



PROGRESS REPORT I

2020

THE AUSTRALIAN
UNIVERSITIES ROCKET
COMPETITION



1 INTRODUCTION

The first assessed deliverable for the AURC 2020 is Progress Report I. The purpose of this report is to provide an overview of each team's progression and to gain a better understanding of how each rocket project is being managed and executed.

As per the **AURC Competition Deliverables** document, the maximum length of the progress report is 20 pages. This page limit is from the introduction (p.1) to the conclusion; appendices are excluded from the page limit but are not to be used for storing run-over from the report body.

If your report exceeds the page limit, content past the 20th page (excluding the appendices) will not be marked. If completed in Microsoft Word or similar, the report must be written in size 12 pt Times New Roman, have 'single' line spacing and must be presented in a professional and consistent manner, alternatively the use of **L^AT_EX** or comparable typesetting software is also permitted.

1.1 Required Information

This initial progress report is to contain the following information as a minimum, further detail can be added as teams see fit. Marking allocation for each section is included in brackets and is further outlined in section 1.2 and the marking rubric.

- Executive summary (5%)
- Introduction (2.5%)
- Design overview (10%)
 - Brief overview of the rocket, its planned subsystems and functions
- Planning, safety and design verification (30%)
 - Problem definition and system requirements
 - Overview of design methodology and process
 - Overview on how the rocket design is to be verified
 - Details on design choices to enhance system reliability and safety
- Team management and organisation (40%)
 - Overview of team management structure and responsibilities
 - Overview of communication and conflict management
 - Overview of project budget
 - Overview of project timeline, milestones and launch schedule
 - Team/org. SWOT analysis
- Conclusion (2.5%)
- Appendices

Note that the presentation, formatting and language of the report will count for 10% of the total mark. This includes (but is not limited to) spelling and grammar, appropriate use of figures, concise explanations, referencing and well-presented layout. Standard (and critical) report components such as the reference list, table of contents, list of figures, list of tables, and cover page are also considered in this allocation of marks and should be included, they will not count towards the page limit.

1.2 Further Information

All teams and organisations are run differently and as such have their own strengths and weaknesses, do not fail to mention the weaknesses of yours, and how they can be addressed. Being creative yet realistic in your problem solving is critical to performing well. Don't be too generic, think about how you will manage issues specific to your team, highlight how your teams strengths will help you overcome threats. Ensure you explain why certain design choices, budgetary considerations and contingencies are put in place.

For your overall approach to the challenge; use the resources provided! One of our industry supporters, Shoal, has provided a systems engineering video for teams to utilise. It can be found on our website under the industry support tab (www.aurc.ayaa.com.au/support).

As can be seen in the grading matrix, certain components are capped at 5 marks. Overall, we would like to ask you to read it carefully. Don't forget to provide research supporting your non-technical decisions as well as your design.

Clear presentation is important. Do not confuse the encouraged brevity of components with the amount of thought required. Research is vital in producing a high-quality report. Spelling, punctuation, grammar and formatting errors will be heavily penalised. It is recommended that you proofread your work thoroughly and ensure it is readable, logical, free from errors and consistently formatted (e.g. dot point formatting is consistent).

Then finally: any academic referencing method is acceptable, but it must be applied consistently. Read the provided Grading Matrix carefully and if you have any remaining concerns, or queries, please contact aurc@ayaa.com.au or your teams coordinator.

1.2 Submission

You must submit your report as one consolidated PDF file through the submission portal on the AURC website (www.aurc.ayaa.com.au/submissions) by 11:59pm AEST, Friday 13th December 2019. Your file naming convention must follow *Team_X_Progress_Report_1.pdf* where X is replaced by your team number

