ASRW 2026

Bill of Materials Guidelines

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EUROAVIA

EXECUTIVE SUMMARY

Bill of Materials Guidelines for Airbus Sloshing Rocket Workshop 2026

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1 Introduction

The Bill of Materials (BoM) consists of a list of materials and tools required for the manufacturing and testing of the vector.

This document will be sent to the host of the final round as instructions on what equipment is required to be obtained for each finalist team. The hosts will follow the document and provide the finalist teams with the necessary equipment to manufacture, test and launch their vector. For this, the BoM should be as clear as possible. This can be achieved by providing the following: 1) Specification of the item; 2) link to a website in English of an online or physical shop, which the host of the final round can use to place orders.

Under normal circumstances, the local organiser will try to procure the specified item using the link(s) provided, however this is not guaranteed due to unexpected constraints such as shipping, taxes, etc. In case of an unsuccessful procurement using the link(s) provided, the local organiser may procure an equivalent of the specified item following the specifications provided.

Tools used are excluded from the budget for the team. However, the specifications of the tools should be provided in detail. A reference to an existing tool that satisfies the requirements may be provided for additional clarity. Similar to above, in case of an unsuccessful sourcing of the intended tool, the local organiser may procure an equivalent of the specified item following the specifications provided.

According to the Technical Regulations 3.3.2, no other materials other than the ones stated in the Bill of Materials will be allowed to be used for the vector. Spare parts and additional items should be included in the BoM. The BoM is considered frozen after submission and is the team's responsibility to ensure they have alternatives listed for their materials in case there are issues with procurement and acquisition (i.e. provide different website links, include options, etc).

Before the beginning of the Finals, the items will be inspected by the judges.

Please note: Section 3 only provides a principle for premade items that we accept and forbid. The items listed in the Bill of Materials will be approved on a case-by-case basis.

2 Document Description

The Bill of Materials should be a list of items used and consumed during the construction. Should items need to be sourced by the local organisers, the specification of the items and links to these parts should be included. **The cost should also include any taxes and shipping costs.** The required items will be sourced to the best of the local organisers' ability according to the information provided. No items (incl. tools) outside of the Bill of Materials will be allowed to be used by the teams.

The Bill of Materials should list the following items:

- Materials for manufacturing the vector
- Standard hand tools are excluded from the €500 budget but must still be listed in the BoM so the host knows what to provide. Only materials that stay on the rocket (consumables and hardware) count toward the financial limit.
- Consumables used during the design and manufacturing of the vector
- Specifications of the items (incl. tools) for the manufacturing of the vector:
    - A 'Logistics' category shall be included to describe: shipping costs (incl. taxes) of consumables, manufacturing materials, and pre-manufactured assemblies; cost of checked luggage to transport materials, etc.
    - A 15% price buffer must be integrated into the total budget calculation to account for price fluctuations and supplier variations
- (If applicable) For **ALL** 3D printed parts:
    - STL file
    - Specifications of the 3D printed parts
    - Nominated material of 3D printed parts
- **Should teams require to use the 3D printing capabilities of the local organisers**:
    - Nominated print settings of 3D printed parts (e.g. layer height, print speed, acceleration, infill, walls, etc.)
    - Please feel free to provide the full .3dp (or equivalent) file which contains the full print settings
    - NOTE: Print quality can vary from printer to printer due to numerous factors (e.g. calibration, external temperature, fan duct, etc.) and is not guaranteed
    - Current confirmed capabilities:
        - Method: FDM only (no resin printers)
        - Material: PLA

A more detailed list of 3D printing capabilities of the local organisers will be shared.

3 Premade Items & Onsite Manufacturing

It is acknowledged that teams may wish to manufacture some parts in advance for various reasons, such as using other manufacturing methods to minimize any issues, especially with 3D printing.

For avionics or any other electronic components pre-made items are allowed. However, these items should still be listed in the Bill of Materials and adhere to guidelines specified above.

The premade items should adhere to the key principles below:

- Simple parts or assemblies
- Reasonable manufacturing method
- Reasonable costing

Examples of reasonable and unreasonable premade items:

- Reasonable:
  - 3D printed parts/assemblies from PLA/PETG/ABS/resin/etc.
  - Laser-cut plywood or any other kinds of plastic
  - Pre-programmed flight computer
  - Electronics
- Unreasonable:
  - Monocoque rocket made out of CFRP
  - Complex assembly of any kinds, especially those that can't be dissembled
  - 3D printed parts/assemblies made of very advanced materials (e.g. titanium)

Please note: This list is indicative and NOT exhaustive. All premade items will be approved on a case-by-case basis, and all premade items shall be listed in the Bill of Materials and adhere to the guidelines specified above.

