



National Aeronautics and
Space Administration

CCP-CQC-COOL-03.09

EFFECTIVE DATE: March 1, 2021

Cube Quest Challenge

**Deep Space Derby
and Lunar Derby**

Instructions for Competitors Obtaining Their Own Launch

Revision B, March 1, 2021

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NASA Centennial Challenges – Cube Quest Challenge		
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DOCUMENT HISTORY LOG

Revision	Change Description	Date
-	Baseline	September 7, 2016
A	Format updated in keeping with Rev C of CCP-CQ-OPSRUL-001, Operations and Rules Document, Clarifying and transitional sentences added, Introduction added, Schedule added, Checklist added for Competitor deliverables.	August 22, 2018
B	Flowchart added, Updated in include Artemis-1, Updated to reflect change in Deep Space distance req., Name of document shortened, Appendix A added Updated Document number to accord with the new format: CCP-CQC-COOL-03.09	March 1, 2021

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1.0 INTRODUCTION

A brief guide of the submittal process is given (see Figure 1) to allow a prospective team to assess responsibilities at a glance. Detailed explanations are given starting in Section 3. Sections 1 and 2 will give the context of the Cube Quest Challenge.

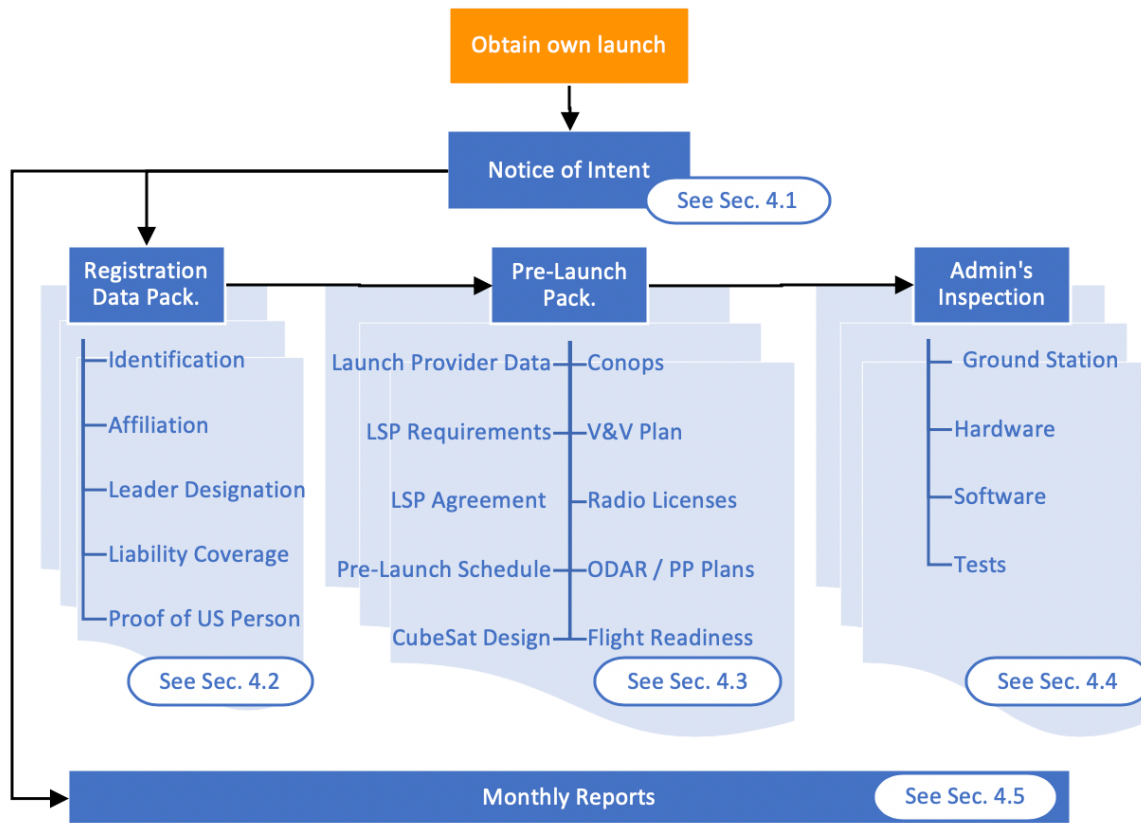


Figure 1: This flowchart describes the submittal process in chronological order.

