
2	PDF-22-5810		Z00100100046-00092	Z00100100046-00091
2	PDF-22-5810			
2	PDF-22-5810			

2nd half columns of an example sheet

Test Date	Board Type	Location	J1	V1	VT	Status	Comments
10/1/2022	EW	LSU	114.6	279.7	115.2	Success	Comments for tests on Item 1
10/15/2022	EW	CERN	114.7	279	114.9	Success	
10/30/2022	EW	SURF	114.8	278.9	114.5	Success	
10/1/2022	EW	LSU	115.6	281.1	115.7	Success	Comments for tests on Item 2
10/15/2022	EW	CERN	115.6	281	115.5	Success	
10/30/2022	EW	SURF	115.3	280.2	115.2	Success	

5. Select a column that represents PIDs (e.g., "Main PID").
6. Select a column that corresponds to Comments (e.g., "Comments").
7. Select a column that corresponds to Specifications.
   In the above example, if "Termination Board #" column is selected, there will be two Items to be uploaded.
8. Select columns that correspond to the rest of the Specifications (if any. E.g., "Drawing #").
9. If there is no sub-component defined in the selected Type ID, this step will be skipped.
   If there are sub-components defined, select the corresponding columns that represent PIDs of sub-components (e.g., SUB PID 1 & 2).
   Then select one column for a particular sub-component, and then tap "Tap here to register this column".
10. Tap "Tap here when done with the above steps".
    When everything goes well, a message "All look good" should be displayed.

- **Basically, pick your spreadsheet.**
- **Then select individual columns for;**
  - **PIDs for this component**
  - **Specifications (this defines # of Items to be uploaded)**
  - **Comments, if any**
  - **PIDs of subcomponents, if any**
- **The rest of the (unchosen) columns are treated as Test data.**

Example sheet

Termination Board #	Drawing #	Main PID	SUB PID 1	SUB PID 2	Test Date	Board Type	Location	J1	V1	VT	Status	Comments
1	PDF-22-5810		Z00100100046-00094	Z00100100046-00093	10/1/2022	EW	LSU	114.6	279.7	115.2	Success	Comments for tests on Item 1
1	PDF-22-5810				10/15/2022	EW	CERN	114.7	279	114.9	Success	
1	PDF-22-5810				10/30/2022	EW	SURF	114.8	278.9	114.5	Success	
2	PDF-22-5810		Z00100100046-00092	Z00100100046-00091	10/1/2022	EW	LSU	115.6	281.1	115.7	Success	Comments for tests on Item 2
2	PDF-22-5810				10/15/2022	EW	CERN	115.6	281	115.5	Success	
2	PDF-22-5810				10/30/2022	EW	SURF	115.3	280.2	115.2	Success	

