

Säkerhet i byggbranschen med IoT

Bilaga



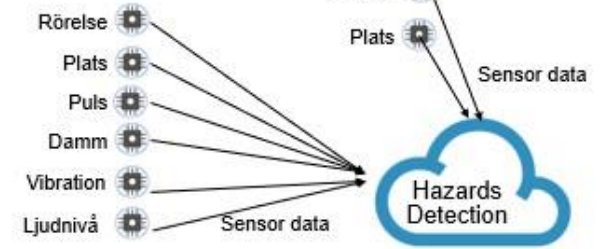
20m

10m

- ✦ UWB tags på utomhusmaskiner
- ✦ Machine Safety Zones



Sensorer



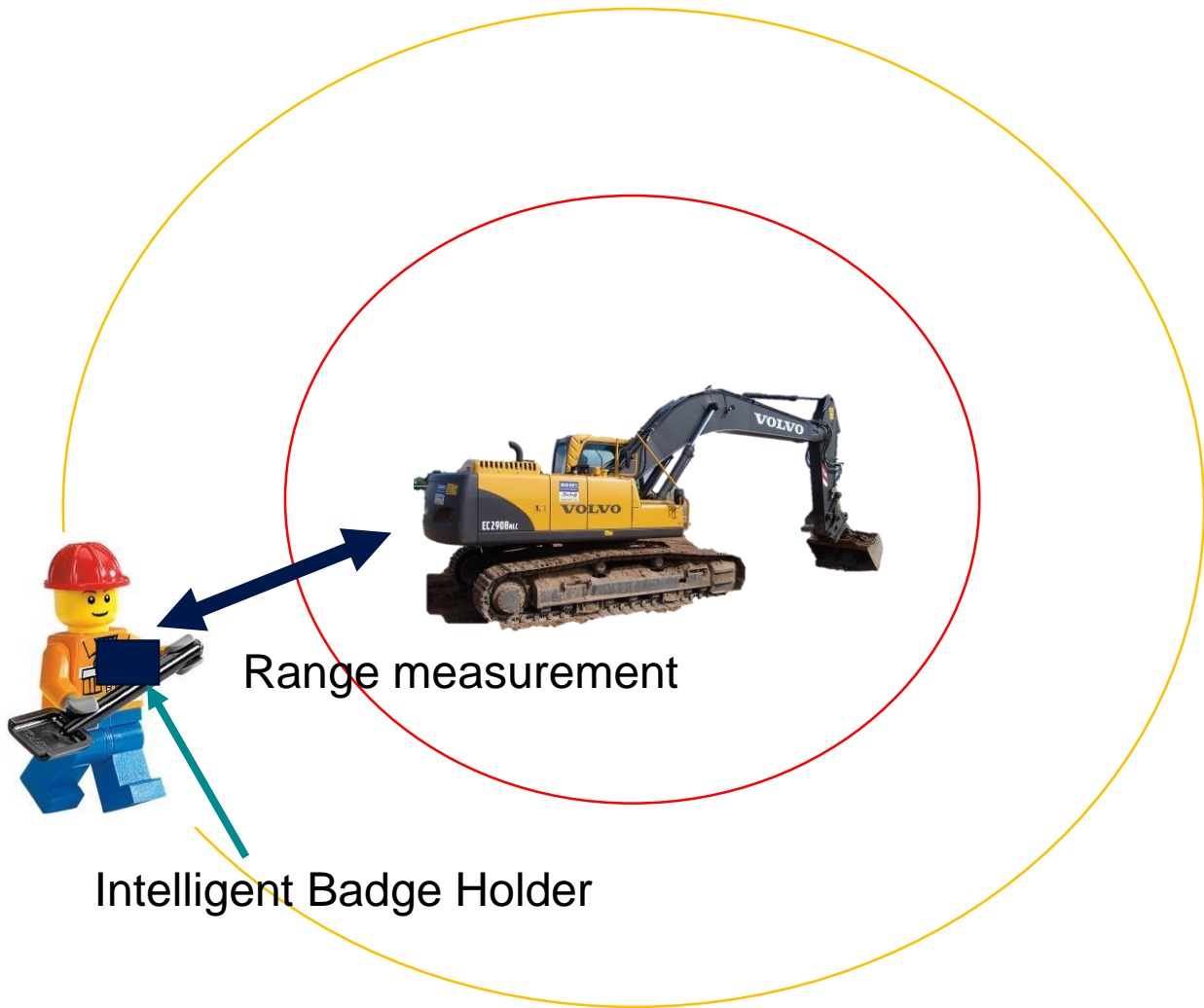
1. Detect ID tags too close to excavator

