



Challenges

For Business



Submission Form Preview

Section 1: Introduction

Title *

Give your submission a catchy title that describes the idea and gets people interested.

Title

0/50



Short description

Provide a brief description of your idea. Be clear and concise.

Short description

0/140

Image



An Image boosts your message by illustrating your solution. Ensure your image is at least 650 pixels wide by 366 pixels tall for clarity.

Supported File Types: **PNG, JPG**



Upload Image

How did you hear about this challenge?

How did you hear about this challenge?

0/100

Section 2: Eligibility

Choose Your Team *

Category *

- 10k - COTS - All Propulsion Types
 30k - COTS - All Propulsion Types
 10k - SRAD - Solid Motors
 30k - SRAD - Solid Motors
 10k - SRAD - Hybrid
 30k - SRAD - Hybrid
 30k Multi-stage
 45k Multi-stage
 Non-Competitive Demonstration Flight

Category Change *

Is this a category change from the previous submission? (Yes/No)

- Yes
 No

Reason for category change.

You may only DOWNGRADE to 10k COTS.

Reason for category change.

0/5000

Student Lead (Name, Email, Phone number) *

Name, Email, Phone number (All Required)

e.g. Bugs Bunny,bugs@gmail.com,99 999-999-9999

Student Lead (Name, Email, Phone number)

0/3000

Alternate Student Lead (Name, Email, Phone number) *

Name, Email, Phone number (N/A if not applicable)

e.g. Bugs Bunny,bugs@gmail.com,99 999-999-9999

Alternate Student Lead (Name, Email, Phone number)

0/3000

Faculty Advisor(Name, Email, Phone number) *

Name, Email, Phone number (All Required)

e.g., Bugs Bunny, bugs@gmail.com, 99 999-999-9999*Faculty Advisor(Name, Email, Phone number)*

0/3000

Alternate Faculty Advisor(Name, Email, Phone number) *

Name, Email, Phone number (N/A if not applicable)

Bugs Bunny, bugs@gmail.com, 99 999-999-9999*Alternate Faculty Advisor(Name, Email, Phone number)*

0/3000

Team mentor (Name, Email, Phone number) *

Name, Email, Phone number

Bugs Bunny, bugs@gmail.com, 99 999-999-9999

Indicate if the individual(s) are certified from one of the Rocketry Organizations (Tripoli, NAR ...) This resource can also be your flyer of record, provided they are certified to the flight level, i.e., Tripoli level 3 for M motors and above.

Team mentor (Name, Email, Phone number)

0/3000

Flyer of record (Name, TRA Number, email, phone) *

Required for all teams.

Name, TRA number, Cert level, email address, phone. (Bugs Bunny, 9999, 3, bugs@gmail.com, 99 999-9999)

This will be the Tripoli-certified resource, certified to the flight level, which WILL BE AT THE EVENT and will be your team's official flyer of record.

Flyer of record (Name, TRA Number, email, phone)

0/3000

Flyer of Record Status *

Please check all that apply.

- Will be attending the IRECs a current Tripoli L3 certified flyer (Using M, N, or O Motor)Is a current Tripoli L2 certified flyer (Using L Motor)Currently has a Tripoli L2 certification but has an L3 cert flight plannedThe team is still searchingNA - Liquid Team

Section 3: Demographic Data

This is all members working with your project including those not attending the event. This will help ESRA promote the event and get more sponsorships and grants to help the teams improve the event.

Any changes to the team composition since the last report? *

Please include any changes to the number of students, gender identity composition, academic year, certifications, veteran status, etc.

Any changes to the team composition since the last report?

0/1000

Visa Status *

International Teams - Please provide an update on your teams' visa status. Specifically, identify the team members that have ALREADY received their visas and status for the other team members planning to attend.

Domestic teams - reply with NA.

Visa Status

0/5000

Section 4: Rocket Information

USE NUMERIC DATA ONLY. DO NOT INCLUDE UNITS WITH YOUR RESPONSE. ALL DATA SHOULD USE THE Metric SYSTEM FOR UNITS. (except where English units are requested)

Airframe Diameter (mm) *

Airframe diameter (mm)

(2-stage projects record the booster airframe here)

*Airframe Diameter (mm)***Number of fins ***

Number of fins

(2-stage projects record the booster fins here)

*Number of fins***Fin Diagram with dimensions ***

Submit a dimensional diagram of the fins, including angles.

