

INTRA 



Introduction of computer vision for the security sector
We let computers see our world

Centi||ien



About us

Centillien in a nutshell

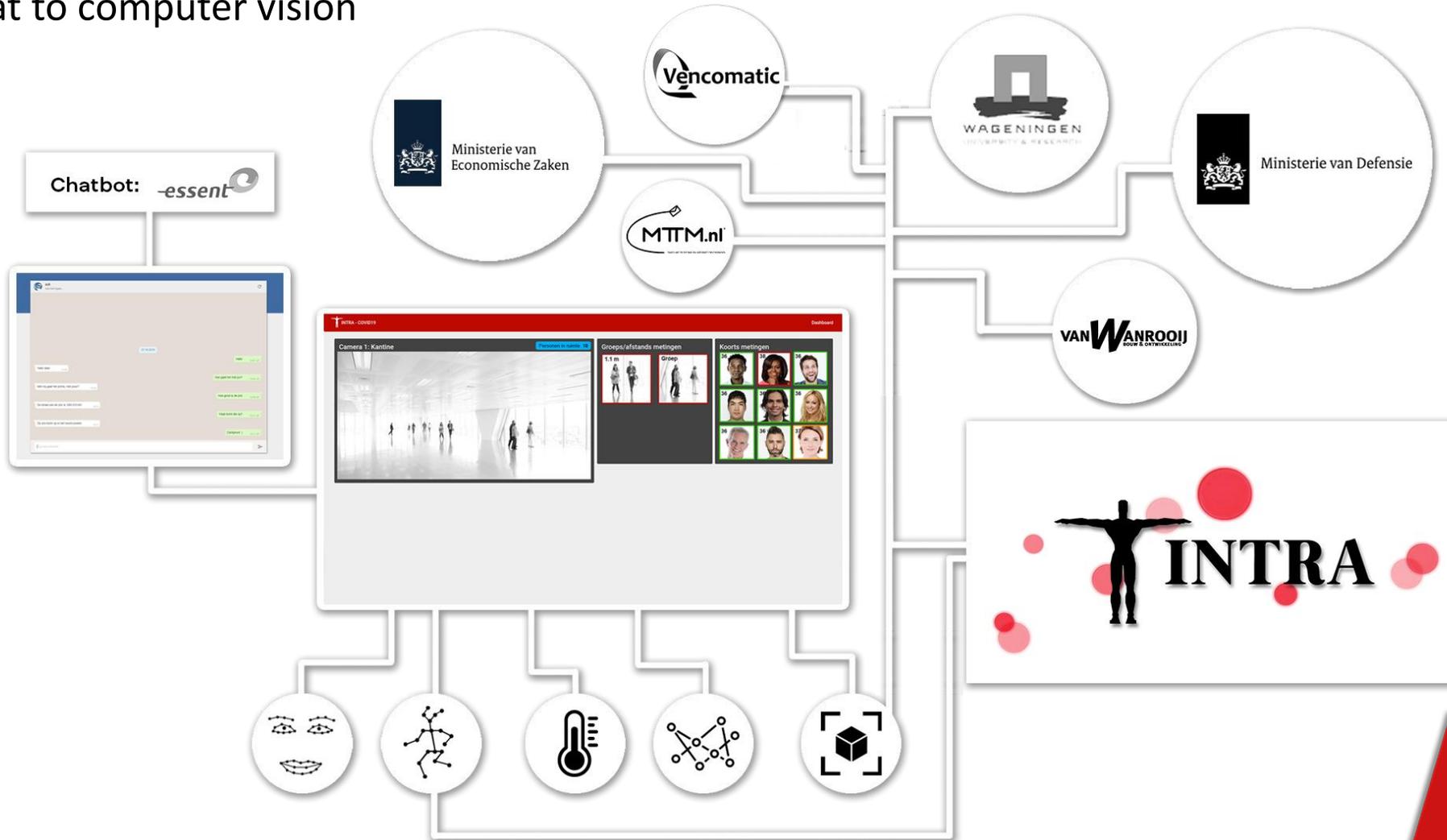
- Specialist in Computer Vision and Artificial Intelligence.
- Because the world gets shape through images, information gathered from pictures has huge value.
- Intra is our software platform for Computer Vision which is strategic for us.
- Public and private security are important markets for us, we 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



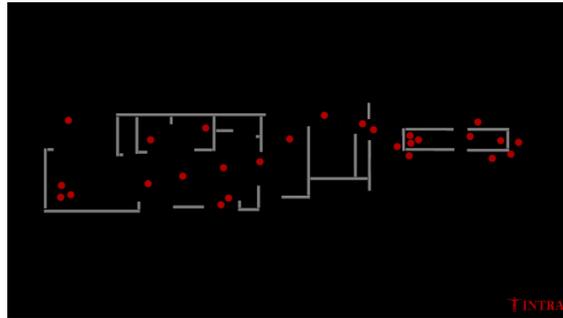
Example videos Intra

(click the thumbnails to watch the videos)

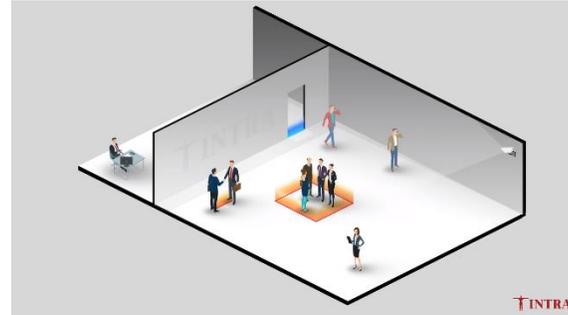
Catch thieves



Track people anonymous



Check Covid-19 compliance



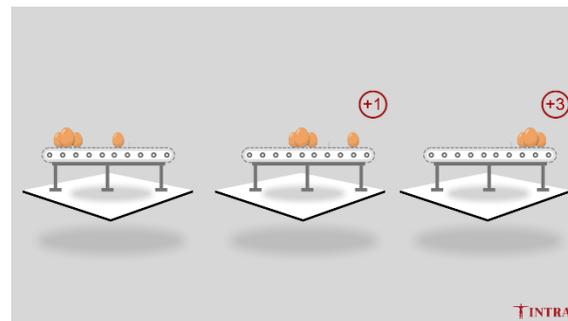
Measure distance



Follow suspects



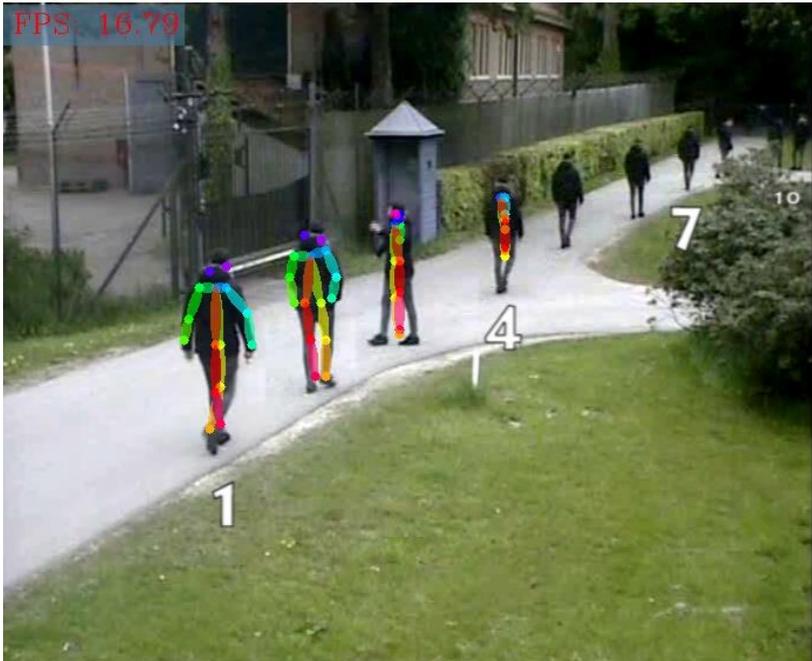
Count eggs



Applications for security

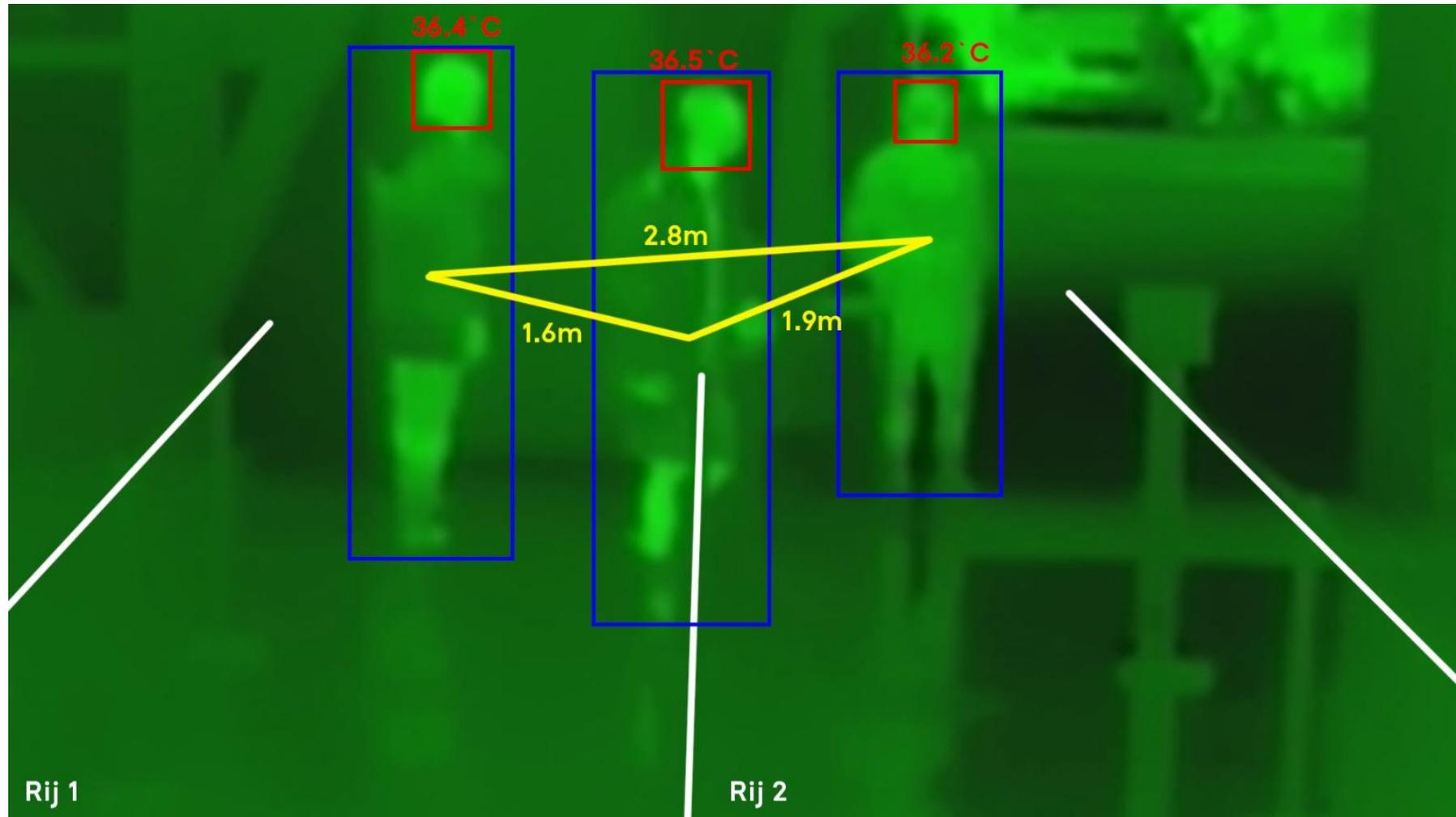
- Theft detection
- Suspicious behavior (predictive profiling)
- Hazardous conditions (machines, quays, stairs, heat sources, etc.)
- Aggression
- Keep your distance (proximity)
- Run, climb, throw
- Leave luggage
- Group formation, crowd management

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

Measuring with night vision





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

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.

