



Sugar Research
Australia

REQUEST FOR TENDER

E-network for rail-based cane transport systems

Proposals must be received by 12 December 2020

SRA Reference SRA-RFU-2020-IC007

This document has been prepared to provide information to assist prospective tenderers in the preparation and submission of proposals to establish real-time data gathering operating across the rolling stock and rail network.

Summary

Sugar Research Australia (SRA) invests in and manages a portfolio of RD&A projects that drive productivity, profitability, and sustainability for the Australian sugarcane industry. As an industry-owned company, SRA is committed to setting the right targets, managing research investments to maximise the likelihood of success, and ensuring the delivery and adoption of project outcomes and impacts across the Australian sugarcane industry.

SRA has identified that development of a monitoring and communication system operating across the rolling stock and rail network to increase efficiency, improve safety, and reduce costs is a priority for the Australian sugarcane industry.

In this context, SRA is seeking tenders from suitably qualified and experienced individuals or groups to undertake a program of R&D to identify and test suitable electronic identification and monitoring technology that can gather information from sensors and/or communications technologies across transport infrastructure to achieve increased efficiency, improved safety, and reduced costs.

Issue

Rail transport is identified as the most prominent of the four main themes identified in the recently endorsed SRA Recommended Sugar Milling Research Program. The development of a monitoring and communication system operating across the rolling stock and rail network would allow improvements such as more efficient and targeted condition-based maintenance, pre-failure intervention, more efficient autonomous consignment data, and improved safety.

Ageing track infrastructure and bins will lead to increasing maintenance demands, critical defects and issues with derailments and other failures. Sensors for track condition and axle/bearing temperature will allow identification of issues before costly derailments occur.

Individual bin identification is an enabling technology, supporting advanced network wide systems offering improved safety, operating cost, and reliability.

Other applications of sensor and communications technologies in the management of cane transport infrastructure and operations may be of benefit to the industry.

Expected project outputs

This investment will define technologies that can gather information from sensors across the rolling stock and rail network and communicate it to facilitate improvements such as more efficient and targeted condition-based maintenance, pre-failure intervention and more efficient autonomous consignment data systems. Other applications of sensor and/or communications technologies that can be applied to increase efficiency, improve safety, and reduce costs may also be investigated or prioritised for subsequent investigation.

Expected project outcomes

The technologies identified in this investment will allow:

- Prioritisation of activities within the estimated \$41 million spent on rail infrastructure each year
- Minimisation of damage and losses from derailments, estimated to cost industry \$2.2 million per year
- Electronic integration of consignment data from field to weighbridge
- Other applications of sensor and/or communications technologies that increase efficiency, improve safety, and reduce costs investigated or prioritised for subsequent investigation.

Proposal submission

Tenders must be submitted through the online Portal SugarNet

<https://grants.sugarresearch.com.au> .

All applicants should consult the Submission Guidelines available on the SRA website

<https://sugarresearch.com.au/research-investment/2020-21-research-project-investments/>

and also provided in SugarNet.

Tender proposals must include a detailed and fully costed budget and a formal payment schedule with milestones (up to two per year) and appropriate achievement criteria that match expected project progress.

Also, Activity and Milestone Timeline and Milestone Budget Calculator spreadsheets must be completed and uploaded as attachments through SugarNet using the templates supplied on the SRA website and in also in SugarNet.

An IP disclosure must also be completed and submitted through the online IP Record Portal; access to the portal and instructions including an instructional video can be found at

<https://sugarresearch.com.au/research-investment/intellectual-property/> . The completed

IP Register, generated as a pdf file from the IP Portal, should be uploaded as an attachment to the SugarNet application.

More detail on each of these is provided in the Submission Guidelines.

Expected project duration is up to 3 years, and total project budget will be capped at \$675,000 (excl. GST) with a maximum of \$150,000 (excl. GST) available in 2020/21.

Selection criteria and process

Selection of the successful proposal(s) will be based on the following criteria:

- The applicant or project team having:
 - A logical research plan and path-to-market
 - Demonstrated ability to conduct the necessary research activities, including appropriate experimental design and statistical analysis
 - A plan for collaboration with appropriate technology suppliers to assist with supply of products and product development to take viable options to market
 - Experience with appropriate technologies would be an advantage.
- The proposed project budget and in-kind or other contributions from the research organisation and any other participants in the research.
- The tenderer being a legal entity with which SRA can contract. The tender submission must describe and provide evidence of the legal status of the tenderer, including an Australian Business Number (ABN) if appropriate.

Tenderers must declare to SRA any matter or issue which may be perceived to be, or may lead to, a conflict of interest regarding their proposal or participation in supply of the services described. Tenderers must outline a strategy so that any actual conflict of interest will be avoided.

Project agreement and reporting requirements

The successful applicant(s) will be required to enter in to SRA's standard project agreement.

Milestone and final reports will be prepared in line with SRA report guidelines (see <https://sugarresearch.com.au/research-investment/forms/>).

The successful applicant(s) may also be required to prepare and/or contribute to short articles for dissemination in SRA and industry publications.

Negotiation

After short-listing, SRA may engage in detailed discussions and negotiations with one or more tenderers to maximise the benefits of the tender proposals submitted.

Useful background

The SRA Recommended Sugar Milling Research Program mentioned above can be found on the SRA website at <https://sugarresearch.com.au/research-investment/sugar-milling-research-program>

Further information

For further information regarding this tender, please contact Dr Stephen Mudge (Research Funding Unit Program Manager).

Phone 0436 924 252

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Submissions

Proposals must be lodged in SugarNet **by 12 December 2020.**