LiveCorp Supplementary Submission – voyage reporting

Review of Australian Standards for the Export of Livestock (ASEL) – Stage 2

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Introduction

This supplementary submission outlines in greater detail for the ASEL Technical Advisory Committee a project that is underway through the LiveCorp / Meat and Livestock Australia (MLA) research and development program in relation to voyage reporting.

The project was initiated as a result of the livestock export industry and the regulator both identifying the need and opportunity to improve and standardise the on-board reporting framework under the Australian Standards for the Export of Livestock (ASEL). Its objectives include:

- Improving the quality, consistency and ease of data collection, collation and use on-board by providing Australian Accredited Veterinarians (AAVs) and stock people with better tools that support their day to day activities and responsibilities;
- Enabling the collation of data more effectively through the standardisation of data collection content and methods;
- Providing new tools for the users of the data (AAVs, exporters, the regulator) to easily access and interrogate information from a central point; and
- Streamlining and standardising regulatory conformance with the daily reporting requirements under ASEL.

In addition, the project will build the technical platform to allow the introduction of greater automation (e.g. of temperature / humidity data) and the implementation of animal welfare indicators, when this project concludes (noting that some welfare measures such as respiratory character and faecal description are already included). It is an important part of the industry's commitment to continuous improvement in animal welfare and supporting the regulatory objectives of the government.

The project

The project has developed a smartphone app as the central collection tool. A centralised database with data analysis tools, and a user interface platform are also in pilot development. These tools will provide for a semi-automated data collection, analysis and reporting system that is more efficient, standardised and valuable than the current regulator managed framework. The system is currently being trialled and refined with input from AAVs.

Smartphone app

The smartphone app – known as LIVEX-Collect – provides the primary tool for data collection on-board. LIVEX-Collect consists of a series of forms / sections into which data is entered and viewed including:

1. Voyage details (date of departure, LNC, etc)
2. Daily deck records, including environmental information (e.g. temperature, humidity) and welfare measures (such as respiratory character, faecal type, and feed and water consumption).
3. Morbidity records:
    o Watchlist (list of animals under observation and diagnosis and treatments administered)
    o Medications (list of medications on board and their dose rates and withholding periods)
    o Mortality (numbers and details of all mortalities)
    o Post mortem (details of post mortems performed)
4. Load plan (electronic copy for reference)

The app provides the opportunity for data that is consistent / unchanged during a voyage to be only completed once and to re-appear as needed in the different reports. For example, the '*Voyage Details*' form is only filled out once, while the daily deck records and mortality / morbidity forms are completed daily, or as required.

Once entered into the LIVEX-Collect app, the data is then uploaded to a central database for storage, backup and aggregation. Data required for the daily reporting to government will either be produced into a separate report for submission to the regulator, or into an access point to the dashboard with the relevant data on environmental conditions, welfare information (e.g. respiratory character, faeces description) and mortality and morbidity details.

In addition, AAVs and stockpersons will be able to view certain reports or information on the app relevant to their activities. For example, the app provides a 'watchlist' function where the AAV or stockperson can access and review the details of the animals that they have identified for observation / treatment.

