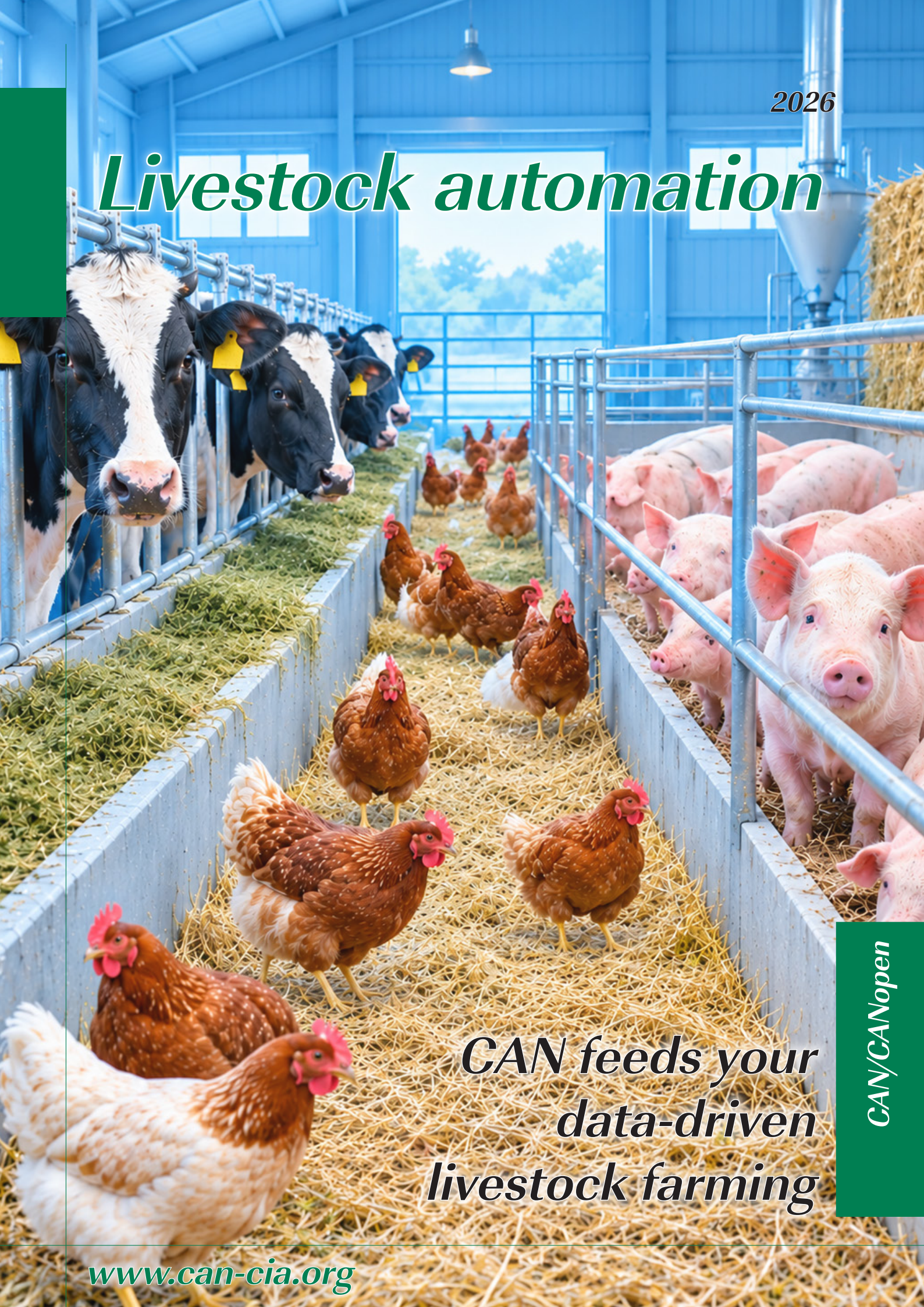
2026

Livestock automation



CAN feeds your data-driven livestock farming

CAN/CANopen

www.can-cia.org

From mechanical to data-driven livestock

100 years of automation

Livestock automation started with mechanical tools and evolves to modern precision livestock farming driven by electronic identification, sensors, and even artificial intelligence (AI). Automatic milking systems and automated feed pushers appeared after 2000.

Nowadays, modern facilities deploy computer vision, biometric sensors, and AI-driven early warning systems—such as automated cleaners and piglet-protection monitors. Some livestock automation systems comprise CAN/CANopen networks or such networks are deeply embedded in robots used in automated livestock facilities for different purposes.

(Source: Lely)

Sensors + actuators + controllers

Why standardized interfaces?

Interoperable devices from different manufacturers:

- Less supplier dependency
- More equipment choice
- Mature, high-volume devices
- Reasonable device costs

(Source: Adobe Stock)

CAN and CANopen

Robust and reliable serial communication

- CAN CC (classic)
- CAN FD (flexible data rate)
- CAN XL (extended data field length)

Configurable and flexible higher-layer protocols

- CANopen CC
- CANopen FD

Interoperable and partly exchangeable devices

- CiA device profiles
- CiA application profiles
- CiA interface profiles

(Source: Big Dutchman)

Engineering snapshot	
Feature	**CAN performance**
Data-field length	0 byte to 2048 byte*
Physical-layer scalability	50 kbit/s to 20 Mbit/s*

** Values depend on the CAN generation and implementation.*

CAN in livestock systems

(Source: Adobe Stock)

Smart pig farming

- Climate controllers
- Dry/liquid feeders
- Sorting gates
- Ventilation devices
- Water dispensers
- Weighing devices

(Source: Adobe Stock)

Automated poultry houses

- Climate controllers
- Augers
- Climate controllers
- Feed weighing
- Ventilation curtains
- Water dispenser

Cow livestock automation

- Climate controller
- Feed-pushing robots
- Food mixers
- Individual food dispensers
- Individual water dispensers
- Milking robots
- Weight sensors

(Source: Adobe Stock)

Start now!

From machine data to agrifood data

CiA and ISO

Harmonized data enables seamless integration in data-driven livestock farming:

- CiA specifies, how CAN/CANopen devices communicate: Messages, context, interoperability
- ISO/TC 347 standardizes, how agrifood data is understood: Common data concepts, AI-based analytics, farm management

Why vendors should participate

- Coordinate requirements
- Bring practical engineering needs
- Influence specification & standards
- Support implementable interfaces
- Reduce development duplication
- Design for future interoperability

Working together

CiA members define interoperability requirements

↓

CiA working groups develop profile specifications

↓

Result: Interoperable livestock equipment

A practical benefit:
Shared expertise → less duplicated effort → better interface standards

"If you want to go fast, go alone. If you want to go far, go together."

African proverb

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