

10_asammdf_issue_157

May 8, 2020

1 Example From asammdf issue #157

extract_can_logging dbc only returns scaling of the 1st data group #157

- <https://github.com/danielhrisca/asammdf/issues/157>

I have a CAN bus log file from a logging device with 2 physical CAN channels.

In both channels, the same J1939 CAN data frame is recorded, split by data group. This case may occur if e.g a single device is recording data from two identical machines in parallel.

I would like to dbc-convert the raw data, but my understanding of using `extract_can_logging dbc` on the overall MDF is that it will “collapse” the original data group separation into a single data group to reflect that the two physical CAN channels are recording the same CAN ID. I would need this separated as the data would in practice not be identical.

To do so, I assumed I would be able to split the original MDF into two MDFs, one for each data group - and then afterwards apply `extract_can_logging`. However, that seems to provide an empty MDF with no matches. I also notice that the structure of the resulting `mdf1` and `mdf2` files are slightly different vs. their counterpart data groups in the concatenated MDF.

Perhaps I’m simply doing the splitting of data groups wrongly - if so, I’ll close this asap.

- *MatinF*

```
[1]: %matplotlib inline
      from asammdf import MDF
      import os
```

Download and extract https://github.com/danielhrisca/asammdf/files/3049504/sample_files.zip

```
[2]: !rm -rf sample_files
      !wget -q https://github.com/danielhrisca/asammdf/files/3049504/sample_files.zip
      !unzip sample_files.zip
```

```
Archive:  sample_files.zip
  inflating: sample_files/AC6013CD_00003277_00000001.mf4
  inflating: sample_files/AC6013CD_00003277_00000005.mf4
  inflating: sample_files/CSS-Electronics-SAE-J1939-DEMO.dbc
```

```
[3]: os.chdir("sample_files/")

[4]: files = ['AC6013CD_00003277_00000001.mf4', 'AC6013CD_00003277_00000005.mf4']
    dbc = ['CSS-Electronics-SAE-J1939-DEMO.dbc']

    mdf = MDF.concatenate(files,time_from_zero=False)

    # split MDF into CAN channel 1 and 2
    mdf1 = MDF(version='4.10')
    mdf2 = MDF(version='4.10')

    mdf1.append([mdf.get("CAN_DataFrame", group=0)])
    mdf2.append([mdf.get("CAN_DataFrame", group=1)])

    mdf1.save('CAN_1', overwrite=True)
    mdf2.save('CAN_2', overwrite=True)

    mdf0_scaled = mdf.extract_can_logging(dbc)
    mdf1_scaled = mdf1.extract_can_logging(dbc)
    mdf2_scaled = mdf2.extract_can_logging(dbc)

    mdf0_scaled.save('mdf0_scaled.mf4')
    mdf1_scaled.save('mdf1_scaled.mf4')
    mdf2_scaled.save('mdf2_scaled.mf4');
```

```
[5]: !ls
```

```
AC6013CD_00003277_00000001.mf4  CSS-Electronics-SAE-J1939-DEMO.dbc
AC6013CD_00003277_00000005.mf4  mdf0_scaled.mf4
CAN_1.mf4                      mdf1_scaled.mf4
CAN_2.mf4                      mdf2_scaled.mf4
```

2 Part 2. Data Analysis.

Looking into the data from the above bug (that has since been fixed).

Exploring the data having been just given a MDF file you've never seen before.

```
[6]: for channel in mdf0_scaled.iter_channels():
    print(channel.name)
    channel.plot()
```

Make the plots look “better” with Seaborn.

```
[7]: import matplotlib as mpl
```

```
[8]: import seaborn as sns
# https://www.datacamp.com/community/tutorials/seaborn-python-tutorial
mpl.rc_file_defaults()
sns.set(
    rc={
        "figure.figsize": (11.69, 8.27), # A4 paper size.
        "figure.facecolor": "w",
        "figure.edgecolor": "k",
        "axes.labelsize": 18,
        "axes.titlesize": 18,
    }
)
```

```
[9]: for channel in mdf0_scaled.iter_channels():
    print(channel.name)
    channel.plot()
```

```
[ ]:
```