Two-stage projects - include both booster and sustainer

Supported File Types: **PDF, XLXS****Choose File****Fin design discussion ***

Describe your fin selection process and how it has been optimized to help achieve the goals of your project.








Normal text

**Fin design discussion**

0/5000

Fin attachment *

Describe the method used for securing the fins to the airframe. Please include an image or video showing the fin attachment to the airframe.








Normal text **B** *I* U ~~S~~ x_2 x^2  \therefore $\frac{1}{2}$      

Fin attachment

0/5000

Fin Flutter Analysis *

Please describe the method and results used to determine the not to exceed flutter velocity or the divergence velocity.

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Fin Flutter Analysis

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Vehicle Length (Meters) *

Total vehicle length, tip to tail, when ready for launch . Include all stages. (Meters)

Vehicle Length (Meters)**Empty motor case/structure (kg) ***

Empty motor case(s)/structure (kg). Include the weight of the nozzle(s), liner(s), and forward closure(s)

Empty motor case/structure (kg)

Propellant weight (kg) *

All propellants (solid/liquid/gaseous), including any pressurizing gasses (kg)

Propellant weight (kg)

Payload weight (kg) *

Must be at least 2 kgs per IREC Rules (kg)

Payload weight (kg)

Total Vehicle Weight (kg) *

All vehicle, electronics, and recovery (kg), including propellant(s), motor case(s), and payload(s). Should be the sum of all the items above

Total Vehicle Weight (kg)

Center of Gravity (mm) *

Please enter the location of the center of gravity measured mm from the nose cone's tip.

Be sure to label this point on your competition rocket.

Center of Gravity (mm)

Static Margin *

The distance between the CG and the CP at lift-off is divided by the airframe diameter, measured in calibers. 1.5 is the highly recommended minimum.

Please detail the rationale for a lower or higher boost static margin in the section narrative below.








Numeric data only.

Static Margin

Couplers & Airframe joints *

Discuss each airframe joint, including couplers, shoulders, and attachment method(s).

Ref. DTEG 8.5 - Airframe joints that implement "coupling tubes" should be designed such that the coupling tube extends no less than one body tube caliber on either side of the joint - measured from the separation plane.








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Couplers & Airframe joints

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Rocket construction narrative/ additional information *

Discuss the construction of your rocket, including airframe, nose cone, composite materials, and identify commercial or SRAD components

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Rocket construction narrative/ additional information

0/5000

Section 5: Propulsion

For COTS - please provide the data supplied by [ThrustCurve.org](https://www.thrustcurve.org) to answer the following questions.

Motor Letter Classification

Select the Impulse level Classification for your rocket motor. For multi-stage, please specify your booster motor

LMNO

Propulsion Manufacturer *

Select the manufacturer of the motor

AerotechCesaroni (CTI)Loki ResearchAnimal Motor WorksSRADOther

Does the team already have physical possession of the motor? *

ESRA would like teams to be aware of the continued unavailability of Cesaroni (CTI) Motors.

YesNoN/A

Has the team already purchased the motor? *

Delivery times on motors can often time extend beyond 4 months

YesNoN/A

Manufacturers Designation

Provide the EXACT motor name as provided by the COTS manufacturer (e.g., M2020-P). Do not include the manufacturer's name -- just the motor name.

Manufacturers Designation

0/3000

Motor Diameter (mm)

Numeric data only (mm)

Motor Diameter (mm)

Initial Thrust (N)

Numeric Data Only (Newtons)

Initial Thrust (N)

Average Thrust (N)

Numeric Data Only (Newtons)

Average Thrust (N)

Maximum Thrust (N)

Numeric Data Only (Newtons)

Maximum Thrust (N)

0/3000

Total Impulse (Ns)

Numeric Data Only (Newtons seconds)

Total Impulse (Ns)

Burn Time (s)

Numeric Data Only (seconds)

Burn Time (s)

Propulsion Narrative

Provide details regarding your motor selection process and analysis.

Normal text

**B***I*U x_2 x^2 

Propulsion Narrative

0/5000

Section 6: SRAD Solid

This section is only filled out by teams using an SRAD Solid motor.