- ★ Challenges:
 - Mobile warning and alarm zone around excavator, moves with the vehicle
 - Operate both "stand alone" and with cloud – Authorize persons to work within alarm zone

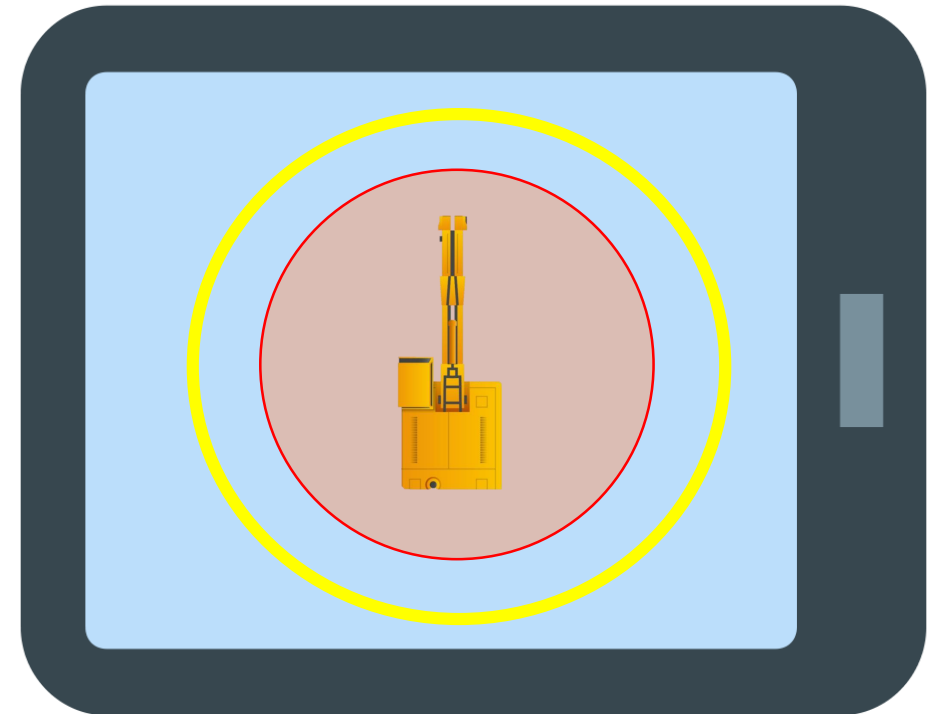
- ★ Demonstration 1 Solution:
 - An intelligent ID06 badge holder, that allows distance measurements between badge and machine
 - Easy procedure to authorize persons into alarm zone, tap and confirm.
 - Driver display warning when close
 - Driver display alarm when too close



