



Silent Herdsman Platform; Impact of Detecting Eating Patterns

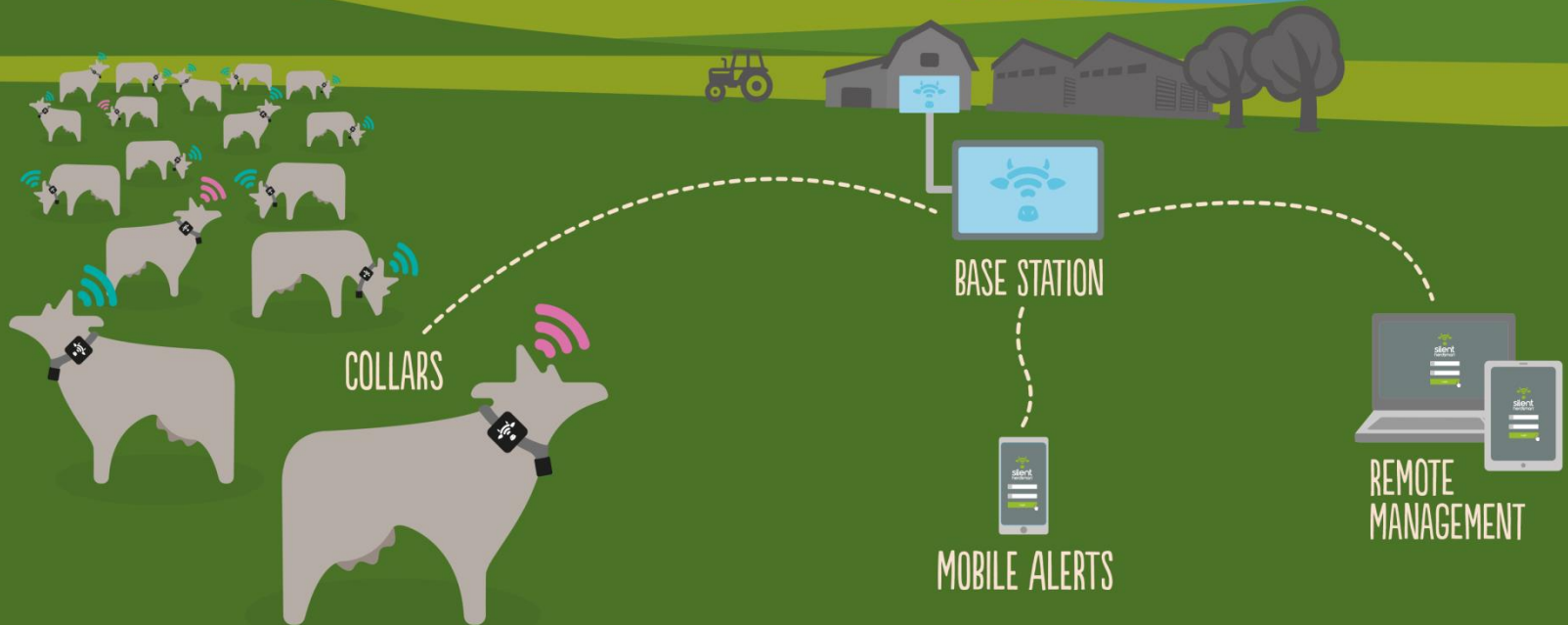
Craig Michie, Ivan Andonovic

- Background
 - Silent Herdsman Platform
- Detection of the onset of Illness
 - Results from commercial deployments
- Conclusions

