

INTRA 



Introduction of computer vision for the logistics

We let computers see our world



About us

Centillien in a nutshell

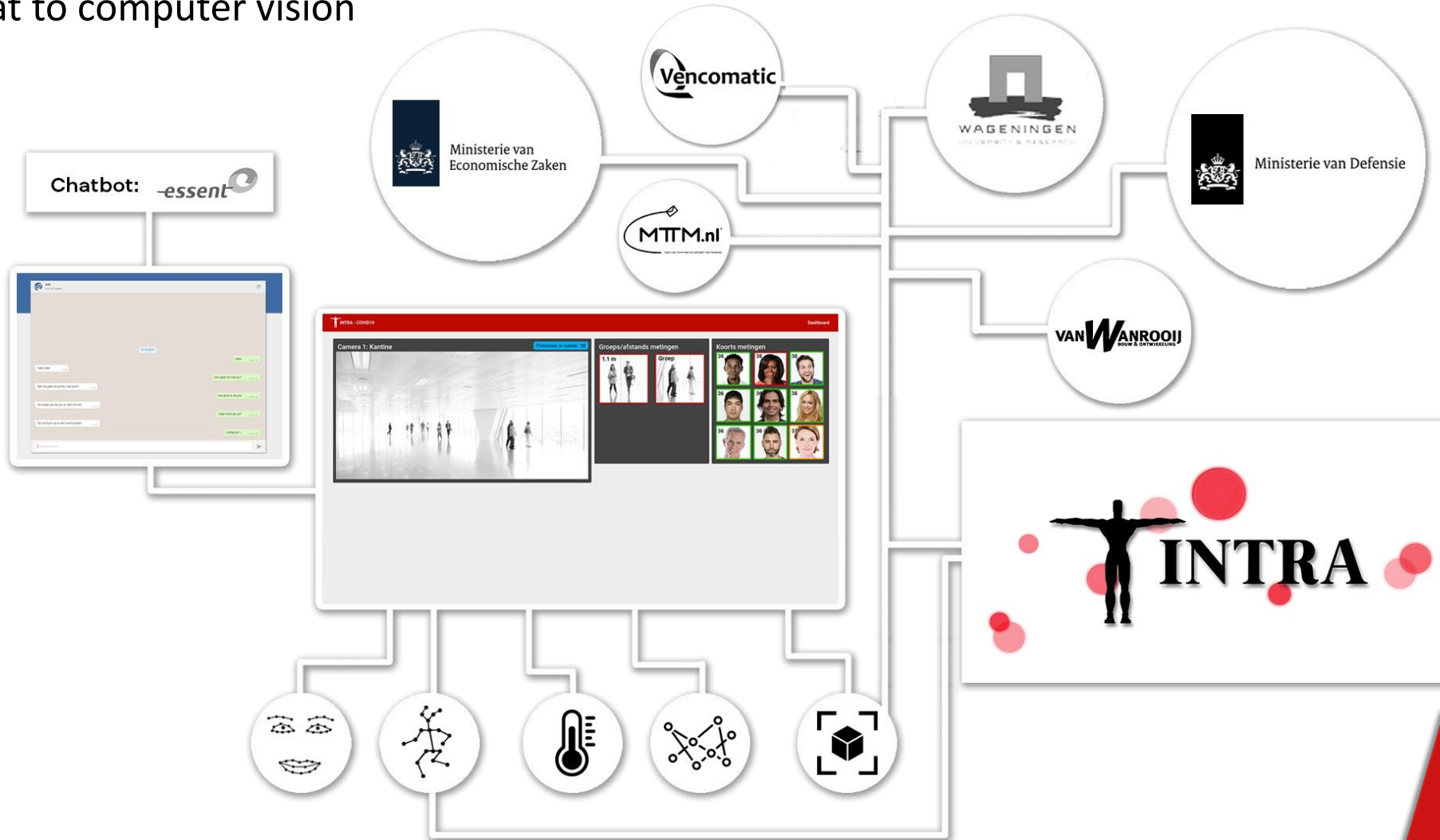
- Specialist in Computer Vision and Artificial Intelligence.
- Because the world gets shape through images, information gathered from pictures has huge value.
- Intra is our software platform for Computer Vision which is strategic for us.
- Logistics is an important market for us, we see a lot of applications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



