Application Note: MFCTool v10: File Format Compatibility for MFC3045 and MFC2046

Equipment

- Metrolab Magnetic Field Camera MFC3045
- Metrolab Magnetic Field Camera MFC2046

OVERVIEW

The latest version of MFCTool v10 (v10.3.1) supports the Metrolab Magnetic Field Cameras MFC3045 and MFC2046.

The new format is XML based and is the one that is recommended to someone willing to write a new interface. For those who already have a software written, the MFCTool provides a way to write all previous file format (including winmfctool v8.0). It must be duly noted that to prevent information loss, the XML file is always generated along the old DAM.

DAM files are made as similar as possible to simplify the transition, but there are some minor differences:

- The first line of the file is different:

  Old DAM file header was:
  M F C - 3 0 4 5 Multiple Measurements file: WMFCToolV8_testwithComment.dam

  New DAM file header is:
  P T 2 0 2 6 Multiple Measurements file: 9046_00000008_2020-10-01_14.26.07_AdvancedDAMV8.mxr.dam

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The part that follows the semicolon is the file name. The major difference is the "M F C - 3 0 4 5" string being replaced by "P T 2 0 2 6".

It could be a problem if these first letters are used as a file signature before parsing it.

- The number in the column "Valid Cycles" is much smaller when using an MFC2046: The column "Valid cycles" shows for the MFC3045 the number of valid cycles (sweep up / sweep down) that were performed using a frequency sweep over the sample. The are no such sweeps in the PT2026 because of the pulsed nature of the measurement. One should understand that when using an MFC2046 and choosing the v8.0 file format, they CANNOT expect these parameters to be identical. It HAS TO BE DIFFERENT, this is really important.

  Example: configuring for 60 "cycles" (an average of 60 measurements) when using MFC2046 which results in a very long measurement time.

To check the compatibility of a parser with the DAM file generated by MFCTool v10, the following questions should be asked:

- Are the first letters used as a way to identify the file before the parse operation.
- Are the "Valid cycles" values used to assert the quality of the measurement.
  - If so, there is a subsequent question: How is defined the right / the correct number of cycles in the parser and how are defined the limits leading to measurement acceptance.