



AUSTRALIAN
ROVER
CHALLENGE

AUSTRALIAN ROVER CHALLENGE 2025

COST REPORT REQUIREMENTS

VERSION 1.0 6 NOVEMBER, 2024



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history.**



THE UNIVERSITY
of ADELAIDE

Requirements for the Cost Report

This document is to be read and interpreted together with the Rules and Requirements document for the 2025 Australian Rover Challenge. It sets out the requirements for the Cost Report, a deliverable of the challenge that is detailed in Chapter 7 of the Rules and Requirements document. This document is the source of truth, and supersedes any information in the Rules and Requirements document.

Contacts

For *any* general enquiries about the challenge, please feel free to use the general inbox which is monitored by a range of the staff involved with the challenge.

Australian Rover Challenge – General Inbox

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This is the best way to connect with the technical committee who develop and manage these rules.

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Changelog

Date	Version	Change notes
06/11/2024	V1.0	V1.0 release. Please read this document carefully in its entirety. Future versions may be issued if any errors are found or areas of clarification are needed.

Requirements

1. As part of the Australian Rover Challenge, teams are required to submit a cost report no later than 23:59 Australian Central Daylight Saving Time (ACDT) on 20 March, 2024.
 - 1.1. Teams will submit the report, in the format of an excel spreadsheet, and may undergo a brief dialogue with judges during the challenge at the request of the judges to ensure the validity of the report.
 - 1.2. The reportable cost of rovers and base station equipment is to be under \$35,000 Australian Dollars (AUD).
 - 1.3. Penalties will be imposed for egregious errors or omissions in the submitted cost report.
 - 1.4. No competition points are available for submission of the Cost Report.
2. Teams must submit an excel spreadsheet which clearly shows the component cost for all items making up their rover and base station systems (that is all equipment required to operate the rover at the Challenge). Teams are free to present this information how they please, however a suggested format is available [here](#).
 - 2.1. Electronic submission must be uploaded via a form on the ARCh website that will be sent directly to team leads before the due date.
 - 2.2. Multiple submissions are permitted, the last submission before the due date will be reviewed by judges.
3. Only those components which make up the intended final rover for the challenge event (more details on “final” rover components in the common questions below) make up the reportable cost and must be included in the spreadsheet.
 - 3.1. Team labour is not included in the reportable cost.
 - 3.2. Labour costs incurred from any party external to the team (including university workshops) is a reportable cost.
 - 3.3. Team software is not a reportable cost, unless it is required to operate the base station.
 - 3.4. Research, development and prototyping costs are not reportable.
 - 3.5. Equipment (hand tools, power tools, etc.) and plant purchased by the team are not reportable costs, and do not need to be factored into any component costs.
4. The price at which any member of the public can acquire the goods, components, or services must be reported in the cost report.
 - 4.1. Donations (whether cash or in-kind) are not permitted to discount the reportable cost of any rover items.
 - 4.1.1. If cash donations are set aside to purchase a specific rover component(s), the purchased component(s) must still be reported as the price that a member of the public

could acquire the component(s).

4.1.2. If a formal or non-formal agreement occurs between your team and a vendor for the discounted supply of components or other goods which make their way into the final rover system, the price at which a member of the public could acquire the item (without any such agreement or discount) must be included in the reportable cost.

4.2. This figure must include taxes (both goods and import taxes where applicable), along with shipping and handling charges associated with acquiring the component(s).

4.3. If such auxiliary charges are applied to a large order, and only some components in the order are part of the final rover system, the auxiliary charges can be apportioned to the component cost according to the retail price of said items.

4.3.1. For example, consider ten motor controllers (of equal retail price) purchased with shipping and handling of \$60, however only four motor controllers make up the final Rover system (accounting for spares, components used for testing, and damaged components which were replaced by others in the same order). The reportable cost for all motor controllers would be the retail price of four of the components, plus $4/10 = \$24$ attributed to the additional charges. The goods and services tax (GST) did not need to be factored in separately, as in Australia this is included in the retail price, and there were no import or other fees or taxes in this example.

5. For large orders of small parts, where it may be cumbersome to calculate the attribution of auxiliary charges to components that make up part of the rover system, the auxiliary charges may be omitted. As a rule of thumb, if the auxiliary charges (when apportioned to the component that makes up the rover system based on retail price) are less than \$5, the auxiliary charges may be omitted and the reportable cost is simply the retail price of the component.

5.1. For example, if an electronics purchase of 500 components (all components of similar value), attracts \$15 shipping and handling, this shipping and handling cost can be omitted when reporting the cost of the electronics components that form the rover system (if only a portion of the 500 components are on the rover).

5.2. In contrast, if the total cost of an electronics purchase of 500 components is mostly attributed to the purchase of 1 battery, then the apportioned shipping and handling cost must be reported.

6. Common Questions

6.1. Components manufactured by the team shall be costed according to the price of the materials required for the component. For example, 3D printed parts should be costed at the estimated material cost. An exception would be if the team were utilising a service provided by their university, for example 3D printing, then the typical price of this service (whether the team paid for it or not) would be the reportable cost of the printed component. If the line between your team's plant/equipment and the university's is not distinct, then report the larger cost.

6.2. All systems which are affixed to the rover during the challenge must be included in the cost report. This includes systems which are only on the rover for a single task, and components which are on the rover for all tasks. The cost of Excavation & Construction pavers and the dedicated payload (where applicable) which are deployed during the challenge must also be included in the the cost report.

- 6.3.** Estimations for the cost of small components such as fasteners and electronics may be made on an assembly or sub-assembly level. For example, the motor driver assembly may contain four motor driver sub-assemblies. The motor driver sub-assemblies may be made up of custom PCBs which have a cost, as well as a variety of small electronics. The cost of the small electronics may be estimated.
- 6.4.** Old components should be costed according to the price at which someone could acquire a like component today. In this sense, old refers to components which are outdated or are no longer commercially sold.
- 6.5.** Subscription fees are a reportable cost if they are required for the operation of the rover. For example, if a mapping service is required for the base station interface, or a telecommunications subscription for rover communications, or similar, the cost must be reported. If the subscription occurs on a monthly or yearly basis, then the total cost which the team has paid for the service/subscription in this challenge cycle must be reported.
- 6.6.** Spares or parts swapped on to the rover during the challenge weekend do not need to be costed. Only the components that make up the rover and base station systems during normal operation (no breakages, malfunctions, or other operation requiring repairs or a fix) should be included in the cost report.
- 6.7.** Any components which were charged in a foreign currency should be reported in the out-of-pocket equivalent in AUD. If the out-of-pocket equivalent in AUD is not easily known (for example a component purchased a long time in the past, but which is still sold at retail price in a foreign currency), then an exchange rate in the month leading up to the cost report may be used to calculate the reported cost of this component.