The Centennial Challenges Program (CCP) is NASA’s flagship program for technology prize competitions

(https://www.nasa.gov/directorates/spacetech/centennial_challenges/cubequest/index.html). The program directly engages the public, academia, and industry in open prize competitions to stimulate innovation in technologies that benefit NASA and the nation. The CCP is an integral part of NASA's Space Technology Mission Directorate (STMD), which is innovating, developing, testing, and flying hardware for use in NASA's future missions. For more information about NASA's STMD, visit:

<https://www.nasa.gov/directorates/spacetech/home/index.html>.

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In 2015, NASA CCP announced the Cube Quest Challenge, in which Competitor Teams could vie for a launch on NASA’s first Artemis I and then compete in either the Lunar Derby or the Deep Space Derby. NASA invites teams that obtain their own launch to qualify and compete in these in-space competitions. The Lunar Derby takes place in lunar orbit. The Deep Space Derby takes place at a range of at least 3 million kilometers from Earth. Prizes will be awarded for various communications, navigation and longevity achievements.

A series of four competitive Ground Tournaments (GTs) were conducted between 2015 and 2017. The Ground Tournaments allowed NASA to gain insight into Competitor Teams’ spacecraft and mission designs and to award launch slots on Artemis I. At the final Ground Tournament, GT-4, three teams were selected for launch on Artemis I based on design and technical merit.

Competitor Teams that obtain their own launch may compete with the GT-4 winners for prizes by meeting the requirements in this document and in the *Cube Quest Challenge Operations and Rules*. Compliance with these requirements will be certified by Cube Quest judges or their designee.

Cube Quest Challenge Operations and Rules, hereafter referred to as “*the Rules*,” is available at <https://www.nasa.gov/cubequest/reference>. *The Rules* is the governing document of the Cube Quest Challenge. The *Rules* document provides registration instructions necessary for all teams that wish to compete. According to Rule 4.F of *the Rules*, Competitor Teams that obtain their own launch must also submit a separate Data Package. The contents of this “Required Data Package for Teams Obtaining Their Own Launch,” also called “Required Data Package for COOL Teams,” are described in this document.

1.1 Purpose of This Document

This document defines what information must be submitted to Cube Quest, and when, so that teams may qualify for prizes in the in-space competitions.

1.2 Definitions

The following terms are will be used in conjunction with and for the purposes of the Cube Quest Challenge. More detailed descriptions may be found in *the Rules* document.

- An “**administrator**” is a NASA employee who organizes Cube Quest Challenge activities.
- “**Artemis I**” is the NASA’s unmanned first lunar flyby mission of the Orion Multi-Purpose Crew Vehicle launched atop the Space Launch System (SLS), currently planned for launch 2021 from Launch Complex 39B at the Kennedy Space Center.
- A “**competition day**” is a 24 hour period that starts at the time each Competitor Team's stand-alone 6U CubeSat is deployed as indicated by their respective launch vehicle operator. Each Competitor Team will have their own start time at which their competition days begin counting.

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- “**Competitors Obtaining their Own Launch**” or “COOL” team is any team that intends to obtain its own launch to compete in Cube Quest’s In-Space Competitions.
- A **Competitor Team** is defined as any combination of one or more Team Members.
- **CubeSat integration date** – the date, per the launch service provider’s schedule and/or per the CubeSat developer’s schedule, when the Competitor Team’s CubeSat is planned to be integrated into the CubeSat dispenser (wherever the location) in preparation for launch.
- “**Deep Space Derby**” is a Cube Quest competition in which CubeSats that reach a range greater than 3 million kilometers from Earth compete for communication, distance, and longevity prizes from the Centennial Challenge Program.
- “**Ground Tournaments**” or “GTs” were a series of competitions in which teams’ CubeSat designs, plans, and presentations were judged for feasibility, safety, compliance with the *Rules*, and innovation. At the conclusion in 2017, three winners were offered a launch on Artemis I.
- “**In-Space Competition**” is the all-inclusive term referring to the Deep Space Derby and the Lunar Derby competitions.
- “**Lunar Derby**” is a Cube Quest competition in which CubeSats that achieve and maintain lunar orbit compete for propulsion, communication, and longevity prizes from the Centennial Challenge Program.
- “**Pre-Launch Data Package**” is a shorter name for the “Required Data for Competitor Teams with Non-NASA Launch package” referred to in *the Rules*.
- “the **Rules**” is an abbreviation for the CCP-CQ-OPSRUL-001 *Cube Quest Challenge Operations and Rules* document. The latest version of all relevant documents can be obtained at <https://www.nasa.gov/cubequest/reference>
- “**Required Data for Competitors Obtaining their Own Launch package**”, also known as a “Pre-launch Package,” is a collection of information defined within this document that must be submitted on schedule for a Competitor Team Obtaining its Own Launch to be eligible for prizes.
- “**SLS**” is an abbreviation of Space Launch System, an American Space Shuttle-derived heavy-lift expendable launch vehicle. It is part of NASA’s deep space exploration plans.