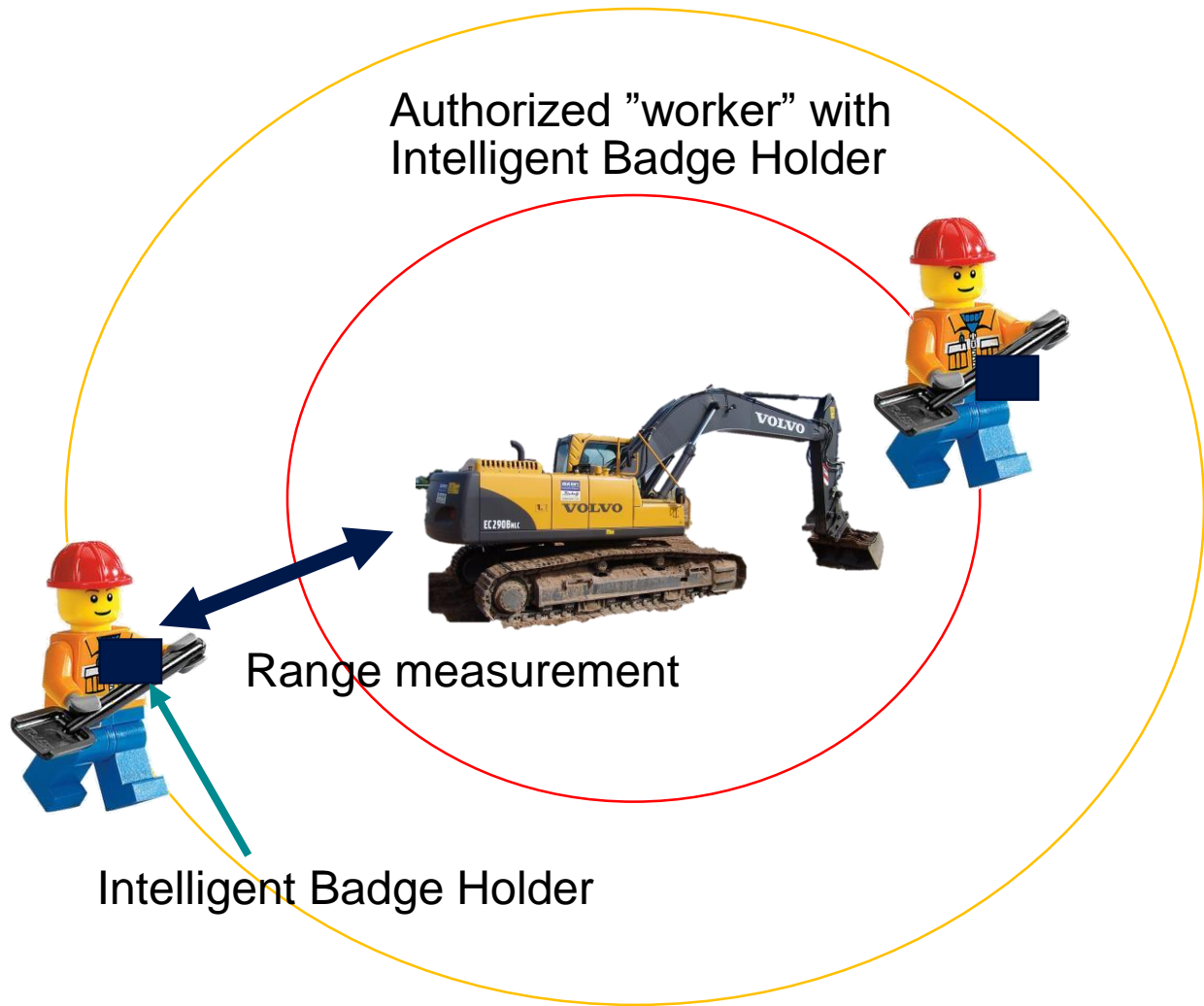
Detect ID tags too close to excavator



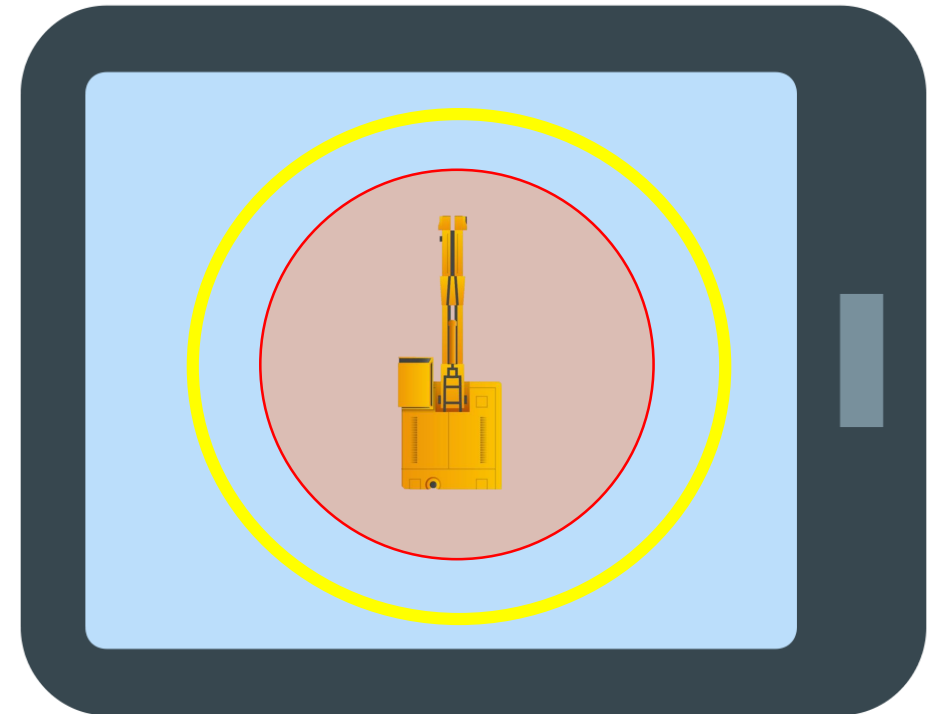
Driver Display



Detect ID tags too close to excavator "on-off" function



Driver Display



2. Detect objects and persons close to the machine

★ Challenges:

- No visibility, backwards or to the right
- Cameras only shows view, no warnings, has to be watched

★ Demonstration 2 solution:

- Presence sensor on the back and right side of vehicle
- Detects objects and know the distance to them
- Alarm with range indication, visual and sound

