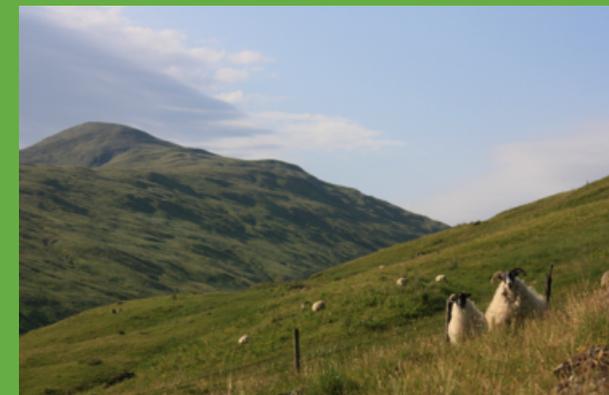


TechCare UK pilots – Integrated sheep system studies using technologies for welfare monitoring



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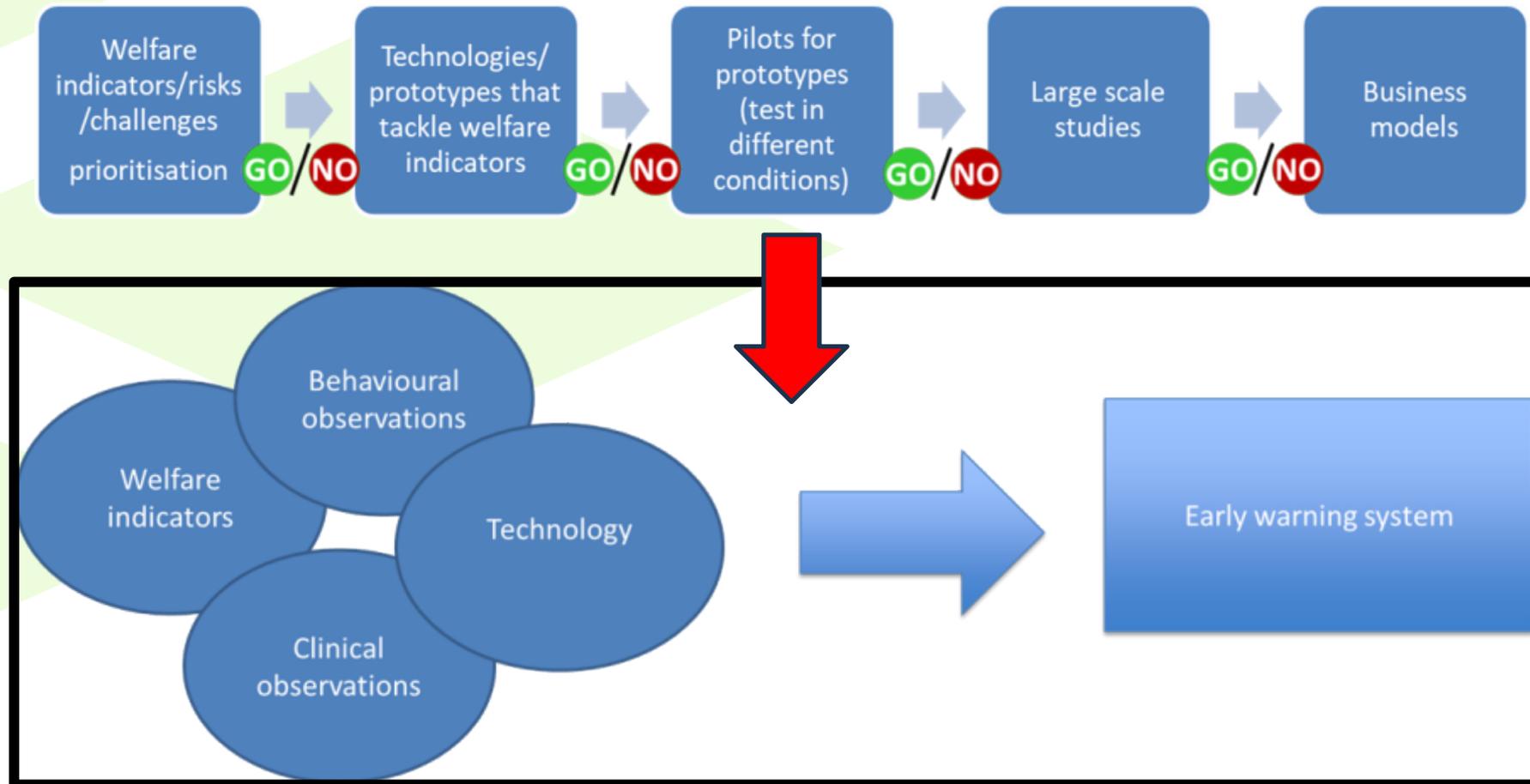
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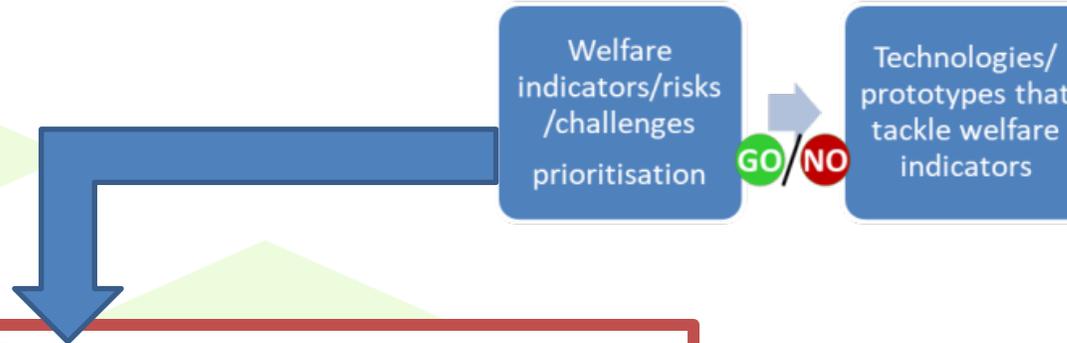
Overview



