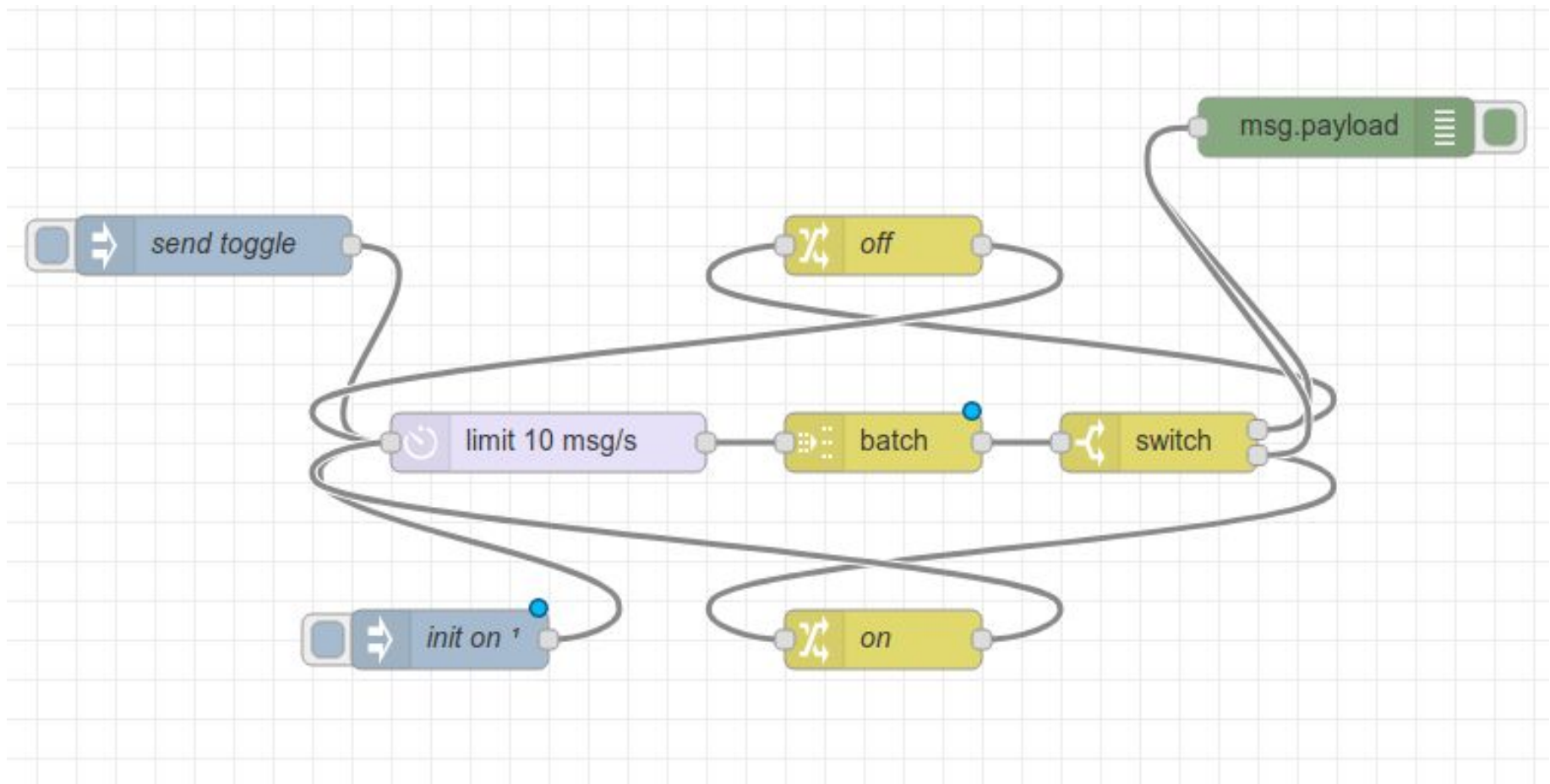# Introduction to the Internet of Things

Session 05

Ulrich Norbisrath

Node-RED introduction

Public Node-RED Exploration

- 2 volunteers
- Build the flow for toggling a light only when "on" received on an input
- Output should receive alternating 0 or 1
- Replace with hardware devices
- Extra: counter
- Audience, please help
  - Fast googlers – try to help (note down links in research report)
  - Stop and delay → ask questions (note questions into research report)
  - Take notes for lab

