Introduction of computer vision for the healthcare sector

We let computers see our world

Centillien

About us

Centillien in a nutshell

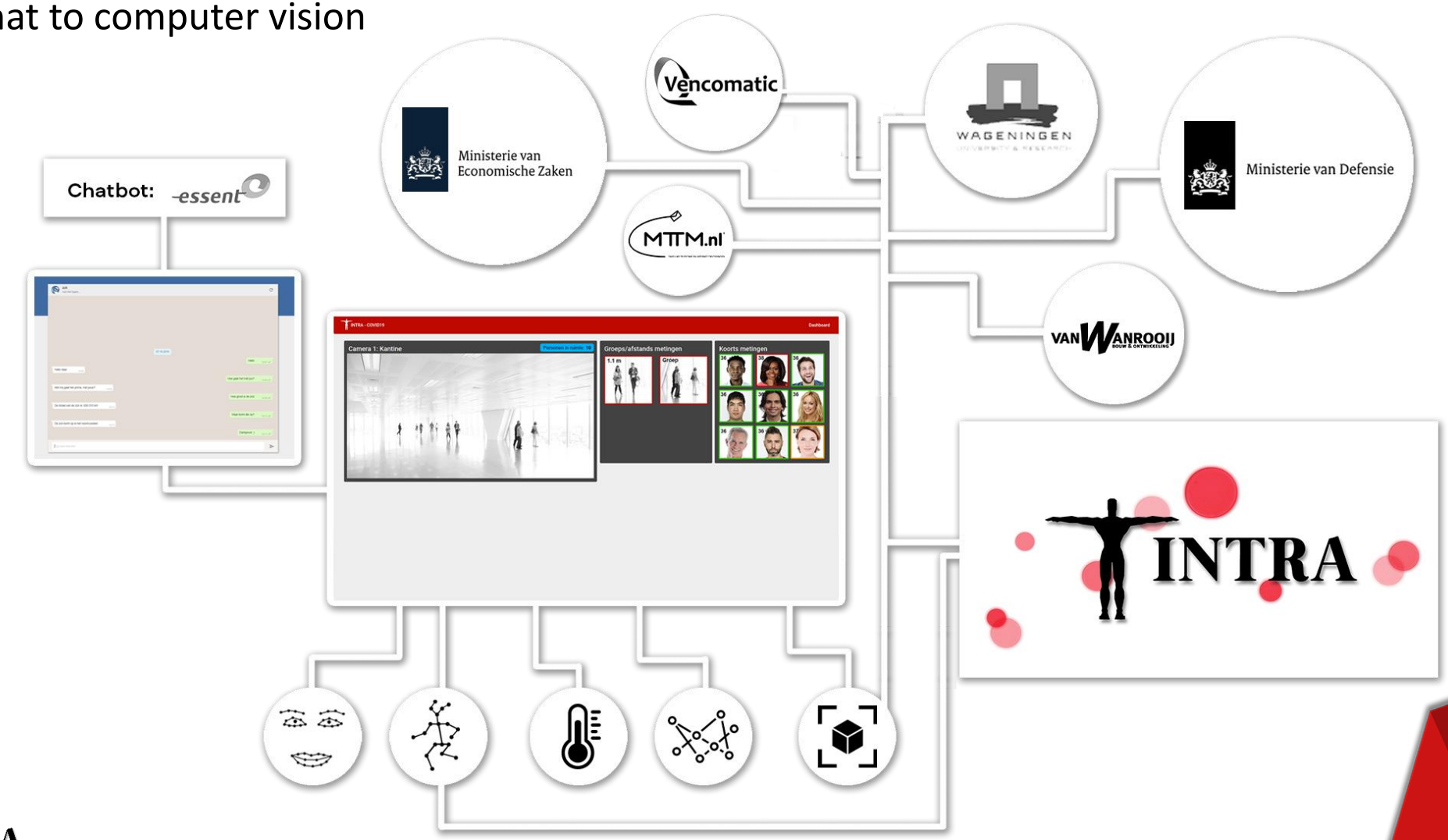
- Specialist in Computer Vision and Artificial Intelligence.
- Because the world gets shape through images, information gathered from pictures has huge value.
- Intra is our software platform for Computer Vision which is strategic for us.
- The healthcare sector is an important market for us, we see a lot of applications there.