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2.0 APPLICABLE AND REFERENCE DOCUMENTS

Documents in Table 2-1 form a part of this document to the extent specified herein.

This document defines a subset of sections in *Cube Quest Challenge Operations and Rules* relevant to Competitors obtaining their own launch (COOL) teams. In addition, it requires submittals defined below in **Section 4.0**.

The portions of *the Rules* that do not apply to COOL teams are those portions referring to Ground Tournaments or Artemis I SLS (**See Appendix A**). With the caveat of those two exceptions, the *Rules* document has precedence and is the ultimate authority in case of any discrepancy between the *Rules* document and the materials included here.

Document users are responsible to verify they are using the latest version. The current revisions of all Cube Quest Challenge documents are posted at <https://www.nasa.gov/cubequest/reference>. This NASA Centennial Challenges website is the primary location for document access and updates. Hardcopy versions will not be available, except for inhibiting circumstances as determined by Cube Quest administrators.

Table 2-1 Applicable Government Documents

Document Number	Title	Revision
CCP-CQ-OPSRUL-001	Cube Quest Challenge Operations and Rules	See Appendix A for most recent
SLS-SPIE-RQMT-018	Space Launch System Secondary Payload Deployment System Interface Definition and Requirements Document	Baseline, March 16, 2015

3.0 INSTRUCTIONS

These instructions apply to every prospective Competitor Team that intends to obtain its own launch for purposes of competing in the Cube Quest Challenge In-Space Competitions.

3.1 Rules

Certification of having met the relevant requirements in *the Rules*, as defined above, must be granted by the Cube Quest judges or their designee to prospective Competitor Teams to be eligible for prizes. Teams will sign the Registration Data Package (see *the Rules Section 5.3*) to acknowledge team members shall comply with *the Rules*.

3.2 Eligibility, Registration, Responsibilities, Agreements

Eligibility requirements are given in **Rule 1** of *the Rules*. Team Responsibilities and Agreements are described in **Rule 2**.

3.3 Submittals & Schedule

To be eligible for prizes, COOL teams must submit the materials described in **Section 4.0** of this document to the address listed in **Section 5.0** and per the schedule laid out in **Table 3-1** below.

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The Cube Quest administration and judges will review each deliverable as they are submitted and respond with approval or further instructions. After final approval, the Cube Quest administration will authorize the team as eligible for prizes in the in-space competitions.

There are five required deliverables:

1. Notice of Intent (NOI) to Compete – to establish dialog with Cube Quest and begin the process.
2. Registration Data Package – to determine team eligibility and to affirm the team will comply with all rules and legal requirements (see *the Rules Section 5.0*).
3. Pre-launch Package – a series of submittals and requirements in the areas of safety, CubeSat design and interface, mission design information, radio operations, Planetary Protection compliance, and other items.
4. Schedule on-site inspection of CubeSat and Mission Operations Center by Cube Quest Challenge inspector at least 30 days prior to integration with the launch vehicle.
5. Monthly progress report.

The schedule for a team’s approval by the Planetary Protection Office (PPO)

(<https://planetaryprotection.nasa.gov/>, see “Contact NASA” link) parallels the steps for participating in the Cube Quest Challenge: teams should start a dialog with the PPO about their concept and destination when filing the Cube Quest NOI, a plan for complying with Planetary Protection follows, then a pre-launch report, and a post launch report with an end of mission plan confirmation.

Table 3-1 Summary of Required Submittals, in chronological order

	Team Submits	Due Date	Brief Description	Cube Quest Responds
1.	Notice of Intent to Compete	As soon as possible, but no later than 120 days before CubeSat delivery to launch service provider	Statement of intention to compete in the Cube Quest Lunar or Deep Space Derbies.	Cube Quest administrator acknowledges by email. Dialog is initiated with team to clarify instructions and to answer questions. Begins registration process.
2.	Registration Data Package	120 days before payload delivery to launch service provider	Specified in <i>the Rules</i> document §2.B and §5.3. Establishes that team abides by <i>the Rules</i> and provides information to determine eligibility for in-space competition prizes.	Cube Quest administrator declares team <u>officially registered to enter the</u> Cube Quest competition. NASA publicly announces the team’s registration.
3.	Pre-Launch Data Package	As available; no later than 90 days	A set of documents, approvals, and inspection criteria	Cube Quest administration and judges receive submittal items,

