

Internet of Things: Presentation notes

1. Greeting and introduction [Ma]

- Hello + welcome
Covered aspects (pos/neg)
looked at use cases / existing applications

2. General information [Mo] (GI, Usage, Positive aspects)

describes all devices > connected to internet / other devices
sensors, actuators (execute, lights / door locks)
smart devices (smart TVs)

pos. asp: industrial automation easier f. Manufacturers
track ordered products on webstie in real-time.

No IoT = no self-driving cars, have to be connected to a network to prevent accidents

3. Negative aspects [Ma]

Every new technology > downside
security - some devices = nightmare
default passwords: (e.g. admin/admin)!!

4. Dash button [Ma]

intended use: buy a product just by pressing it - Creative people found ways
to use it for own projects: detecting if it's on the network or not
Amazon stopped selling buttons consumer protect. org. ruled – break laws

5. Discussion [Mo]

asked ourselves: really need the IoT? Conclusion: smart devices = useful
thing - can't stop the future | next years: IoT huge topic

6. Heating stats [Mo]

In app we're requesting data heating system in Abtenau – contains settings,
temps measured by diff. sens. (outs., ht. flw., ret. flw.)
load data > 2 sep. tables, left – curr. temp, right – settings (stats/work hrs of
compr.)
data called up every minute. Chart = history of temps. acc to timespan.

Choose timespan w/ slide, click rectangles to hide/show curve.

7. Explanation of used code [Ma]

Resümat CD4 (from 2002) -> RS232 ser. Port. Avail.

Proto. Using hex data, rev. eng. in online. forums

Read/write options, CRC-16 w/ special params

Example command for protocol

10 02 and 10 03 mark start/end

01 15 = mode (read)

offset and bytes to read after offset

last bytes are the CRC checksum

after requesting all data: comparing values w/ displayed data and noting addresses + length

floats stored as IEEE 754

an eternity later: found out all addresses

inserted data into a fhem plugin (perl) + added improvements to it

requested + processed every minute

8. JS code explained [Mo]

↓ here, function called when pos. of slider changes, updates displ. chart w/ new timespan, printChart() downloads data for sel. timespan + filters temps.

Process data to create approp. spaces between each temp that we display

9. Finally [Mo]

thanks 4 attention. Further qu?