



## Fact sheet

# Using technology for remote and automated monitoring of export livestock health and welfare

## Challenge summary

The Department of Agriculture, Water and the Environment (DAWE) is seeking new and innovative solutions to improve the monitoring and reporting of livestock health and welfare at critical points in the export supply chain. This innovative solution should use automated and remote technology. Australia is a world leader in health and welfare standards for export livestock. However, maintaining and demonstrating good welfare outcomes places considerable government regulatory burden on industry, which must monitor, collect data and report. Burden is also placed on government staff, who are required to travel and inspect livestock and management processes. A more effective and efficient mechanism for both industry and government to conduct these time-consuming manual activities would allow more time to identify and address issues early.

## Potential themes

Advanced technology, artificial intelligence, data automation, digital imaging, animal tracking, image recognition, machine learning, environmental monitoring, animal health and animal welfare.



## Overview of challenge

More than 2.3 million Australian livestock is exported each year by sea and air. DAWE is responsible for verifying that livestock exporters are meeting their regulatory requirements. Both industry and government undertake activities that contribute towards monitoring and reporting of livestock health and welfare. Recent moves away from using livestock mortality as the only measure of welfare have led to an increased need for livestock monitoring, data collection and reporting. Since these activities are conducted by people, subjective judgements and inherent human error can create inconsistencies.

Current monitoring and reporting processes are largely manual, repetitive and resource-intensive. Data quality varies in reliability and accuracy, and in some instances, information is duplicated. DAWE is after an innovative technology solution that introduces efficiencies at one or more key points along the supply chain.

Prior to export, an important regulatory requirement is the daily monitoring of animal health and welfare. Livestock that is found unsuitable for export, e.g. those injured, lame or blind, are removed.

Once livestock is loaded onto a ship, monitoring and reporting is required for: health and welfare; feed and watering; environmental conditions (e.g. temperature, humidity, ammonia levels); pen conditions (e.g. bedding/pad depth, moisture content); and animal behaviour. With tens of thousands of livestock to monitor, a technology-assisted solution would reduce the burden of this manual task. It would also increase the efficiency and effectiveness of stock removal prior to export, decrease transcription errors, and facilitate faster detection of, and response to, animal health or welfare issues.

## Solution requirements

The scope for innovation to solve this BRIL challenge involves leveraging technological advances to develop automated and integrated systems for real-time monitoring and reporting of animal health and welfare in premises and in transport.

Technology solutions need to consider the physical environment in which they will operate. Premises holding livestock may be large and open to the elements (e.g. heat, dust, rain), and may have little connectivity. Vessels have data connectivity considerations also, including connectivity between decks and transmission whilst at sea. The on-board environment can also be cold, hot, humid, dusty or wet.

The solution needs to improve the efficiency and effectiveness of assessment of livestock health and welfare indicators while being operable in all weather conditions and in confined spaces. Ideally, livestock and environmental observations need to be communicated in real-time within and from premises and offshore vessels. They also need to interface effectively with existing reporting mechanisms and technologies employed by DAWE and industry, where possible.

## Benefits of the solution

The solutions to this challenge have the potential to be commercialised and used across a range of agricultural industries in Australia and worldwide. Also, since consumers are increasingly demanding ethical meat production, the use of monitoring and reporting technology could provide producers with the ability to demonstrate their commitment to animal welfare. Further, it could facilitate superior livestock management.

By spending less time manually identifying stock unfit for export, or collecting multiple data points required for regulatory oversight, industry can focus more on animal husbandry. This will ensure livestock is well prepared for the export journey and provided prompt treatment, when necessary. Aside from improved animal health and welfare outcomes, automated monitoring and reporting will reduce the regulatory burden on industry, improve the quality of data obtained and streamline the reporting process of all operators across the export supply chain.

## How to apply

For information on how to apply, visit [business.gov.au/BRIL](https://business.gov.au/BRIL)