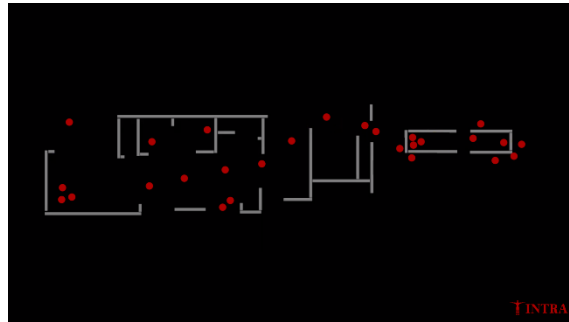
Example videos Intra

(click the thumbnails to watch the videos)

Catch thieves



Track people anonymous



Check Covid-19 compliance



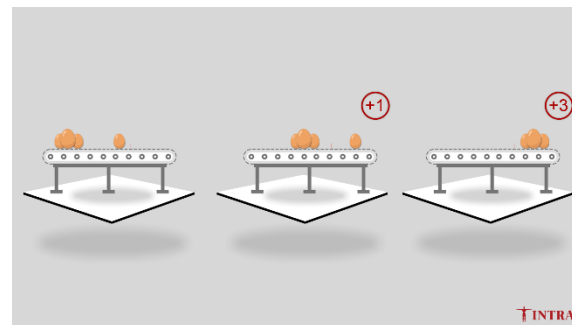
Measure distance



Follow suspects



Count eggs



Applications for logistics

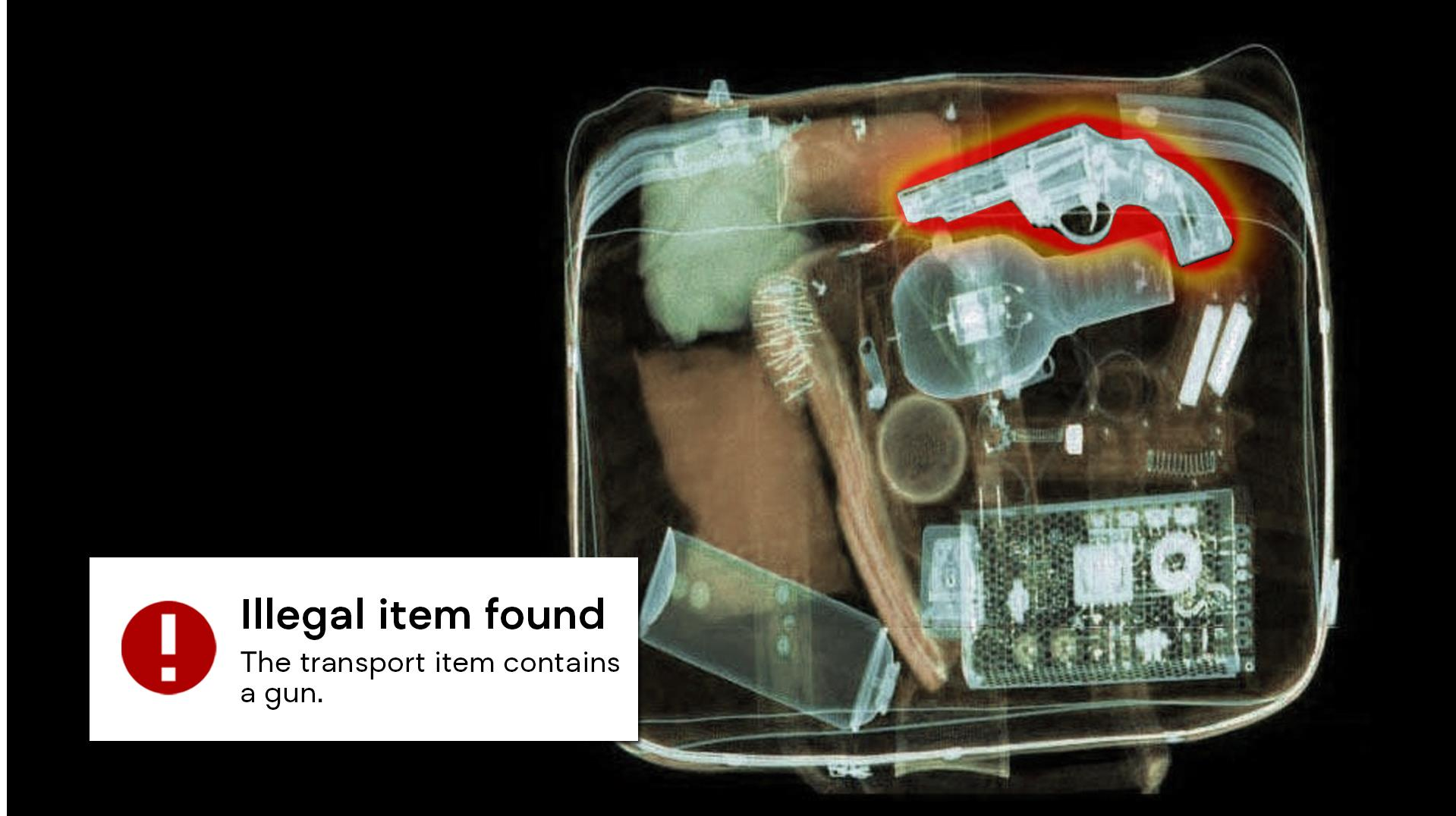
- Drones delivering packages to the right customer.
- Sorting and routing in delivery centers.
- Order picking.
- Counting packages.
- Detecting damaged goods.
- Detecting suspicious goods.



