

## Puzzle 3 Details and BOM

### Puzzle Start

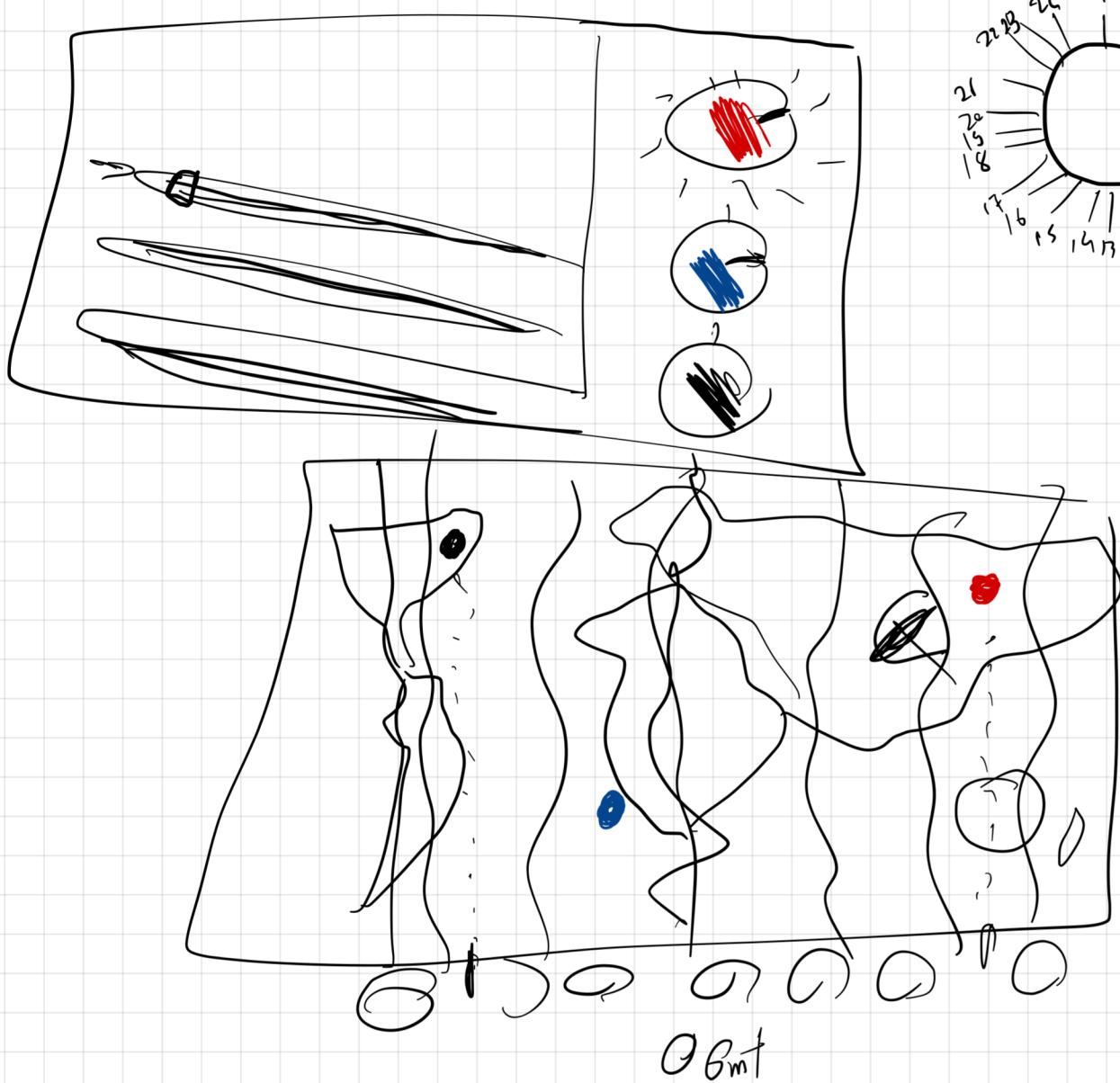
- When / how is radio turned on?
  - ↳ interface ??!
- turn on via other group's puzzle
  - ↳ power on
  - ↳ amplify transmission power
  - ↳ turn on yourself
- emergency broadcast is running
  - ↳ information message from NASA etc. to the people
- last employee of the power supplier working in the control room was dismissed a few years ago due to digitalization & automation of the control room
  - he - Ferdinand - was a hobby funk operator
  - hints that he exists somewhere in the room ??