Motor Description

- SRAD Solid, XX pounds of aluminum-HTPB-AP composite propellant, YY Class, ZZZZ Ns.

Motor Description

0/1000

Maximum Pressure (psi)

Numeric data only (Pounds per square inch)

Maximum Pressure (psi)

Initial Kn

Numeric data only

Initial Kn

Peak Mass Flux

Numeric data only (lb/(in²*s))

Peak Mass Flux

SRAD Solid Motor simulation file

Upload Burnsim (bsx) or OpenMotor (ric) motor simulation files. For multi-stage rockets, include a simulation file for each motor in a ZIP file.

Burnsim

Note: Greg Deputy, owner, and developer of the BurnSim software, has offered free academic year licensed copies for competing teams. BurnSim printouts are required for SRAD solid category team reports.

You can download the software from his website.

Contact Greg directly with your Team name and ID # for your license key.

BurnSim@blastzone.org

<http://www.burnsim.com>

OpenMotor

OpenMotor is an open-source internal ballistic motor simulation program. The program can be downloaded from <https://github.com/reilleya/openMotor>

Supported File Types: , **BSX, RIC, ZIP**

 **Choose File**

Motor File

Upload the SRAD motor file(s) which was used in your flight simulation. This is the exported ENG or RSE file which contains the physical definition of the motor and its thrust curve data.










For a multistage rocket, include an SRAD motor file for each stage in a compressed ZIP file.

Supported File Types: , **ENG, RSE, ZIP**

 **Choose File**

Static Fire Methodology

Describe your static motor testing methodology. Include engineering, safety, and location discussions.

Normal text **B** *I* U ~~S~~ x_2 x^2         

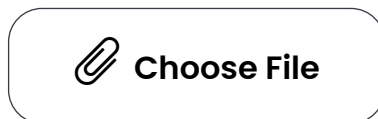
Static Fire Methodology

0/5000

Annotated Test Stand Diagram

Provide an annotated engineering diagram of your motor test stand.

Supported File Types: , **PNG, PDF**

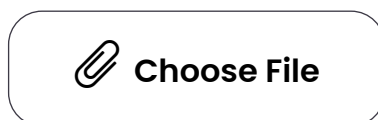


Static Fire Test Results

Static Fire Test Results must include the following data: Time Stamp (seconds), Pressure (PSI), Force/Thrust (Newtons or Pounds).

For multistage, include a file for each motor test in a ZIP file.

Supported File Types: , **XLSX, CSV, TXT, ZIP**














Static Burn Video

Please include a URL to the video highlighting your work if you have completed your static burn.

Static Burn Video

SRAD Solid Narrative

Provide details regarding your motor formula selection and analysis.

Normal text  **B** *I* U  \times_2 \times^2         

SRAD Solid Narrative

0/5000

Section 7: Hybrid/Liquid Motors (Engine)

This section is for Hybrid and or Liquid engines.

Annotated Engine Drawing

Provide a detailed, annotated engineering drawing of the hybrid engine (a lengthwise cross-section of the engine)

Supported File Types: , **XLSX, PNG, PDF**

 **Choose File**

Engine Function Description

Provide a description of how the engine works from filling, to ignition, to launch.

Supported File Types: , **XLSX, PNG, PDF**

 **Choose File**

Plumbing Diagram

Provide a detailed, annotated plumbing diagram, including ground support valves and pressure relief devices.


Supported File Types: , **XLSX, PNG, PDF**

 **Choose File**

Fire Control



Provide a fire control flow chart: arming, filling, monitoring, aborting, and firing of the motor.

Supported File Types: , **XLSX, PNG, PDF**

 **Choose File**

Performance Predictions

How are performance predictions obtained? (e.g., instrumented test fire, in-house software, empirical approximation, an educated guess is not sufficient)










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Performance Predictions

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Testing Details

Has the engine been tested? (hydro-test, injector flow tests, hot fire tests)

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Testing Details

0/5000

Engine Hot Fire Test - Video










Provide engine hot-fire test video.

This test is a completion requirement; however, it is not required until the final report.

Engine Hot Fire Test - Video

Ground Support Equipment & Testing

Please describe your team's GSE and testing, either completed or planned. Be sure to indicate the maximum operating range.











