Directory Structure

Directory storage:

1. FCMPASS directory storage is dependent on computer’s username and OS
   1. Mac
      1. '/Users/', username, '/Library/Application Support/FCMPASS/FCMPASS\_Directory'
   2. Windows
      1. 'C:\Users\', username, '\AppData\Local\FCMPASS\FCMPASS\_Directory'

Cytometer Storage:

1. Cytometer
   1. Generation by user input from bead catalogue
      1. Filepath: '/Users/', username, '/Library/Application Support/FCMPASS/FCMPASS\_Directory/', cytometer
   2. Upon creation of new cytometer, two files generated to save information about cytometer and datasets generated under cytometer filepath
      1. FCMPASSCytDirIndex.fcmpass
         1. Saves information about cytometer attributes
         2. Cytometer attributes saved as two cell arrays: AttributeName and AttributeInfo in a key-value type pair relationship
      2. FCMPASSDatasetIndex.fcmpass
         1. Saves information for datasets generated under cytometer. This information is used for displaying datasets correctly in dataset listboxes in experiment calibration and detector optimization
         2. A table contains all the information with 3 columns: Filename, Version, and DisplayName
         3. Version\_4\_0\_1\_Update\_Cytometers.m script is always run upon start-up to test if datasets still exist. This script must be run upon start-up, so don’t delete.

Bead Catalogue Storage

1. Bead catalogue information is stored under: ‘BeadSetDatabase.fcmpass’
2. Each tab of the bead catalogue has information saved in a unique table. Table header names are found in FCMPASS\_BeadCatalogue\_DatabaseCheck file.
   1. Scatter
      1. ScatterTable: table
         1. Selection: logical
         2. Diameters: float
         3. DiametersCV: float
         4. BeadRI: float
         5. BeadRIWave: float
         6. CatNo: char array
         7. Manufacturer: char array
         8. LotNo: char array
         9. SetName: cell arrays containing char arrays
         10. Composition: char array
   2. FL
      1. MESFTable: table
         1. Selection: logical
         2. BeadFluor: char array
         3. Manufacturer: char array
         4. RefValue: 2D char array
         5. CatNo: char array
         6. LotNo: char array
   3. Rainbow Particles
      1. CalParTable: table
         1. Selection: logical
         2. Name: char array
         3. Manufacturer: char array
         4. CatNo: char array
         5. LotNo: char array
         6. PopNo: float
   4. Cross Calibrations
      1. CCTable: table
         1. Selection: logical
         2. ID: char array
         3. Fluorophore: char array
         4. CatNo: char array
         5. LotNo: char array
         6. Cytometer: char array
         7. Date: char array
         8. RefValue: cell array containing char array
      2. CC\_Vars: cell array where each row corresponds to the CCTable entry
         1. Column 1: Auto vs. Manual CC
         2. Column 2: Calibration parameter
         3. Column 3: Regression type
         4. Column 4: slope
         5. Column 5: y-intercept
         6. Column 6: R^2
         7. Column 7: Median rainbow stats AU
         8. Column 8: rainbow bead CV stats AU
         9. Column 9: rainbow bead std stats AU
         10. Column 10: Median MESF bead stats AU
         11. Column 11: MESF bead CV stats AU
         12. Column 12: MESF bead std stats AU
         13. Column 13: MESF bead ref values
         14. Column 14: MESF bead .fcs file date
         15. Column 15: Rainbow bead .fcs file date
         16. Column 16: calibrated height parameter rainbow bead assigned ref values
      3. Rows of these two variables are linked together to the same cross calibration
3. Unique identifiers generated for all bead entries, necessary for tracking changes to datasets and loading correct bead information in MIFlowCytEV reports
   1. Unique identifiers saved under: ‘UID’
      1. UID contains a 1x3 cell array with each cell containing a cell array of UIDs for rainbow particles, FL, and cross calibrations respectively
4. Linking of MESF berad and rainbow particles for cross calibration information is saved under: ‘CC\_Link’
   1. CC\_Link contains a 1x2 cell array containing 2 cells arrays corresponding to UIDs with headers for rainbow particles and FL respectively, and each row corresponding to the cross calibration saved in the same row under CCTable
5. MIFlowCyt information is saved under preferences

Dataset Structure

Dataset Storage:

1. Dataset Info
   1. Experiment Calibration
      1. Prefix: ‘D’
      2. Suffix: replace(num2str(datenum(datetime('now'))), '.','\_')

Current datenum converted to a str and valid filename

* + 1. File extension: ‘.fcmpass’
    2. Full dataset filename example: ‘D739003\_6528.fcmpass’
  1. Detector Optimization
     1. FL
        1. Prefix: ‘V’
        2. Suffix: replace(num2str(datenum(datetime('now'))), '.','\_')

Current datenum converted to a str and valid filename

* + - 1. File extension: ‘.fcmpass’
      2. Full dataset filename example: ‘V739003\_6528.fcmpass’
    1. Scatter
       1. Prefix: ‘S’
       2. Suffix: replace(num2str(datenum(datetime('now'))), '.','\_')

Current datenum converted to a str and valid filename

* + - 1. File extension: ‘.fcmpass’
      2. Full dataset filename example: ‘V739003\_6528.fcmpass’