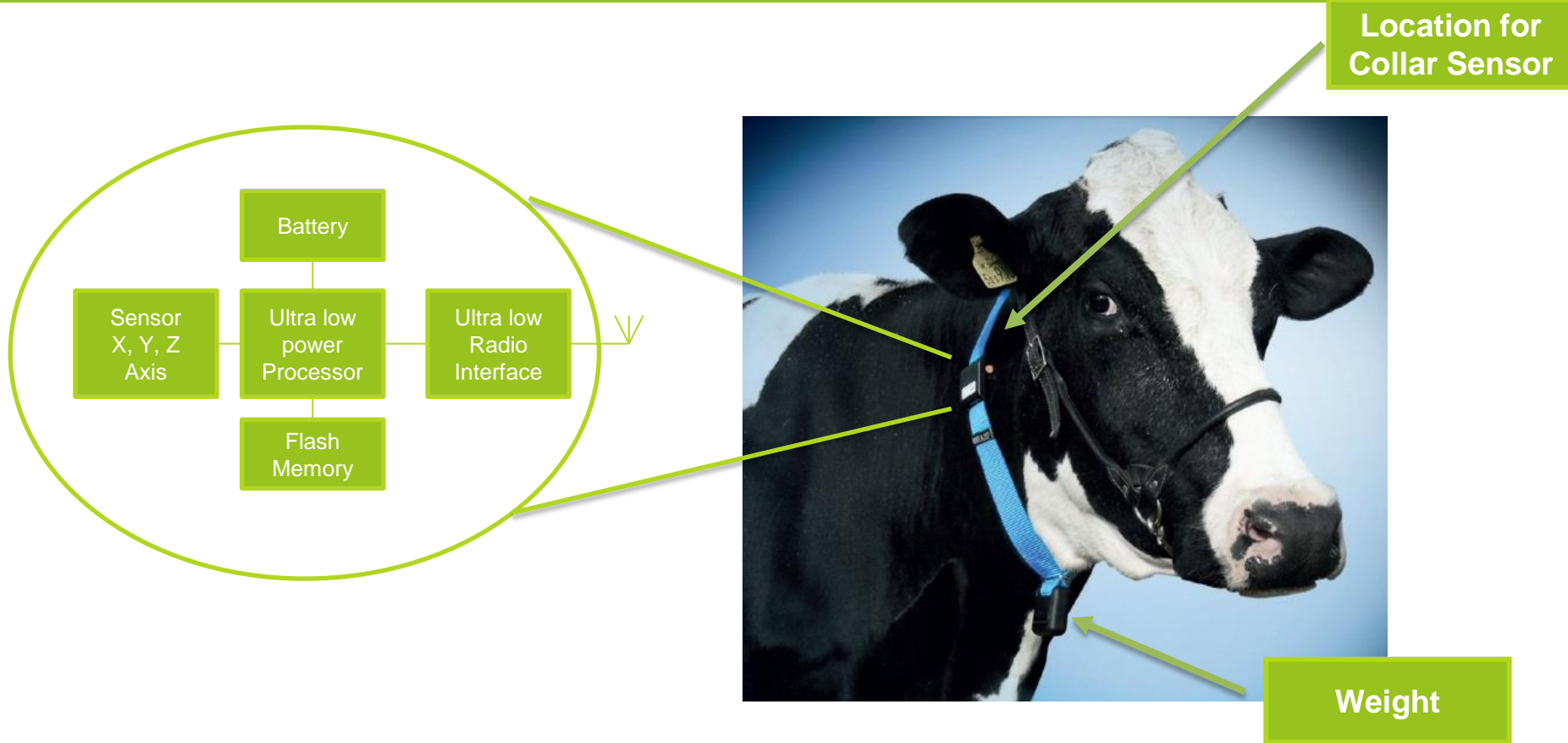


Background

Platform



Smart Collar

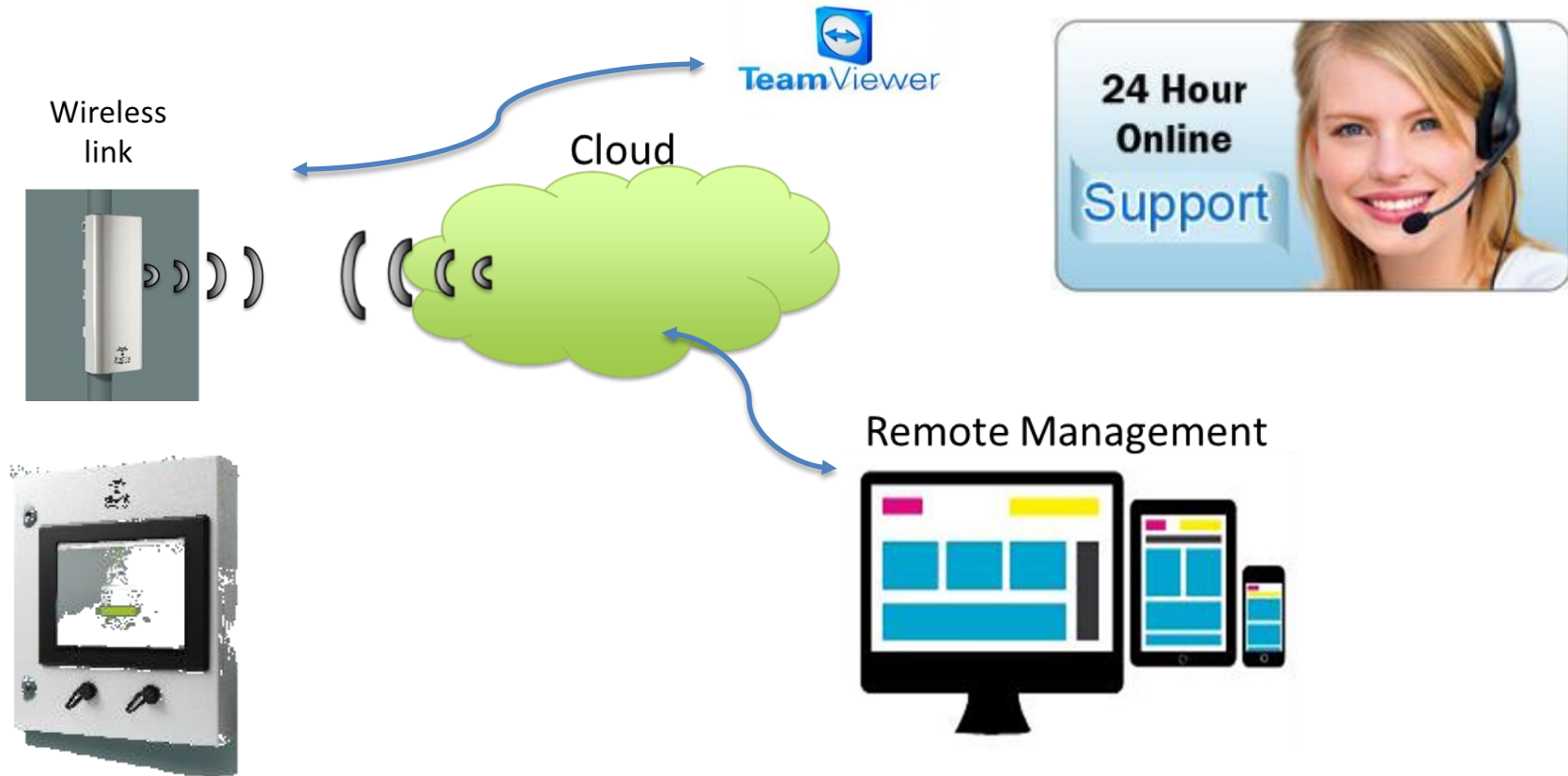


Unique Feature Set



- only patent protected head mounted 3-axis accelerometer product providing multiple conditions (currently THREE);
 - activity profiles
 - eating periods
 - rumination periods
- platform provides both 'oestrus' and 'health' alerts based on these conditions
- 'oestrus' accuracy enhanced through consideration of eating and rumination behaviours
- cloud base services offered
 - off-line functionality guaranteed

- **on-line ensures customer service and strategic data opportunities**





Detecting Illness; Results

Detecting Illness with Collar?