Smartphone app main menu

Daily records form

Example morbidity forms
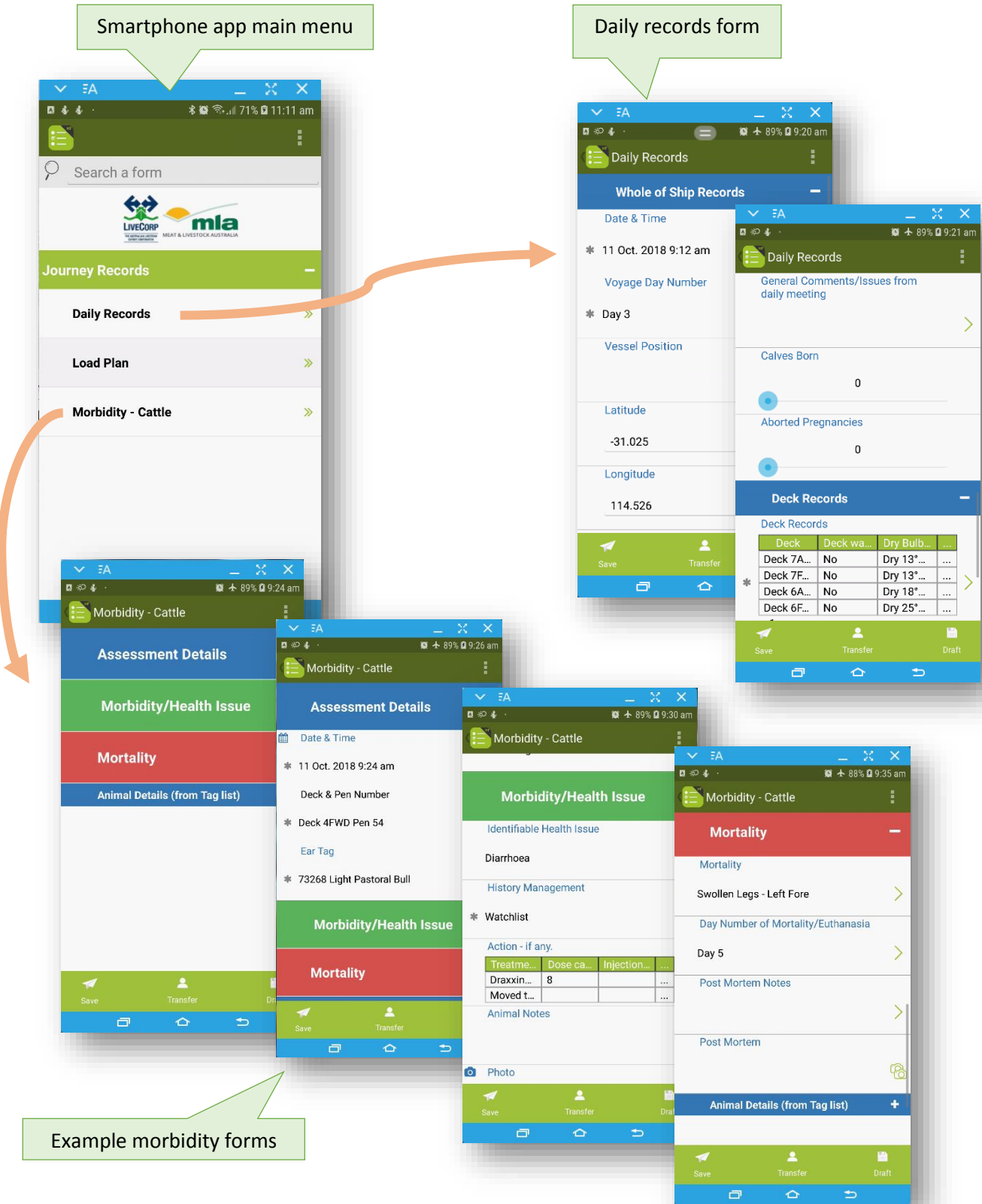
Database and dashboard

The central database and user interface are key elements of the system to enable quicker and more streamlined reporting. The database provides a central point for the data to be securely held where it can be aggregated and analysed for trends and issues. In the future, this would be expected to not only include data entered through the app, but also any information collected through automated monitoring.

The multi-level user interface built into the database will provide simultaneous access to the data configured to the purpose and relevance of the end user (e.g. AAVs / stockpersons, exporters or the regulator).

Through the user interface, AAVs and stockpersons will also be able to access the voyage data to produce meaningful, standardised, informative voyage reports tailored specifically to each voyage and report required.

