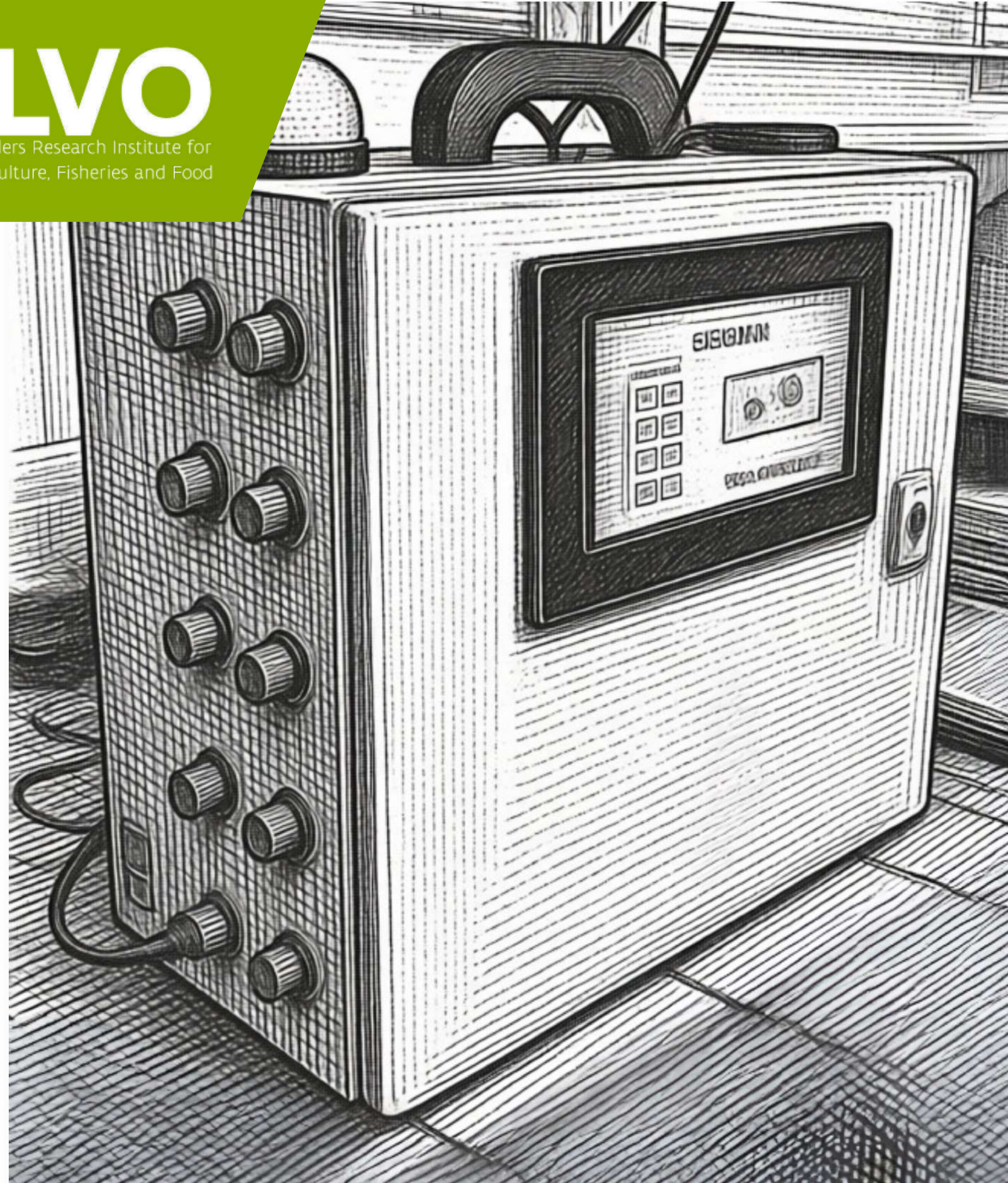




DALM

an in-house developed
mobile data acquisition
and edge processing system

Sacha Coussement
AI4AS conference – 29/06/26

DALM

“Data Acquisition and Logging Machine”

The Purpose

Why do we need the DALM?

The Needs

What features does the DALM need?

The Device

What features does the DALM have?



The Purpose

Why do we need the DALM?

