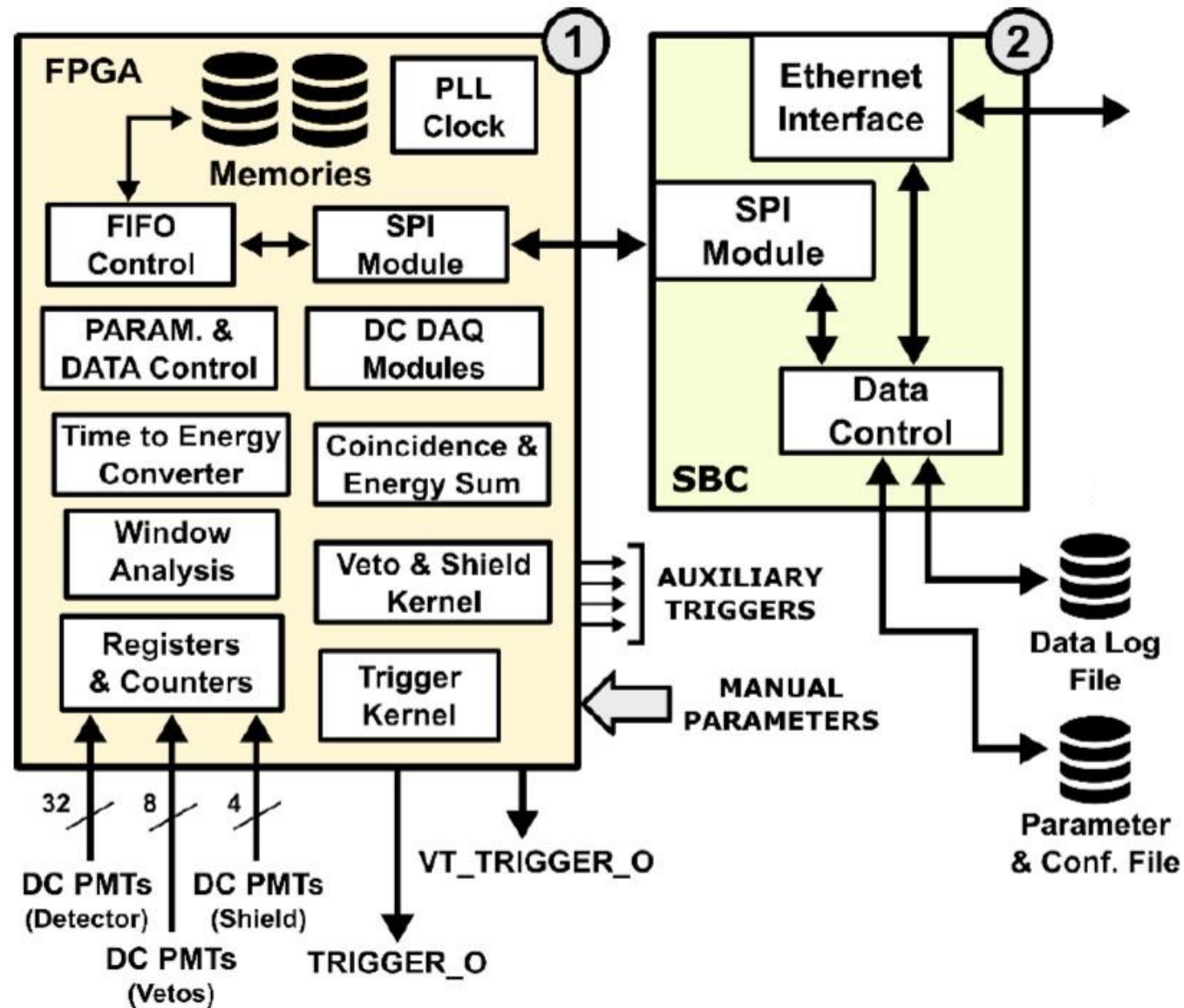


TRIGGER solution for LIME: status

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Trigger system overview



In the folder **/home/pi** there is the following files structure:

- **conf**
 - RUN.CONF
 - TRIGGER.CONF
 - VERSION.CONF
- **ctrl_trigger_sockt.py**
- **download.sh**
- **init_boot.sh**
- **lib**
 - test_spi_bit.py
- **log**
 - DATA_LOG.LOG
 - IDD_RUN_LOG.LOG
 - STATUS_LOG.LOG
- **spilibx.py**
- **spilibx.pyc**
- **trigger_process.py**
- **util**
 - ftp_con_trigger.sh



This text file should be edited in order to implement different Trigger conditions in the FPGA logic.

