

Indesmatech and LoRaWAN in farming

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Indesmatech



IndesmaTech
From Strategy to Implementation

Innovative design-in support and marketing of advanced technology

- Advices on and sale of LoRaWAN products and services
- Operates in the Nordics, incl. the Baltics, UK and Ireland
- 12 empl., HQ in Copenhagen
- Patrik Särenfors: Norway and Sweden
- Jari Makslahti: Finland & the Baltics



Lots of farming data



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From Strategy to Implementation



First wave of datacollection:

- from tractors and other machines
- from tagged animals
- Usage: Analyses and planning.

Challenges:

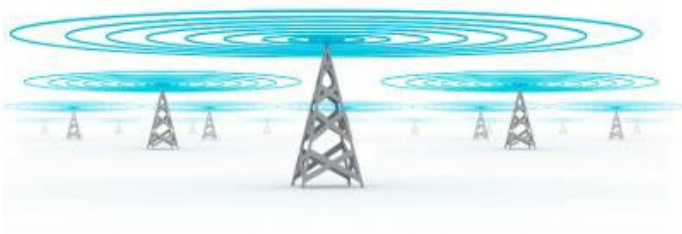
- Network coverage (wi-fi, 4G/5G)
- Need for overall monitoring
- Need for real time data



LoRaWAN – Smart Wireless Infrastructure



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Long Range

- ❑ Up to 15km range
- ❑ Deep indoor coverage
- ❑ Gateways for ethernet/3G/4G
- ❑ Open Source
- ❑ ISM band

Max Lifetime

- ❑ Low power
- ❑ 5-20 year batt. lifetime
- ❑ >100x vs GSM/3G/4G
- ❑ >10x vs NB-IoT
- ❑ Similar to Sigfox

Multi Usage

- ❑ Open network Option
- ❑ Roaming
- ❑ High Capacity (quan.)
- ❑ Multi user
- ❑ Public network option
- ❑ Data on exist. servers

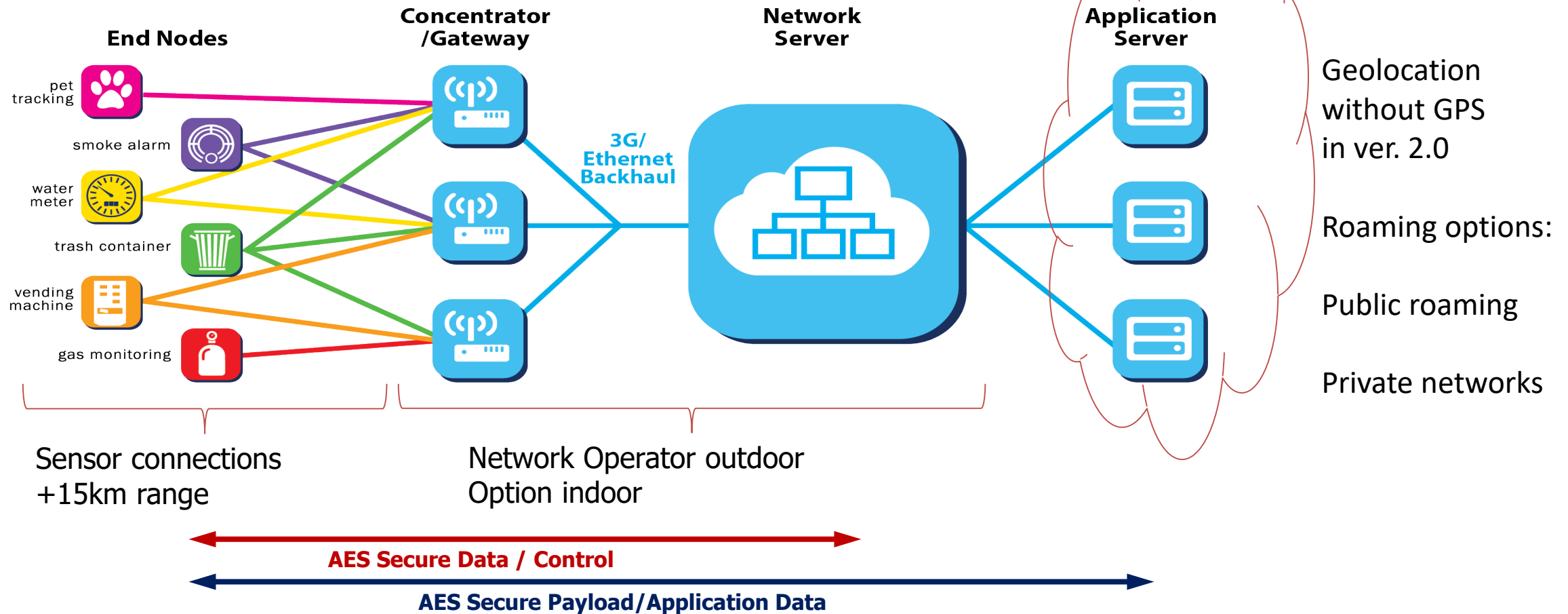
Low Cost

- ❑ Minimal infrastructure
- ❑ Low cost sensor nodes
- ❑ Open source
- ❑ Not dependent on specific supplier

LoRaWAN from LoRa Alliance



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Monitoring pigs



Case: Farrowtech.dk

- IR monitoring of the farrow process in the device
- Sends alarm, when assistance is needed, via loRaWAN
- Result: Less mortality of sucking pigs

Monitoring cattle



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Case: Microfeeder.com

- Dosage of feed and mineral for cattle in a critical situation
- Supervision of cattle behavior from LoRa-signal
- Result: Optimal feeding and increased animal well-being

Crop monitoring



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Cases:

- Sensoterra humidity sensor
- Decentlab ultrasonic level sensor

Measurement of:

- Humidity
- Water levels
- Yield
- Usage of pesticides

Further possibilities?

Remote control farming and optimization of day2day operations:

- Tracking of animals, machines and equipment
- Water management
- Building ambient management, access control etc.
- Pest control
- Data sharing in the whole value chain from feeding stuff, farms, dairies, slaughteries and retail
- Optimimal supply and accounts with dairies/slaughteries

Discussion



- LoRaWAN versus other wireless solutions
- Radiosystems versus drones and AI
- Processing in the device or in the cloud?
- Who will develop further smart devices?
- Are we willing to share data with suppliers and customers?

Thank you for your attention



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