Research competition: Data Sandbox+

Following the success of the RSSB's 'Data Sandbox' competition launched in 2017, we are creating a new opportunity for academics, suppliers and innovators to make use of the vast quantities of data that the rail industry collects. The Data Sandbox+ initiative builds on the repository of data that was made available for the original Data Sandbox competition and includes new and refreshed content.

Scope

Getting more value from the data that the rail industry collects is a key enabler to improving performance and customer experience.

The Data Sandbox+ is a research competition, within the PERFORM programme, aimed at supporting research into novel use of data to improve service reliability and punctuality. The projects funded through this competition should build on existing feasibility studies (i.e. current Data Sandbox projects or others) or propose new approaches and ideas.

Proposals will have to deliver innovative data-driven solutions to the following key operational performance challenges:

- Predicting and minimising reactionary delays

- Understanding train movements

- Reducing dwell time variations

- Management of disruptions

- Better measuring and understanding performance and delays

- Other challenges, as identified by relevant owners (Network Rail; Passenger / Freight Operators)

The proposals must demonstrate a good understanding of the chosen industry challenge and an awareness of relevant research that has already been undertaken in the area.

Proposals are expected to generate new knowledge while addressing a specific challenge. The solutions suggested should have the potential to deliver a measurable impact (i.e. estimated % improvement on performance) and should be supported, if possible, by a relevant business case.

Submission guidance

This competition is encouraging the submission of two types of projects:

- **Feasibility studies**: these are defined as research intended to show the technical feasibility of the proposed concept or design; they are also aimed at the acquisition of new knowledge for developing such concepts and designs. In terms of Rail Industry Readiness Levels (RIRL)[1], these projects fall within level 3 - 5.

- **Demonstrator projects** (prototypes and trials): these are defined as projects intended to demonstrate and evaluate prototypes via testing. In terms of RIRL, these projects fall within level 5 – 7.

WHOLE-LIFE MANAGEMENT (9)

Continue incremental improvements using business as usual practices are undertaken or directed by asset owners.
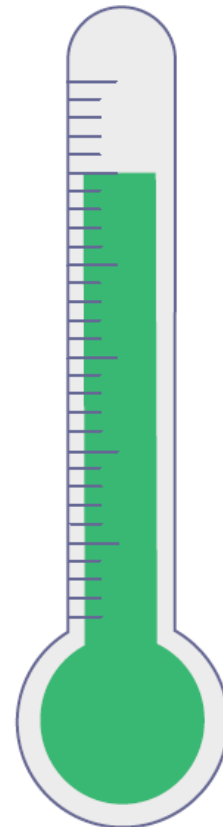
EXPLOITATION (7-8)

First of class deployment sees the concept earning value with end users acting as agents for delivery. Cost price and risk are all well understood.

DEVELOPMENT (4-6)

Promising ideas and concepts are developed and qualified by development and demonstration agents. Business plans are increasingly robust and end users are engaged with the concept being prepared for deployment.

INVENTION (1-3)

New ideas, emerging technologies are usually created in/by the academic/research/innovation agent domain, business plans are necessarily loose allowing the potential room to evolve and be understood.

---

[1] Rail Industry Readiness Level (RIRL): **https://www.rssb.co.uk/rail-technical-strategy/rail-industry-readiness-levels**

Eligibility and consortia requirements

- Organisations of any size can lead a project, this includes academia and supplier organisations.

- Applicants are welcome from all sectors.

- Inter-disciplinary collaboration is highly recommended. A successful submission is likely to consist of participants with a range of disciplinary perspectives and different expertise. The project team must include at least one individual with railway expertise.

- The lead organisation must be based in the UK; international partners are welcome to join consortia as long as a justification for their involvement is provided in the proposal.

- The bidding teams should secure the support of at least one organisation that is accountable for performance (i.e. a train operator, both freight and passenger, or Network Rail), either as partners or supporters. All projects are expected to benefit from a high degree of industry 'buy-in' to the delivery and implementation of research outputs.

- Each consortium must appoint a Principal Investigator (PI), who will be responsible for receiving and managing the funding. RSSB will contract directly with the PI's organisation.

Funding

Project duration is expected to be between 6 and 12 months, although we will consider longer projects on their merit.

This is a single-phase competition with a total allocation of up to £650,000, which will run continuously until the end of the financial year. We expect to fund 3 – 4 feasibility studies and 2-3 demonstrator projects.

Type of project	RSSB funding[2]	Match funding[3]
Feasibility studies	80%	20%
Demonstrator projects	60%	40%

---

[2] The percentage of funding indicated in the table refers to the percentage that RSSB will contribute towards the total project costs.
[3] The percentage of match funding indicated in the table refers to the percentage that the consortium will contribute towards the total project costs.

Match funding can be either a contribution 'in kind' or 'in cash', or a combination of both. Contribution from grants received from other sources cannot be counted toward the consortium contribution.