Drones delivering package to the right customer.



Recognize suspicious package content.



Illegal item found

The transport item contains a gun.



Detecting damaged goods



Damaged goods

A damaged package has been detected.



 **USP's**

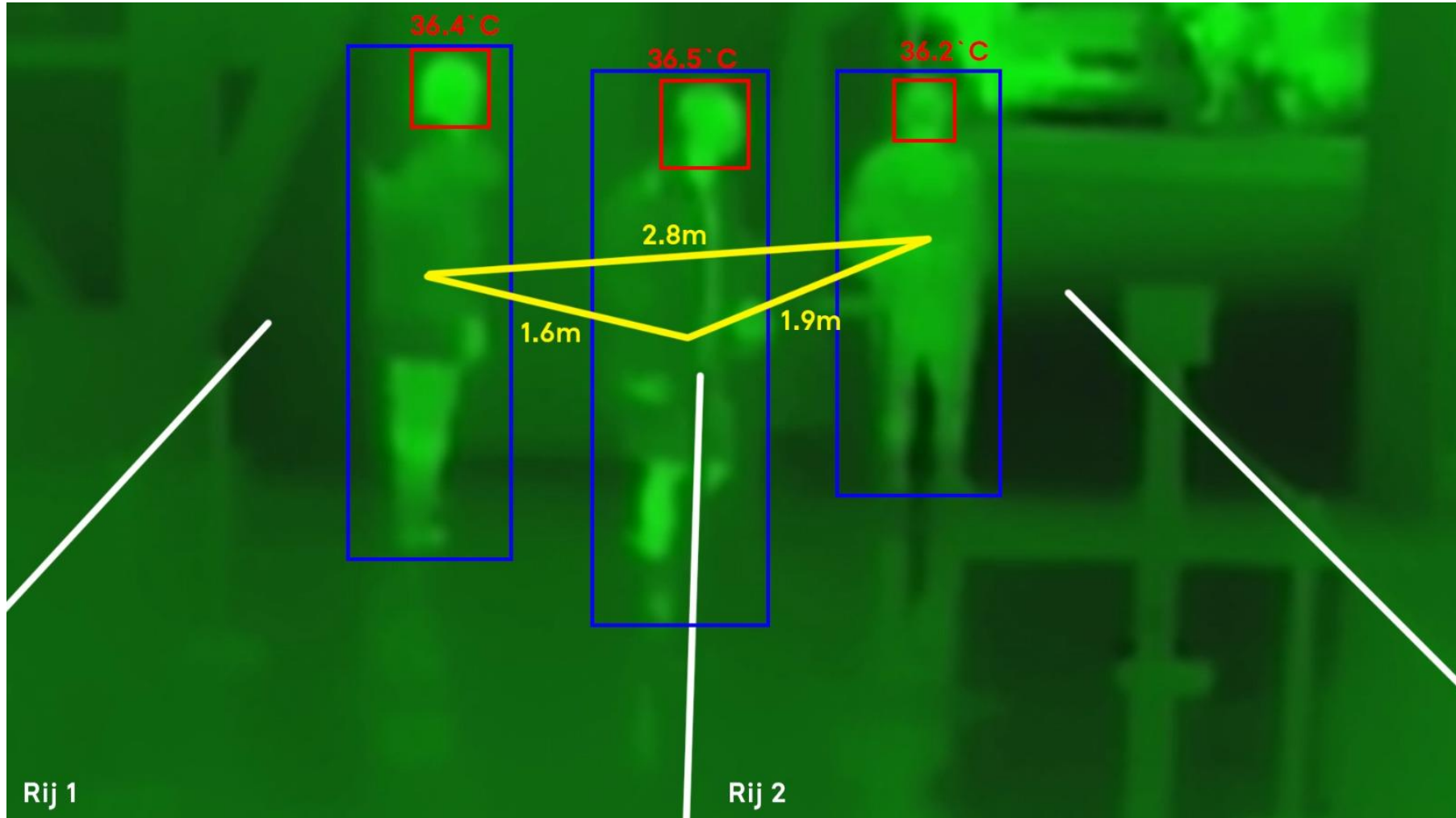
- With Intra we can speed up the introduction of new appliances with a stable platform.
- Not only detection of people, animals or things, but also behavior.
- Multiple possible measurements.
- Scalable by the use of latest technology
- Modular, so easy to incorporate new application components.
- Proven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