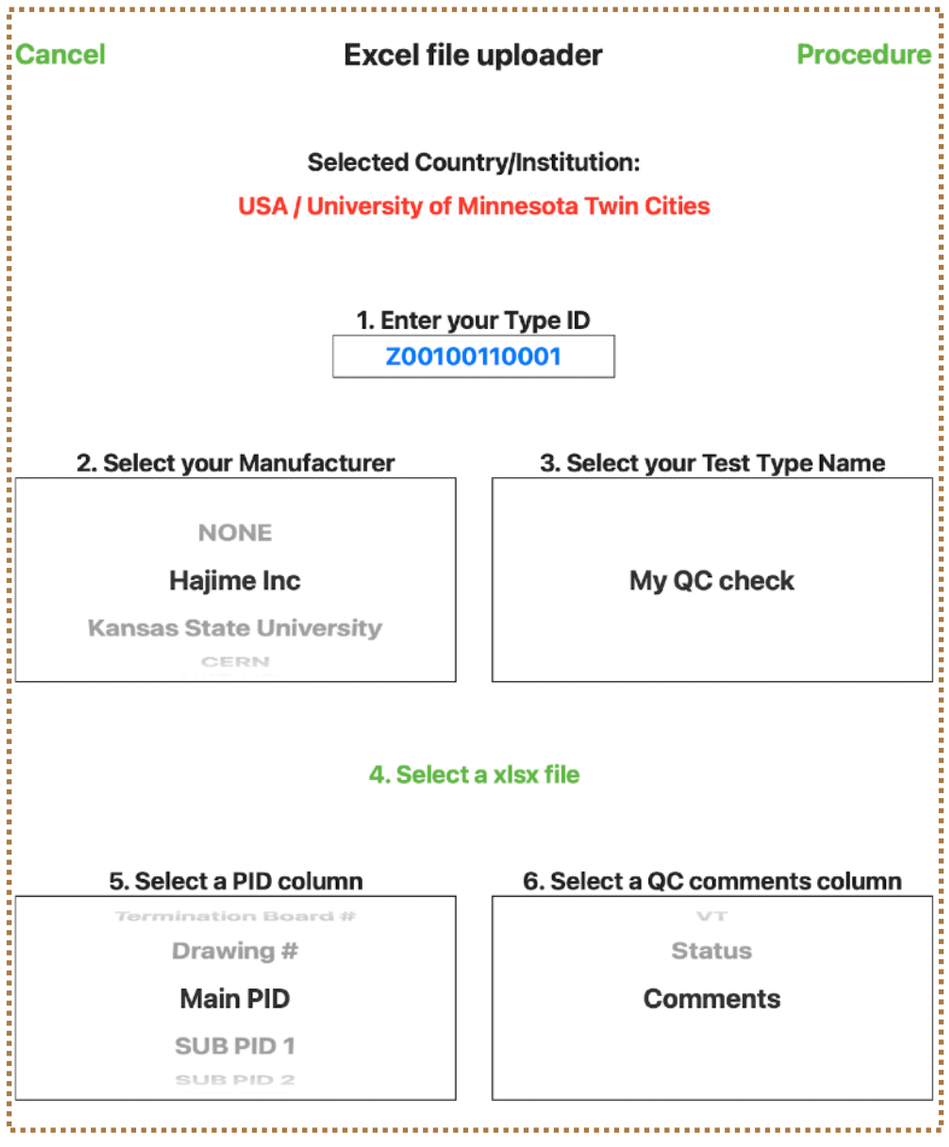
- In this example, we select “Main PID” as a column that represent PIDs.
  The column is currently empty.
  It means PIDs will be generated by the HWDB (will perform POST, not PATCH).
- One could then select “Termination Board #” as a column that represents each Item.
  If we do that, there will be two Items to be uploaded, with Termination Board # = 1 and 2 assigned respectively.
- One could also select “Drawing #” column as an additional info to be stored in Specs.
- “Comments” column could be chosen to represent comments for each Items.
- When a Type ID is selected, the app will know how many subcomponents are expected.
  One can specify PIDs of subcomponents in the sheet (or one could patch them later).
  - In this example, we select “SUB PID 1” and “SUB PID 2” to represent PIDs of subcomponents.
  - And these labels must be identical to the defined functional position names in the Type definition.
- The remaining columns will represent the Test data, which will be stored as Lists.

1. Select a Type ID. Once you select Type ID from “PID Display”, the app shows the corresponding possible Manufacturers and Test Type Names.