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	Team Submits	Due Date	Brief Description	Cube Quest Responds
		before the CubeSat is integrated into its deployer.	described in Section 4.3 of this document.	evaluate, and approve package. Cube Quest administration qualifies team to compete for in-space prizes.
4.	Cube Quest Administrations' Inspection Notice	90 to 60 days before CubeSat integration with deployer, to allow visit by inspectors 30 days prior to integration.	Team must arrange for a 2-day visit by Cube Quest inspectors to validate CubeSat design, ground station and mission operations center per Rules 4.F and 7 of the Rules .	Cube Quest will declare CubeSat to be compliant with Rule 4.F of the Rules . Inspection is final verification of submitted documentation and that the operations center appears as described.
5.	Monthly Progress Report	5 th day of each month	A report on schedule, budget, and progress towards launch per Rule 2.F of the Rules .	NASA will not make this information public except in aggregate form, to help assess the cost and pacing of innovation.

Submittal 1, Notice of Intent, must precede Submittal 2, Registration, and a complete Pre-Launch Package (Submittal 3) must precede the site inspection (Submittal 4). Monthly reports are expected from acceptance of Submittal 2 onwards. Any exceptions to this order or completeness of submittal may be addressed through the waiver process in **Section 3.4**.

3.4 Cube Quest Waivers

It is understood that schedules may slip, some documentation comes from entities beyond your control, and the stage of development may be radically different between teams entering this phase of Cube Quest Competition. Given that encouraging innovation is the main goal, requests for waivers may be considered by the Cube Quest administrators under certain circumstances. Waiver forms and contact information may be found in **Appendix B** of this document. Waivers should be pursued as soon as a team foresees difficulties in meeting either requirements or schedule.

4.0 DETAILS OF REQUIRED SUBMITTALS

The following sections specify the submittals and requirements.

4.1 Notice of Intent to Compete

The Team Leader (the qualified individual who will be designated Team Leader in the Competitor Team's Registration Data Package) shall send a "notice of intent to compete as a

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Competitor Team that obtains their own launch” by email to the Cube Quest Challenge email address: ARC-cubequestchallenge@mail.nasa.gov.

The Cube Quest administrator will acknowledge receipt of the NOI. Submission of the formal NOI enables the Cube Quest Challenge and Centennial Challenge Program to establish dialog with the Team regarding registration and the team qualification schedule, and to answer questions.

4.2 Registration Data Package

The Team Leader shall submit a Registration Data Package as required by *the Rules* §2.B, and §5.3.

Rule 1 of *the Rules* gives the eligibility requirements for the Competitor Team and the Team Leader. **Rule 2** provides the Competitor Team responsibilities and agreements for participation in the Cube Quest Challenge.

Upon approval of the Registration Data Package, the Cube Quest administration will respond with approval to enter the challenge competition.

4.3 Pre-Launch Package

Competitors that obtain their own Launch must submit a “**Pre-Launch Data Package**,” also called the “*Required Data Package for Teams Obtaining Their Own Launch*” in **Rule 4.F NLT 90 days before CubeSat integration**. NASA Cube Quest administrators and judges will use the data to assess the team’s entry and to declare the team qualified to compete in the Cube Quest Challenge. The submittals required for that package are listed in this Section (4.3).

4.3.1 Integrated Pre-Launch Schedule

A schedule must be submitted with calendar dates for each of the following:

- Launch Service Provider’s Data: Required documentation and planned completion dates
- Concept of Operations
- Radio Licenses
- ODAR and Planetary Protection Plan submission
- CubeSat design data
- Cube Quest administration site visit to validate CubeSat design data and ground station and mission operations center inspection
- Certificate of Flight Readiness from Home Institution
- Delivery date to launch provider

4.3.2 Evidence of Launch Service Provider Agreement, Requirements, and Validation Plan

Each team must submit documentation to indicate “buy in,” or agreement, of the launch service provider with the Competitor Team’s delivery plans. In addition, each team must provide any and all requirements imposed on them by the launch provider and how they plan to meet them. This may be combined with any schedules imposed by the launch provider. This documentation should demonstrate that the Team has adequate human resources, test facilities, test equipment, and any other resources required to validate the spacecraft for launch, with adequate margin.