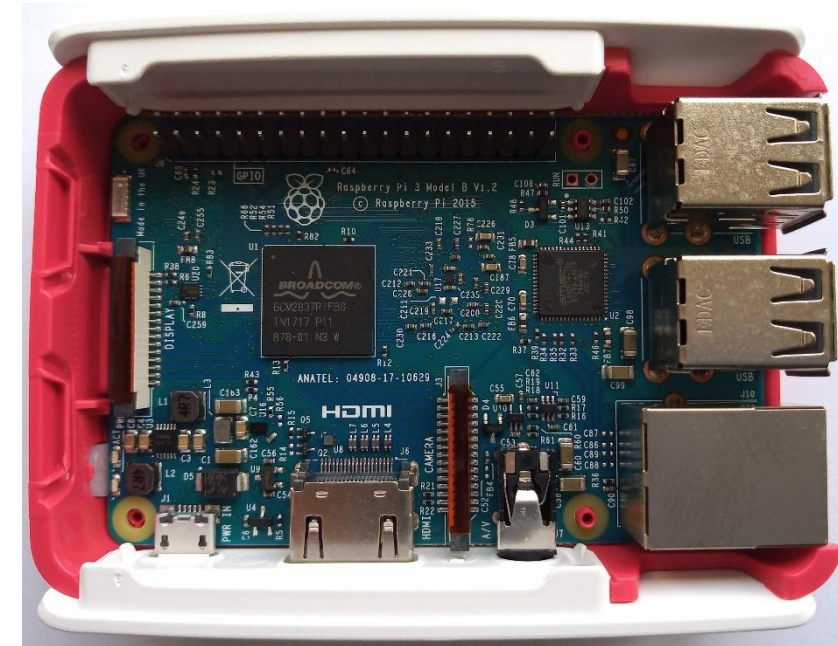
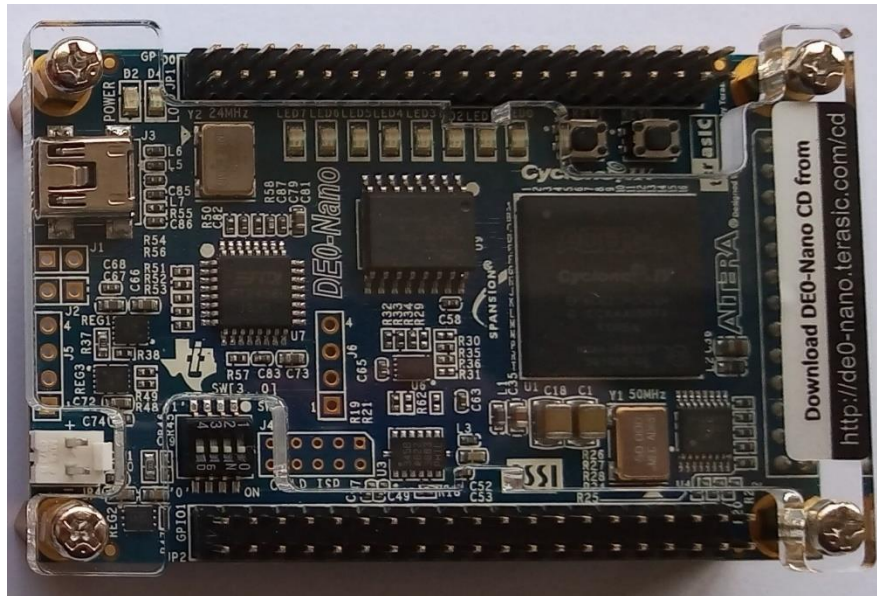
In the folder **/etc/init.d** there is an initialization service that calls the file *init_boot.sh*, which then calls the processes *ctrl_trigger_sockt.py* and *trigger_process.py*.

