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*'Developing animal behaviour and welfare:  
Real solutions for real problems'*

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International  
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## **Back to the future: moving towards more natural animal production systems, supported by 21st century technology**

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Sunday, 1st August - 18:00: Plenary: Application of Technology to Applied Animal Behaviour and Welfare - Plenary talk

Thursday, 5th August - 09:00: Plenary: Application of Technology to Applied Animal Behaviour and Welfare - Plenary talk

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Conventional animal production is under considerable societal pressure. Concerns such as animal welfare, climate change and resistance to antimicrobials are changing the way society is perceiving animal production. In response to those concerns, there is an ongoing debate on how to design sustainable and therewith societally acceptable animal production systems. Some fear that a move towards more natural animal production systems, also employing improved animal welfare conditions, would be like moving back in time and that animal farming would lose much of the progress that has been made since World War II. We feel these fears are unfounded and that progress can be continued by implementing 21st century technology in more natural animal production systems. These animal production systems will put the animal and its needs at the centre and will enable the animal to use its adaptive capacity to respond to challenges in its environment. Sustainable systems should be designed, that rely much less on antimicrobials and that allow good animal welfare without mutilations, such as beak trimming, tail docking or castration. These systems are more complex and costly for the farmer to manage, and these efforts should be rewarded by increased product value and consumer appreciation. A OneWelfare approach, recognizing the interactions between human- and animal welfare and of environmental impacts is needed. Modern technology will aid the animal and the animal industry in making the change towards more natural systems. Sensor technology enables us to track individual animals or groups of animals and record their activity or behaviour. In turn, this data will inform the farmer on the animals' interactions with the social and physical environment. This does not only give more insight into animal welfare and allows for its improvement by e.g. changing environmental conditions; Further progress in animal farming can be made by selecting 'best performers', not showing damaging behaviours, such as feather pecking, tail biting or aggression. Continuous monitoring of animals at the group or, if possible, at the individual level allows us to monitor animal welfare and provides us with early-warning systems of health and welfare problems. With the aid of 21st century technology, we can design more natural animal production systems that put the animal at the centre and that help to create a sustainable future for animal production.