Backup sheets

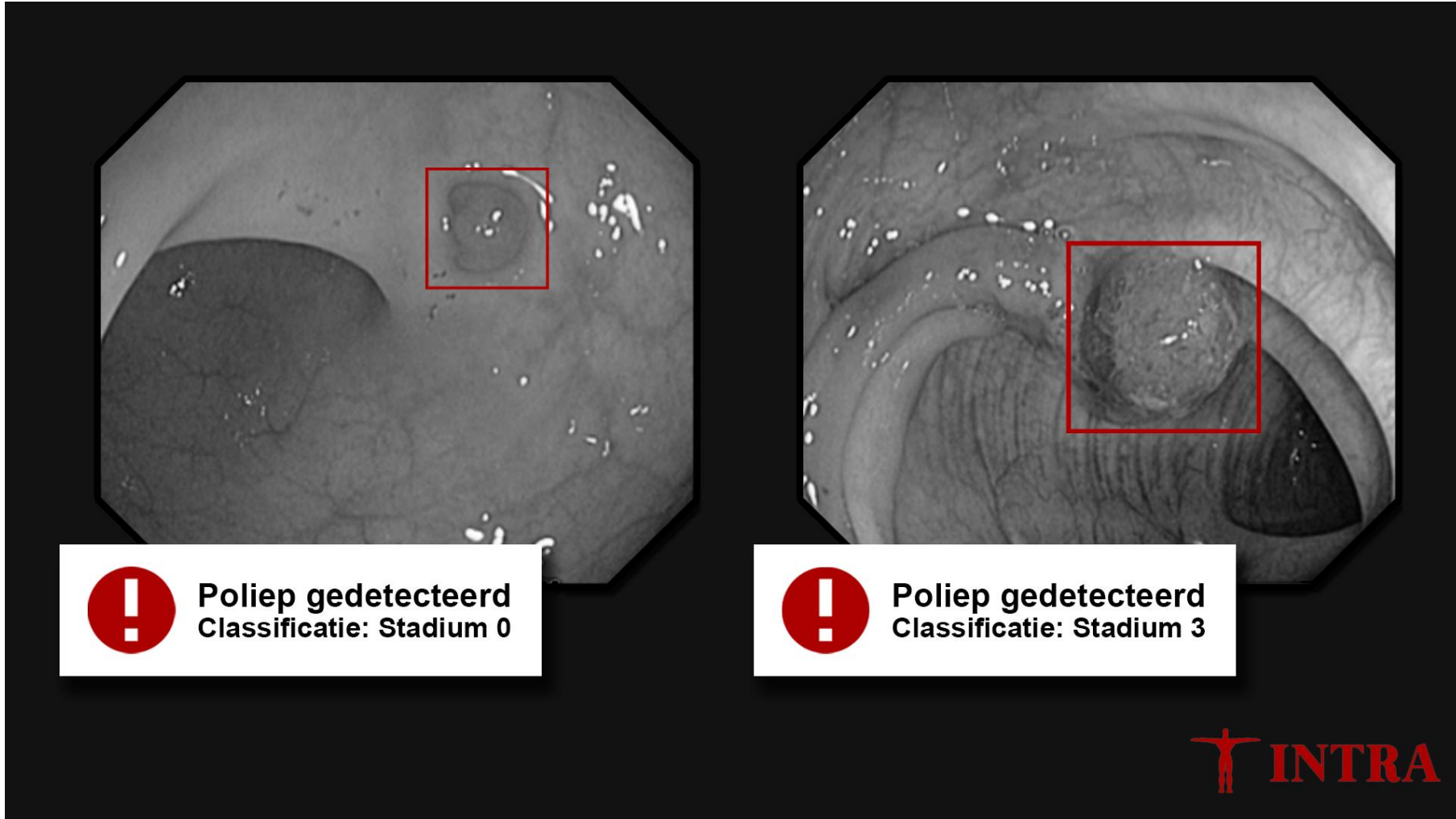
References

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

Example of anonymous people recognition



Medical application



Recognize and count animals



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

Recognize and count eggs



Baking bread



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