**Device Magic Form**

Currently, two forms are available 2022\_v3 and 2024. The only difference is the inclusion of alternate fields for [*Tare Weight*, *Mass + Tube*, *multi-part Mass + Tube*, *SWE* in MV study area (*cm* instead of *g*)

**Q:** Do we want both forms active? 2024 appears flexible for both MV and non-MV SWE methods  
  
**Q:** Do we want a drop-down list of plot\_id’s?  
  
**Q:** Do we want to change the field name “*Mass + Tube* (*cm SWE / g*)”? (both field names *and* identifiers)

**Q:** Do we want to change the “*Mass + Tube*” fields in the multi-core section? Currently named identical (no units) which might be easy to enter wrong in the field and mess things up downstream.

**Q:** Do we want to change the other multi core identifier names? They are not very clear/informative. (e.g. norm = SWE\_cm multi = SWE ; norm = Mass\_\_Tube\_\_g\_ multi = Mass\_\_Tube ; norm = Plug\_\_cm\_ multi = Plug\_ ; etc.)

**Q:** The way that multi-part cores are currently configured, it seems that only 2-part cores are possible. Is this correct? Is this OK?

**Q:** How do the depths work?  
- Depth\_cm (always on)  
- Core length (density)  
- # extensions (only depth sample)  
- Depth Final = depth\_cm + 42\*# extensions (depth ; confirm how it works)  
- New depth (only multi-core density ; not used for anything)  
- Core section length (multi-core density)  
- Core length final = (density ; core length(s) – plug(s)  
- depth\_max (density ; user input – this is what is used for SWE calcs)  
- snow\_depth (post) = depth\_final + depth\_max (purpose? Is this what’s used?)

**Q:** Density calcs  
- Density\_nonMV = SWE\_cm / (depth\_Max – Plug\_\_cm\_)  
- Density\_MV = SWE\_Final\_cm / (depth\_max – plug\_\_cm)

**P:** Depending what is wanted on the processed sheets. It would be cleaner if we were to set the end SWE and density fields the same and omit the intermediary fields. Do we need them (or to know how density was calculated?)

**Q:** How do we want to handle data from different plot\_id (e.g. roadside) | other distances | missing something or other? [the script that I have been given moves the road data around a bit, but doesn’t seem to process or export them]  
  
***possible soln:*** output an ‘unprocessed spreadsheet’ (and warning) containing data that wasn’t compatible with script? **OR** leave them on output files, they just won’t have any gnss data (and they will complicate the checks somewhat, but not impossibly)

**Device Magic Form Processing**

Current state of script:

* Takes spreadsheet with any study areas and parses them separately
* Outputs: see questions below

**Q:** What is the plan for phase/flight #?  
- currently need to enter manually, which a) is an extra step b) leaves room for error c) prevents/complicates ‘easy processing tools’ idea  
**soln:** A) make it part of DM form B) Make it part of the input file naming rqmts (I can make it so the script still runs if it doesn’t find it in name)  
  
**Q:** What variables are actually desired on the outputs?  
  
**Q:** Does the script need to work for previous versions of the DM forms (variable amount of work, depending how far back we want the compatibility to extend and how man changes have been made in the past)

**Q:** the processing scripts that I was given contain calcs for *snow\_depth* which appears to be the same as the built-in calc in the DM form for  
  
**Q:** ‘centre’ points (density) are currently not being given coordinates, do we want this?

**CHECKS:**

Distance from centre not entered (I have found this in the spreadsheets)

Incorrect plot\_id variations (caps, trailing spaces)

Are there final density values for all density samples and depth values for depth samples?

Coordinate location (I can compare distance to plot\_id centre, but if these are wrong then it is due to user input error so I’m not sure how I would catch this…)

Number of coordinates attributed == number of samples

**GNSS:**

**Q:** What is the workflow for this data? Changing between years/flights? Wondering how to consistently access it within scripts (if not a stable workflow – they can be entered as an input when the script is run?)  
  
**Q:** rounding in cardinal direction template x/y (not significant, just curious)  
  
**Q:** Cruickshank R1O values are 0?  
  
**Q:** Do we want lat/lon? (I forgot)

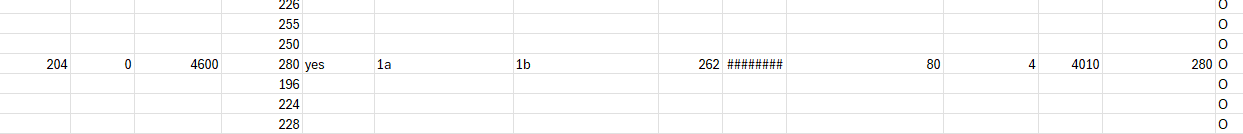
**Q:** Naming convention of outputs and inputs? (CRU, ENG, TSI, MV)  
CRU\_trip2\_DMform\_clean  
CRU\_trip2\_DMform\_summary  
CRU\_trip2\_DMform\_GNSSmerged  
  
Inputs: template and gnss points – e.g. easting vs. Easting\_m  
I can write code to account for many possibilities, but it’s a bit of a pain and a waste of time if not necessary. Better to enforce that users have named columns correctly in the input files? I *can* write an error code into the script so that it rejects the inputs if they don’t contain the column name that I needs (and gives an explanation of what is missing)  
  
**Data Organization (for Rosie)**

**Q:** Template issue. Can I remove redundant files?

**Q:** How do we want the data/files organized  
- original forms and outputs from processing  
- GNSS and template files  
- other…  
with the aim of minimizing multiple copies, without messing up old structural dependencies

**BONUS:**

**Q:** Do we want some sort of summary/reference plots as part of the output?  
- Map of data points (plotted or .kml points)  
- Histograms/scatterplots of depth/SWE/density for plot\_ids?



Core length | plug ….. | multicore length | plug copy | depthmax  
How does the plug work?