

MACH-23 LAUNCH COMPETITION & CONFERENCE

Preliminary
Design Review



Mach-23 PDR Guidance

The Mach-23 Preliminary Design Review (PDR) will be in the form of a PowerPoint presentation where teams will introduce themselves, explain their Launch Vehicle & CanSat designs, any progress to date and safety aspects and risk mitigation in up to 20 slides. Presentations will be recorded by teams and submitted to the Mach-23 organisation team for examination. Presentations will be up to 20 minutes long. These will be reviewed in terms of mission concept, planning and safety, and teams will be provided with one A4 page of paper of feedback, followed by a virtual meeting to talk through this feedback.

Recordings are recommended to be done via Zoom, to include both the slide packs and presenters. Both the recording and a copy of the slides must be submitted by 5pm on Friday 3rd of February, 2023 on the UKSEDS Community Hub.

Timeline:

Deadline for submission of PDR slides: **Friday February 3rd, 2023**

Feedback presented to teams: **Monday February 13th, 2023**

Individual meetings with teams on feedback: **between February 14th- 17th 2023**

Best of luck, we look forward to seeing your designs!

Useful documents:

Presenting a PowerPoint presentation over Zoom - <https://support.zoom.us/hc/en-us/articles/203395347-Screen-sharing-a-PowerPoint-presentation>

Preliminary Design Review Background Information - <https://www.sciencedirect.com/topics/engineering/preliminary-design-review>

Preliminary Design Review - Advice on Best Practice for PDR

The Mach-23 PDR is designed to help progress teams ideas and show the reviewers that you have considered the safety and scientific ambitions of your mission with relevant planning.

Teams should not change the format of the PDR template provided. To avoid overcrowding of slides, we suggest the use of multiple slides when more information is required to be included. The total length of your presentation should not exceed **20 slides**.

The mark scheme for these presentations has been listed below.

	Section	Worth (%)	Detail	Marking
1	Mission Overview	17.5	<i>Overview of mission.</i>	Marks will be split into the following: <ul style="list-style-type: none"> - Up to 5% for a detailed mission statement - Up to 10% for detailed mission overview - Up to 2.5% for overview of team members and roles
2	Launch Vehicle Design Concept	25	<i>Overview of Launch Vehicle design concept, to describe design choices and provide justifications.</i>	Marks will be split into the following: <ul style="list-style-type: none"> - Up to 5% for justification of motor selection - Up to 5% for quality of included flight simulations - Up to 10% for overview of launch vehicle components, including payload integration - Up to 5% for plan of manufacturing process
3	Payload Design Concept	27.5	<i>Overview of CanSat Payload design concept, to describe design choices and provide justifications.</i>	Marks will be split into the following: <ul style="list-style-type: none"> - Up to 7.5% for overview of sensing systems - Up to 10% for outline of structure for sustainable CanSat - Up to 10% on plans for recovery and ground support
4	Risks & Mitigation	10	<i>Description of potential risks associated with your designs and plans for mitigation.</i>	Marks will be awarded for identification and mitigation of risks, for both CanSat and Launch Vehicle elements (up to 10%)
5	Project Management	12.5	<i>Overview of how the project will be managed throughout the duration of the competition to ensure completion by launch date.</i>	Marks will be split into the following: <ul style="list-style-type: none"> - Up to 5% on budgeting outline - Up to 7.5% on production of a project timeline
6	Conclusions and Progression	5	<i>Summary of the CDR stage and next steps for progression.</i>	Up to 5% will be awarded for a concise summary and detailing progression to the FRR stage.
7	Presentation style	2.5	<i>Formatting and Presentation Quality</i>	Up to 2.5% will be awarded for presenting in a clear manner, using the provided template.