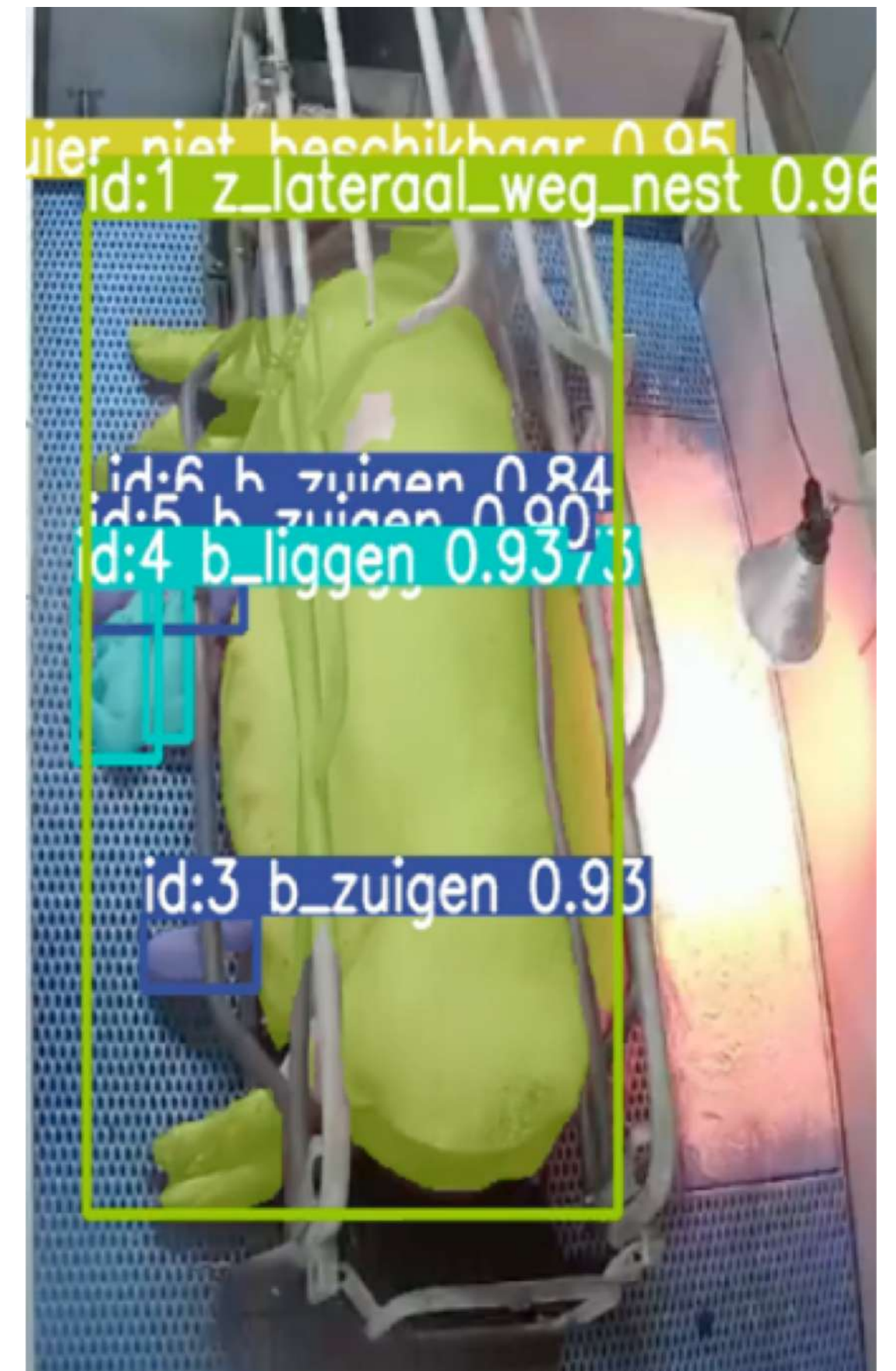
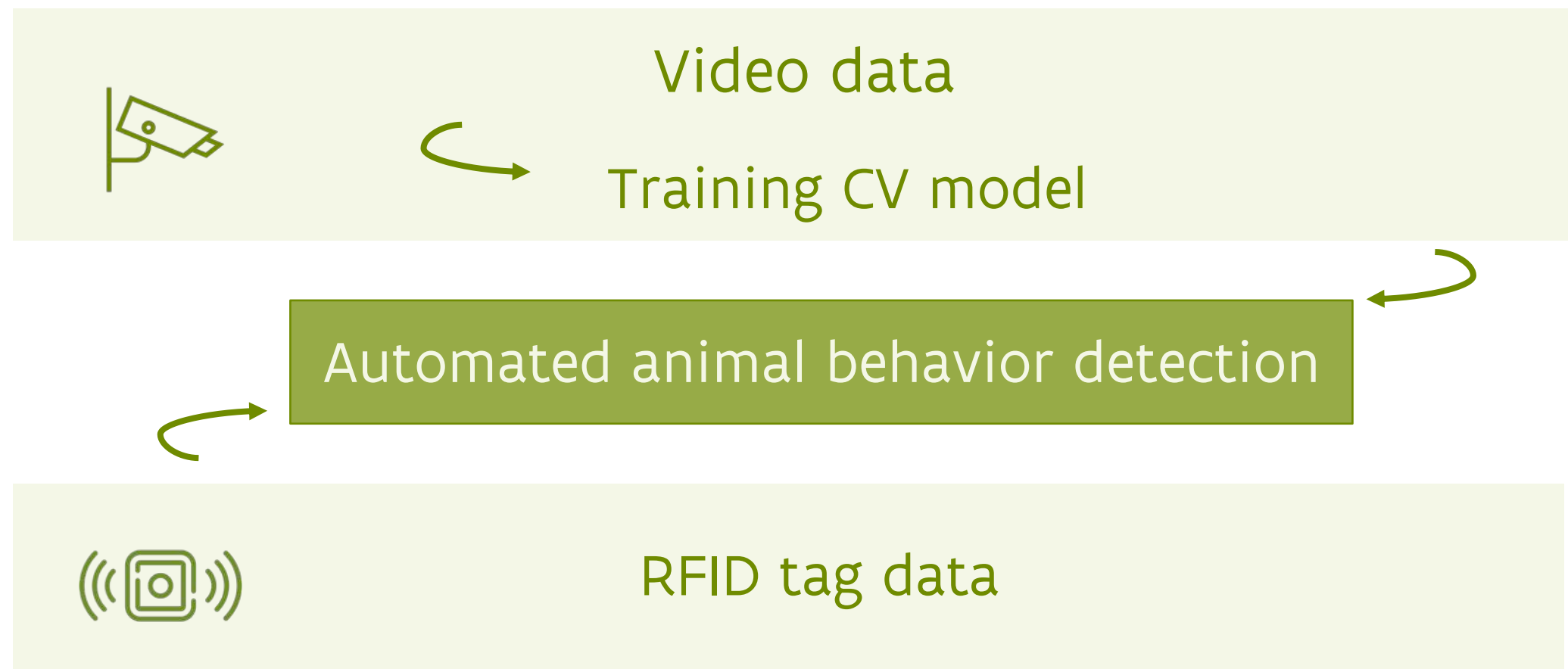
The Purpose Enabling automated animal behavior analysis