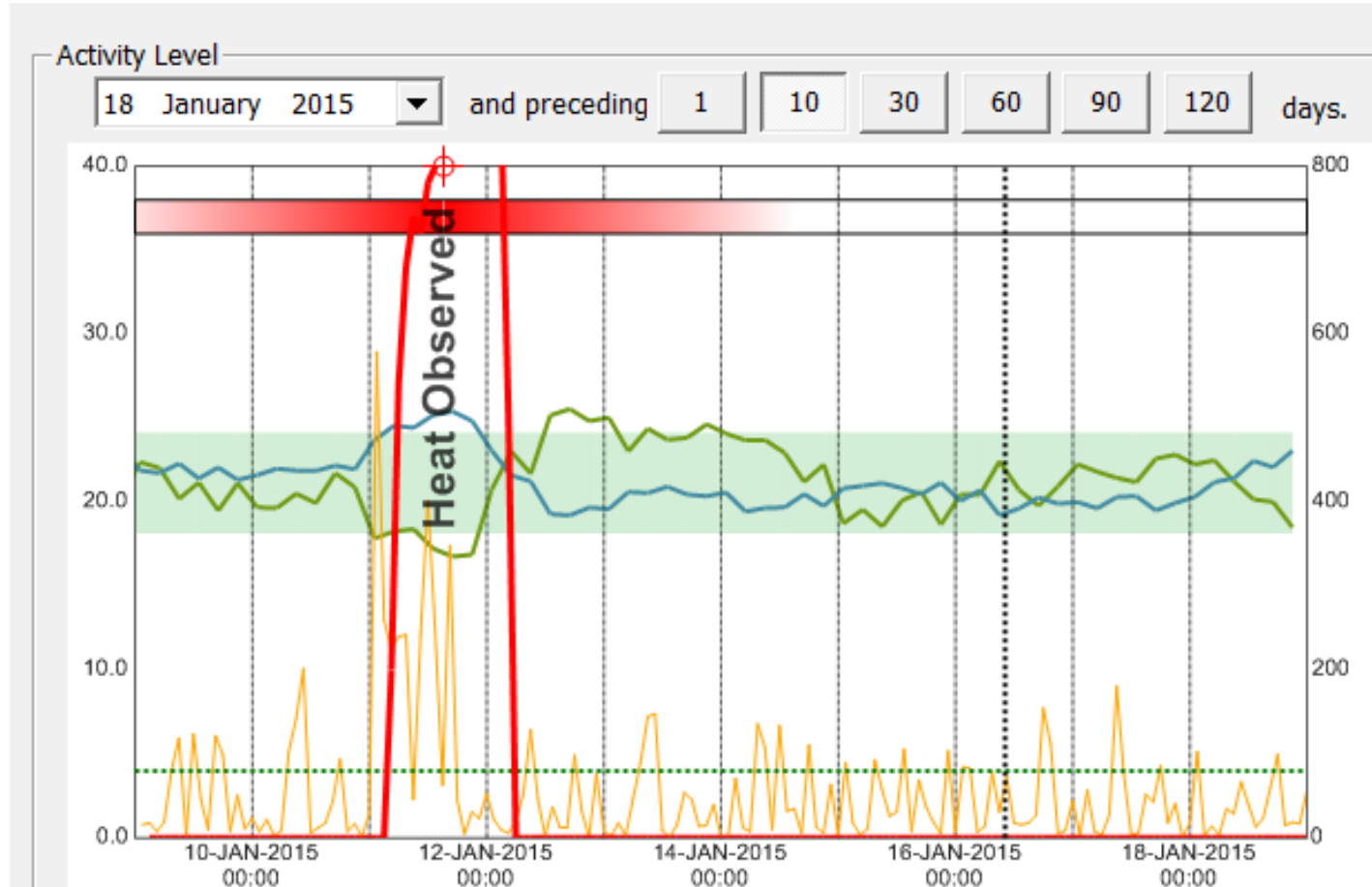


- Activity
 - sick cows tend to be less active
- Eating
 - sick cows tend to eat less
- Rumination
 - sick cows tend to ruminate less