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4.3.3 Concept of Operations

4.3.3.1 Cube Quest Mission Concept

Teams will draft a mission concept that includes the following:

- 1) Prize Attempts: Declare which in-space arena(s), and list all prizes that your team will attempt to win, as defined in *the Rules Sections 3.2.3, 4.7 and 4.8*:

Table 4-1 Competition Prize Lists

Competition	Competition Prize Categories
A. Deep Space Derby Prizes	<ul style="list-style-type: none"> i. Best Burst Data Rate ii. Largest Aggregate Data Volume Sustained Over Time iii. Spacecraft Longevity iv. Farthest Communication Distance from Earth
B. Lunar Derby Prizes	<ul style="list-style-type: none"> i. Achieve Lunar Orbit ii. Best Burst Data Rate iii. Largest Aggregate Data Volume Sustained Over Time iv. Spacecraft Longevity

- 2) Planned dates and times for each critical in-space event to be eligible for prizes as specified in the *Rules*. Critical events include: launch; CubeSat deployment; data transmission events intended for prize eligibility; and any other judged events.
- 3) Data Transmissions Eligible for Prizes: Each Competitor Team shall inform the Judges a minimum of 24 hours prior to the start of each operating period (as specified in **Rule 18.A** through **Rule 18.F** of *the Rules*). The details of eligible data transmission events and requirements are contained in the supplemental document Communications Procedure for Both In-Space Challenges (CommsProc), which can be found on the Cube Quest website: <https://www.nasa.gov/cubequest/reference/>
- 4) Competition Start: As reminder per the *Rules*, Competitor Teams that obtain their own launch shall notify the Judges within one day of their deployment confirmation. See **Rule 15.A** of *the Rules*.

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- 5) Competition End: For Competitor Teams that have arranged their own third-party launch, all activities for the purposes of the Challenge shall end exactly 365 competition days after their respective CubeSat deployment confirmation time, or exactly 365 competition days after the Artemis I launch, *whichever occurs first*. For Competitor Teams that have arranged their own third-party launch, data transmissions after 365 calendar days will only be used for longevity category entrants (and not for data burst rate or data aggregate volume or lunar orbit or farthest communications prizes). See **Rule 19.A through 19.D** of *the Rules*.

Other Mission Concept items include planned launch vehicle and trajectory, CubeSat deployment and navigation/propulsion; mission operations; ground operations; satellite communication concept (include planned spectra of communications); conceptual method for CubeSat disposal.

4.3.3.2 *Operation of Payloads (if any):*

If the CubeSat is carrying any subsystems or instruments used for purposes other than to win Cube Quest Challenge prizes, please supply the following:

- (i) Identify any science or demonstration payloads
- (ii) List payload requirements or science goals
- (iii) List operations constraints and schedule/milestones
- (iv) List extended mission goals, after completion of activities for Cube Quest prizes

Per Rule 2.G of *the Rules*, NASA will retain all Media Rights related to the story of the Challenge.

4.3.4 *Launch Service Provider's Data*

Cube Quest administrators require the following data to verify the launch service agreement.

4.3.4.1 *Launch Service Provider Contact Data*

Provide the contact information for the Team's chosen launch service.

4.3.4.2 *Copy of Launch Agreement*

Competitors shall submit the launch service agreement, with signatures or other indications of commitment by both the Team and by the launch service provider.

4.3.4.3 *Interface Requirements from the Launch Service Provider*

Submit a complete set of interface requirements, in original document and format provided by the launch service provider.

4.3.4.4 *Safety Requirements from the Launch Service Provider*

Submit a complete set of safety requirements, in original document and format provided by the launch service provider.

4.3.4.5 *Test Requirements Imposed by Launch Service Provider*

Submit a complete set of any test documentation given to the launch service provider, in original document and format, such as any vibration or thermal test results.

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4.3.4.6 *Other Supporting Material from the Launch Service Provider*

Submit a complete set of other supporting material not covered by interface or safety, in original document and format provided by the launch service provider.

4.3.4.7 *Schedule, Milestones Imposed by the Launch Service Provider*

Submit a complete schedule imposed by the launch service provider, including milestones for delivery, integration, launch, and events associated with deployment and relevant timing post-deployment, in original document and format provided by the launch service provider. This may be combined with Competitor team’s schedule, into a single integrated schedule. It shall include, at a minimum:

- (i) Development through Delivery including Launch Service Provider Reviews
- (ii) Post Delivery to Launch
- (iii) Post Launch to Deployment Operations

4.3.4.8 *Waivers Against the Launch Service Provider’s Requirements*

Submit a list of any completed, in-progress and/or planned waivers against the launch service provider’s requirements. Submit information indicating approval, or review status, by the launch service provider. Include contingency plans if planned waivers are not approved by the launch service provider.