Upon award of funding, RSSB will issue a grant agreement. The lead organisation will be required to sign and return it within agreed date, or funding may be withdrawn.

RSSB will fund projects as can be afforded within the available budget. This will be dependent on proposals' quality and number of proposals received.

RSSB will pay 50% of the total funding contribution upfront and the remaining 50% at completion, upon acceptance of the final deliverable(s).

A sample agreement will be made available to interested bidders, who are encouraged to review it; however, no changes will be accepted unless under special circumstances. This will enable us to accelerate the procurement process.

What are the types of costs that the grant contribution could cover?

- Labour costs: these include the costs of personnel from the consortium organisations working directly on the project. The costs of project management as well as report writing are eligible and should be included within the labour totals.

- Travel and subsistence: these are costs incurred exclusively for progressing the project.

- Subcontractor costs: these include any work that is essential to the success of the project and that is outsourced (beyond the partners on the consortium). The reasons for employing each subcontractor, rather than including them in the consortium, must be clearly outlined in the proposal.

- Materials: these are the materials to be consumed on the project and purchased from third parties.

The following are ineligible costs:

- Interest, e.g. hire-purchase interest
- Patent costs
- Advertising
- Certifications
- Entertainment
- Training

The project should take into consideration time and resources required for regular project meetings (on a quarterly basis or at other periodic recurrence, depending on the project length) and dissemination opportunities. It is expected that the project team will proactively seek these; RSSB will also make relevant dissemination opportunities available throughout the life of the project.

Proposal format and guidance

We are expecting good quality proposals, clearly written and formatted. You must use the proposal template provided. Your proposal should be no longer than 12 pages and should include the following:

- **Description of the proposed research:** this section should include the project scope and objectives; methodology; breakdown of tasks; description of expected deliverables for each task and associated delivery dates.
- **Workplan[4]**: a Gantt chart or other graphic representation comprehensive of milestones, tasks and deliverable dates.
- **Pathway to impact:** this section should include a high-level description of the overall implementation journey of the project. It should also highlight the potential wider industry benefits. This section is expected to be kept live during the life of the project, if successful.
- **Justification of resources:** clear and transparent breakdown of costs, using the template provided.
- **Track record and industry support**: a list of all consortium members and supporters. For the consortium members, it should specify the relevant expertise that each investigator will bring to the project.
- **Short summary** (half A4 page).

Please note that the assessment panel may request additional clarifications or ask that a proposal is resubmitted, if it does not meet the required format.

Evaluation criteria

All proposals will be reviewed by a panel of experts and assessed according to the following nine criteria:

Novelty of the idea

1. Relevance to the scope of the call.
2. Originality of the proposed work.
3. Potential scientific merit and contribution to knowledge (for feasibility studies) or key role in de-risking and progressing the route to market journey (demonstrator projects)

Demonstrated delivery capability

---

[4] It is expected that, if successful, the workplan is updated regularly by the project team and is discussed during the project update meetings.

4. Ability of bidding team to deliver the research.
5. Probability of technical success, acknowledgment of risks and relevant mitigation actions.
6. Evidence of strong industry support and engagement that is committed for the life span of the project.

Resources and management:

7. Clear and transparent breakdown of resources. Your proposal should include a clear narrative description that demonstrates:
   - 'value for money' of the proposed idea;
   - all costs associated with the project have been identified;
   - the level of commitment of match funding.

Potential impact:

8. Quantified potential benefits for the industry.
9. Evidence of sound rationale of next steps and possible 'routes to market'.

Criteria will be weighted evenly and scored out of 3:
- 0 = Does not meet the criterion
- 1 = Significant concerns about ability to meet criterion
- 2 = Minor concerns about ability to meet criterion
- 3 = Confident that response fully meets criterion

How to apply

Download the project proposal template, the master pricing sheet and the grant agreement from the competitions' online hub: https://rssb.wavecast.io/data-sandbox-plus

This competition will run continuously until the end of the financial year, until when funds run out.

There will be two rounds of applications (April – July; September – December); the second round will be subject to funding remaining from the first round. This will enable projects which are in a position to move forward and have a clear implementation plan to do so in a timely manner. The staggered approach will also enable more ideas to be put forward throughout the year.

The open and close dates are as follow:

Open date	Close date	Successful bids announced
4 April 2019	17:00 on 5 July 2019	August 2019
2 September 2019	17:00 on 6 December 2019	January 2020

All the proposals must be submitted via email to researchcompetitions@rssb.co.uk.

Please use "COF-DSP Proposal Submission" in the email subject.

The submission should include the following attachments:

- Project proposal using the feasibility study template provided (Word doc format)
- Master pricing sheet (Excel format)
- Any additional supporting information (i.e. letters of support etc.)

For any queries, please contact: researchcompetitions@rssb.co.uk