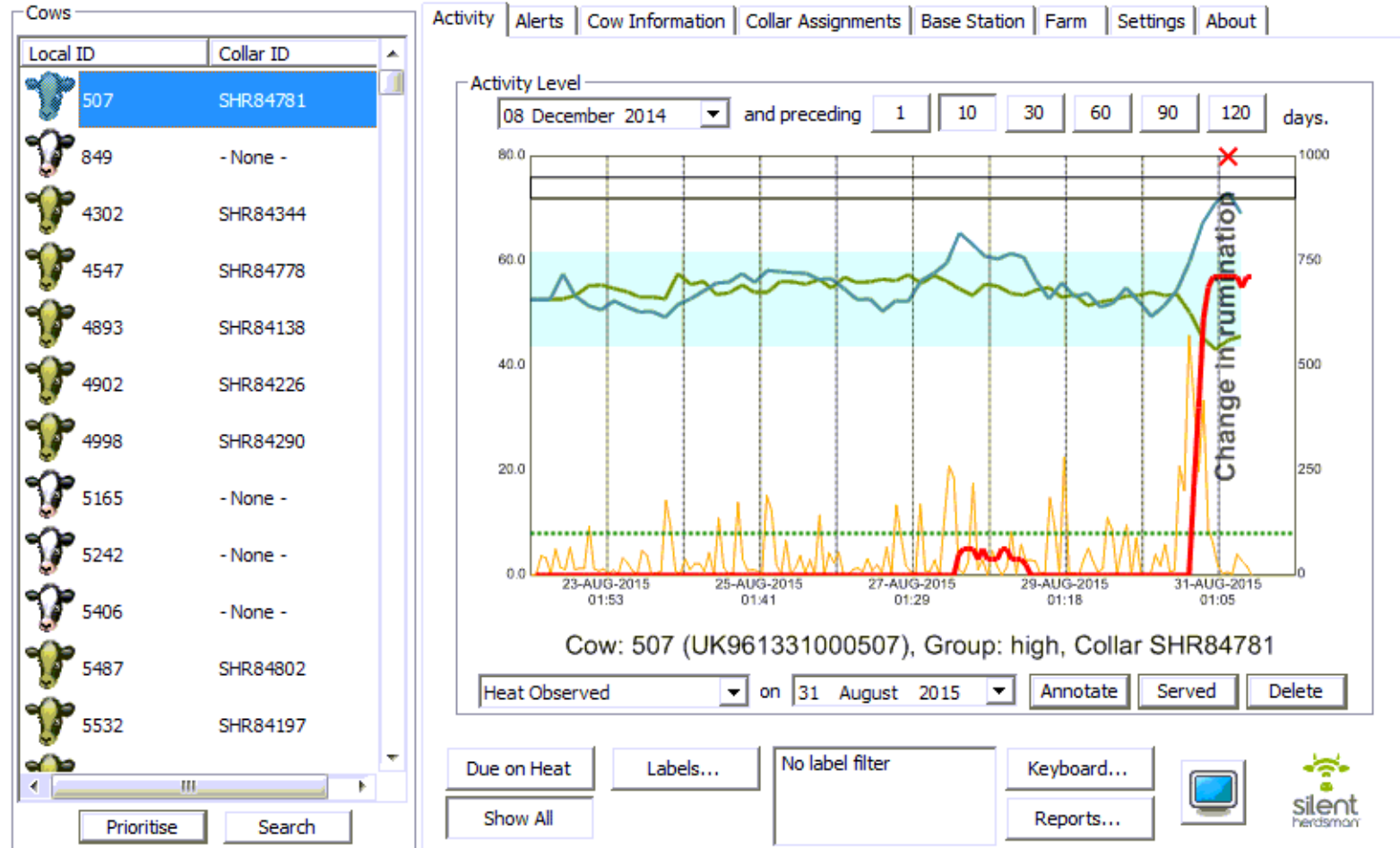
Normal Dry Cow



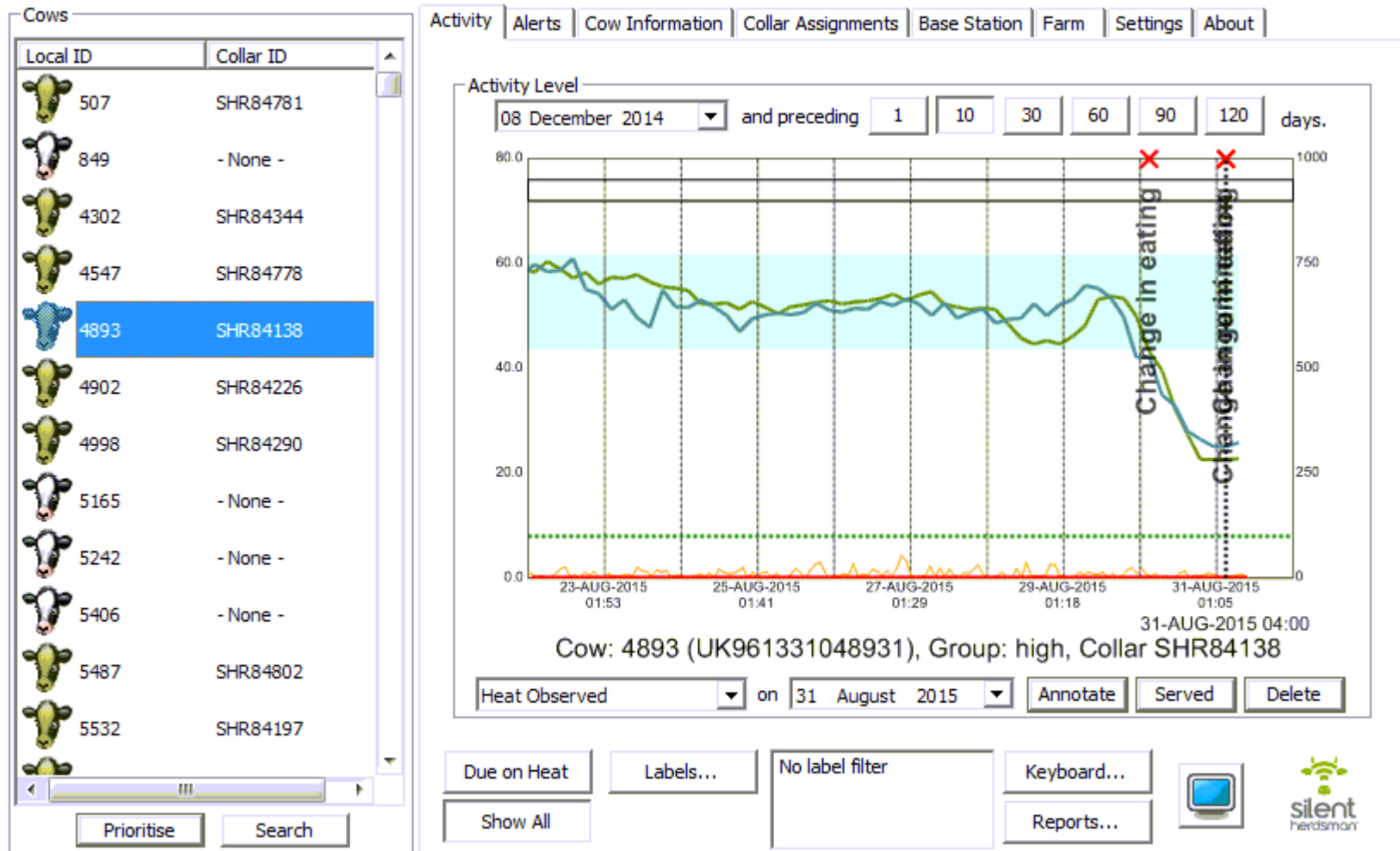
Oestrus



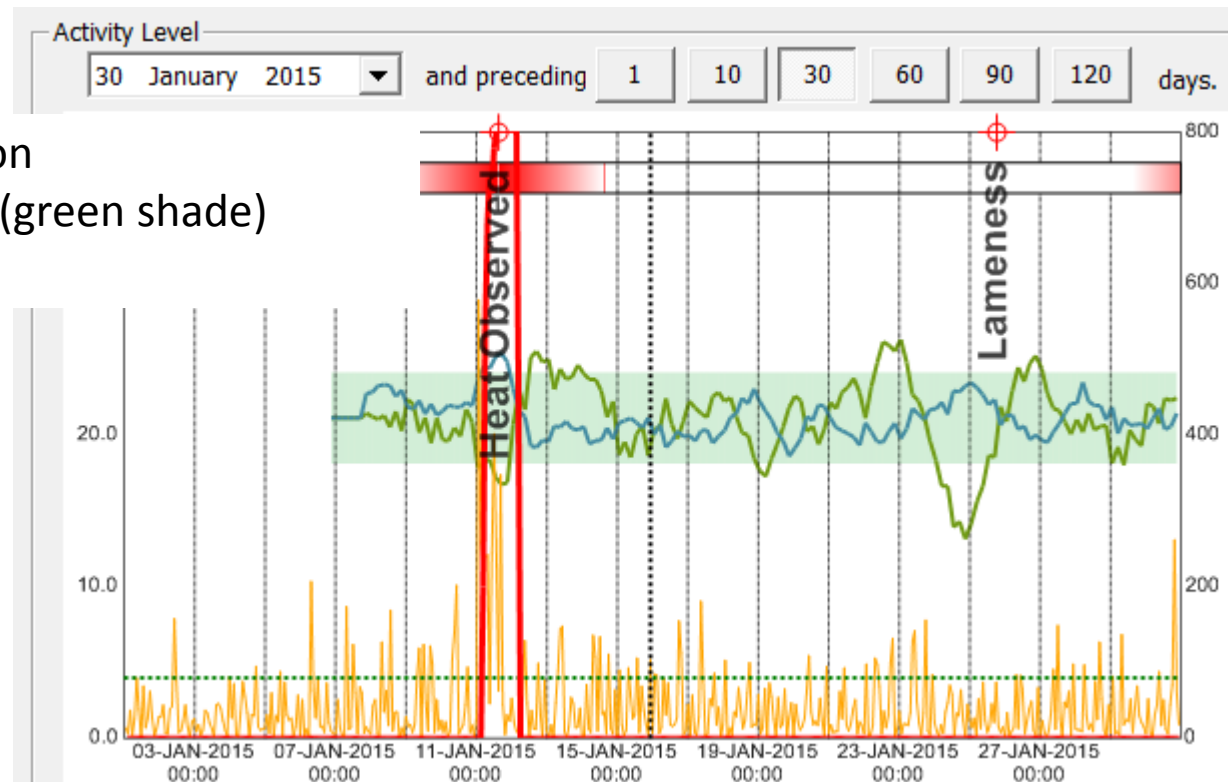