The LIVEX-Collect system
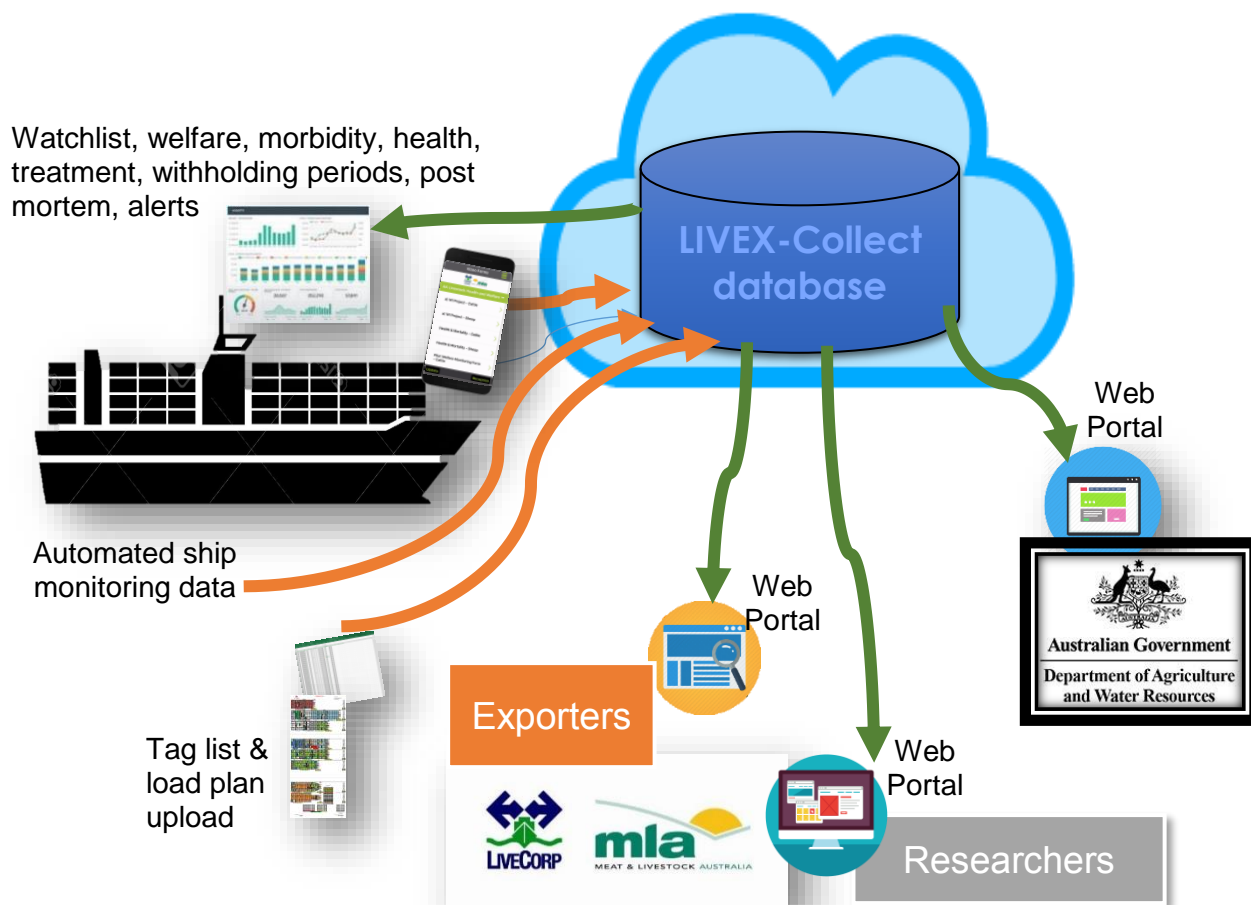
Project outcomes

Standardisation

The app is being specifically developed to improve the standardisation of reporting across industry so as to ensure reports are of a minimum good quality and allow better comparison and analysis of the data captured.

For example, the app standardises the form and data collected to meet the daily reporting requirements of the government. In addition, the morbidity form in the app is based on the Veterinary Handbook for Cattle, Sheep and Goats to ensure that the terminology used by AAVs and stockpersons when diagnosing and recording diseases and syndromes is consistent. Standardised terminology and format of reports will improve outcomes as it means that data can be more effectively collated and analysed for emerging or persistent trends / issues.

Example of a regulatory voyage daily report which has been designed to meet current ASEL standards.

Automation

In the future, automation of parts of the data collection on board vessels is likely to be an important component of an effective system. Opportunities for automation, in the current system and into the future, may include:

- Automated functions in the app: Including the automatic calculation of relative humidity (based on the wet and dry bulb temperatures) and medication dosages required for specific animals (based on the medication and tag list information uploaded to the app i.e. weight).
- Automated generation of a range of reports based on singular data entries: Unlike the current recording and reporting system, the new system only requires data to be entered once in order for a range of reports to be generated in various formats according to different purposes (e.g. daily or hospital pen reports for the department, morbidity reports for the exporter, or withholding treatment records for importers).
    - In the current trial process, the pilot voyage reporting system is operating in a semi-automated manner – that is, while the data entered into the app is automatically synchronised to the database, a third party is required to manually download the data in order to generate the required report. However, once the project is complete, the process will be fully automated.
- Automated environmental monitoring and other welfare indicator collection: As technologies are identified, developed and introduced into the livestock export system the data from these systems should be able to be automatically sent to the database for incorporation into reports (for example, if temperature collection is automated it would remove the requirement for the AAV or stockpersons to complete that field in the app).

