Title: “Intelligent” waiting room

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Explore the use of RPI and RPI HQ Camera to build a proof of concept of a "intelligent" waiting room:

- detect when people arrive and react (e.g. say hello in a screen or via audio
- know how many persons are there
- if possible - voluntarily - see the status of someone changes :
    - moving a lot (by tracking)
    - inferring from skin variations the heart rate and other changes - could help trigger and alarm

Opportunities / challenges :

- explore the new RPI compute module to replace the traditional RPI4.
- explore cameras to extract heart rate - using PPG -
- explore the use of solution such Tensorflow to recognize relevant events/situations - depends on selected scenarios

Some references

Raspberry Pi Compute Module 4
https://www.raspberrypi.com/products/compute-module-4/?variant=raspberry-pi-cm4001000

All About Raspberry Pi HQ Camera Lenses
https://learn.adafruit.com/raspberry-pi-hq-camera-lenses

Tensorflow Lite tutorials
https://www.tensorflow.org/lite/tutorials

Remote Photoplethysomographic (PPG) Imaging
http://alumni.media.mit.edu/~djmcduff/assets/remote-physiology.html

Automated video-based heart rate tracking for the anesthetized and behaving monkey
https://www.nature.com/articles/s41598-020-74954-5

Pose Estimation on The Raspberry Pi 4
https://medium.com/analytics-vidhya/pose-estimation-on-the-raspberry-pi-4-83a02164eb8e