What is computer vision and what is Intra

- Computer vision is image recognition with the use of Artificial Intelligence.
- Using that technology it is possible to recognize people, animals and things.
- You can relate things to the environment and even analyze (human) behavior.
- Computer vision applications have similar characteristics
  - First step is a detection of what is interesting (object, human, etc..).
  - Determine the context or what needs to be analyzed in relation to other objects
  - Taking a measurement like distance, time, temperature (not always)
  - Detection of abnormal circumstances
  - Take action (change band speed, warning or instruct a robot)
  - Improve the model by training till the optimum is reached.
- Intra is the platform developed by Centillien that is created to stabilize these steps and speed up the development of new applications.

The origin of Intra

From chat to computer vision



INTRA

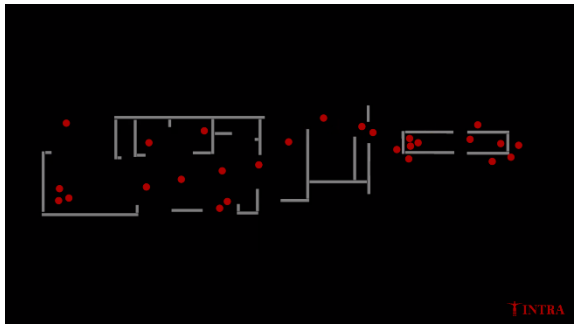
Centi|lien

Example videos Intra

(click the tumbnails to watch the videos)

