PigSys

BRIEFING NOTE
for the pig farmers (PigSys project)

THE CHALLENGE

Barn environment is one of the most important factors affecting performance and welfare of pigs.

In modern pig barns, automated systems for feeding and ventilation control are already present. These systems seldom exchange information but work as stand-alone solutions. Information from such existing systems can, however, be combined with current sensor data on actual air and feeding conditions and automated recordings of the pigs' behavior, in a joined platform. Such a platform can provide a quick overview of both productivity and animal welfare and may act as a real time decision support system for the farmer in the everyday management of a pig herd.

Through the integration of available information in a decision support system, unwanted events amongst the pigs, such as outbreaks of diseases, unexpected behavioral changes, like pen fouling or tail biting, and abnormal feed consumption rates could be identified and rectified at an early stage.

SENSORS AND THE VALUE THEY BRING TO THE ANALYSIS OF PIG FARMS

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- **The best available sensor for pig health and welfare is the animal itself.** Pigs' behaviour can provide information about their barn environmental situation, food and water adequacy, health, welfare and production efficiency.

- Machine vision technique provide an automated, non-contact, non-stress and cost-effective way to achieve animal behaviour monitoring requirements.

- Direct visual observation of animal behaviour to detect environmental challenges is a task for a skilled stockperson.

- Interpretation can be very subjective and limited by the low daily contact time and sheer amount of animals which must be supervised.

- Technical sensors which enable the measurement of physical and chemical environmental conditions in the barn (e.g. air temperature, air velocity, pollutant gas levels) can provide concrete information on the current and historic housing situation.

- Image processing techniques can provide information about the thermal experience of pigs in a barn. This can be a useful supporting technology to improve control of the ventilation system for better barn climate, thermal comfort and welfare of pigs.

- Continuous and real-time monitoring of the behaviour of a group of pigs can be used as an early warning system to reduce the cost of production, limiting losses from disease and mortality and improving the job satisfaction of owners and staff.

- **Development of new technologies and sensors is therefore an important step towards the establishment of an automated intelligent system to enhance pigs' welfare and health.**