

Automation of electric acquisition for the new experimental setup

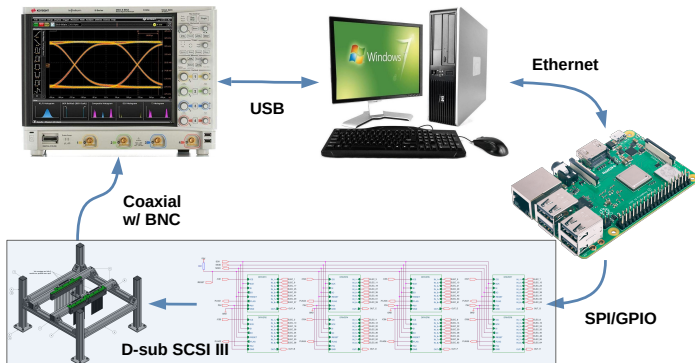
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Automation – general view

Schema



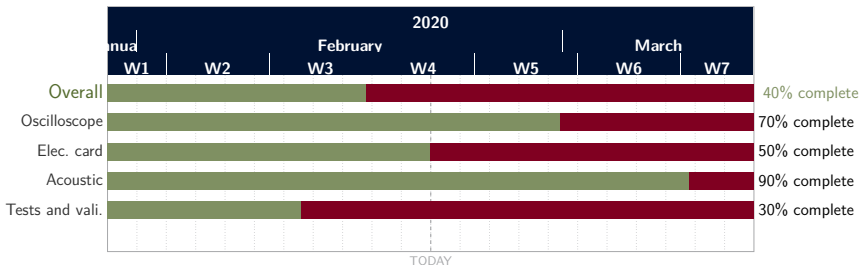
Automation – general view

Main points

- ▶ Python-based routines and interface to control the electric acquisition
- ▶ Quicker and simpler acquisition
- ▶ Less human interaction
- ▶ Towards reproducibility

Automation Planning

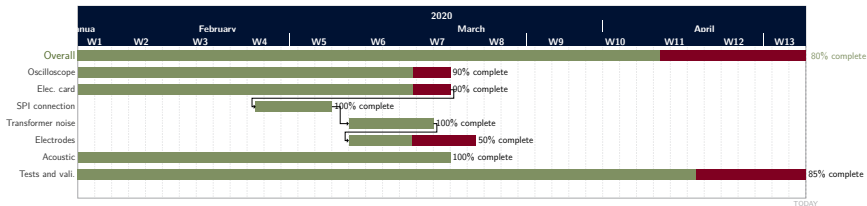
From : 2020-01-30 until 2020-03-13



► **Proposed at 2020-02-20**

Automation Planning

Today



Points :

- ▶ Oscilloscope connection has no easy-to-use user interface. Possibility of bugs I have not yet seen.
- ▶ Control over GPIO pins works but SPI is not quite clear.
 - ▶ The right cable config.
 - ▶ What 8-bit message do I send to change drivers/relays.
- ▶ Oscilloscope control could be done with LabView to make it easier.

Tests to be performed

- ▶ Check if all relays work properly - **DONE**
- ▶ Test box attenuation/plastic velocity/etc **ONGOING**
- ▶ Water-filled box with dipole source to check electrodes' behaviour to electromagnetic sources
- ▶ Sand-filled box
- ▶ Sensitivity to the Layer response

Perspectives to new experimental setup

General :

1. Greater SNR;
2. Faster acquisition
3. Greater spatial precision of electric measurements due to more rigid electrodes;
4. Ensure repeatability;
5. More precision when studying the converted wave.

Thank you for your attention!