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Ground Support Equipment & Testing

0/5000

Cleaning

Describe oxygen cleaning and storage procedures for the engine and GSE. Are all materials in contact with oxidizing agents compatible?











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Cleaning

0/5000

Failure Mode Assessment

Specifically, discuss handling two failure modes: 1) loss of (RF) connectivity to the fill controller and 2) power failure of the FC during fill.








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Failure Mode Assessment

0/5000

Hybrid/Liquid Engine Narrative

Provide any additional details you wish to give about your engine.

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Hybrid/Liquid Engine Narrative

0/5000

Section 8: Predicted Flight Data and Analysis

The following stats should be calculated using rocket trajectory software or detailed hand calculations.

Recommended software: RockSim, OpenRocket, RASAero II

Launch Rail *

Specify in the narrative below if "other"

- ESRA Provided 17' Rail ESRA Provided Hybrid ESRA Provided Multistage Team-provided Other

Rail Length (feet) *

Write "17" if using ESRA provided rail
Numeric data only.

Rail Length (feet)

Liftoff Thrust-Weight Ratio (X:1) *

5:1 thrust to weight ratio is the highly recommended minimum for a single-stage and 8:1 for two-stage projects. Please detail the rationale for a lower ratio in the section narrative below.

- Numeric data only (just record X)

Liftoff Thrust-Weight Ratio (X:1)

0/3000

Launch Rail Departure Velocity (meters/second) *

30 meters/second is a highly recommended minimum. Please detail the rationale for a lower rail departure velocity in the section narrative below.

- Numeric data only.

Launch Rail Departure Velocity (meters/second)

Maximum Acceleration (G) *

Measured in G forces

- Numeric data only.

Maximum Acceleration (G)

Maximum Velocity (meters/second) *

Measured in meters/second

- Numeric data only.

Maximum Velocity (meters/second)

Predicted Apogee - meters above ground level (AGL) *

Meters above ground level (AGL)

- Numeric data only.

Predicted Apogee - meters above ground level (AGL)

Flight simulation file *

Please attach your Rocksim, OpenRocket, or RASAero II simulation calculation file.

Be sure your simulation considers the launch conditions at the contest launch site.


Supported File Types: **RKT, ORK, CDXI**

 **Choose File**

Flight Profile Graph *

A graph of altitude, velocity, and acceleration versus time in PDF format for the flight as planned.












Supported File Types: **PDF**

 **Choose File**

Predicted Flight Data Narrative

Use this field to discuss your flight profile. Additionally, include methods & software utilized to produce the flight data. Be sure to provide a detailed explanation of deviations from ESRA recommended flight parameters.

Two-stage projects please include a description of the flight profile and the means that will be used to inhibit ignition in the event of a non-nominal flight (to include the required altitude check strategy and a description of the tilt detection method if used)).

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Predicted Flight Data Narrative

0/5000

Section 9: Switches and Arming Electronics

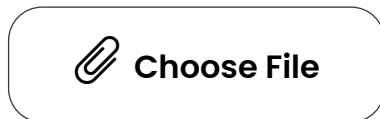
Wiring diagram (Required) *

Please add a wiring diagram in PDF format for your recovery electronics. The wiring diagram should only include the power source, switches, and recovery electronics.

Please identify any changes to the first progress report.








Two-stage projects - the wiring diagram needs to include the electronics used for staging ignition, stage separation, and recovery.

Supported File Types: , **PDF**

**Switches ***

Please describe all your arming switches: mechanical, magnetic, Bluetooth, others, and their ability to function under the expected load.

Note: Two-stage projects require a switch between the electronics that light the sustainer igniter and the igniter itself. WIFI switch may be used to arm the recovery electronics and arm the sustainer ignition circuit.

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Switches

0/5000

Redundancy *

Please describe the redundancy built into your recovery electronics.

Redundant flight computers that control the recovery events MUST BE COMPLETELY

INDEPENDENT of each other. This includes the switch, power, and electronics.

Redundancy

0/5000

Two-Stage COTS Staging Electronics

For two-stage projects only - what COTS staging flight computer is being used to light the sustainer?

Two-Stage COTS Staging Electronics

0/3000

Arming Sequence *

Please describe your arming sequence once the rocket is vertical on the pad. Also include discussion of required PPE and environmental conditions (noise).