Topview

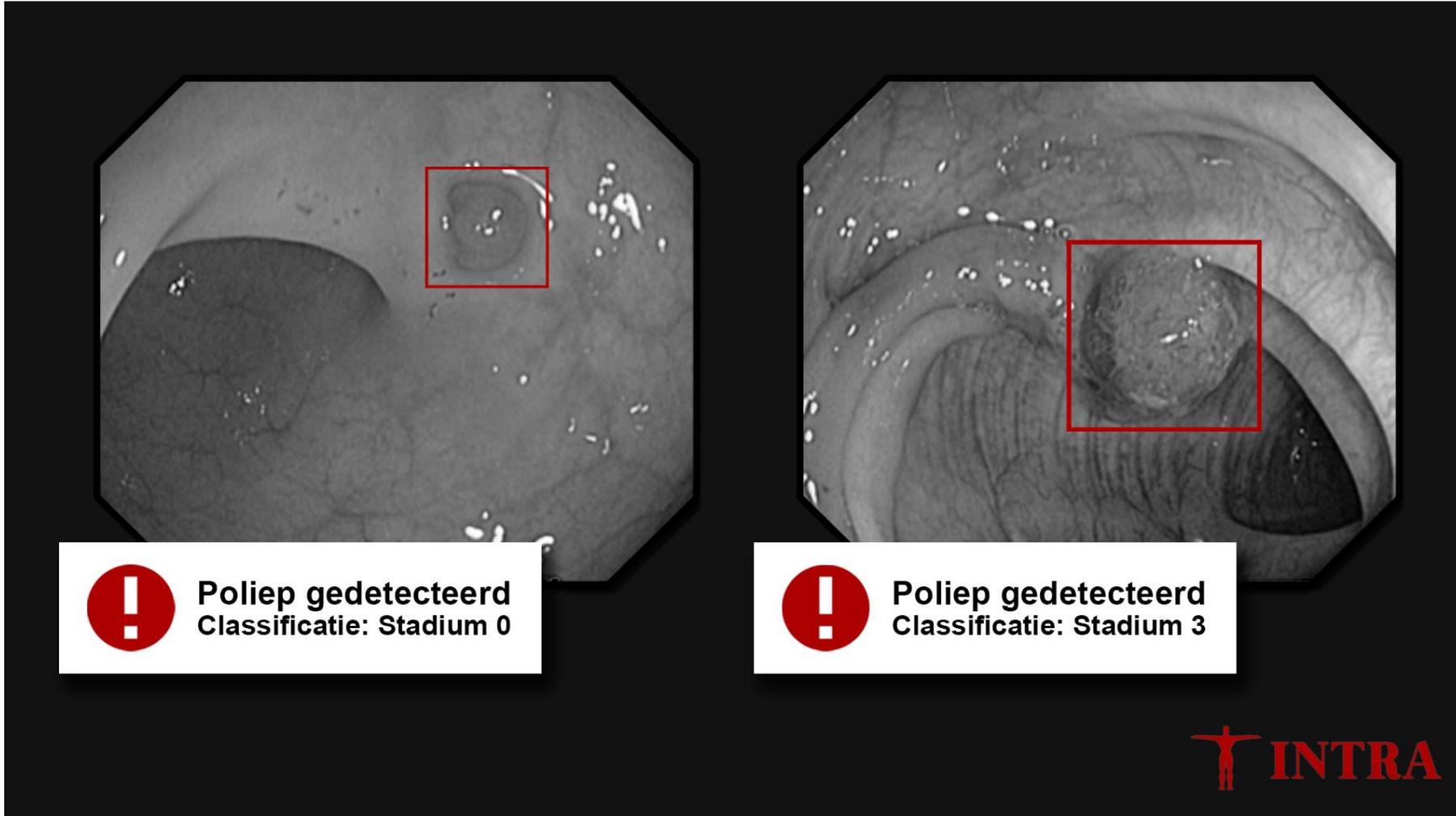
The screenshot shows a Linux desktop environment with a top-view security camera feed interface. The interface displays six camera feeds (Camera D03 to D08) with green bounding boxes around detected objects. A terminal window in the foreground shows system statistics and error messages.

Terminal Output:

```

intra@intra-HP-Z230-Tower-Workstation: /var/www/intra
File Edit View Search Terminal Help
13 0 0 26503684 107784 2752988 0 0 31 22 435 80 57 30 14 0
0
14 0 0 26518000 107792 2753628 0 0 0 19 3717 797743 69 24 8
0
10 0 0 26524056 107800 2754016 0 0 0 18 3746 733714 69 23 8
0
14 0 0 26530960 107808 2753728 0 0 0 16 3681 712695 69 23 8
0
^C
(intra) intra@intra-HP-Z230-Tower-Workstation: /var/www/intra$ free -m
total used free shared buff/cache available
Mem: 31889 3211 25882 276 2795 27999
Swap: 2047 0 2047
(intra) intra@intra-HP-Z230-Tower-Workstation: /var/www/intra$ [NULL @ 0x220b400]
missing picture in access unit
[NULL @ 0x1fff00] missing picture in access unit
    
```

Medical application



Detect plant damage

Dashboard Devices Leren Help Loguit

Plantschade waarschuwingssysteem



Analyse heeft de volgende Symptomen gevonden

- Stemphylium
- Aardvlooiën
- Meeldauw

[Bekijk waarnemingen](#)



Recognize and count animals



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

Recognize and count eggs



Baking bread