AURC 2020 Progress Report 1 Marking Rubric

		0 Marks	3 Marks	5 Marks	8 Marks	10 Marks	Mark
Executive Summary, Introduction & Conclusion (10%)	Executive summary	No executive summary provided.	Poor or incomplete overview of the rocket, lack of understanding of competition category. Unclear project objectives and goals. The reader cannot make an informed judgement on the viability and success of the project.	Clear, concise and informative overview of the rocket and competition category, the project's objectives and goals. Discloses the project's (and payload) design challenges and the team's recommended approach. Provides sufficient information to allow the reader to make an informed decision of the project's probability of success.	-	-	
	Introduction & Conclusion	No introduction and/or conclusion provided	Fails to concisely summarise the project background or outline the purpose of the report. Too long or too brief to accurately capture the contents of the report.	Clearly summarises the background of the project and outlines the purpose of the report. Presents an overview of the team and its goals and projected milestones.	-	-	
Design overview (10%)	Brief overview of the rocket, its planned subsystems and functions	Little to no overview provided.	Insufficient to no detail of rocket systems for their intended functions provided. System does not comply with (AMRS) regulations or competition requirements.	Rocket design is incomplete or is not flight worthy. Model needs significant work before deemed suitable. Unsatisfactory motor selection criteria and selected motor. Little to no payload overview. Little to no overview of avionics provided. Aspects of the design fails to comply with the AMRS regulations and competition requirements.	Adequate rocket design that captures most elements of a rocket and provides enough detail for the selection of a suitable motor. Will need extra work to achieve a model suitable for detailed design. Satisfactory motor selection. Adequate recovery method selection which may be lacking in the required detail or could result in inappropriate descent rates. Brief overview of your payload. Overview of avionics details provided. System complies with all relevant competition and AMRS regulations but may have minor design flaws.	Matured rocket design that captures the critical elements of a rocket and provides sufficient detail for the selection of a suitable rocket motor. Satisfactory motor selection. Appropriate recovery method selection with safe proposed descent rates. Brief but informative overview of your payload and its intended purpose. Concise but informative overview of your current avionics details provided. Intended system complies with the relevant competition and AMRS regulations.	
Planning, safety and design Verification (30%)	Problem definition and system requirements	Fails to identify the design problem and system requirements.	Vaguely addresses the design problem and fails to identify all requirements of the system.	Concisely identifies the design problem and requirements of the system.	-	-	
	Overview of design methodology and process	No overview of design methodology and process provided.	Poor outline of procedures and processes to address design challenges. Team demonstrates inconsistent or ineffective decisions-making procedures and processes to implement changes.	Details the design process of how the design problems and challenges are addressed and validated Details how the team approaches the problem and processes / procedures to implement design decisions and changes.	-	-	

	Overview on how the rocket design is to be verified	No overview evident for rocket and design verification	Little information provided on design verification and testing methods Limited scope of testing methods Poorly justifies testing methods.	Provides several testing and design verification method. Poorly details testing methods and provides few methods. Satisfactory justification of various verification methods and	Demonstrates a variety of testing and verification methods. Adequately establishes the suitability of each testing method and verification for systems and hardware. Provides a satisfactory level of detail for testing and verification methods of several systems and hardware.	Concise details of the variety of methods used to verify system design and hardware. Identifies the suitability of each testing or verification method for various systems. Delineates the importance of testing different systems to different levels of scrutiny. Discloses details regarding testing, proving hardware, justifying proven hardware and method of testing.	
	Details on design choices to enhance system reliability and safety	No additional information provided on enhancing system reliability or safety.	Poorly identifies or defines unreliable and unsafe systems. Identifies at least 1 system that is mission critical and or are unreliable. Fails to adequately implement measures or describe measures to enhance system reliability.	Poorly identifies or defines unreliable and unsafe systems. Identifies at least 2 system that is mission critical and or are unreliable. Poorly implements methods or solutions to improve system reliability and safety.	Adequately identifies and defines unreliable and unsafe systems. Identifies at least 3 system that is mission critical and or are unreliable. Demonstrates that appropriate solutions or methods have been utilised to increase system reliability and safety.	Clearly identifies and defines at least 4 systems that are mission critical and or are unreliable. Justifies the system/s unreliability or mission criticality. Demonstrates that appropriate solutions or methods are utilised to increase system reliability and safety.	
Team organisation (40%)	Overview of team management structure and responsibilities	Little to no overview of the team management structure or responsibilities.	Poor overview of team management structure. Lacks detail on the responsibilities of various roles within the team. Demonstrates an uneven task allocation or inability to adequately to distribute tasks.	Concise overview of team management structure, roles and their responsibilities for the project. Demonstrates fair task allocation or justifies tasks allocation for various roles.	-	-	
	Overview of communication and conflict management	No communication or conflict management overview provided.	Little detail regarding team communication strategies. Fails to identify key stakeholders in the project and strategies of engagement. Little detail or poor implementation of conflict management strategies Fails to identify mitigation approaches for different conflict styles.	Some information detailing team communication strategies. Identifies few project stakeholders and little information regarding strategies of engagement. Some details regarding team conflict management and mitigation strategies. Identifies a conflict management approach for some conflict styles.	Sound overview of team communication strategies, with mention of specific processes and procedures. Identifies various project stakeholders with moderate information regarding strategies of engagement. Sound overview of team conflict management plans. Identifies some conflict management techniques for some conflict styles.	Concise overview of communication processes and procedures utilised to ensure efficient communication within the team. Identifies and demonstrates appropriate communication with various project stakeholders. Concise overview of team conflict management plans. Identifies detailed conflict management approaches for various conflict styles.	
	Overview of project budget	No budget is set out.	A minimal budget is set out. Clear issues and concerns are identifiable. Budget is not self-consistent. Contingencies are not considered.	Budget set out has moderate errors pertaining to quantities. Budget is largely self-consistent with little to no errors. Contingencies are not well-justified.	Budget is considerate of largely considerate of the relevant costs - omitting only few items. Contingencies are justified with minimal inconsistencies and errors.	Budget is discerning in its set out and is representative of any and all costs relevant to the project. Contingencies are strongly justified.	