ILVO



The Purpose Storing data





The Needs

What features does the DALM need?

The Needs Robustness & Mobility



Storage Redundancy



Physical robust



Mobile





SD1A404DB-GNY
Image: Dahua Technology



Advanreader-70
Image: Keonn Technologies

The Needs Interoperability & Modularity

⇒ Storing data from PoE enabled devices

⇒ Extendable with auxiliary modules

The Needs Control & User Experience

- Remotely Accessible
- Logging and dashboard
- Some control for farmers





The Device

What features does the DALM have?

The Device Robustness & Mobility



DS723+
Image: Synology Inc.

Storage Redundancy

NAS equipped with two 20TB hard drives in RAID 1

Rigid enclosure

Withstanding barn environments and thorough cleaning



Rittal AX Enclosure
Image: Rittal GmbH & Co. KG



Compact & Mobile

Eazy to transport and relocate



EtherCON
Image: Neutrik AG

PoE outlets

8 PoE outlets to connect different PoE enabled devices

Auxiliary modules

Device can be extended with a “lighter” version: the DALMe



The Device Inter- operability & Modularity

The Device Control & User Experience



RUTM11
Image: Teltonika

Grafana Dashboard

Logging system metrics and info
about stored data



Remote Access

Accessible from a remote location
through an Ethernet or 4G
connection

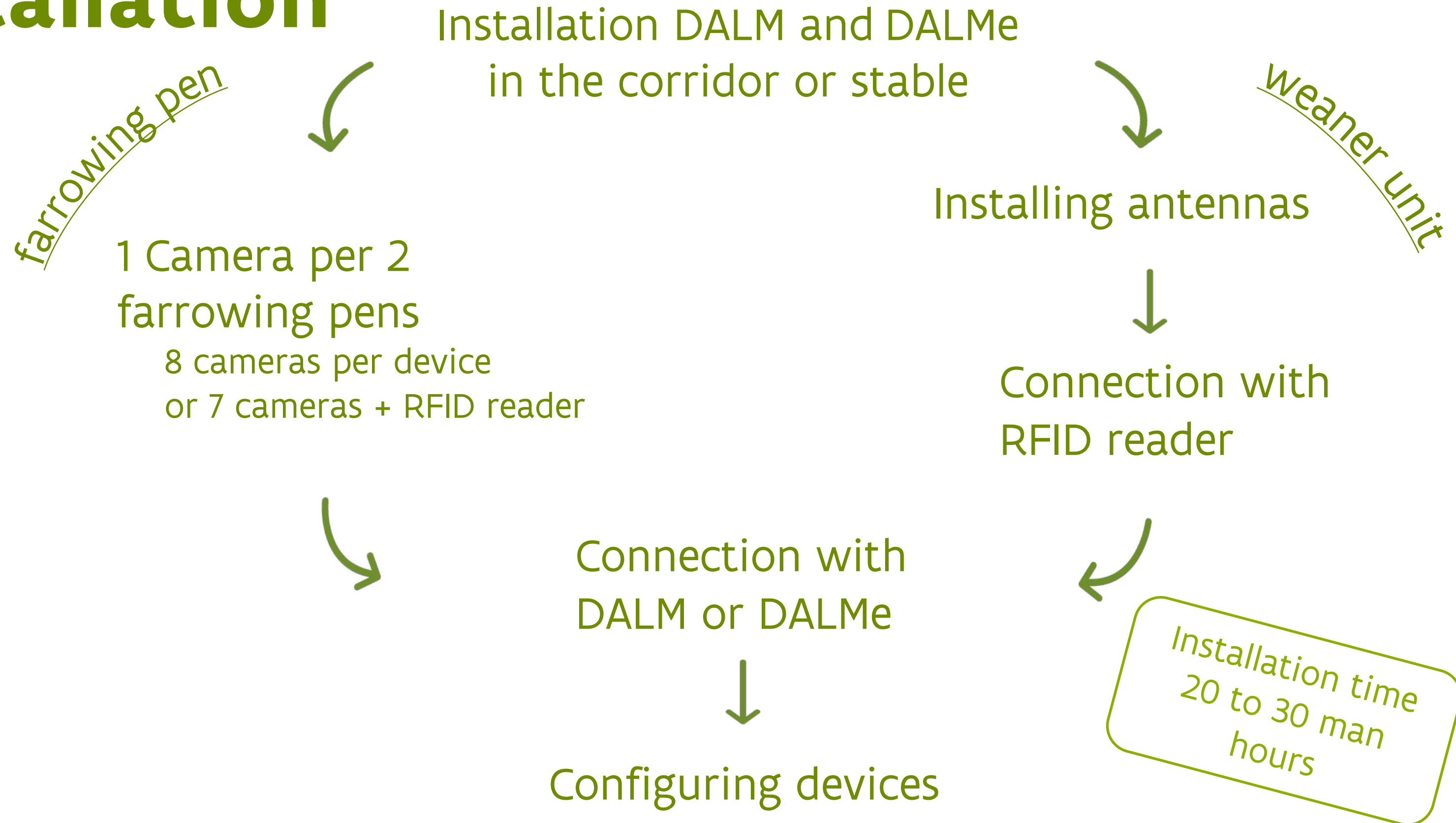
HMI screen and alarm

A touchscreen enabling farmers to
stop the recording of the camera's



Nextion Intelligent 7.0''
Image: Nextion

The Device Installation



DALM

“Data Acquisition and Logging Machine”

- ⇒ Rugged and interoperable system
- ⇒ Capable of powering PoE devices and storing their data
- ⇒ Reliable and redundant storage
- ⇒ Able to function under real livestock farming conditions

The Device

Future developments

- ⇒ On-edge processing capabilities
- ⇒ Solar-powered variation



Thank you!

QUESTIONS?

Contact:

Flanders Research Institute for
Agriculture, Fisheries and Food
Burg. Van Gansberghelaan 115
9820 Merelbeke-Melle – België

sacha.coussement@ilvo.vlaanderen.be

www.ilvo.vlaanderen.be