Arming Sequence

0/5000

Switches and Arming Electronics Narrative *

Please add any additional detail needed to give the reviewers a clearer picture of your switches and arming electronics sequence.

Two-Stage projects - Specifically describe the mitigation procedures that will be used to prevent the sustainer motor from lighting on the ground.

Normal text



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I

U

~~S~~

x_2

x^2

Switches and Arming Electronics Narrative

0/5000

Describe all batteries in your rocket *

Examples:

- 1x cylindrical 18650 lithium ion in metal case
- 4x manufacturer-provided lithium polymer in metal pouch
- 2x alkaline 9V in metal case
- 6x CR2032 lithium primary coin cell

Describe all batteries in your rocket

0/500

Using team-provided ground power at the launch pad? *

Will your rocket use team-provided ground power at the launch pad?

 YesNo**Describe the batteries in your launch pad ground support equipment**

Examples:

- N/A if no pad ground support equipment
- 1x cylindrical 18650 lithium ion in metal case
- 4x manufacturer-provided lithium polymer in metal pouch
- 2x alkaline 9V in metal case
- 6x CR2032 lithium primary coin cell
- 10x sealed lead acid car battery in plastic case

Describe the batteries in your launch pad ground support equipment

0/500

Section 10: Recovery**Describe your recovery system; dual-deploy electronics, size, chute style, number of**

chutes, colors, decent rates, length of shock cord, and provide any additional detail not recorded in your recovery system as to parachute size(s) and color(s) and size and note shear pins size and quantity if being used."

"Chute Release" commercial products are no longer approved.

COTS Altimeter *

Enter the manufacturer and model of your COTS altimeter.

NOTE: IREC Design, Test, & Evaluation Guide 3.3.1

COTS Altimeter 0/3000

Deployed Payload - Recovery System *

If the payload is deployed, what is the recovery system?

Use the Payload Narrative field to provide details.

- Not applicable**
- Parachute**
- Parafoil**
- RC Controlled**
- Other**

Redundant Altimeter *

Enter the manufacturer and model of your COTS altimeter or enter SRAD for a student-built flight altimeter and provide detailed information in the Recovery Narrative below.

Redundant Altimeter 0/3000

Altimeter & Battery Drain Testing

Provide detailed testing methodology, test results, and video data for each altimeter. This must include battery drain testing. Although not required for this report, this will be a requirement for the third progress report.

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Altimeter & Battery Drain Testing

0/5000

Drogue Deployment Charges - Primary & Backup (g) *

Enter type of energetics (4F, Pyrogen, Co2), primary charge (g), backup charge (g)

e.g., Black Powder, 4g, 5g

e.g., CO2, 6g, 12g

e.g., CO2, 6g, Black Powder, 5g

Drogue Deployment Charges - Primary & Backup (g)

0/3000

Main Deployment Charges - Primary & Backup (g) *

Enter type of energetics (4F, Pyrogen, Co2), primary charge (g), backup charge (g)

e.g., Black Powder, 4g, 5g

e.g., CO2, 6g, 12g

e.g., CO2, 6g, Black Powder, 5g

Main Deployment Charges - Primary & Backup (g)

0/3000

Deployment Charge Discussion *

Detail the energetic system selection- BP, CO2, Mechanical, Other and how it operates

Include charge sizing calculations and testing data.

BP systems must include a method for ensuring comprehensive BP burning, especially at target altitude. Hint: 10K and 30K flights have different requirements.

Normal text



Deployment Charge Discussion

0/5000

Drogue Deployment Altitude (meters) *

Please add an explanation in the Recovery Narrative if drogue is deployed after apogee - Numeric data only.

Drogue Deployment Altitude (meters)

Drogue Decent Rate (meters/second) *

Enter the decent rate of the rocket under drogue in meters/second - Numeric data only

Drogue Decent Rate (meters/second)

Main Deployment Altitude (meters) *

Enter the main deployment altitude - Numeric data only

NOTE: IREC Design, Test, & Evaluation Guide 3.1.2 - no higher than 1500 ft

Main Deployment Altitude (meters)

Main Decent Rate (meters/second) *

Enter the decent rate of the rocket under the main chute in meters/second - Numeric data only








NOTE: IREC Design, Test, & Evaluation Guide 3.1.2 - less than or equal to 30 ft/sec

Main Decent Rate (meters/second)

Shock Cords and Mechanical Links *

Provide the following data for each shock cord used in the recovery system:

Material, Length, Strength, Attachment point & Mechanical linkage 1, Attachment point & Mechanical linkage 2, Notes.