Rumination Drop in Heat



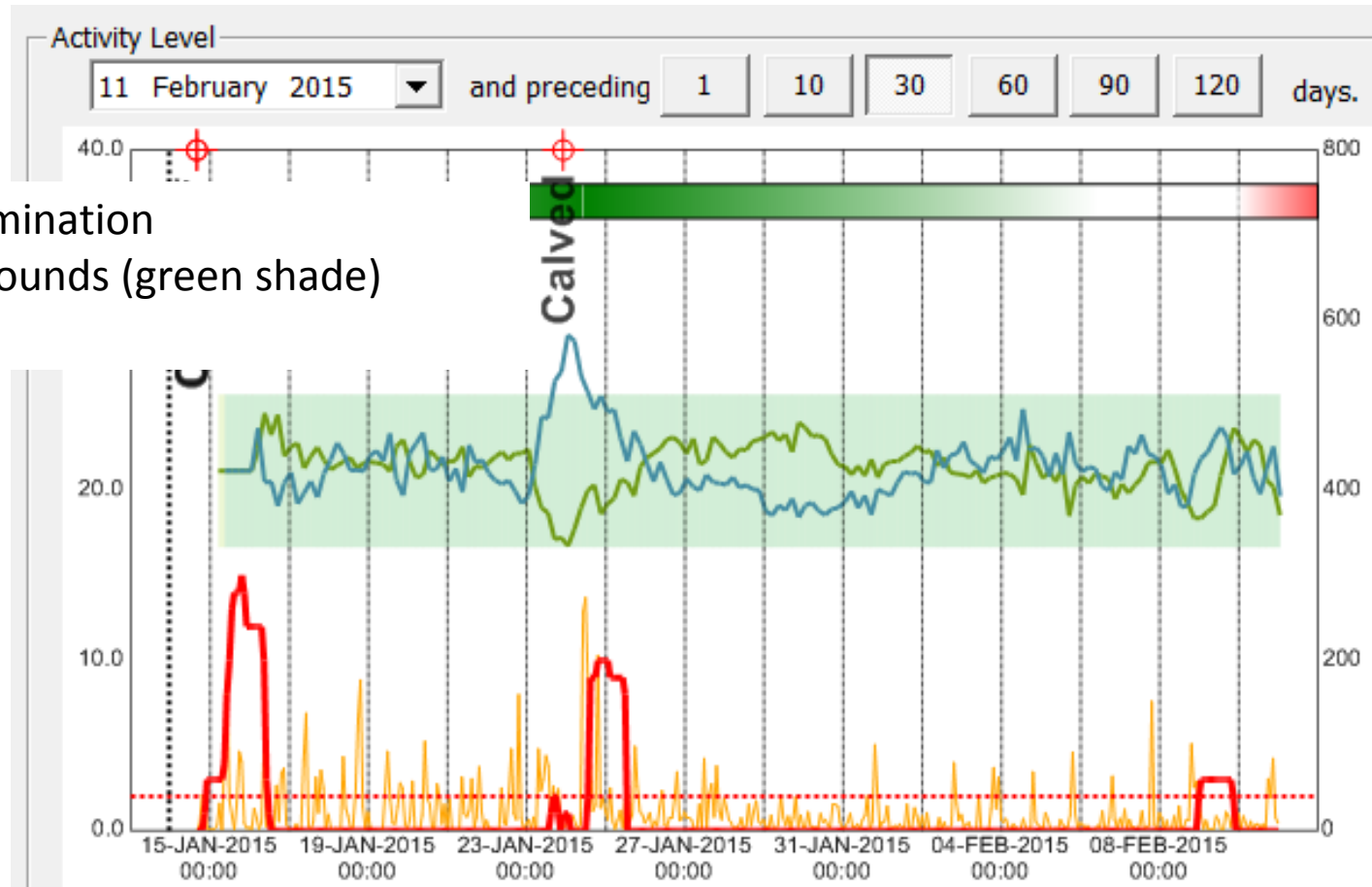
Sick Cow



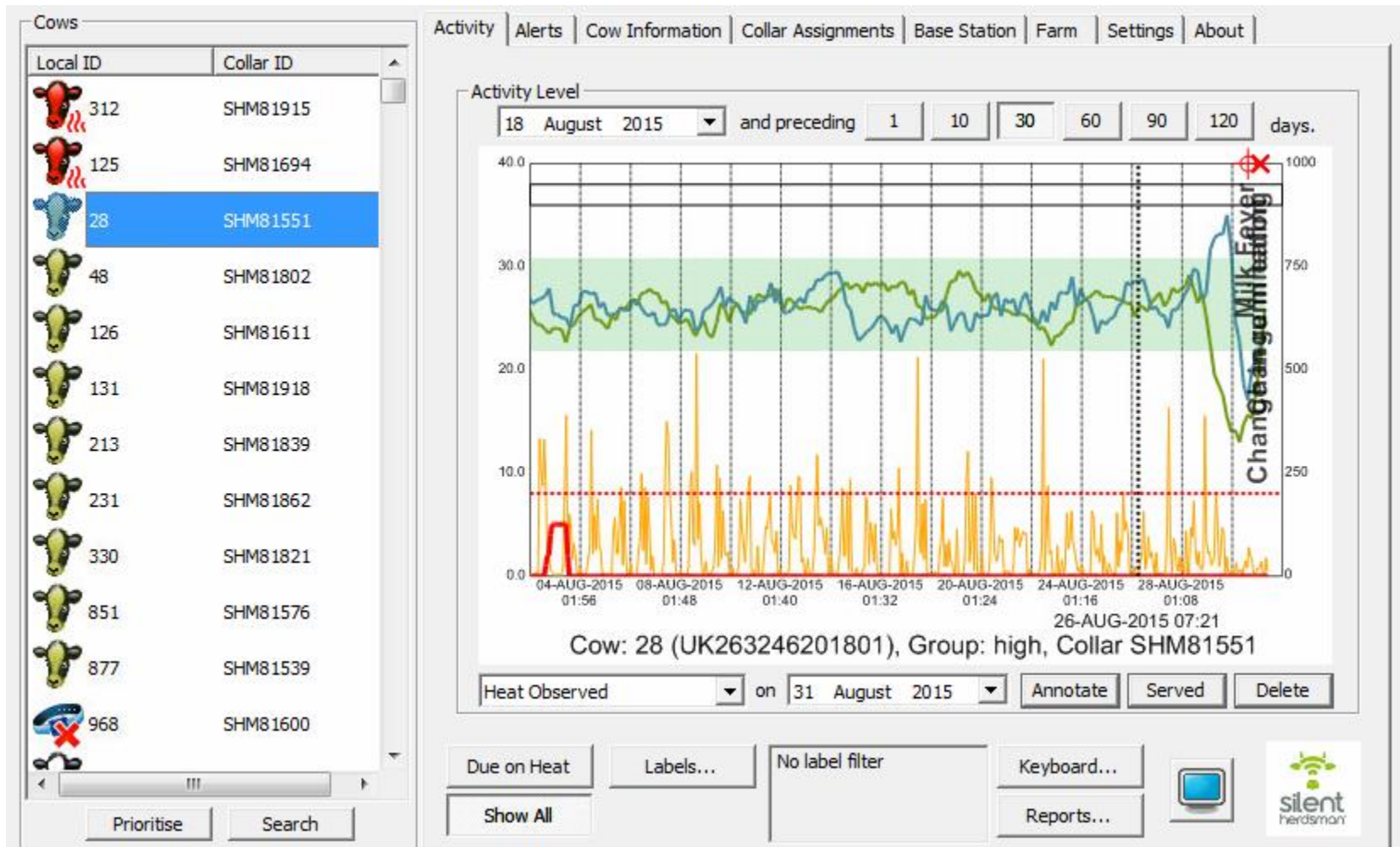