Catch thieves

Track people anonymous

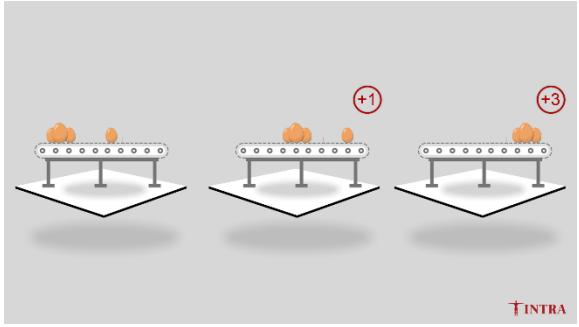


Check Covid-19 compliance

Measure distance

Follow suspects

Count eggs



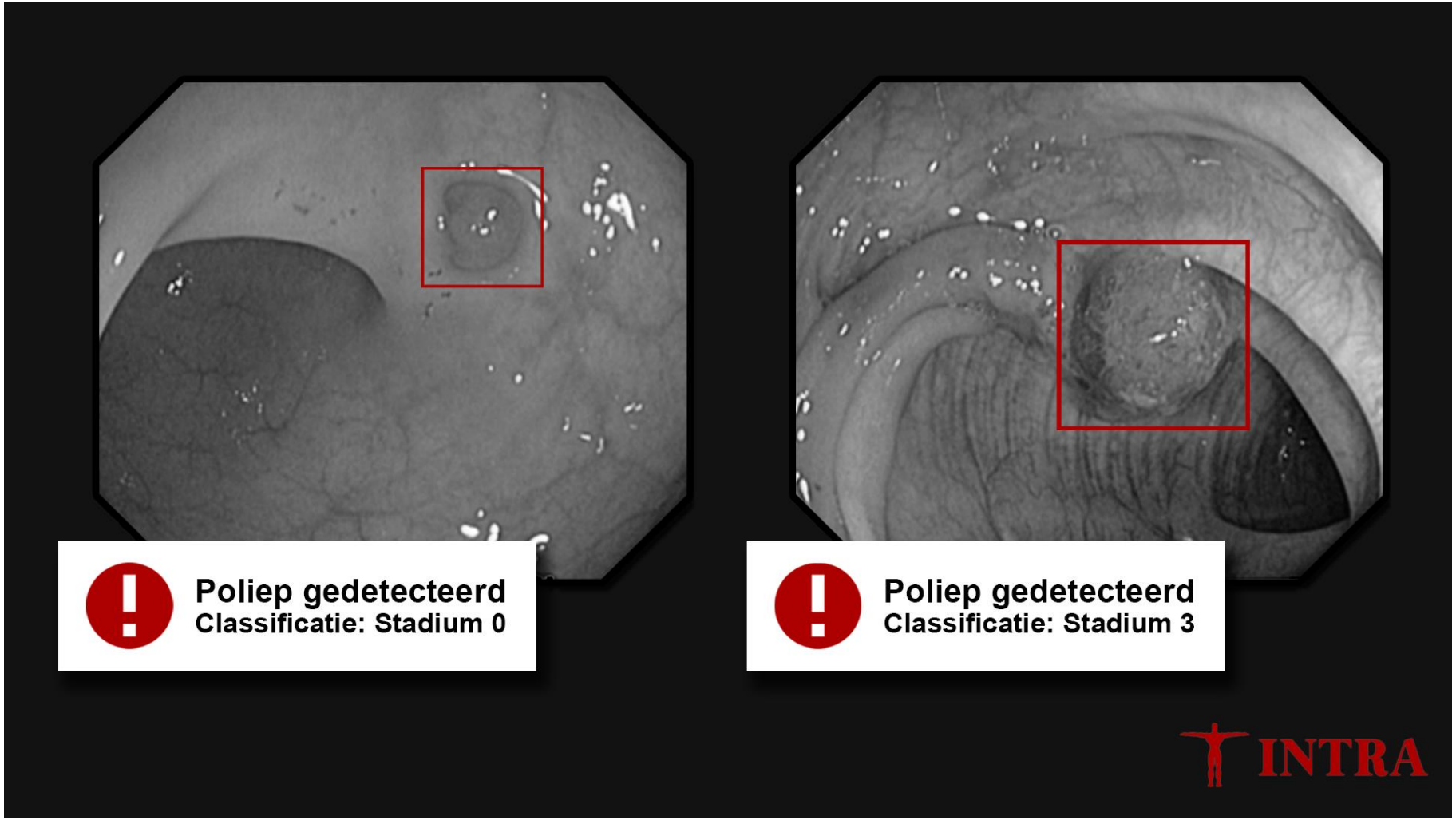
INTRA

Applications for healthcare

- Mental health
  - Intensive nightcare with violent or confused clients
  - Recognition of apathetic behavior
  - Recognition of epileptic seizures
- Elderly care
  - Falling out of bed
  - Falling asleep / Forgetting to go to bed
  - Taking medication
- Extramural or home care
  - Detection of dangerous situations
  - Fainting, choking, strokes
  - Diagnostics
- Recognize patterns using CAT / MRI / X-ray / Ultrasound
- Covid-19 prevention
- General: Anonymous behavioral analysis to gain insight into activity, aggression, avoidance of danger.

Centi|ien

Tissue recognition



INTRA

Ultrasound

Falling out of bed

USP's

- With Intra we can speed up the introduction of new appliances with a stable platform.
- Not only detection of people, animals or things, but also behavior.
- Multiple possible measurements.
- Scalable by the use of latest technology
- Modular, so easy to incorporate new application components.
- Proven use cases.