2. Select a Manufacturer.

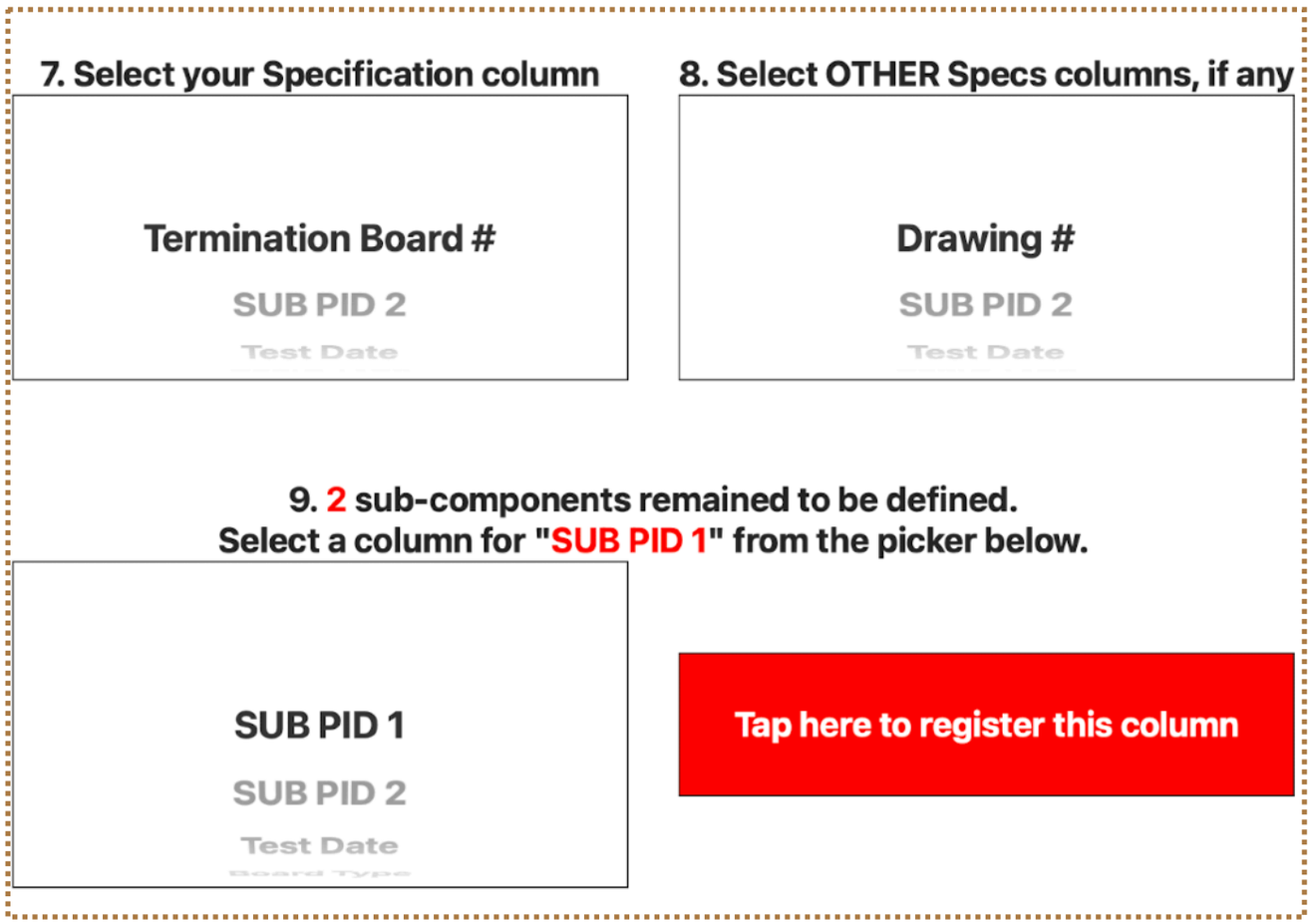
3. Select a Test Type.

4. Pick your spreadsheet. Once a spreadsheet is selected, the app lists possible candidates of column labels.



5. Select a PID column.

6. Select a Comment column.



7. Select a column that defines Items.

8. Select an additional column(s) that represent more Specs, if any.

9. In this particular selected Type ID, two subcomponents are expected.
Select columns that represent them and tap “Tap here to register this column”.
Or you can skip this step and patch subcomponents later.

10. When everything is ready, tap “Tap here when…”. A summary should be displayed.

Tap “Upload to HWDB” will trigger the upload process.

Checking the result through the WEB UI…

Hardware DB

Items for Component Type: Test Type for the iPad app

Previous

BULK ADD... ADD NEW... FILTER...

Id	Part_id	Serial_number	Manufacturer_id	Batch_id	Creator	Created
46274	Z00100110001-00020	None	Hajime Inc		Hajime Muramatsu	2023-09-01 12:22:40UTC-05:00
46273	Z00100110001-00019	None	Hajime Inc		Hajime Muramatsu	2023-09-01 12:22:39UTC-05:00
46270	Z00100110001-00018	None	Hajime Inc		Hajime Muramatsu	2023-08-30 09:31:07UTC-05:00
46269	Z00100110001-00017	None	Hajime Inc		Hajime Muramatsu	2023-08-30 09:31:07UTC-05:00
46251	Z00100110001-00016	None			Hajime Muramatsu	2023-08-27 13:33:39UTC-05:00
46249	Z00100110001-00014	None			Hajime Muramatsu	2023-08-27 13:33:38UTC-05:00
46250	Z00100110001-00015	None			Hajime Muramatsu	2023-08-27 13:33:38UTC-05:00
46248	Z00100110001-00013	None			Hajime Muramatsu	2023-08-27 13:33:38UTC-05:00
46247	Z00100110001-00012	None			Hajime Muramatsu	2023-08-27 13:33:38UTC-05:00

Edit Item Z00100110001-00020

QR | SPECS LOG | STRUCTURE LOG | CONTAINER LOG | TEST LOG | IMAGES

Component Type	Z.Sandbox.Sandbox.Test Type for the iPad app
Part ID	Z00100110001-00020-US186
Serial Number	
Country of Origin	United States
Resp. Institution	University of Minnesota Twin Cities
Manufacturer	Hajime Inc
Batch ID	--SELECT--
Created	2023-09-01 12:22:40
Created by	Hajime Muramatsu
Specs Version	
Enabled	
Contained in	N/A

Specifications

Drawing #	PDF-22-5810
Termination Board #	2

Sub-components

Sub Pid 1:Test_Parts_3	Z00100100046-00092
Sub Pid 2:Test_Parts_3	Z00100100046-00091

SAVE DONE

Test history for Z00100110001-00020

ADD NEW TEST...