Lameness



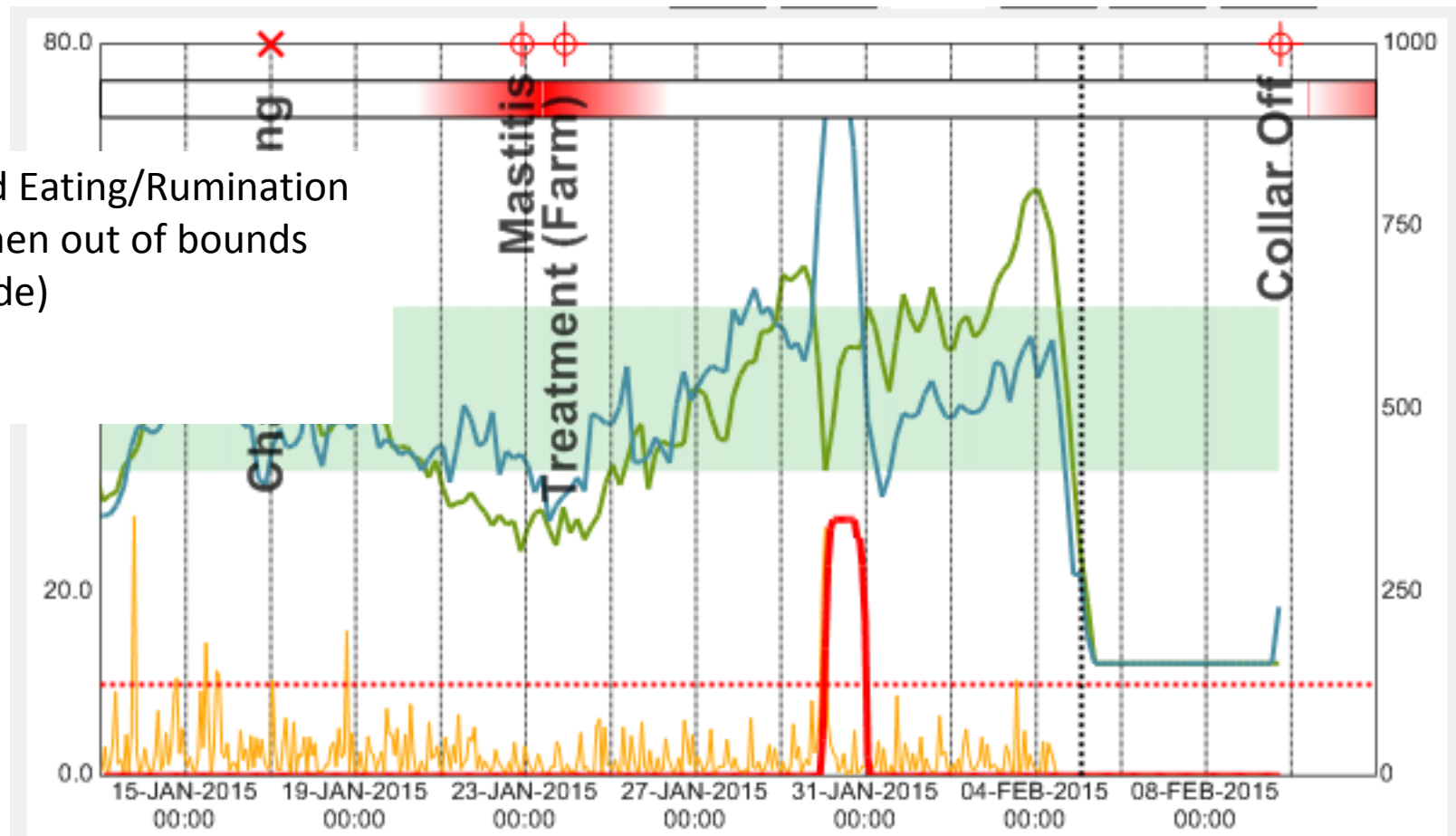
Calving Cow



Illness

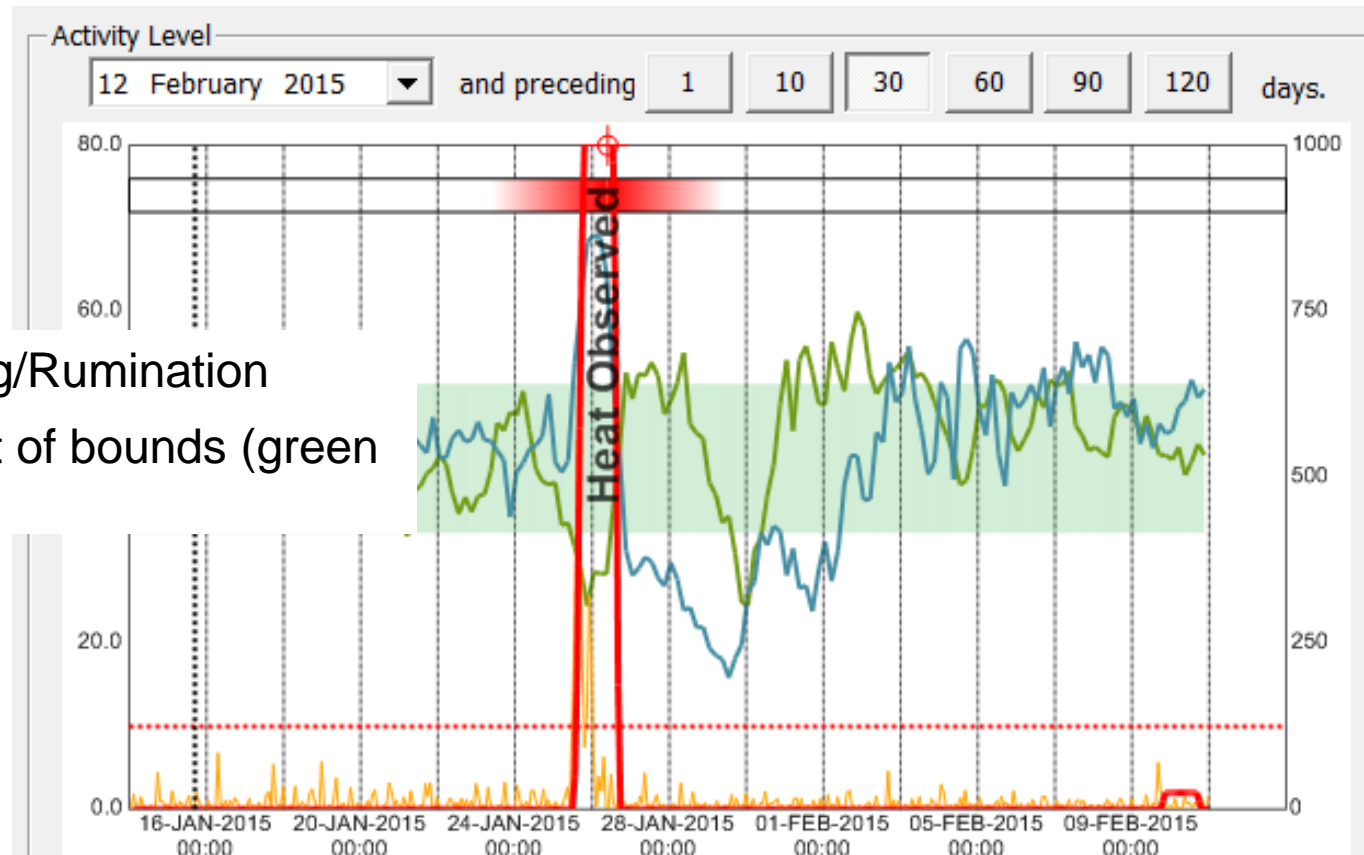