Centi||ien

Backup sheets

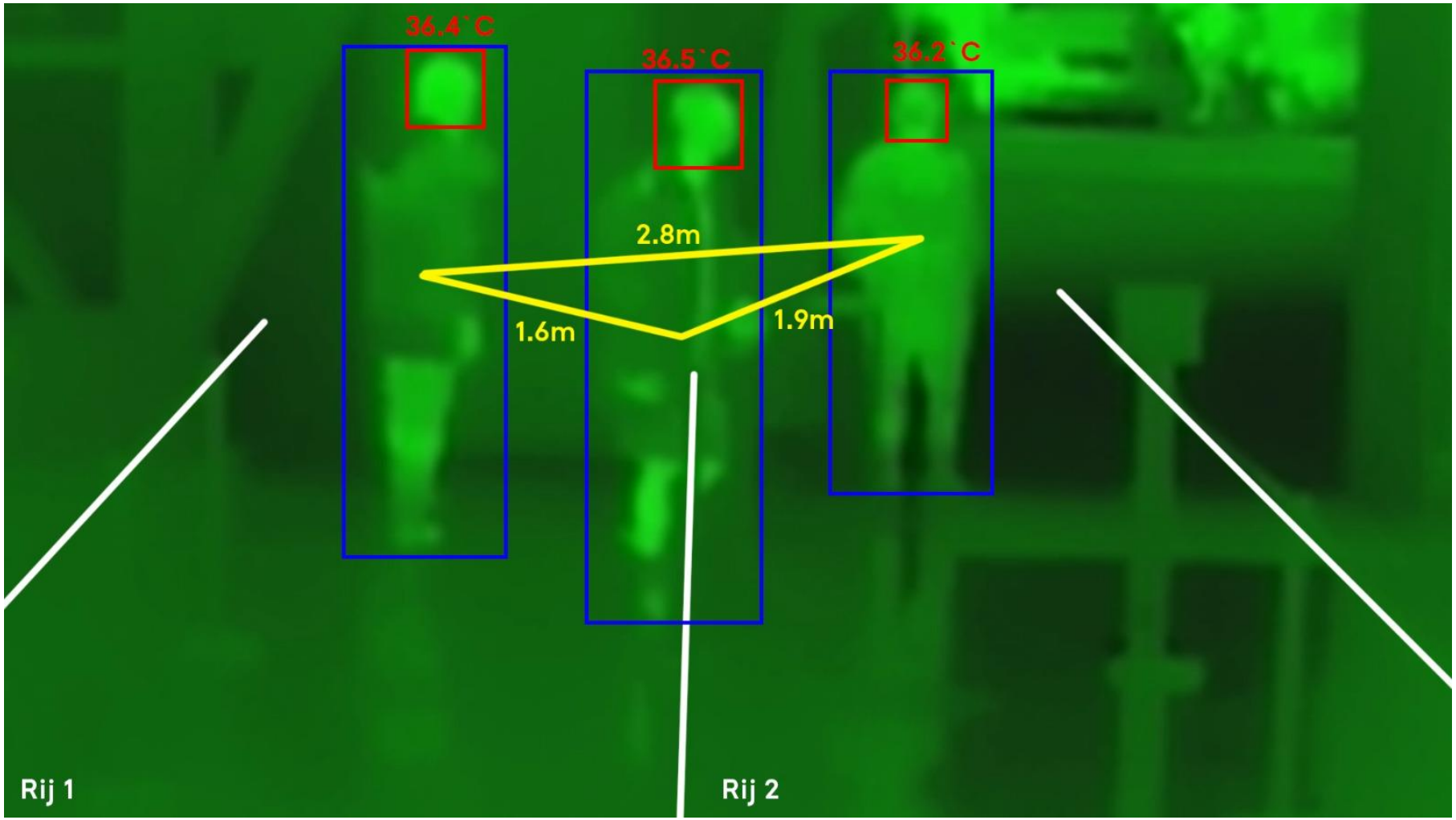
INTRA

Some of our work

- Dutch Department of economic affairs. Measure compliancy to corona rules,
- Dutch department of Defence, predictive profiling. Recognize suspicious behavior
- Vencomatic, recognize and count eggs in industrial stables around the world.
- Univerity of Wageningen. Recognize animals for research of migration patterns
- Van Wanrooij, predict housing prices on street level (nationwide)
- Essent Belgium, chatbot with emotion detection.