Test_type_name	Created	Creator	Test_data	Test_spec_version	Comments
My QC check	2023-09-01 12:22:40.376749-05:00	Hajime Muramatsu	J1: - '115.6' - '115.6' - '115.3' V1: - '281.10000000000002' - '281' - '280.2' VT: - '115.7' - '115.5' - '115.2' Status: - Success - Success - Success Location: - LSU - CERN - SURF Test Date: - 10/1/2022 - 10/15/2022 - 10/30/2022 Board Type: - EW - EW - EW	0	Comments for tests on Item 2

- **Test data are stored in Lists.**
- **Within each of the lists, the order of each elements are preserved.**

Almost done with the HVS PD2 uploads

- Only one component remained to be uploaded,
  called an Array, consists of assemblies of CPAs+FCs+EWs.
  Its checklist includes QC checks on the final TPC HVS.

- Were waiting for the updated sub-component functionality ready.
  And it is now.
  This will be done this week.

More detail list of what we have uploaded

We have created a tree-view that can be accessed without logging into the HWDB @ https://pd2-hvs.tiiny.site/

HWDB Tree View

Click on the arrow(s) to open or close the tree branches.

- ▼ Projects
  - Project ID = D (DUNE)
    - ▼ Systems
      - System ID = 5 (FD1-HD HVS)
        - ▼ Subsystems
          - Subsystem ID = 999 (CPA)
            - ▶ Types
          - Subsystem ID = 20 (CPA)
            - ▶ Types
          - Subsystem ID = 22 (EW)
            - ▶ Types
          - Subsystem ID = 21 (FC)
            - ▶ Types
          - Subsystem ID = 13 (TPC HV Assembly)
            - ▼ Types
              - Type ID = D00501342003 (CPA/EW Assembly Lower)
                - ▶ Items
              - Type ID = D00501342001 (CPA/EW Assembly Upper)
                - ▼ Items

Part ID = D00501342001-00003
Name = CPA/FC/EW Assembly

▼ Sub-Components

Part ID = D00501341001-00003 (Pos. = CPAFC Assy) : Type = CPA/FC Assembly US
Drawing Number = DFD-13-5100
Name = CPA/FC Assembly US

▼ SubSub-Components

Part ID = D00502004501-00005 (Pos. = CPA Plane PID) : Type = CPA Plane US
Drawing Number = PD2-020-AB01
Location ID = CPA_0021

▼ SubSubSub-Components

Part ID = D00502001000-00007 (Pos. = P1 Parts ID) : Type = CPA Panel Assembly PD2 US
Drawing Number = PD2-020-1000
Name = US Panel
Panel Number = 6

▼ SubSubSubSub-Components

Part ID = D00502000021-00007 (Pos. = MRB T/B Type I: Bottom BR) : Type = Mini Resistor Board - T/B Type I
Drawing Number = DFD-20-A021
Name = Mini Resistor Board - T/B Type I
Serial Number = 111

Part ID = D00502000040-00008 (Pos. = MRB T/B Type II: Bottom BL) : Type = Mini Resistor Board - T/B Type II
Drawing Number = DFD-20-A040
Name = Mini Resistor Board - T/B Type II
Serial Number = 17

Part ID = D00502000049-00012 (Pos. = MRB T/B Type II: Top BR) : Type = Mini Resistor Board - T/B Type II
Drawing Number = DFD-20-A040
Name = Mini Resistor Board - T/B Type II
Serial Number = 18

Part ID = D00502000021-00013 (Pos. = MRB T/B Type I: Top BL) : Type = Mini Resistor Board - T/B Type I
Drawing Number = DFD-20-A021
Name = Mini Resistor Board - T/B Type I
Serial Number = 105

Part ID = D00502002000-00007 (Pos. = P2 Parts ID) : Type = CPA Panel Assembly PD2 Center

Besides PIDs, it also shows other types of IDs that are used within the HVS group

Link to the corresponding Component page, provided by the WEB-UI of the HWDB

Summary

- **Let us know if you are interested in the app.**
  All you need to do to start to use this app is to provide your email addresses.
  We'll then send you links to download the app via Apple's TestFlight.

- **Besides what we have shown today, the app currently covers various QC checklists for the PD2 project of the HVS consortium,**
  as well as for the DUNE (FD-1).
  And we also have a new independent app for FD-2.