	Overview of project timeline, milestones and launch schedule	No timeline is disclosed.	Unreasonable timeline and milestones are disclosed. Competition milestones do not align with project timeline. Lack of detail regarding launch opportunities and system preparation	All major competition milestones identified with a clear and well thought out plan of how and when they will be met. Reasonable project technical and management milestones are disclosed.	-	-	
	SWOT analysis	No SWOT analysis conducted.	Identifies few or misidentifies SWOT pertinent to the project and team. Poorly identifies impacts to team, project and stakeholders. Fails to implement sufficient minimisation/maximisation strategies for impacts of SWOT	Identifies few SWOT pertinent to the project and team. Identifies and details their impact on the team, project and stakeholders. Briefly outlines sufficient minimisation/maximisation strategies for impacts of SWOT.	Identifies at least 4 strengths, weaknesses, opportunities and threats to the project. Details SWOT impacts on the project, team and stakeholders. Details processes to maximise/minimise impacts of SWOT.	Identifies at least 6 strengths, weaknesses, opportunities and threats to the project. Details SWOT impacts on the project, team and stakeholders. Details processes to maximise/minimise impacts of SWOT.	
Formatting and Language (10%)	Formatting	Report is inappropriately set out, has no cover page, is inconsistent in structure and frequently repetitive. Report styles, headings and subheadings are largely inappropriate in the field of engineering. Tables and figures are frequently referenced or labeled/titled inappropriately. Referencing and/or lists for figures and tables is insufficient.	Report is only repetitive on few occasions. Structure, headings, subheadings, etc. are with only minor and infrequent errors. Labelling, referencing and titling is appropriate and errors are not common. Contents of the report are outlined well - errors are not common	Set out of report is of a concise, consistent and logical nature - strongly aligned with common system engineering principles of report writing. All necessary information is both internally and externally referenced in a concise, consistent and logical manor. Headings, subheadings, etc. are consistent, logical and concise. Report is not repetitive.	-	-	
	Language	Grammar, punctuation, spelling, etc. is frequency inconsistent and of a low and unprofessional standard. Frequent use of inappropriate terminologies. Report is not concise in neither structure nor linguistic technique as a whole. Frequent errors in spelling (Australian English).	Grammatical issues are few and far between. Punctuation is consistent with minimal and infrequent errors. Spelling errors are few and far between. Spelling is appropriate (Australian English) with little to no error.	Grammatical, punctuational and general linguistic technique is with little to no fault and consistent. Spelling is without error. Report is of a highly professional nature. Terminology is consistent and industry-aligned.	-	-	
						Total /100	