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Shock Cords and Mechanical Links

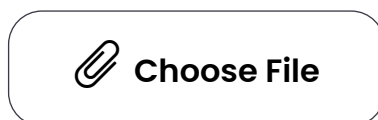
0/5000

Concept of Operations Graphic *

Attach a graphical representation of your predicted flight, from liftoff to touch down, demonstrating the flight.








This is not a flight profile graph but a pictorial graphic indicating liftoff, boost cutoff, boost phase, apogee, drogue deployment, payload deployment, payload function if deployed, main deployment, vehicle, and payload touchdown. Indicate speed (ft/sec), altitude (ft), time (sec), and distance from launch site (ft)

Supported File Types: **PDF**



Recovery System Protection

Describe the system(s) used to protect the entire recovery system. Include all potentially flammable material if using Black Powder ejection charges.

Normal text ▼ **B** *I* U ~~☒~~ x_2 x^2  \therefore $\frac{1}{2}$      

Recovery System Protection

0/5000










Recovery Narrative *

Provide any additional detail not recorded for your recovery system. such as

Provide detailed analysis and test data for all electronic components, especially SRAD elements. (Required for report three)

Additionally, identify every independently recovered part of the launch vehicle and its recovery scheme. As appropriate, identify its associated recovery events, means of the event triggering (e.g., barometric, magnetometer, other...), the redundancy of those event triggers, and the altitude at which those events should occur at. The more information we have, the better we can help you.

Provide additional details of your recovery system as to parachute size(s) and color(s) and size and note shear pins size and quantity if being used.

Normal text ▼ **B** *I* U ~~S~~ x_2 x^2         

Recovery Narrative

0/5000

Section 11: Radios and GPS Tracking

Reference: IREC GPS Tracking Requirement and Recommendations**GPS Tracker Manufacturer/Model/Location ***

Enter one tracker per line.

e.g.,

AltusMetrum, TeleGPS v3, Fiberglass Nosecone

SRAD, internal dev version, electronics bay

For SRAD trackers, add details in the GPS Narrative field.

GPS Tracker Manufacturer/Model/Location

0/500

Wavelength Band / Frequency Range *

2 m / 144.0 - 148.0 MHz 70 cm / 420.0 - 450.0 MHz 33 cm / 902 - 928 MHz

Licensed Team Member Name, Amateur Radio Call Sign *

If using an Amateur Radio band requiring a license, enter the name and call sign of the licensed team member. Write N/A if no amateur license required

Licensed Team Member Name, Amateur Radio Call Sign

0/3000

What country is the amateur radio licensed team member's amateur radio license from? *

Write N/A if no amateur license required

What country is the amateur radio licensed team member's amateur radio license from?

0/3000

Does that license country have a reciprocal operating agreement with the United States? *

Check <https://www.arrl.org/reciprocal-permit>

Yes No USA license Amateur radio license not needed

Does the amateur radio license allow use of the desired frequency, mode, and power in their home country? *

YesNoAmateur radio license not needed








What callsign will be used during the event? *

If using a non-US amateur radio license, callsign must start with W5.

What callsign will be used during the event? 0/3000

GPS Location & Telemetry *

Describe the location of the GPS Tracker and its ability to transmit a telemetry signal.








Normal text v **B** *I* U ~~S~~ x_2 x^2  $:=$ $\frac{1}{2}:=$      

GPS Location & Telemetry

0/5000

GPS Tracker Narrative

Fill this box out as completely as possible. For SRAD GPS Solutions, provide a narrative around your solution. The ability to easily change frequency, utilize APRS, and extensive testing of the solution must be included. The more information we have the better we can help you.

Normal text v **B** *I* U ~~S~~ x_2 x^2  $:=$ $\frac{1}{2}:=$      

GPS Tracker Narrative










0/5000

Section 12: Test Plan

Include all systems electronics, deployment, payload...

Planned Tests *

Please keep it brief. Use these headers in your response: Test Type, Date, Description, Status, Results.