- UK (Meat sheep, outdoors)

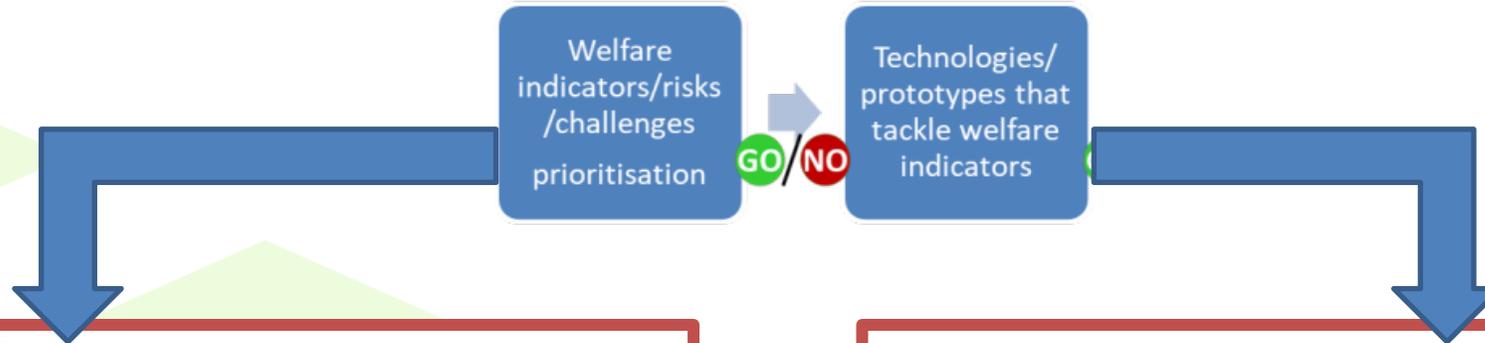


Welfare priorities



- UK stakeholder events highlighted the following topics in terms of welfare prioritisation
 - Gastrointestinal parasites
 - Nutritional issues (e.g. undernutrition)
 - Lameness
 - Mastitis
 - Ectoparasites
 - Mismothering

Technologies of interest



- UK stakeholder events highlighted the following topics in terms of welfare prioritisation

- Gastrointestinal parasites
- Nutritional issues (e.g. undernutrition)
- Lameness
- Mastitis
- Ectoparasites
- Mismothering