4 BOM Errors & Deductions

4.1 Scoring and Deductions Principle

The Bill of Materials (BoM) submitted with the Final Design Report is considered frozen. The Organizers will attempt to procure materials exactly as listed.

Errors in the BoM (e.g., broken links, vague specifications, or missing items) directly impact the team's ability to build their rocket and the fairness of the budget competition. The team should find ways to minimise such risks by adding multiple links, options, and reviewing their BoM frequently. Deductions will be applied to the Final Design Report score at the discretion of the judges. The total penalty will be determined based on the frequency and severity of the cases.

4.2 Common Errors and Examples

The following errors will result in penalties. Use the examples below to ensure your submission is compliant.

A. **Broken, Incorrect, or General Links.** Organizers will not search for your parts. If a link leads to a 404 error, a login wall, or a generic homepage, the item will not be purchased. It is highly recommended to provide up to three (3) alternative link options for each critical item to avoid procurement issues.

B. **Vague Descriptions or Missing Specifications.** You must specify the dimensions/quantity, material, type or specifications. Ex: If it is listed ‘glue’ and the organizer buys gluestick instead of Epoxy, the fault lies with the team.

C. **Omission of Logistics and Shipping Costs.** Since the Finals are an Assembly Phase, teams often bring pre-manufactured sub-assemblies. The cost to transport these items to the venue (e.g., checked luggage fees, shipping costs) is part of the rocket's lifecycle cost and must be included in the budget.

D. **Omission of Fair Market Value for Home Parts.** Teams are permitted to use pre-existing materials (e.g., 3D printed parts made at university, zip ties from home), but these cannot be free. To ensure fair competition against the 500 EUR limit, these must be listed at a standardized Fair Market Value (FMV) or the original purchase price.

E. **Listing Prohibited On-Site Manufacturing Tools.** The fabrication of custom tools (e.g., hot wire cutters, jigs) on-site is strictly prohibited due to safety regulations. All custom tooling must be manufactured before arrival.

4.3 Organizer Error Protocol

If a procurement error occurs due to a mistake by the Organizers (e.g., the team provided a correct link and description, but the Organizers purchased the wrong item), the team will not be penalized. The Organizers will rectify the issue immediately on-site.

The following table illustrates a comparison between a Non-Compliant (Penalized) and a Compliant (Approved) entry for a single custom item to ensure all regulatory requirements are met.

Criteria	Example A: Non-Compliant (Penalized)	Example B: Compliant (Approved)
Item Name	Fin Can	3D Printed Fin Can Assembly
Supplier / Link	www.amazon.com (Generic Home Page)	Option 1: https://example-filament-shop.com/pla-blue-roll (Direct Filament Source) Option 2: https://www.prusa3d.com/fr/produit/prusament-pla-jet-black-1kg/ https://www.atome3d.com/collections/prusa-filament-prusament-pour-imprimante-3d-france?srsltid=AfmBOoodLC3PdyVm8bBGA01vrCWjz-jK8ouWw_zLhcjROx11mO3btPeP) Option 3: https://example-filament-shop.com/pla-red-roll

Specification	"Plastic"	"Prusa PLA, 100% Infill, 0.2mm layer height"
Unit Price	€0.00	€15.00
Notes	"Printed at uni. Will build a hot wire cutter on-site to trim the edges."	"Price reflects estimated filament usage & machine wear (FMV). Part is pre-trimmed using a pre-made jig. Transport cost included in 'Logistics: Checked Luggage' line item."
Why This Score?	FAIL: • Broken Link: Generic homepage used. • Vague Spec: Material properties undefined. • No FMV: Listed as free despite value. • Safety Violation: Intent to build custom tool on-site • Missing Logistics: No transport cost for bulky item.	PASS: • Direct Link: Points to exact raw material. • Exact Spec: Material & print settings defined. • Fair Market Value: Estimated fairly against budget. • Safety Compliant: Pre-manufactured; no on-site tool building. • Logistics Referenced: Connected to shipping budget.

5 Amendments

The Bill of Materials should be submitted alongside the Final Design Report. However, should any amendments be required, these may be done within three weeks from the confirmation of acceptance to the final round. During this time, the teams shall also be available for questioning on the document by the host of the final round to aid in obtaining the desired materials.