What is this?
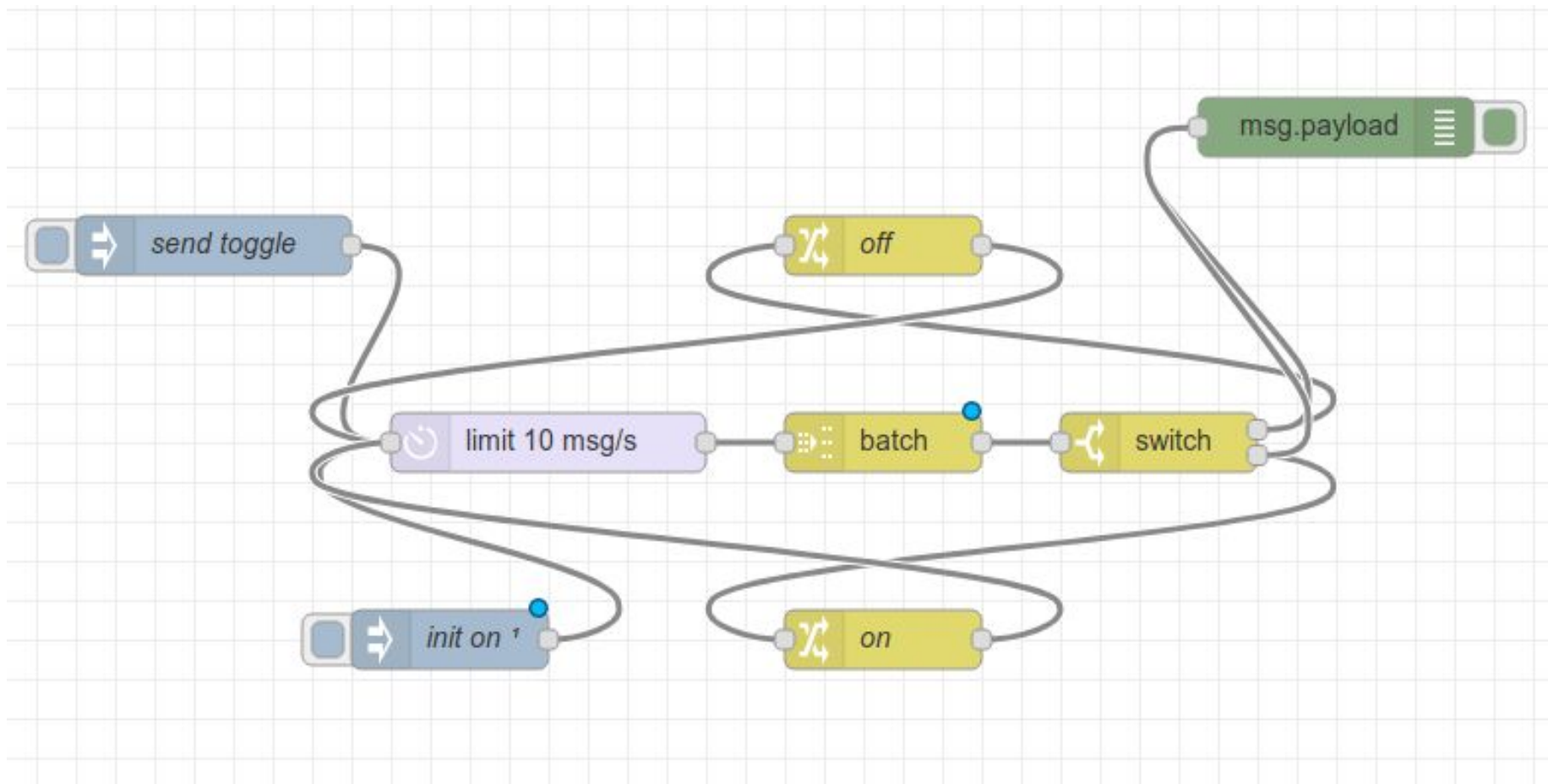
Node-RED GUI introduction

- npm install node-red-dashboard

- buttons

- switches

- sliders

- gauges

- charts

- groups

- → research report:
  - 2 small scenario ideas where such interfaces could be used
  - Help given

Some Node-RED tips and tricks

Lab 5

- Node-RED
  - Finish Node-RED tasks (integrator with button, LED-control) from last lab
- Repeat Node-RED parts with Flogo (if you can't install docker image, you need to program directly in json)
  - integrator
  - web-trigger for color setting
  - install in flogo:
    - github.com/TIBCOSoftware/flogo-contrib/trigger/mqtt
    - github.com/project-flogo/edge-contrib/activity/mqtt
- Optional: try MongooseOS IoT Framework (gpio and temperature tutorial)
- If you manage Mongoose: check out PJON library and build a bitbanged one-wire network with 2 esp nodes, on esp node needs to still be connected to mqtt and the other one to the rgb led, the control message needs to be forwarded via the onewire network

Flogo

- On Pi:

  go get -u github.com/project-flogo/cli/…

- Flogo webservice – only in docker, not on pi

- Not as easy as promised

- short demo

Flogo Demo