4.3.5 **Radio Licenses**

Each team must provide copies of each FCC license for each applicable part of the communications chain (both in space and on the ground). If ground station services are being contracted to an outside entity, contact information and a copy of an agreement must be provided.

Provide copies of service agreements with third-party private or government ground station and network operators.

Include relevant details:

- (i) Required radio operation timing delays
- (ii) Radio operations constraints
- (iii) Spectrum management approval authority, authorized spectrum, and constraints
- (iv) Radio licensing requirements, name and affiliation of operator, other details

4.3.6 **ODAR Compliance and Planetary Protection Plans**

Each team must submit Planetary Protection Plans, End of Mission Plans, and Orbital Debris Assessment Reports (ODAR) that comply with legal and regulatory requirements as described in **Rule 17**.

For Planetary Protection, Teams will address at least:

- (i) The anticipated Planetary Protection Category of the mission under NASA directives;
- (ii) The steps intended to be taken for planetary protection compliance, including potential for affecting primary payload compliance;
- (iii) The mission operational accommodations to comply with anticipated requirements, including organizational responsibilities;

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- (iv) The steps to be taken for the preparation of flyby or orbital portions of the spacecraft to comply with any requirements for overall microbiological cleanliness and recontamination prevention prior to launch;
- (v) End of Mission disposal;
- (vi) The organization(s) responsible for implementing planetary protection requirements; and
- (vii) Timelines for delivery.

Provide to Cube Quest copies of NASA approvals for each of the Planetary Protection Plan, End of Mission Plan, and Orbital Debris Assessment Report and all other legal and regulatory ODAR and Planetary Protection approvals as may be required.

For guidance and instructions on ODAR and Planetary Protection submittals, contact Cube Quest administration.

4.3.7 CubeSat Design Data

Teams must comply with CubeSat Mass, Volume and Power Requirements of **Rule 4.A-4.F** of the *Cube Quest Challenge Operations and Rules* document.

Competitor Teams shall submit the planned or as-built, exterior dimensions and mass of their CubeSat in it's stowed configuration. Teams will show their CubeSat does not exceed the 6U size and mass requirements as defined in the latest version of the SLS Secondary Payload Interface Definition and Requirements Document (per **Rule 4.B** of *the Rules*). If CAD files or engineering drawings are submitted to substantiate the planned dimensions, they must be in a format such that the dimensions are legible.

Cube Quest administrators will validate the CubeSat design per the rules based on inspections performed during their on-site visit, one month prior to integration.

4.3.8 Additional Considerations

Teams should submit information regarding topics listed here if not already part of the Launch Service Provider's data:

- a. Battery charging, top off, inhibits in dispenser, other battery safety
- b. Post-delivery payload access requirements and constraints
- c. Other dispenser considerations
- d. Pressure vessels
- e. Other stored energy
- f. CubeSat mechanisms – stowage and deployment requirements
- g. Power up sequence after deployment
- h. Environment and qualification test requirements
- i. Parts containment inside the dispenser
- j. Materials compatibility/outgassing/liquid containment
- k. Deployment trajectory influences on mission plan
- l. Any EMI/EMC and payload compatibility testing

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4.3.9 Home Institution Certificate of Flight Readiness

Provide a copy of the final certification of flight readiness issued by the Team’s home institution (university or company) if any. If the Team is not affiliated with any university or company, then the Team will submit their own plan, criteria (such a environmental and acceptance test criteria), and declaration that they are ready to ship to launch in space.

4.3.10 Launch Service Provider’s Certificate of Flight Readiness

Provide a copy of the final certification of flight readiness issued by the launch service provider.

4.4 Cube Quest Administrators’ Inspection

Competitor Teams shall permit Cube Quest Judges, or their designee, to verify submitted documentation by inspection of ground stations, competition hardware and/or software, and component or subsystem tests before CubeSat integration with deployer. (**Rules 4.F and 7.**)

Teams must help Cube Quest inspectors schedule a 2-day visit, giving notice of proposed date 90-60 days in advance to allow time for travel arrangements. Inspections should occur no later than 30 days prior to integration with the launch vehicle.

Upon inspection, Cube Quest will declare the CubeSat to be compliant with the Rules 4.F. This inspection is the final verification that data packages, sites, and hardware meet requirements.

4.5 Monthly Progress Report

No later than the 5th working day of each month, submit a monthly progress report including:

- Assessment of Team’s progress toward all items scheduled in this document **Section 3.3 (Table 3-1)**.
- Briefly report technical, schedule and organizational issues and their mitigations
- Incremental and cumulative financial report as specified in Rules **Rule 2.F**.