In order to access the Raspberry PI it is necessary to know its IP address in the private network and to use the following credentials:

- Login: pi
- Password: lsd

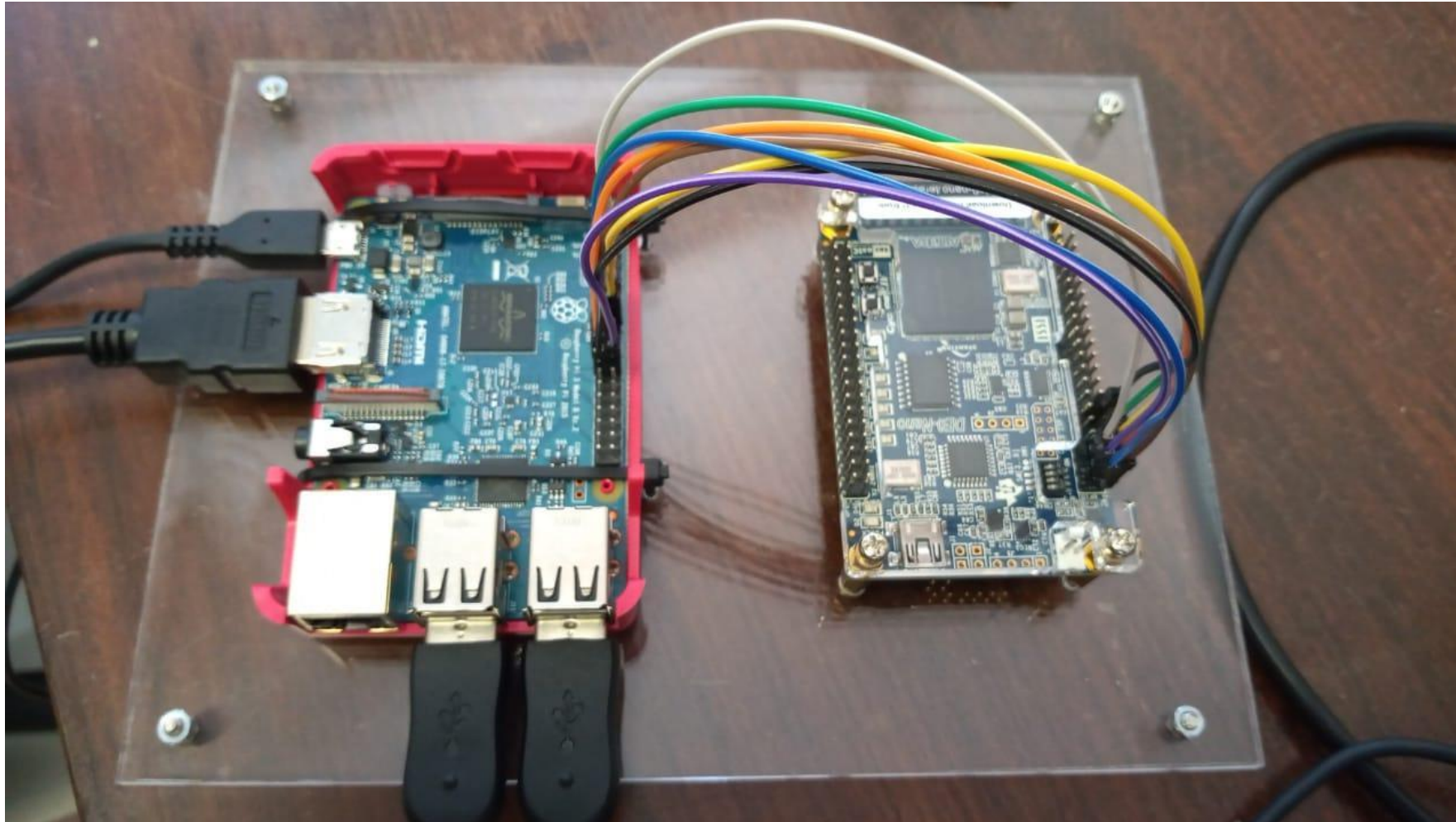
New hardware for LIME

The boards are already available at CBPF for development and tests.



Terasic DE0 Nano FPGA Kit (US\$86)
Cyclone IV EP4CE22F17C6N

Raspberry Pi 3 Model B (US\$43)



Test setup assembled at CBPF

- Pin assignment modifications for the new FPGA kit. **DONE**
- Check software compatibility for the new RaspberryPI. **DONE**
- Make the connections between the FGPA kit and the RaspPI. **DONE**
- Check the SPI communication between the RaspPI and the FPGA kit. **DONE**

What is next?

- Improve the TCP closing after programs execution. **ONGOING...**
- Design a simple Trigger Logic inside the FPGA (AND, OR gates).
- Test the system with external pulses (functionality).
- Write a simple manual to facilitate the duplication of the system in Rome.
- Check about the compatibility of electrical levels of inputs (LVTTTL / TTL).
- Build a solution to assemble the boards and connectors on a single mechanical framework (VME?, NIM?). (To-Do in Rome)