Mastitis (then culled)



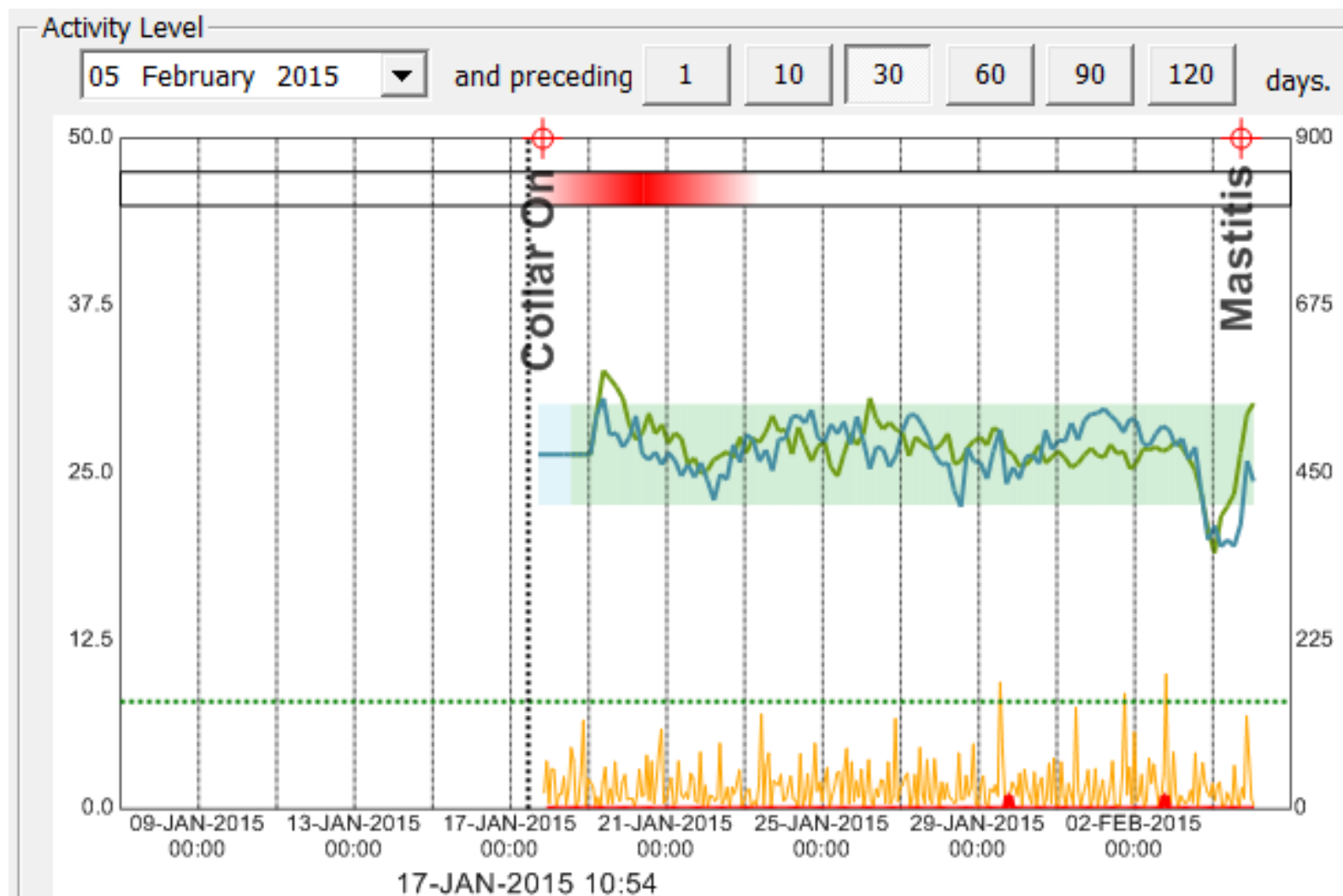
Normalised Eating/Rumination
Flagged when out of bounds
(green shade)