Normal text ▼ **B** *I* U ~~ABC~~ x_2 x^2         

Planned Tests

0/7000

Section 13: Payload Information

NOTE: To compete in the SDL Payload Challenge, you MUST follow the instructions on the IREC Documents and Forms Page. The information provided here is so the ESRA safety reviewer can determine what impact the payload will have on the safety/stability of the rocket.

See <http://www.soundingrocket.org/irec-documents--forms.html>

Payload - Deployed or Attached *

Will the payload stay attached and recover with the main rocket recovery system or is it deployed and recovered independently?

Attached - recovers attached to the rocket recovery system

Deployed - recovers independently of the rockets recovery system

AttachedDeployed

Deployed Payload - Deployment Mechanism *

If the payload is deployed, how is it deployed?

Use the Payload Narrative field to provide details.

NADeployed with drogueDeployed with mainPayload BP Ejection chargePayload CO2 EjectionPayload MechanicalOther (Please detail in Payload Narrative)

Deployed Payload - Deployment Altitude (meters) *

Numeric data only.

Deployed Payload - Deployment Altitude (meters)

Deployed Payload - Decent Rate (meters/second) *

If the payload is deployed, what is the decent rate (meters/second)

Deployed Payload - Decent Rate (meters/second)

Deployed Payload - Altimeter *

If the payload is deployed and the recovery system on the payload is dependent on altimeter deployment, which altimeter is used?

Use the Payload Narrative field to provide details.

NANA, deployed with the drogueCOTSSRAD

Deployed Payload - GPS *










If the payload is deployed, what is the GPS tracking system?

Use the Payload Narrative field to provide detail.

NACOTSSRAD

Payload Narrative *

Please help us to help you, by filling this box out as completely as possible. Identify whether the payload is functional or inert. Include a description of its purpose (if applicable) and its recovery scheme (if applicable). The more information we have the better we can help you.

Normal text ∨ **B** *I* U ~~ABC~~ x_2 x^2         

Payload Narrative

0/5000

Payload RF Narrative *

Describe any radios in the payload, their purpose, if a license is required, when they begin and end transmitting, the peak and average power level, and antenna type. Feel free to add additional information to explain any radios in the payload.

Payload RF Narrative

0/5000

Section 14: Video Challenges

Are you participating in the Video Challenge? *

<https://www.soundingrocket.org/-video-challenge.html>

YesNo

Are you participating in the Live Video Challenge? *

<https://www.soundingrocket.org/live-video-challenge.html>

YesNo

Live Video Challenge Narrative *

If participating in the Live Video Challenge, describe all pertinent aspects of your implementation. At a minimum, include the frequencies used, if a license is required for those frequencies, what callsign would be used, transmitter type, transmitter power, modulation format, receiver type, camera type, video source, rocket antenna type and polarization, ground antenna type and polarization, what content will be displayed, output connection (SDI or HDMI), and output resolution and frame rate. Otherwise write N/A

Live Video Challenge Narrative

0/3000

Section 15: Additional Comments

Any other pertinent information *

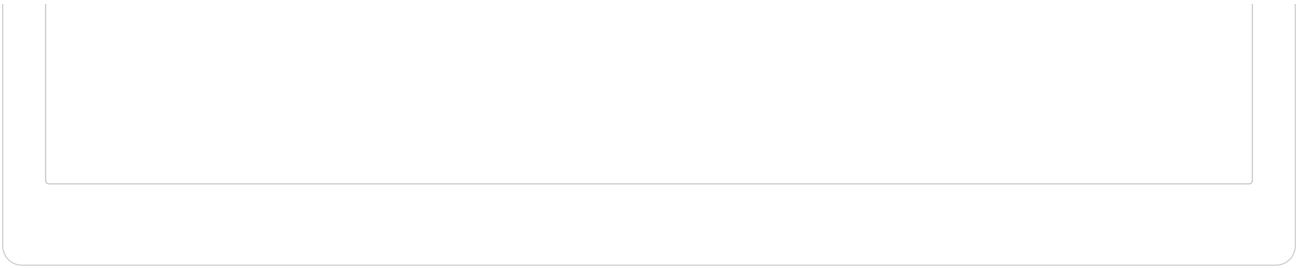
Add any information that clarifies or provides an additional narrative regarding your project.

Normal text



Any other pertinent information

0/7000



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Yes

No