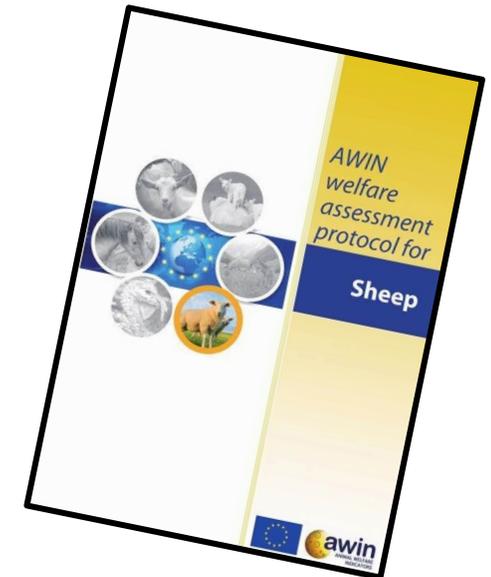
- Technologies available for testing

- EID weigh crate & EID tags
- Proximity loggers & GPS
- Ultra-high frequency (UHF) tags
- Accelerometers
- TST (Targeted Selective Treatment)
- Weather stations

Pilot farm goals



- Goals of the pilot farms
 - Validate the robustness of the technology (including prototype or near-market)
 - Test in different environments
 - Breeds/species
 - Climatic/environmental conditions
 - Topography
 - Production systems
 - Monitor animal welfare (using the AWIN scoring system)
 - Fine tune the application of the technologies to be used as an early warning system



UK Pilot Farms



- SRUC's Kirkton & Auchtertyre Farms ●

- West Highlands
- 2225ha, 1300 ewes
- Main sheep breeds: Scottish Blackface & Lleyn



