Sample Qt GUI application on custom HMI board that communicates with PC over USB

Project Description:

2 application should be written in this project. First one which is Qt GUI application will be run on Yeşil Otomasyon custom HMI board and should be written entirely Qt C++. Second application should run on PC and software environment is up to programmer. It could be c, python, Qt etc.

HMI board and PC application can communicate over USB. PC recognizes HMI board as an ACM & RNDIS device. In ACM & RNDIS device mode, you should be able to communicate with HMI board as a serial device and network device (like ethernet). You can think RNDIS is like a USB ethernet converter.

HMI Board Qt Application;

- should send/receive commands/data over USB (ACM, /dev/ttyGS0)
- should send/receive commands/data over USB (RNDIS, usb0) using websocket or TCP or UDP
- should contain several buttons, background images, and several info messages.
- should contain minimum 2 pages

HMI board has 800x600 resolution and GUI design entirely up to you. For example; you can create 2 pages and move around them with buttons or with commands from PC. You could change background images, list some items received from PC in combo box, send command to PC when button is pressed etc.

PC side;

- should send/receive commands/data over USB (ACM device, /dev/ttyACM*)
- should send/receive commands/data over USB (RNDIS, usb0) using websocket or TCP or UDP

Project Environment:

We are expecting from you to cross compile HMI board application. So Qt 5.12.3 arm libraries will sent with this document, it is useful to have it under /opt/Qt5.12.3Arm so that it does not cause any problems. Linaro 6.4.1-2017 toolchain also will sent with this document. You should be able to create Qt kit with these on your Qt Creator.