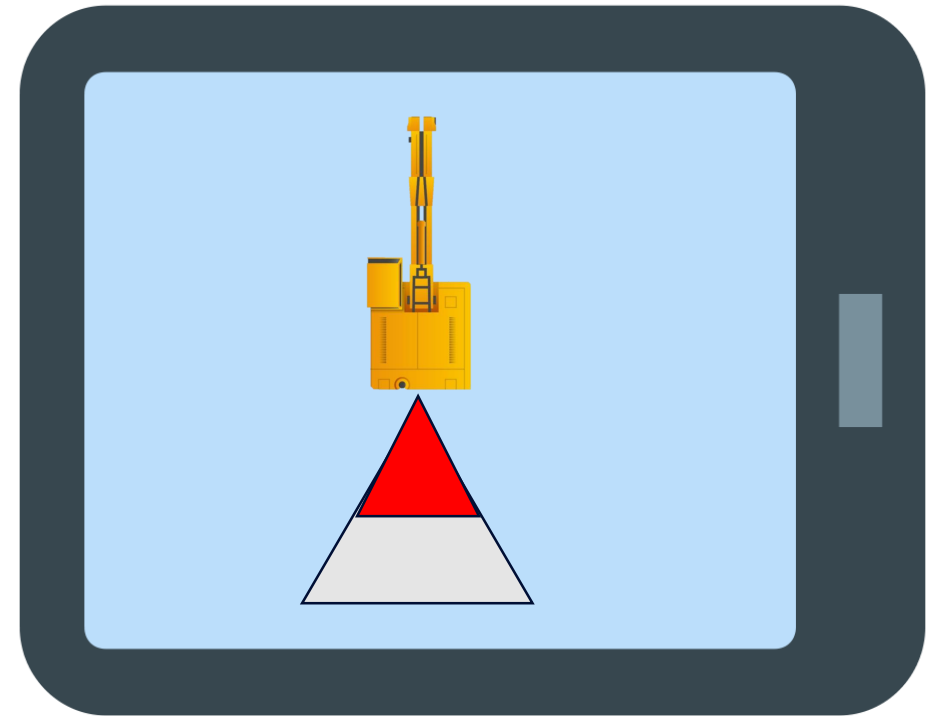


Presence sensors

Presence sensors on the back and right side of the excavator



Driver Display

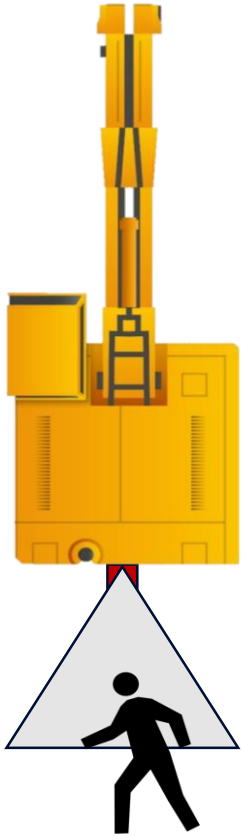


3. Detect third parties

- ✦ Challenges:
 - Third parties, when work is taken place in public spaces, do not carry badges.
 - Alert driver when a person is too close – Alert third parties when too close, external alarm
- ✦ Demonstration 3 Solution:
 - Cameras with image recognition to identify persons
 - Driver display alarm when person too close to machine



Visual Recognition



Driver Display