- Moredun's Firth Mains Farm ●

- Midlothian
- 82ha, 300 ewes
- Main sheep breed: Scotch Mule - Texel



Data collection

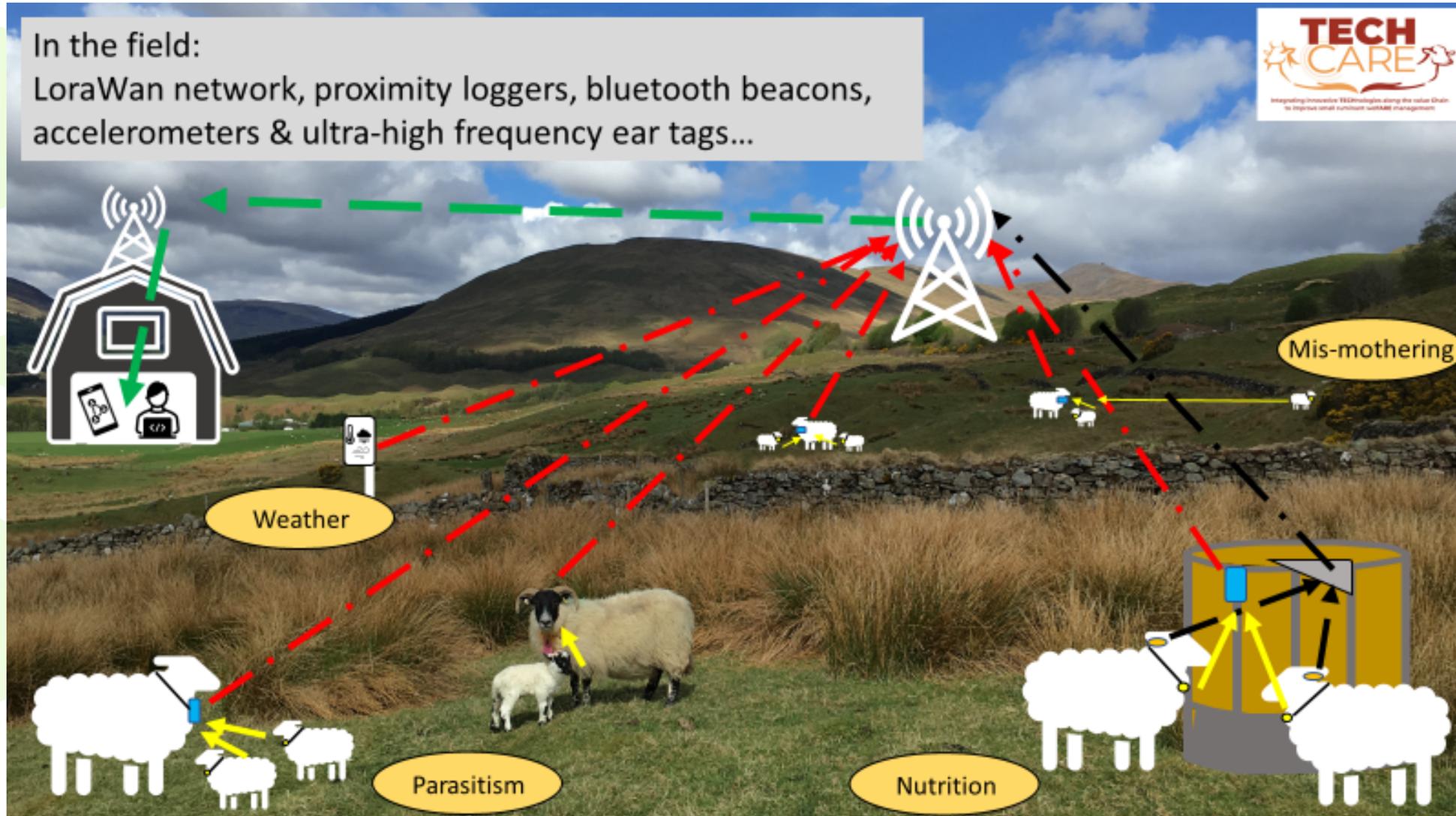


- Live weights
- Body Condition Scores
- AWIN scores
 - lameness
 - dagginess
 - fleece
 - udder...
- In-field behaviour and welfare observations
- Clinical measurements
 - Faecal Egg Counts
 - Somatic Cell Counts



Example sensor data

In the field:
LoraWan network, proximity loggers, bluetooth beacons,
accelerometers & ultra-high frequency ear tags...



Data collection

- UHF & Proximity Sensors
 - Presence/absence
 - Visits to food resource measured
 - Animal order
 - e.g. through a gate
- Proximity sensors
 - Distance between ewe & lamb
- Accelerometers
 - Changes in behaviour

Health issues (mastitis, lameness etc.)



Data collection



- UHF & Proximity Sensors
 - Presence/absence
 - Visits to food resource measured

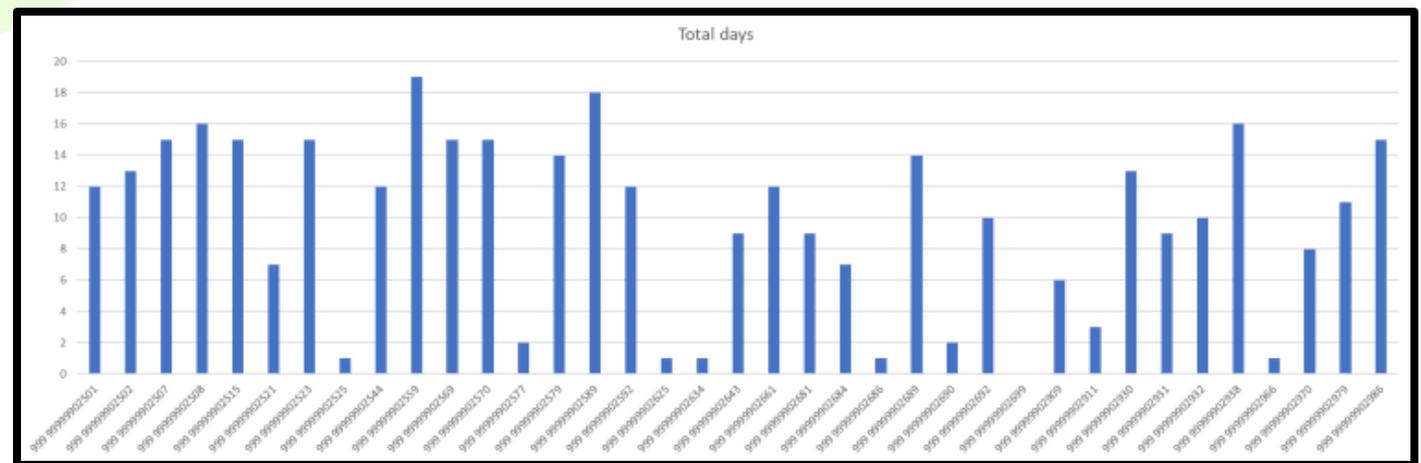
Nutrition

Observation post WISP
Hay ring WISP
Feed block WISP

Example trial - UHF



- Preliminary data
- Outside/extensive conditions
- Differences observed between ewes as to how often they visited the feed block
- Ewes that visited less – potential welfare issue?