5.0 SUBMITTAL ADDRESS

All correspondence shall be to the Cube Quest administrator Email address:

arc-cubequestchallenge@mail.nasa.gov.

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6.0 PRE-COMPETITION CHECKLIST

COOL teams and judges may use the following questions as a checklist for completeness of the team's entry into Cube Quest In-Space competition.

Table 6-1 Pre-Competition Checklist

#	Section	Eligibility Steps Towards In-Space Competitions	√
1	4.1	Contacted Cube Quest Challenge with Notice of Intent?	
2	4.2	Submitted Registration Data Package?	
	<i>The Rules</i> §5.3	Received declaration of eligibility to enter?	
3	4.3	Submitted Pre-Launch Package -	
	4.3.1	Integrated Pre-Launch Schedule?	
	4.3.2	Evidence of Launch Service Provider agreement, requirements, and validation plan?	
	4.3.3	Concept of Operations?	
	4.3.4	Launch Service Provider's Data?	
	4.3.5	Radio license application?	
		Approved radio licenses?	
	4.3.6	ODAR and Planetary Protection Plans?	
		ODAR and Planetary Protection approvals from NASA?	
	4.3.7	CubeSat design data?	
	4.3.8	List of any relevant additional considerations?	
	4.3.9	Home institution's certificate of flight readiness?	
	4.3.10	Launch service provider's statement of flight readiness?	
	<i>The Rules</i> §4.1	Received declaration of eligibility to compete?	
4	4.4	Has the CubeSat been inspected by Cube Quest administrators prior to integration with the LV provider's deployment mechanism?	
5	4.5	Have progress reports been submitted monthly until inspection?	

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APPENDIX A: PORTIONS OF THE RULES DOCUMENT THAT APPLY TO “COMPETITORS OBTAINING THEIR OWN LAUNCH”

1.1 Summary

In general, all portions of the Operations and Rules document (#CCP-CQ-OPSRUL-001) apply to Competitors Obtaining their Own Launches (COOL) except those mentioning

- Ground Tournaments
- Artemis I regulations.

Sections of *the Rules* are listed below, with tailoring categories of either:

- Applies: this item applies to COOL teams
- Tailored: portions of text that do not apply to COOL teams are shown in ~~strikethrough~~ notation
- FYI: this item is not required but may be useful

Each time the Operations and Rules are revised, this appendix will also be revised. This current tailoring appendix applies to Revision D of CCP-CQ-OPSRUL-001.

Paragraphs From CCP-CQ-OPSRUL-001 REVISION D	Page #	Applies to COOL?
1.0 Introduction	5	Applies/FYI
1.1 Definitions		Applies
2.0 Applicable and Reference Documents	7	Applies
2.1 Government Publications		Applies
2.2 Non-Government Publications		FYI
<i>Table 2-1 – Government Applicable Documents</i>		Applies
SLS-SPIE-RQMT-018: SPIE-0300: SPIE Secondary Payloads Interface Definition & Requirements Document (IDRD)		FYI
CQC-004-NNL-01: Instructions and Required Data Package for Cube Quest Challenge Competitor Teams Providing Their Own Launch		Applies
Required Navigation Artifacts for Authenticating Claimed Communication Distances and Verifying Achievement and Maintenance of Lunar Orbit		Applies
CCP-CQ-COMPRO-001: Communications Procedure for Both In-Space Challenges (CommsProc)		Applies

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Paragraphs From CCP-CQ-OPSRUL-001 REVISION D	Page #	Applies to COOL?
<i>Table 2-2 – Government Reference Documents</i>	8	Applies
2.2 Non-Government Publications		Applies
<i>Table 2-4 – Non-Government Reference Documents</i>		FYI
3.0 Challenge Overview	9	
Paragraphs 1, 5, 6, & 8		Applies
3.1 Judges and Judging		Applies
The Centennial Challenge Program will nominate a panel of Judges. Judges will be involved in every aspect of the Ground Tournaments and the Deep Space and Lunar Derbies (though individual persons may be assigned as replacements on occasion, as availability or needs arise).		Tailored
3.2 Competition Phases		FYI
3.2.1 Prize Payment		Applies
3.2.3 In-Space Prizes		Applies
<i>Table 3-2 – In-Space Prize Awards</i>	12	Applies
<i>3.2.3.1 Deep Space Derby Prizes</i>		Applies
<i>3.2.3.2 Lunar Derby Prizes</i>	13	Applies
3.3 Artemis I CubeSat Payload Delivery, Integration, and Launch		FYI
3.4 NASA-Furnished Resources		Applies/FYI
NASA will provide the following resources at no cost to registered Competitor Teams in addition to the documents identified in Section 2: <ul style="list-style-type: none"> • 6U Form Factor guidance • 6U dispensers for CubeSats selected for Artemis I launch • Dispenser integration services for selected Artemis I payloads NASA will provide contact information for a Secondary Payloads Integration Manager (SPIM) to the top 5 Competitor Teams competing in the Ground Tournaments.		Tailored
4.0 Competition Requirements and Rules	14	Applies

