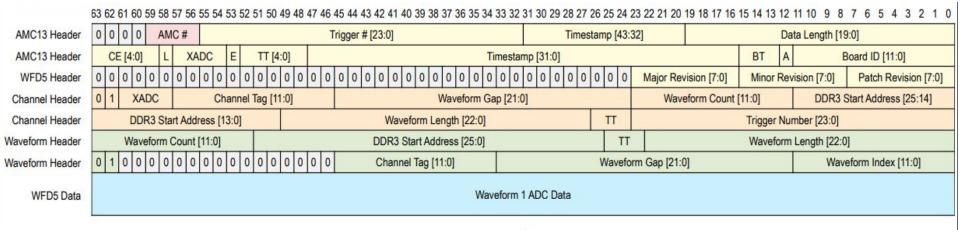# Current Progress

Frontend code:

- Working on installation script for RHEL7.9 machines
  - Installs and makes midas-modified from github
  - Working on installing and making gm2daq-modified from github

Backend code:

- Sean Foster working on output analysis
  - Almost completely decoded midas data banks
  - Working of "offline" analysis for now
  - Plans for "online"/DQM work

	63 62 61 60 59 58 57 56 55 54 53 52 51 50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0
AMC13 Header	0 0 0 0	AMC #	Trigger # [23:0]	Timestamp [43:32]	Data Length [19:0]
AMC13 Header	CE [4:0]	L	XADC	E	TT [4:0]	Timestamp [31:0]	BT	A	Board ID [11:0]
WFD5 Header	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Major Revision [7:0]	Minor Revision [7:0]	Patch Revision [7:0]
Channel Header	0 1	XADC	Channel Tag [11:0]	Waveform Gap [21:0]	Waveform Count [11:0]	DDR3 Start Address [25:14]
Channel Header	DDR3 Start Address [13:0]	Waveform Length [22:0]	TT	Trigger Number [23:0]
Waveform Header	Waveform Count [11:0]	DDR3 Start Address [25:0]	TT	Waveform Length [22:0]
Waveform Header	0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Channel Tag [11:0]	Waveform Gap [21:0]	Waveform Index [11:0]
WFD5 Data	Waveform 1 ADC Data

Development Steps (Rough Outline)

Frontend code:

- Clean up DAQ for easier user control, package with modified midas, distribute

Backend code:

- Correctly "bin" all header information, trailer information, ADC data, etc.
- Histogram/data reconstruction (offline)
- Establish Data Quality Monitor (DQM) that links with midas experiment (online)

```xml
<!-- The purpose of this file is to specify what devices are in each frontend crate -->
<!-- To declare frontend AMC130x create root node <frontend id="x"> -->
<!-- To declare device in slot 'y' of create, create node <slot id="y" type="device_type" -->
<!-- Select "device_type" from FC7, WFD, or Rider (WFD and Rider are the same device) -->
<?xml version="1.0" encoding="UTF-8"?>
<frontend id="0">
    <slot id="1" type="FC7" />
    <slot id="2" type="FC7" />
    <slot id="5" type="WFD" />
    <slot id="6" type="FC7" />
    <slot id="7" type="WFD" />
    <slot id="8" type="WFD" />
    <slot id="10" type="WFD" />
    <slot id="11" type="WFD" />
    <slot id="12" type="WFD" />
</frontend>
<frontend id="1">
    <slot id="1" type="WFD" />
    <slot id="2" type="FC7" />
    <slot id="3" type="WFD" />
    <slot id="4" type="WFD" />
    <slot id="5" type="WFD" />
    <slot id="6" type="FC7" />
    <slot id="7" type="WFD" />
    <slot id="8" type="WFD" />
    <slot id="9" type="FC7" />
    <slot id="12" type="WFD" />
</frontend>
```

Example crate contents configuration file