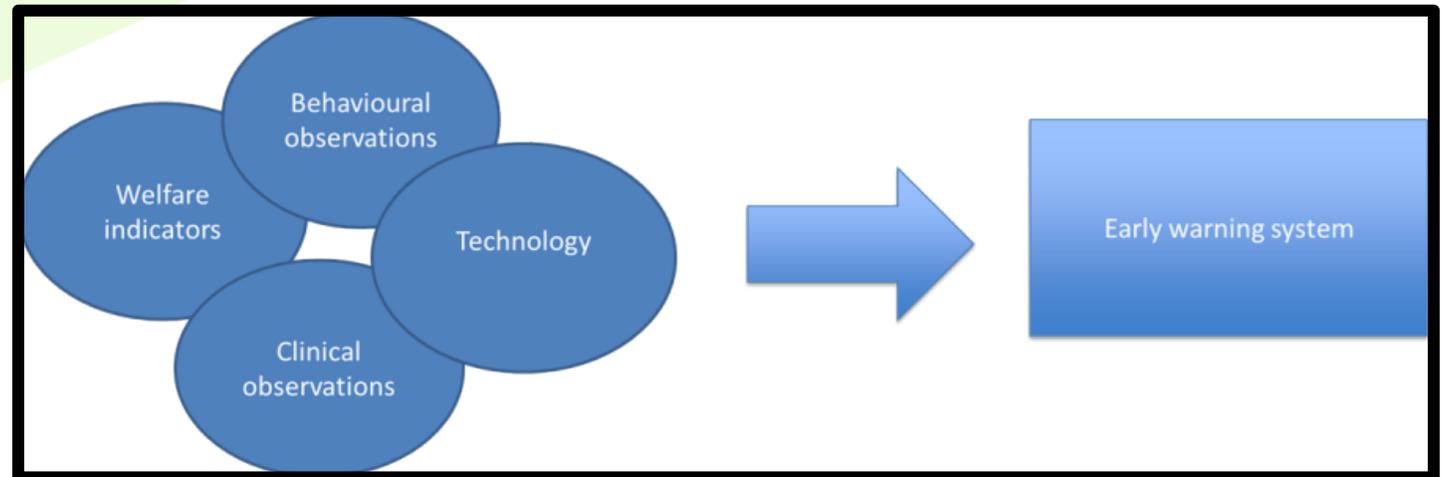
To date



- Data has been collected:
 - from each technology used
 - on animal performance
 - on welfare – in field & AWIN protocols



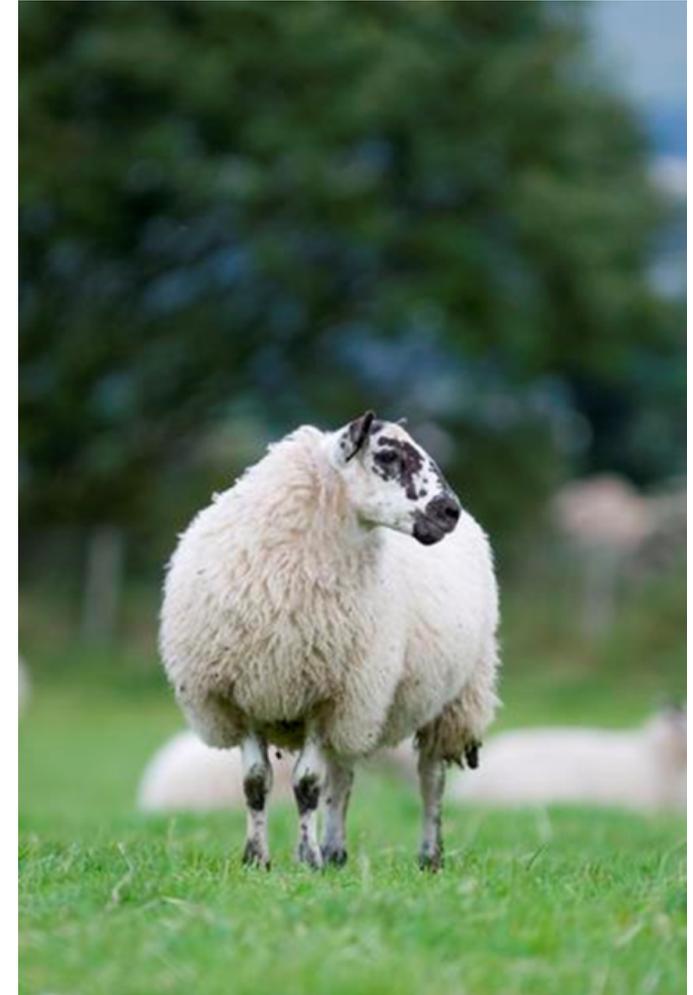
Now we need to bring everything together!



Next steps



- Analyse data and identify possible early warning systems.
- Identify technologies suitable for going on to the large-scale farms
- Identify protocols for technology use on the large-scale farms



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