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Paragraphs From CCP-CQ-OPSRUL-001 REVISION D	Page #	Applies to COOL?
Competitors are responsible for understanding and compliance with the Ground Tournament (GT) Rules, the requirements of the SLS Secondary Payload Deployment System Interface Definition Requirements Document (IDRD), and with (when applicable) the Deep Space Derby Rules and/or the Lunar Derby Rules.		Tailored
4.1 Eligibility and Registration		Applies
Rule 1: Eligibility to Compete and win prize(s)	14-16	Applies
Rule 2: Competitor Team Responsibilities and Agreements	16-18	Applies
4.2 Artemis I Launch and Schedule		FYI
4.2.1 Notification to Competitors of Artemis I Deployment Trajectory		FYI
4.3 Design Requirements		Applies
Rule 4: CubeSat Mass, Volume, and Interface Requirements		Applies
Rule 4.A: shall meet SLS IDRD		FYI
Rule 4.B	19	Applies
Rule 4.C		Applies
Rule 4.D		Applies
Rule 4.E		Applies
Rule 4.F		Applies
Rule 5: Radio Frequency Authorization		Applies
Rule 5.A		Applies
Rule 5.B		Applies
Rule 5.C		Applies
4.4 Monitoring and Inspections	20	Applies
Rule 6:		Applies
Rule 7:		Applies
Rule 14.C backfill teams		FYI
4.6 General Rules Applicable to Both In-Space Challenges		Applies
Rule 15: In-Space Competition Start (“Start of Competition”)		Applies
Rule 15.B: notification of Artemis-1 deployment		FYI
Rule 16: Competitor Ground Stations		Applies
Rule 17: Planetary Protection	25	Applies
Rule 17.B:		Applies/FYI

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Paragraphs From CCP-CQ-OPSRUL-001 REVISION D	Page #	Applies to COOL?
Rule 18: Communications Competition Procedure for Both In-Space Challenges.		Applies
Rule 19: Competition End for Both In-Space Challenges	26	Applies
Rule 21: NASA to share Competitor Team accomplishments	27	Applies
4.7 Additional Rules for Deep Space Derby		Applies
Rule 22: Achievement and Maintenance of Verifiable Minimum Required Distance from Earth		Applies
Rule 23: Deep Space Derby Prizes		Applies
4.8 Additional Rules for Lunar Derby	28	Applies
Rule 24: Achievement and Maintenance of Verifiable Lunar Orbit		Applies
Rule 25: Lunar Derby Prizes	29	Applies
4.9 Additional Cube Quest Challenge Rules	30	Applies
5.0 Data Submission	31	Applies
5.1 Format		Applies
5.2 Method		Applies
5.3 Registration Data Package		Applies
Appendix A. Foreign Student Acknowledgement	33	Applies
Appendix B. Foreign Participant Acknowledgement	34	Applies

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APPENDIX B: WAIVER FORM

Originator team:	
POC:	
Date of Waiver Request:	
Waiver for what document or activity?	<input type="checkbox"/> Registration Data Package <input type="checkbox"/> Pre-Launch Package <input type="checkbox"/> Inspector's visit <input type="checkbox"/> Monthly report Other _____
Rule or requirement unmet:	
Request to:	<input type="checkbox"/> Delay until _____ <input type="checkbox"/> Omit
Reason Waiver is Requested (ie circumstances causing delay):	
Proposed Mitigations	
This Section to be filled out by Cube Quest Administrators	
Immediate Response:	Delay granted <input type="checkbox"/> Yes <input type="checkbox"/> No Requirement waived <input type="checkbox"/> Yes <input type="checkbox"/> No
Authorized Disposition:	
Rationale:	
Cause Classification:	<input type="checkbox"/> CQC <input type="checkbox"/> External authority <input type="checkbox"/> Competitor Team <input type="checkbox"/> NASA <input type="checkbox"/> Other
Administrator's Approval Signature and Date	

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