Injured back, receiving treatment

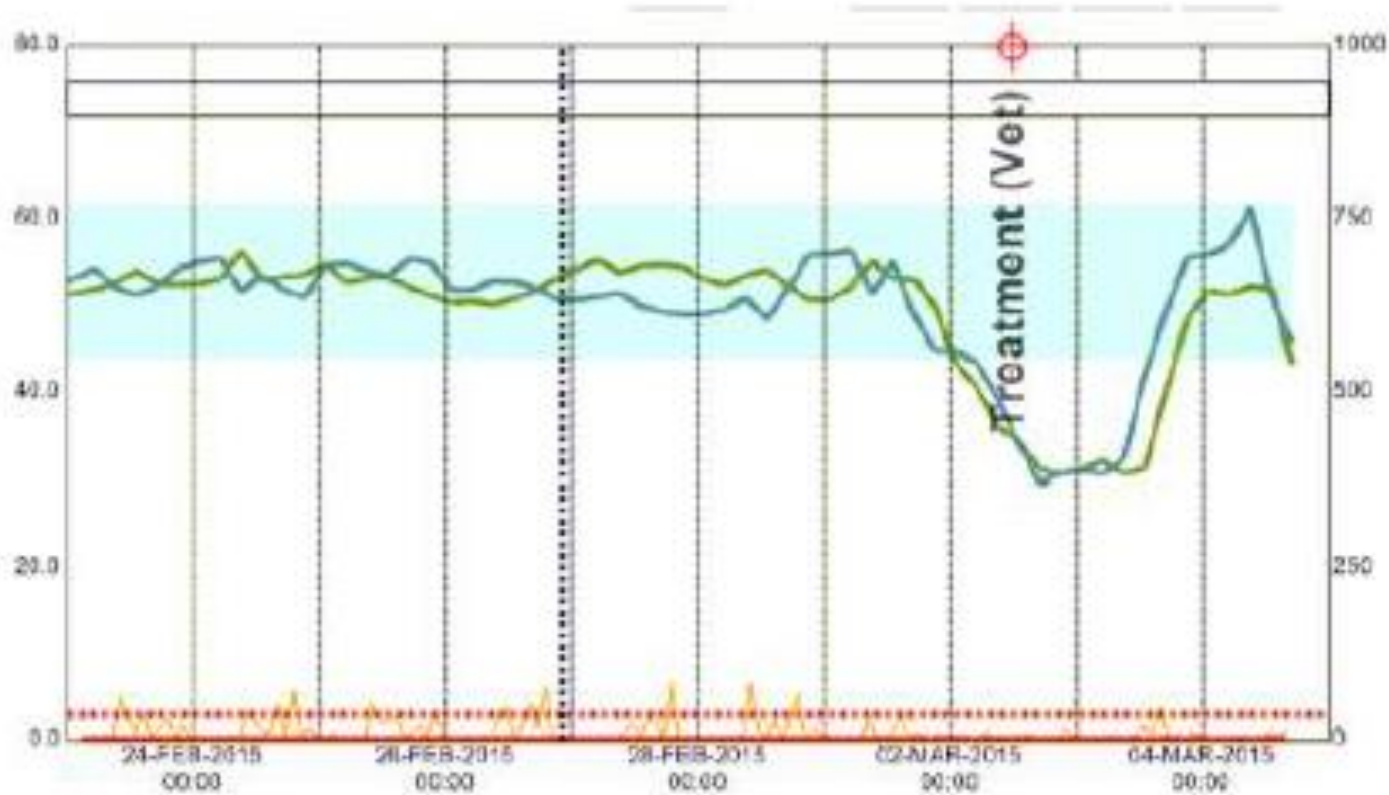


- Normalised Eating/Rumination
- Flagged when out of bounds (green shade)

Clinical Mastitis



Pneumonia

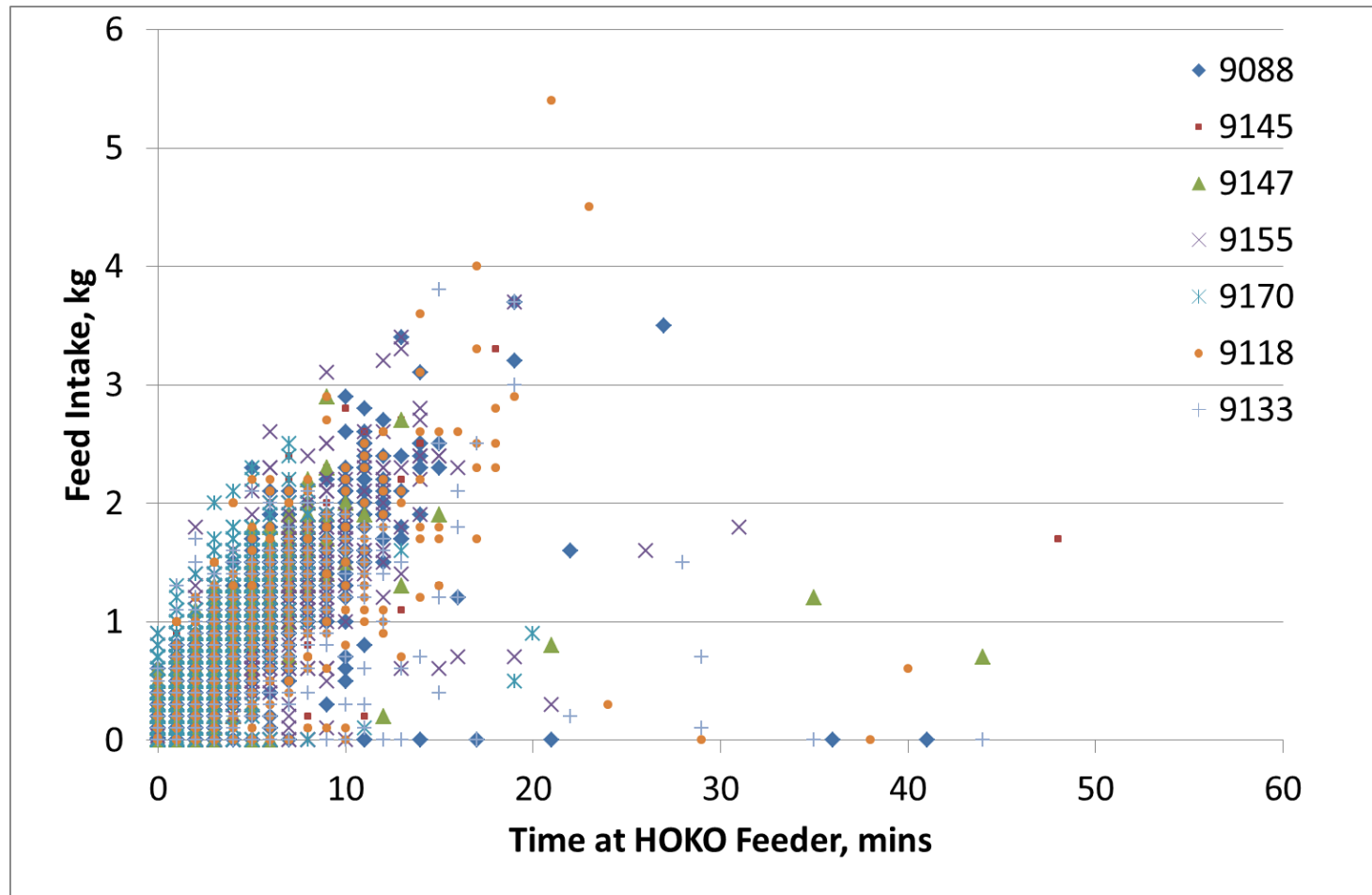


Correlation between Eating Time and Intake



measurement of time in feed bunk and weight of feed consumed

Feed Intake as a function of Time?



- *activity* an *excellent* indicator for the onset of *oestrus*
- *activity* on its own is a *poor* indicator of the onset of *illness*
- *ruminating plus activity* enhances the accuracy of *oestrus* detection
- *eating and ruminating* is an *excellent* indicator of the onset of *illness*

THANK
YOU!

