

## TERMS OF REFERENCE

### Development of feedlot induction automation prototypes

#### Summary:

Meat & Livestock Australia (MLA) in consultation with the Australian Lot Feeders' Association (ALFA) is seeking MLA preliminary applications from individuals, organisations or project teams with the capability to develop prototypes for feedlot induction automation.

#### Background:

The Australian feedlot industry has a history of adopting leading-edge technologies that will improve operating efficiency, cattle performance and feedlot profitability. Interest in automation within the feedlot industry is increasing. In 2017, MLA commenced automation projects in feedlot induction automation. Two MLA reviews have been published including MLA Project B.FLT.0247 - Review of opportunities for feedlot induction automation; and MLA Project B.FLT.1004 - Feasibility of induction automation R&D. Aligned with the MISP (2020) strategic imperative of improving feedlot productivity and profitability, the feedlot industry wishes to continue to explore potential opportunities in this field.

#### Project Objectives:

- (1) Develop an induction automation prototype
- (2) Determine the value proposition (cost-benefit analysis) to the feedlot industry for the automation technology adoption or further R&D investment.

#### Methodology:

Whilst not limiting the capacity of the applicant to develop any particular methodology or technique it is envisioned that the methodology may include an assessment the following:

- proof of concept experiments
- calibration experiments
- on-site randomised feedlot experiments versus conventional practices

The methodology adopted must be scientifically robust and achievable within the defined project period to meet project objectives. Methodology presented in the MLA full application, must be of a standard and level of detail to be accepted into a leading scientific journal in the field of animal science or agricultural engineering.

All application's methodology must include a commissioning phase of appropriate length to ensure correct system operation, prior to commencement of the formal scientific experiment. Appropriate contingency for breakdowns in the main project should be planned if applicable.

Prior to experiment commencement Animal Ethics approval must be obtained if applicable, and maintained for the duration of the project.

All applications must include a suitably qualified on-site project manager to ensure that project methodology is achieved. Qualifications of the on-site project manager and track record of delivery of projects should be included in the Full application. The on-site project manager should be located at the feedlot or research site for the duration experimental work for the project.

Prior to submitting the MLA Full application, the applicant must identify research sites or feedlot collaborators if applicable and obtain their support for the MLA full application and methodology.

**Process:**

The MLA feedlot program project application process has two stages:

**Stage 1** - Applicants submit a preliminary application, utilising the MLA Preliminary Application form, addressing the Terms of Reference. Proposals will be scored against the selection criteria set out in the Terms of Reference.

Preliminary applications must not exceed four (4) pages. MLA will acknowledge receipt of each application. Applicants will be advised in writing of the success or failure of their preliminary application.

**Stage 2** - Should your preliminary application be successful, MLA will invite you to submit a full application, utilising the MLA Full Application form. Proposals will be scored against the selection criteria set out in the Terms of Reference. Final project approval will be subject to contractual agreement between the applicant/s and MLA.

In particular, the MLA Full Application should detail:

1. Detail the approach that will be adopted to address the project objectives.
2. Detail the specific work activities proposed and timelines for their achievement.
3. Provide details of the information/data to be collected, collated and assessed and how these activities will be undertaken.
4. Include a detailed and fully costed budget that covers all the resources required to undertake the work, including details of basis for charging (daily fees, number of days, expenses, etc.).
5. Propose a payment schedule, taking account of the following:
  - Progress payments may be negotiated against project milestones if the size and timescale of the project warrant this. The proposal should propose milestones and payments if required.
  - A minimum of 20% of the project budget must be retained for payment against the final milestone.
  - Payment of fees will be upon MLA acceptance of the attainment of the project milestones.
  - A detailed ex-ante economic Benefit Cost Analysis must be included in the full application for all market categories of Australian feedlot cattle that the research project will utilise to demonstrate the potential economic viability of research treatments. The research application should provide references for assumptions of the analysis where possible to ensure they are reflective of current industry conditions and past research literature. This analysis is in addition to the minimum requirements for information on Benefit Cost-Analysis outlined in 'Live export, grainfed beef and goat levy funded research development and adoption programs: GUIDELINES for preparing MLA full proposals'.

**Selection Criteria:**

Applications will be reviewed by Meat & Livestock Australia, and selection of the successful proposal will be based on assessment against the following criteria:

**Stage 1:**

1. Background of Proposed work
2. Outputs, outcomes and impacts of the project
3. Quality of Brief Project Design and Methods to achieve project objectives
4. Quality of Preliminary Budget
5. Value for Money of Preliminary Budget
6. Delivery Timeline

**Stage 2:**

1. Applications fulfilment of the methodology and terms of reference requirements of the project.
2. Quality of the methodology to achieve project objectives.
3. Quality of budget justification.
4. Value for money of application.
5. Quality of ex-ante economic Benefit-Cost analysis
6. Impact of proposed output on feedlot industry profitability and/or sustainability
7. Delivery timeline.

**Reporting Requirements:**

The successful applicant will provide milestone reports (if required) and a final report giving full details of the results of the work. Milestone and final reports will be prepared in line with MLA report guidelines and delivered in Microsoft Word format.

In addition to MLA standard reports, the following will also be provided to MLA at the time of delivery of the Final report:

1. a copy of all project data, including meta-data
2. a Microsoft Power-point presentation summarizing key project outcomes

MLA encourages publication of project outcomes (upon MLA approval) in relevant scientific journals. Journal publication costs if required to be supported by MLA, should be included in the budget.

**Timing:**

The duration of the project must not exceed 2 years from project initiation to delivery of the revised final report. However, delivery timeline is a selection criterion at both stages of application assessment and speed to delivery of outcomes for commercial industry will be viewed positively.

**Budget:**

Indicative budget for the FY20 (Jul 1<sup>st</sup>, 2019 to Jun 30<sup>th</sup>, 2020) financial year is \$250,000 AUD. There is no set budget for the total project however, applicants should deliver a fully justified budget to achieve project objectives. Value for money is a selection criterion at both stages of application assessment.

**Meetings:**

The applicant needs to allow for two half-day presentations/meetings with the MLA Feedlot Project Manager, one at project inception and one at the stage of delivery of the final report. The MLA project manager will travel to the applicant in all cases.

The successful applicant shall report directly to Dr. Joseph McMeniman, MLA Feedlot Project Manager.

**Confidentiality and IP:**

Where further information is available which may assist the successful applicant in meeting the requirements of the project, MLA will provide such information to the successful applicant.

All data and cited references must be acknowledged appropriately in the final publication and it is the sole responsibility of the applicant to ensure copyright laws are not breached.

The successful applicant will be required to enter into a standard agreement with MLA.

**Conflict of interest:**

Applicants, research teams or subcontractors with any potential conflicts of interest, should thoroughly outline these in this application, including how they propose to manage them, if applicable.

**Project Proposal Submissions:**

To access the MLA Preliminary and Full application templates (Grain-Fed, Live Export & Goats), go to [www.mla.com.au](http://www.mla.com.au) and follow the links to Research and Development, then Funding opportunities and Research organisation funding to download the applications.

MLA applications at either stage must be lodged electronically as Word document to: [applications@mla.com.au](mailto:applications@mla.com.au)

Stage 1 MLA Preliminary Applications must be received by Tuesday 30<sup>th</sup> April, 2019 at 5pm (Queensland time).

Stage 2 MLA Full Applications must be received by Monday 3<sup>rd</sup> of June, 2019 at 5 pm (Queensland time).

Strict adherence to the time deadline for applications will occur. Applications received past the deadline will not be assessed. Applications not received in the standard MLA application template will not be assessed.

**Further Information:**

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