

Development of a **Digital Twin Pig** for growth and behaviour

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The new paradigm to centralize information and knowledge in the digital world

**Recollection
digital twin**

Historic data

14 years, 23 batches of pigs, 2780 pigs

All available data sources are used to build a virtual representation (such as KPI report, 3D model or augmented reality) of each individual pig which updates automatically over time
Hidden states can be incorporated

Many available data sources
(e.g. genetics, feed, market
prices, management practices)

Real time data collection

IoT, MQTT, Kafka streams, RTSP video streams

Virtual representation

The real-life pig

Physical twin

**Monitoring
digital twin**

Informed users act

**Prescription
digital twin**

**Automated
digital twin**

**Prediction
digital twin**

Representation of future states

Simulation

&

Prediction

**Centralized information allows to focus
on all aspects of the pig's life**

Growth

Behaviour

Welfare

Heat production

Ammonia output

Meat quality

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Anomaly detection

Resilience evaluation

Perturbation simulation

Users interact with the digital twin to
obtain simulation insights
and gain automated feedback and advice

Interactive tool provide users advice

Monitoring and prediction models provide current and future insights
With simulation models changes in the pig's life can be evaluated

Simulations in the digital twin could replace experiments in the physical world



Online version ↗

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