Value for users

From the outset, this project has been acutely aware that full adoption of the new system will be critical to the value and integrity of the reporting output, and that achieving this in a positive manner presents numerous challenges. That is, the new system must completely satisfy the needs of the current system as well as providing additional benefits otherwise the users will continue to either use their old system, use both the new and old systems, or resent the new system – all of which will result in potentially inaccurate and incomplete datasets.
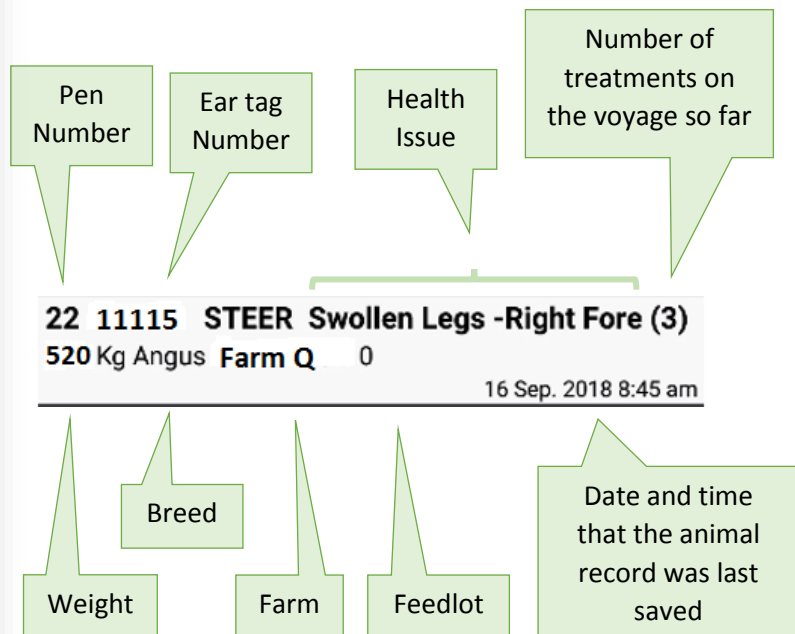
To achieve a sense of ownership and buy-in, this project is focusing heavily on building a set of tools that offer value and clear benefit to the users – for example, making the job of an AAV or stockperson more efficient and effective or allowing an exporter to review their performance or identify trends relevant to commercial incentives (e.g. the potential to identify line effects of livestock).

AAVs, in particular, are being engaged in the development of the app to ensure it is as user friendly and valuable to use as possible. This has resulted in some significant improvements, for example:

- The app allows for an electronic copy of the vessel load plan to be uploaded to remove the need to carry a paper based copy;
- Consignment tag and property lists for cattle can be uploaded to the app prior to departure so that the tag number, breed, weight, line etc for each animal is available for convenient access and does not have to be manually entered;
- A list of all medications used on livestock vessels is now incorporated into the app, together with their respective dose rates and withholding periods;
- The 'watchlist' tool in the app provides a comprehensive and convenient running list of animals under observation and what they have been treated with to date;
- The data recording app works offline and only requires connectivity to upload to the central database;
- The primary reporting tool is based on excel which is familiar to most users and requires little training; and

- The excel spreadsheet filters have been refined to optimise the ability for AAVs to interrogate the data and provide flexibility of the data to allow use in various formats.

Pen Number

Ear tag Number

Health Issue

Number of treatments on the voyage so far

22 11115 STEER Swollen Legs -Right Fore (3)
520 Kg Angus Farm Q 0
16 Sep. 2018 8:45 am

Weight

Breed

Farm

Feedlot

Date and time that the animal record was last saved

Example of a 'watchlist' on day 3 showing animals under observation and / or treatment.

Project conclusion

The app has been trialled by AAV's and stockpersons on 12 voyages as part of its refinement, however it has only recently been tested for use in supporting the daily reporting function. To date the focus has been on long haul cattle voyages, with the extension to other areas imminent. The LEP is seeking to roll out its use in the coming months in a manner that enhances engagement from AAVs and stockpersons. The objective of the LEP is for the app to be in use on all voyages within 12 months, with a suitable dashboard also available at this time – including for the regulator to view standardised and improved daily report data.