

CA18105



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Practical solutions to remote ante and post mortem inspection

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What is required to perform ante- and post-mortem meat inspections remotely?

Remote inspection

- Conducting the legislatively mandated controls at slaughter, both ante- and post mortem, from a location other than the abattoir
- **Sustainability, Resilience, improved Working environment and potential Cost savings**

Requirements

- Receiving sensory information deemed sufficient enough to allow for decision-making by the inspecting personnel
- A way to collect information on site
- A way to relay the above information to an off-site OV
- ***A device and an internet connection***

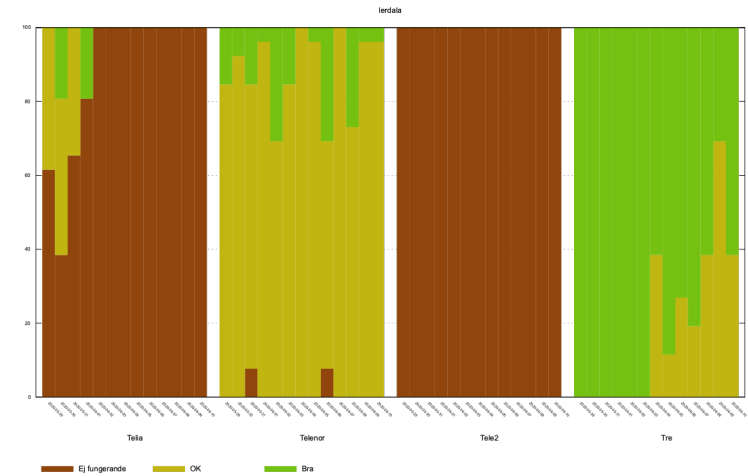
Criteria for the device itself

- Can record video and transmit it over the internet
- Hygienic and easy to use, preferably with gloves
- Allows for the use of both hands
- Simple and cheap to replace!
- = **A smartphone and a holder**



Internet connection demands

- A secure and reliable enough internet connection
 - 3 Mbit/s *up and down* has been deemed sufficient, but more is always more
 - *Latency* and *Jitter* are more important than raw bandwidth for the user experience
- Large differences between mobile operators!
 - Few locations actually perform well enough over a sustained period of time



Recommendations

- A reasonably high-end smartphone
 - Water/dust-proofing (IP67/68) is to recommend!
 - Most if not all modern phones possess hardware more than high specced enough to "max out" the quality of video over the internet
- WiFi connectivity to a land-based service would be ideal, but under ideal conditions 4G can perhaps be acceptable
 - A site-survey at every location would likely be required to know
 - Costs for technological expansion or amplification

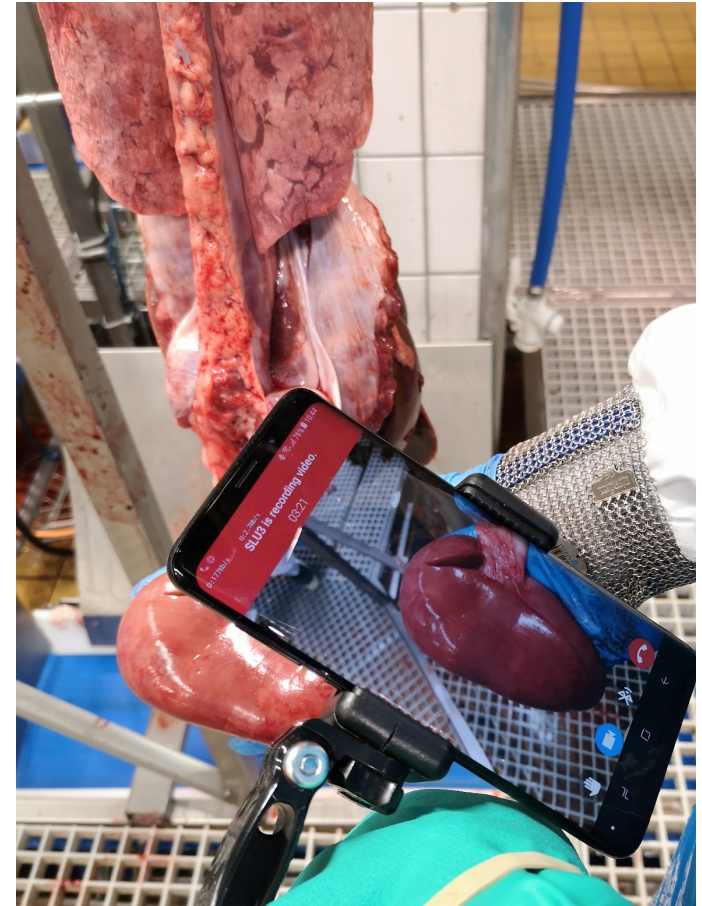
Performing the inspections

- A staff member (a *technical support person, TSP*) at the abattoir performs a video call to the off-site OV
 - The video call enables the OV to directly instruct and guide the assistant
- The TSP films the animals and/or carcasses, and verbally relays any information of importance. The OV can interject with questions at any time
- The TSP performs any *examinations* and provides any *additional information* the OV requests or requires
- The OV makes a decision based on the inspection
- *It takes two to tango.*
 - Training of the TSP will be very important to streamline inspections and maintain efficiency

Slideshow



Slideshow, cont.



