Digital Fax

Controlling an E-Ink display via a P2P network

Elena Frank, Paco Lombardi, Bruno Stendal, Leonard von Lojewski
Freie Universität Berlin

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Idea

Control the content displayed on a E-Ink Display from remote via P2P Communication

- Have a E-Ink display connected to a smaller / larger IoT Device that controls the displayed content
- Setup a P2P node on the IoT Device that remote Peers can connect
- To change the displayed content, other (authorized) peers can send according messages to the node
- E-Ink display has very low energy consumption - can be unplugged any time and will continue displaying content
- No central server needed, peers can easily join the network

Technical Details for a first MVP

- Use libp2p networking library to implement the P2P-Network
- Use Raspberry Pi with Raspberry Pi OS (based on debian)
- Write software in Rust, compiled to target ‘armv7-unknown-linux-gnueabihf‘
- E-Ink display e.g. *Waveshare 7.5inch E-Ink Display HAT for Raspberry Pi*
  that can interface through SPI with:
  - Raspberry Pi
  - Jetson Nano
  - STM32

Possible Extensions

- Use RIOT as OS ;-))))
- Use different IOT device
- Use low level networking library instead of libp2p e.g. smoltcp (does not require an OS)