Centi|ien

Example of anonymous people recognition

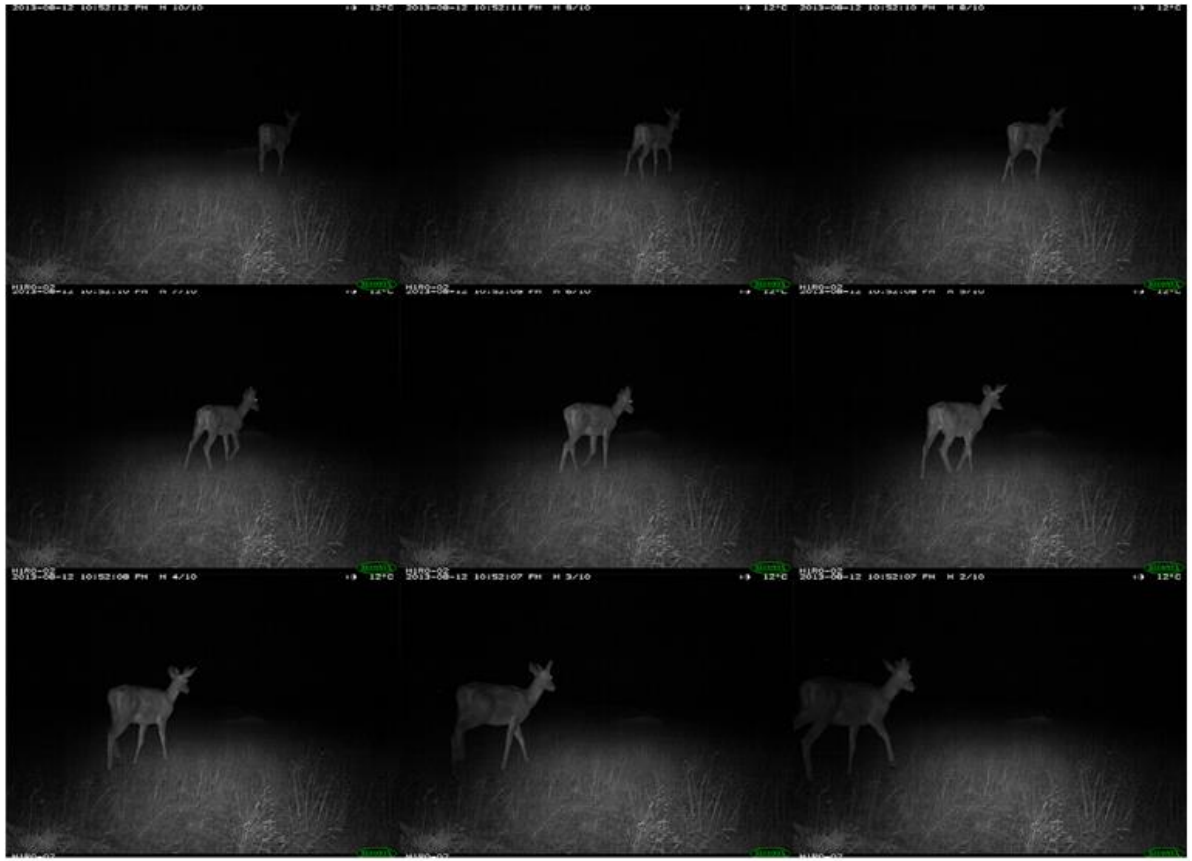


INTRA

Centilien

Baking bread

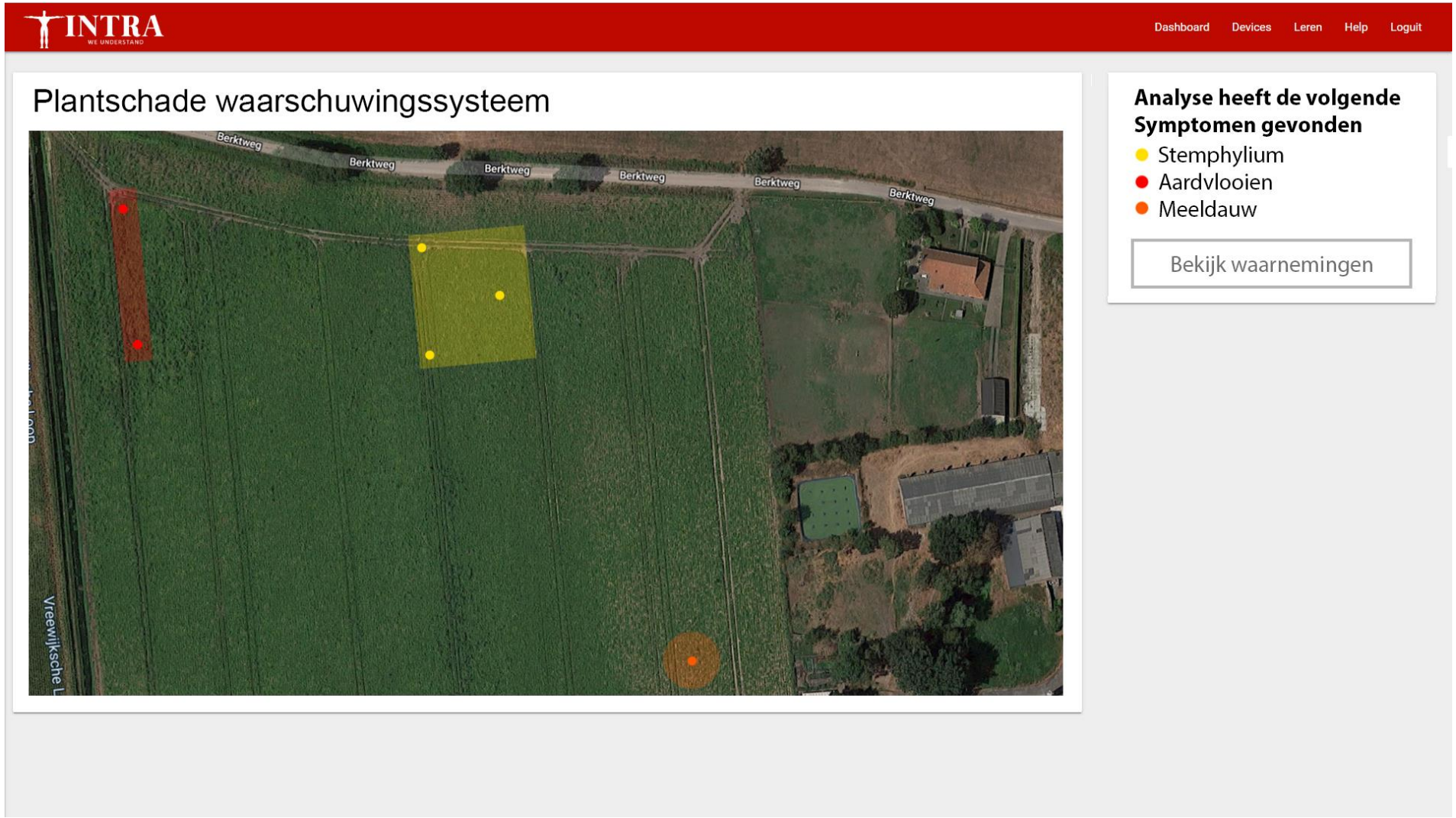
Recognize and count animals



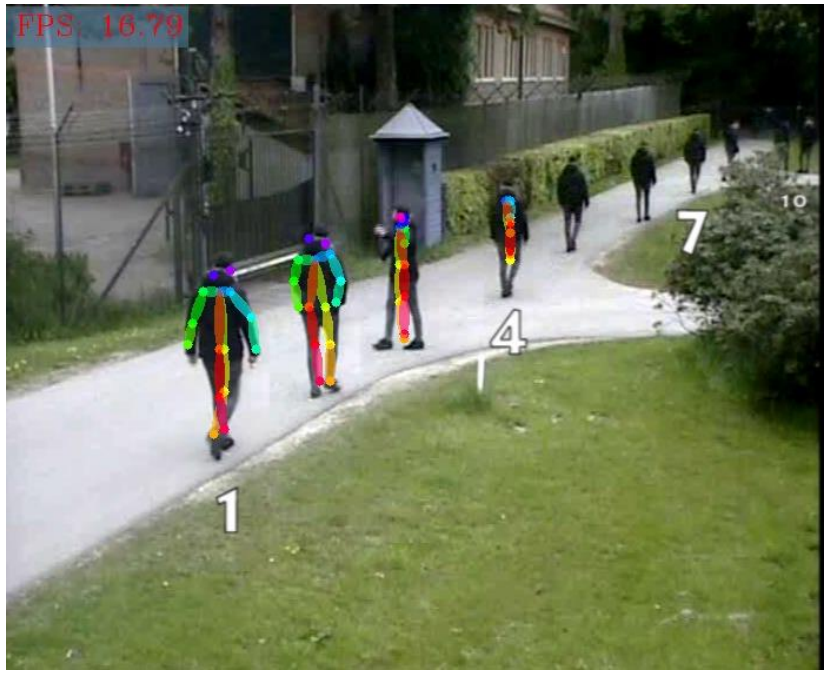
Conclusie:
'dutch_name': 'Witstaarthert'
'scientific_name': 'Odocoileus virginianus'
'animal_count': 2

Recognize and count eggs

Detect plant damage



Behavior analyses limbs vs posture



Remark: Using limbs to recognize behavior is more reliable on short distance, but by posture it is also possible with greater distance