

# Remote Operations (Gamification) – Stage 1

Semi-Automated Beef Scribing User Interface

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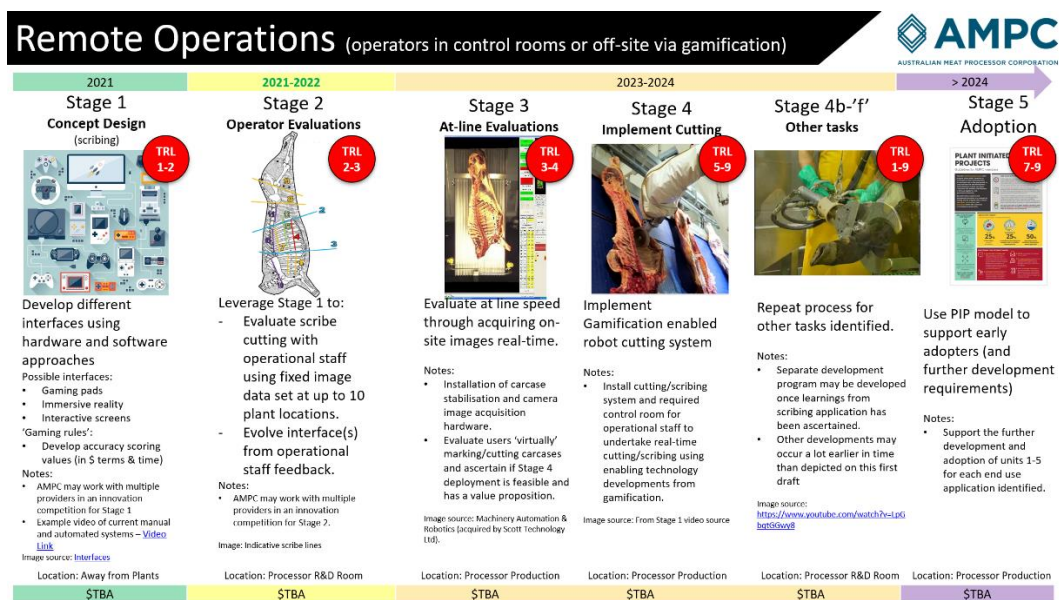
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## Project Description

AMPC (and the industry) have an innovation vision, and support R&D program, to eliminate all WHS incidents from processing operations. Where possible dangerous tasks will be fully automated. Where automation is not currently viable (either due to technology limitations or ROI), semi-automated/remote solutions will be developed that will remove the operator from dangerous tools and implements. Where semi-automated solutions are not viable then the remaining hands-on tools will be made as safe as possible (i.e. BladeStop and Guardian).

This project focuses on further developing solutions, and approaches, for semi-automated / remote solutions, with the first task being evaluated that of beef scribing. An Innovation Theme on a Page (ToaP) has been developed for this program of work (depicted within the Project Description) and shows both the proposed development stages of the area as well as implementing an innovation competition where more than one provider may be supported in the early stages to evaluate different approaches to the primary goal and secondary goals of Remote Operations via Gamification.



## Project Content

The methodology for conducting the project was as follows:

- ◆ Concept design for program including prototype UI and UX theme, interaction and program flow
- ◆ Program a basic proof of concept gaming/semi-automated platform for beef scribing cut placement. This will include a means for displaying images to an operator for marking of key points of interest which define the cuts.
- ◆ Continue development of platform with UI/UX kept simple and basic, but demonstrating the concept and interaction mechanisms. Implement concept 'gamer' options for interface.
- ◆ Recommendations on Stage 2 developments, timeframe, budget, third party inputs, expected interface using resulting accuracy and carcass marking cycle times.
- ◆ Perform site trials of the software for processor feedback.

## Project Outcome

This project successfully saw the design and prototype implementation of a gamified semi-automated scribing web user interface by Intelligent Robotics. The intent behind IR's approach was focused heavily on utilising the interface in the context of driving an automated system. The user interface concept consists of a number of modes: instruction mode, which teaches the operator about the interface and how to use the program; practice mode, which guides the operator on how to place and adjust markers and gives assistance when incorrect placements are given; test mode, which runs through a mock production situation, taking the operator through a series of carcass images and then grading them on accuracy and placement time; and production mode, which uses live images from production to drive a robotic cutting system.

The concept developed over a number of iterations through the course of the project, taking into account feedback from AMPC and processors, and also factoring in learnings from other projects occurring in parallel. The end result is an interface which received positive feedback and would be commercially feasible for driving a semi-automated beef scribing system. Work with both these processors is continuing to proceed to next steps for the technology.

## Benefit for Industry

There are a range of operations in meat plants that are dangerous, time consuming and hard to perform accurately. One such operation, is beef scribing. Beef scribing requires the holding of a saw and placing of a multitude of cuts on the beef carcass, and the primary objective of this project is to allow operational staff to undertake beef scribing without having to hold onto the saw. This reduces the risk of injury due to being removed from a powered saw.

Looking further into the future, the system is to be developed with the final solution involving a robotic solution that performs the cuts for the operations staff to remove people from the processing line.

The benefits behind this line up with AMPC's 2020-2025 strategic plan, including:

- 1) Removing staff from dangerous operations, via Hands-Off processing
- 2) Carcass Primal Profitability Optimisation, via accurate processing
- 3) Digitisation, via acquiring product information and leveraging data insights
- 4) Attraction, via demonstration and developing a wide range of operations
- 5) Retention, via improving working conditions and making tasks exciting
- 6) Development, via developing tasks that require higher skills and intellect
- 7) Safety and Wellbeing, via reducing the high-risk nature of processing operations

This will result in the project output, of a Successful demonstration of an AMPC evaluated beef scribing gaming interface.