### Radio Features

- turn on autonomously if desired
  - ↳ otherwise switch to turn on, etc
- no matter how encoders are positioned, plays one same emergency broadcast
  - ↳ information to people of the city (from NASA etc.)
- only at one specific position of the 3 encoders, the radio station changes
  - ↳ playing hobby funkier Ferdinand's broadcast
- display (3-7 zoll) must be touch (resistive), Windows Logo on it
- sound must be reasonable

## First Puzzle

- world map hanging on a wall, with 3 pins somewhere on it
  - ↳ time difference to GMT of the positions of the three Pins corresponds to the desired positions of the three radio encoders
  - ↳ to reach hobby bunker radio station
  - ↳ all other encoder positions don't change the radio station
    - ↳ same emergency broadcast everywhere else
  - ↳ positions of the pins were former holiday destinations of the hobby bunker operator, this is how he remembered his station
    - ↳ how is this clear??
  - ↳ absolute time difference ??



- o solving this puzzle automatically changes radio station
  - ↳ we can now hear the voice of hobby bunker Ferdinand

## Second, subsequent puzzle

- hobby hacker Ferdinand is talking randomly
    - ↳ he's a bit crazy
    - ↳ he's swearing and bitching around
      - does not like the today's modern systems and the fact that he had been fired
      - thinks and says that he is the only one being able to deal with the control system and that nobody else is actually able to reboot the system in a situation like this because nobody knows the correct software name / key to something ??
  - in his talking, he rather randomly includes color names
    - ↳ blue-green-red-green or so
  - these colors correspond to the sequence of touching the parts of the windows Logo on the display
    - ↳ people might not understand at first that display is even touch due to it being resistive
  - once the correct sequence has been entered, the display suddenly changes
    - it now shows a
      - software name, or
      - validation key for software, or
      - code to open door / safe
- our puzzles have been solved !

# BOM

- resistive touchscreen
  - for LittleVGL & ESP32 / Arduino
  - 3.5 - 7 inch
- 5 V Display:  
<https://octopart.com/datasheet/1596-adafruit+industries-53099534>
- 4.3 V Display:  
<https://octopart.com/966-adafruit+industries-24610865?r=sp#PriceAndStock>
- incremental encoders 4x → 3x for 1st Puzzle  
1x for volume
  - 12 or 24 steps
  - construct and 3D print the case ourselves
- → PEC11R 24  
<https://octopart.com/pec11r-4220f-s0024-bourns-26648301>
- speaker, e.g. 4Ω 3W  
<https://octopart.com/as04004pr-r-pui+audio-22744112?r=sp>
- amplifier
  - PAM8403 Dev Board  
↳ or only IC  
<https://octopart.com/175-adafruit+industries-32978442?r=sp>
  - combined alternative: <https://octopart.com/pec11r-4220f-s0024-bourns-26648301>
- On/off switch
  - or whatever we decide on how radio is turned on
- zB  
<https://octopart.com/dfr0119-dfrobot-77801045?r=sp>
- MicroSD card holder  
<https://octopart.com/search?q=Micro+sd+Card&currency=USD&specs=0>
- Micro SD card
- case: to be constructed by ourselves
  - 3D printed
  - use wood too

## Non-technical:

- world map
- pins

## Questions to be answered:

- power electronics / power supply ?!
  - ↳ rechargeable battery ?