What is required to perform ante- and post-mortem meat inspections remotely?

- A cheap technological device that almost everyone owns
- A pair of extra hands!
- A sufficient internet connection, preferably land-based

Current work in remote meat inspection

- Multiple papers in review or under work
 - Further solidifying and expanding the results and method-evaluations as well as highlighting other facets of a potential methodological shift
- Framework and risk-assessments for digital communication
- Work will continue within the field, in order to further support the goals of increasing flexibility for low-capacity slaughter and game handling in remote areas

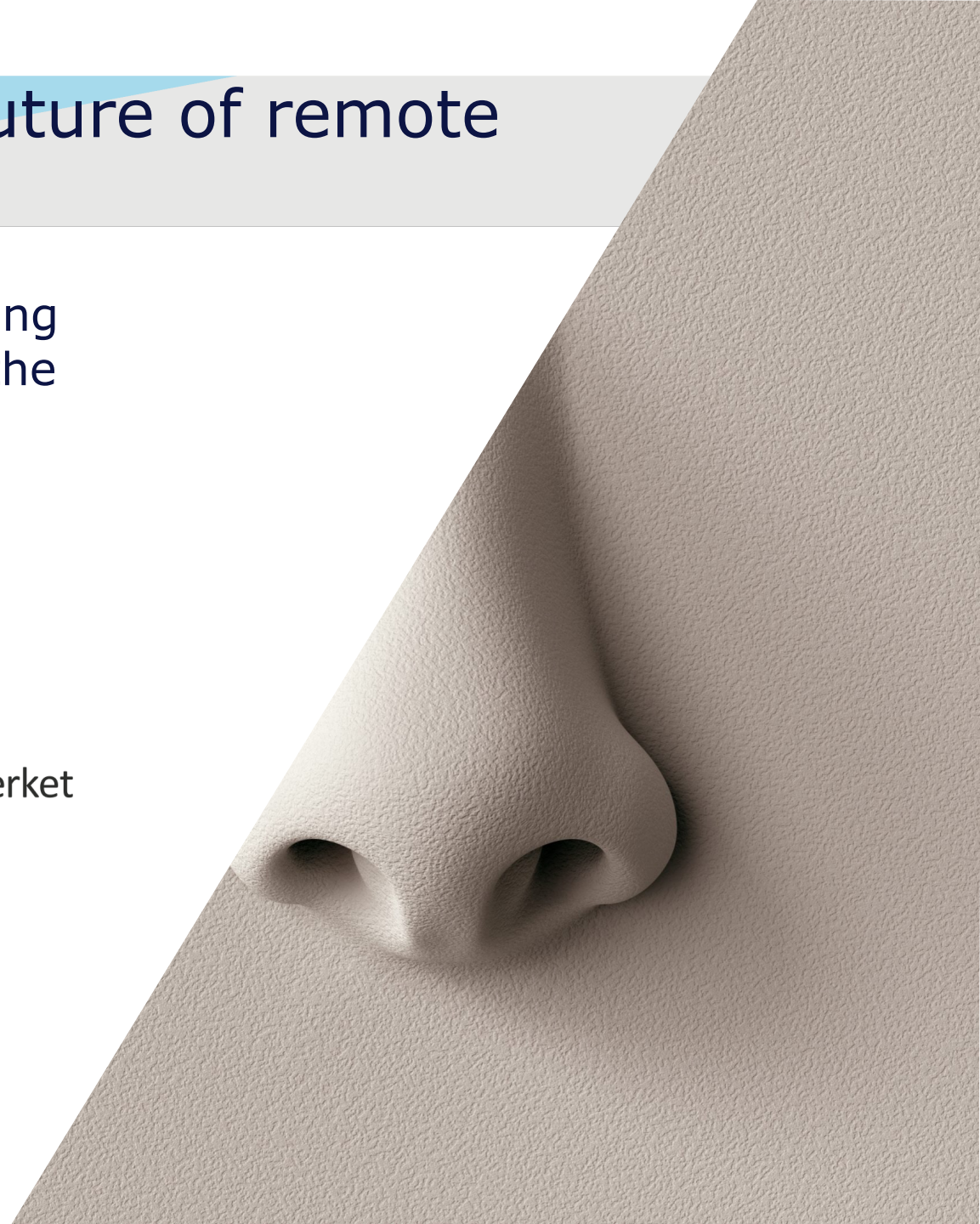
The electronic nose and the future of remote inspection

- Problems with only verbal descriptions during remote inspection. Technology can lessen the variation and improve resilience
 - A tool that enables a *Gold Standard* in detection of olfactory irregularities

- Collaboration



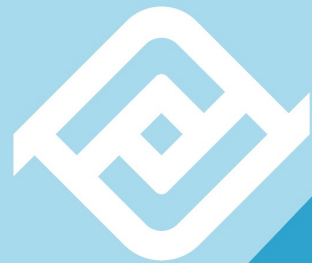
- Currently entering the sampling phase



The electronic nose and the future of remote inspection, cont.

- Two different versions developed side-by-side
- One based on a specifically designed/calibrated sensor
 - Detects a single specified scent
 - In this case focus is on urine in male pigs
- One based on multiple sensors, *AI* and *sensor fusion*
 - Aims to learn what normal “carcass smell” is, and detects anomalies in the olfactory footprint

Thank you for the attention.
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