

Preliminary Design Review Judging Score Sheet

University:

Team Number:

Presentation Room:

Judge Initials:

The objective of the Preliminary Design Review Presentation is to evaluate the engineering effort that went into the design of the UAV system and how the engineering meets the intent of the mission.

2020 Mission

Wildfires are expected to once again impact California in 2020, and local authorities are looking for new rapidly deployable Unmanned Aerial Vehicle (UAV) systems to support the fire-fighting mission. The primary missions of the UAV system shall be:

- o **Fire Detection, Imaging, and Tracking:** The UAV system shall be capable of monitoring an area for new fires, provide imagery of on-going fires, and tracking of fire progression.
- o **Fire Suppression Aircraft Routing:** Once a fire system is identified, the UAV system shall be capable of generating optimal routes for fire suppression aircraft into and out of the fire zone and disseminating those routes back to the ground station. Routes should ensure aircraft separation for ingress and egress of the fire suppression aircraft, as well as separation from any UAV traffic.
- o **Persistent Communications Node:** Communication within a fire zone is critical, and lives have been lost due to communication failure. Standard Land Mobile Radios (LMR) work on Line-of-Sight, which can be a challenge in a mountainous fire zone. The UAV system shall serve as a persistent communications relay for LMRs in the VHF and UHF frequency ranges.

Scores must be assigned any number between 0 and the **maximum points available for that category.**

0% of the possible points = inadequate or no attempt at intent

25% of the possible points = attempted but below expectations on intent

50% of the possible points = average or expected intent met

75% of the possible points = above average intent met but not perfectly

100% of the possible points = excellent, perfectly meets intent

____ /150 **TECHNICAL CONTENT:** Did the team address the primary objective of the mission? Did the team cover in depth the following categories adhering to the objectives of the mission:

- System Requirements Overview (including Mission / Flight Profile)
- Vehicle Design (e.g., Air-frame / Structure, Aerodynamics / Performance, Propulsion & Electrical Power)
- Payload Integration (Camera or Sensor Design / Selection, Communications System Selection / Design)
- UAV / Ground Segment Communications Interface, Operator / Pilot Interface Screens

____ / 75 **ORGANIZATION:** Were the team's thoughts presented in a logical order of progress? Were the transitions from thought to thought clear and concise? Were distinct introduction and overviews as well as summary and conclusions given?

____ / 50

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DELIVERY AND VISUAL AIDS: Did the presenter(s) speak in a clear voice? Did they show enthusiasm and promote confidence in the presentation? Did they maintain eye contact? Were visual aids appropriate and used for clear visual reference?

/ 25 QUESTIONS: Did the presenter(s) answers illustrate that they fully understood the questions? Did they create a feeling of complete confidence in their response to the questions? Did they readily accept the validity of the judges' question? Did they appear to be prepared for questions?

/ 300 TOTAL = PRESENTATION POINTS (300 points maximum)

COMMENTS:
