RULES FOR THE 5th MISSION OF THE INTERNATIONAL AERIAL ROBOTICS COMPETITION MISSION

ADMINISTRATIVE PROCEDURES FOR 2008

Because 2008 will be the final year for the current IARC mission, the following administrative procedures will be available to allow teams to demonstrate the maximum possible performance:

1. Every team will have the option to start at Level 1, regardless of previous accomplishments. Upon successful completion of each level, the team must successfully progress through all subsequent levels. Each team will have 4 attempts for each level. It will be monetarily advantageous for the teams to show continuous transition from one completed level to the next.
2. If a team progresses continuously from one successfully completed level to the next higher level and then fails to accomplish that higher level, one attempt for the higher level will be charged.

The team with the highest Static Judging score will receive an additional attempt at each level (note: since 2008 is the final year of the current mission and only existing official teams will be qualified to compete, Static Judging will be based solely on the Journal Paper submissions).

GENERAL RULES GOVERNING ENTRIES

1. Vehicles must be unmanned and autonomous. They must compete based on their ability to sense the semi-structured environment of the Competition Arena. They may be intelligent or preprogrammed, but they must *not* be flown by a remote human operator.
2. Computational power need not be carried by the air vehicle or subvehicle(s). Computers operating from standard commercial power may be set up outside the Competition Arena boundary and uni- or bi-directional data may be transmitted to/from the vehicles in the arena however there shall be no human intervention with any ground-based systems necessary for autonomous operation (computers, navigation equipment, links, antennas, etc.).
3. Data links will be by radio, infrared, acoustic, or other means so long as *no* tethers are employed.
4. The air vehicles must be free-flying, autonomous, and have no entangling encumbrances such as tethers. A subvehicle, however, may have a tow-line connection to its primary aerial robot. This tow line must be passive (no data paths or power).
5. Subvehicles may be deployed within the arena to search for, and/or acquire information or objects. Subvehicle(s), must be fully autonomous, and must coordinate their actions and sensory inputs with all other components operating in the arena. Subvehicles may not act so independently that they could be considered separate, distinct entries to the competition. Any number of cooperating autonomous subvehicles is permitted, however none are required. If used, subvehicles must be deployed by launching it from the ground or air under command of the primary fully autonomous aerial robot. Subvehicles may be airborne or multimode (able to operate in the air or on the ground). Subvehicles, whether air or ground launched, must fly the full 3km course autonomously either being carried all or part of the way by the primary aerial robot, or by flying along with it independently but fully autonomously. A human operator may start the engine of the subvehicle before the primary is converted to automatic control, but once the primary aerial robot begins fully autonomous operation, NO human contact is allowed with the subvehicle. Separate kill switches will have to be functional on both the primary aerial robot and all subvehicles capable of sustained nonballistic flight over 100m. This also has implications for how many safety pilots are employed by a given team. The important distinction here is that a team NOT have two entries. Subvehicles need to be unequal in some way such that they can not complete the mission independently of the primary aerial robot. All vehicles must remain within the boundaries of the arena.
6. Air vehicles and air-deployed subvehicles may be of any size, but together may weigh no more than 90 kg/198 lbs (including fuel) when operational.
7. Any form of propulsion is acceptable if deemed safe in preliminary review by the judges.
8. So your entry form will be anticipated, and so you can be notified that it has **not** arrived were it to get lost in the mail, an **Intention to Compete should be**

received no later than the date shown in the schedule at the bottom of these web pages. To avoid unnecessary delay due to the mail (particularly for international entries), a letter of intention to compete can be transmitted by E-MAIL to Robert C. Michelson, Competition organizer at millennialvision.llc@gmail.comm. Submission of a letter of intention to compete is not a requirement, however **entries received after the deadline which are not clearly postmarked may be rejected** as late unless prior intention to compete has been expressed.

9. **The official World Wide Web pages for the competition are your source for all information concerning rules, interpretations, and information updates regarding the competition. In anticipation of the upcoming Qualifier, the official rules and application form will be obtained from the official World Wide Web pages and will not be mailed to potential competitors. If you have received these rules as a hard copy from some other source, be advised that the official source of information can be found at: http://iarc.angel-strike.com/oldauvs/AUVS/IARCLaunchPoint.html The application form is available electronically at http://iarc.angel-strike.com/oldauvs/AUVS/97IARC/application.html.** All submissions must be in English. **The completed application form is not considered an official entry until a check or money order for 1000 U.S. Dollars is received by mail on or before May 1, of the current year for which a team officially enters the competition (this is a one-time application fee). The application fee should be sent to the attention of the Competition organizer, Robert Michelson, P.O. Box 4261, Canton, Georgia 30114, U.S.A.** This application fee covers all of the qualifiers. Teams entering for the first time subsequent to 2001 are still liable for the application fee. *(This fee has been instituted to discourage teams from applying that are not serious competitors)*. As an incentive, part of this application fee will be returned to those teams performing to a specified level during each qualifier (see the Qualification and Scoring section for details on fee rebate). The application fee (in the form of a check, money order) should be made out as follows: **AUVS IARC**. Checks or money orders made out to any name other than "AUVS IARC" will be returned. Upon receipt of the one-time application fee, your team will become "official" and will get listed on the official web site (helps you with gaining sponsorship grants), and co-sponsors offering special promotions will be notified that your team is eligible these offers (see offer details at: http://iarc.angel-strike.com/oldauvs/AUVS/IARCLaunchPoint.html). A brief concept outline describing the air vehicle must be submitted for safety review by AUVSI (the application form provides space for this). AUVSI will either confirm that the submitting team design concept is acceptable, or will suggest safety improvements that must be made in order to participate. **A web page showing a picture of your primary air vehicle flying either autonomously or under remote human pilot control must be posted/updated by June 1 of each year** to continue to be considered as a serious entry. The page should also include sections describing the major components of your system, a description of your entry's features, the responsibilities of each of your team members, and

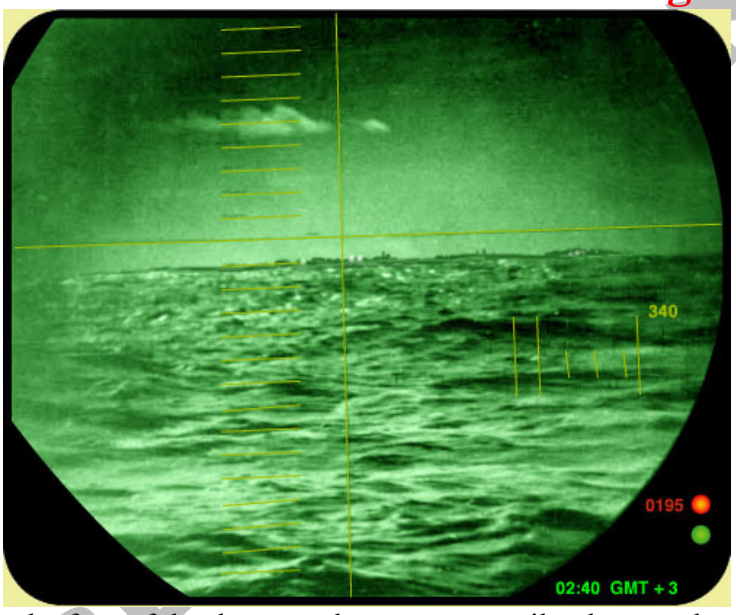
recognition for your sponsors. At least one picture of your vehicle flying is required, though additional photographs of the other components comprising the system are desirable. People accessing your page should be able to learn something about your system from the pages. Web pages that are deemed adequate will be listed with a link from the official competition web site. **A research paper describing your entry will be due by the date shown at the bottom of these pages.** The paper should be submitted electronically in .pdf format via E-MAIL to millennialvision.llc@gmail.com (no hard copy is required).

10. Teams may be comprised of a combination of students, faculty, industrial partners, or government partners. Students may be undergraduate and/or graduate students. Inter-disciplinary teams are encouraged (EE, AE, ME, etc.). Members from industry, government agencies (or universities, in the case of faculty) may participate, however full-time students *must* be associated with each team. The student members of a joint team must make significant contributions to the development of their entry. Only the student component of each team will be eligible for the *cash awards*. Since this fourth mission of the International Aerial Robotics Competition was announced in AD2000 and will run for several years (until the mission is completed), anyone who is enrolled in a college or university as a full-time student any time during calendar years 2000 through 2006 is qualified to be a team member. "Full-time" is defined as 27 credit hours during any one calendar year while not having graduated prior to May 2001. Graduation after May 2001 will not affect your status as a team member.

NEW MISSION (Begun in 2001)

The new mission will involve demonstration of fully autonomous flight over a large area in an attempt to perform a mission that is described in three examples below. Each example is of interest to a different potential user, however the behaviors required are identical for each mission example.

MISSION EXAMPLE No. 1 — Hostage Rescue



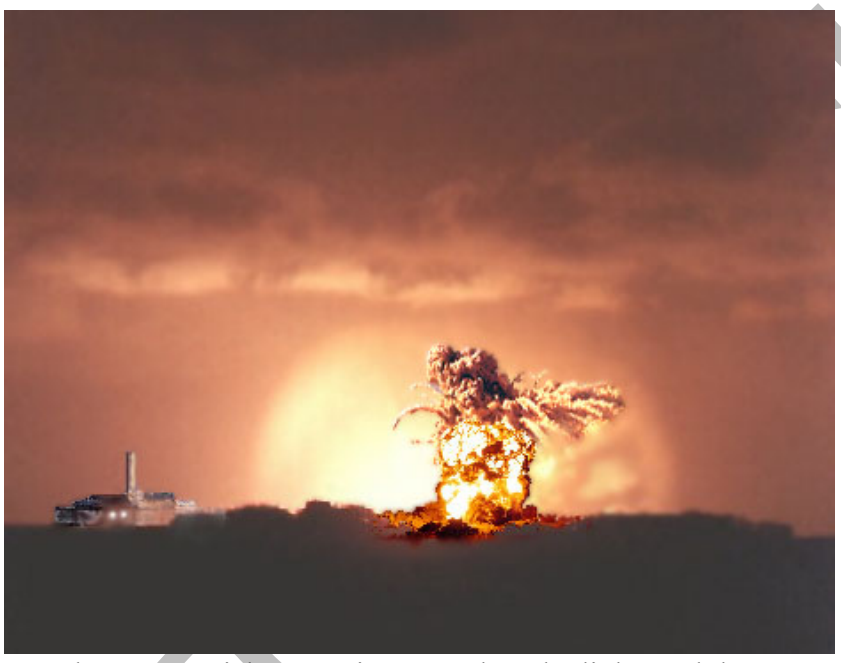
Darkness is upon the face of the deep as a breeze moves silently over the surface of the waters. Suddenly a periscope is thrust through the still boundary that divides the waters from heavens. Low on the horizon are the twinkling lights of a coastal city. In that city lies an embassy in which the diplomatic staff is being detained by a terrorist group known as the "Independent Anarchist Rebel Coalition".

The periscope scans the dark surface for vessels— none are detected. Soon, the Spesialkommando Elite Assault League 6 (SEAL-6) will deploy from the submarine to take control of the embassy and free the hostages. First however, an aerial sensor probe will be launched from the submarine to determine how many terrorists are guarding the hostages.

The submarine lies three kilometers from the city in deep water. The embassy is near the waterfront and is identifiable by two great lights illuminating the national seal (see photo) over the main entrance which is an image in the likeness of a circle with a cross at the center. Because this incident is occurring in a tropical third world nation, the embassy will have some of its windows open to the evening air.

Your mission is to have an autonomous aerial robot carry sensors from the location of the submarine to the embassy, and then covertly enter the embassy to provide a picture of the hostages and their captors that can be viewed back on the submarine. This information must be obtained as quickly as possible so that SEAL-6 will know the location and size of the threat before a rescue attempt is made. The reconnaissance mission must be completed within 15 minutes of launch from the submarine in order to maintain the element of surprise.

MISSION EXAMPLE No. 2 — Nuclear Disaster



April 26, 1:23:44 hrs Greenwich mean time. Let there be light: and there was light. A great fire ball illuminates the night followed seconds later by the sound of a thunderous explosion. A catastrophe of unknown cause or extent has occurred in Unit #4 of the Ukrainistan nuclear reactor complex. All that is seen now is the dull red glow of burning graphite from the KMBR-1000 reactor.

There are no survivors within the facility. Radioactive elements of Iodine-131, Cesium-137, and Strontium-90 are present in lethal levels. A safe distance for human investigative teams has been determined to be no closer than three kilometers. Units #1 and #3 have apparently shut down automatically, but Unit #2 is still operating, possibly due to a fault in the control system that makes the emergency shutdown unable to function. Long distance aerial photography indicates that the overpressure from the explosion has blown out all windows in the facility.

Your mission is to have an autonomous aerial robot carry sensors from a safe location (three kilometers distant from the complex) to the control room of Unit #2 which is identifiable by two great lights illuminating the Ukrainistani national seal (see photo) over the main entrance. The seal is an image in the likeness of crossed swords within a

circle. Sensors must enter the control room to provide a picture of the main control panel gauges and switch positions so experts can see why Unit #2 has not shut down and assess the potential for a meltdown of this unit. The reconnaissance mission must be completed within 15 minutes of launch from the three kilometer safety perimeter due to expected radiation-induced failures within the aerial robot's systems.

MISSION EXAMPLE No. 3 — Biological Emergency

During archaeological excavations near Athena Greco, a necropolis dating back to 425 BC was discovered containing seven mausoleums. Each mausoleum consisted of several catacomb-like chambers. Only two of the mausoleum buildings remain intact. Soon after the discovery, the archaeologists fell ill, at first with strong fevers accompanied by redness and burning of the eyes, followed by vomiting of blood. Within one hour, victims' skin became severely ulcerated and bleeding was observed from all openings of the body. No personnel having direct contact with the site have survived longer than 4 hours.
A team from the CDZ and the US Army Medical Research Academy for Infectious Disease (USAMRAID) set up a field laboratory where they determined the cause of the epidemic to be a new strain of the Ebola virus. Dr. Jackson Gilbertman of the CDZ in Atlanta has reported that this is the most lethal strain of the virus investigated to date. In an interview earlier this week, Dr. Gilbertman stated that, "This is not really a new mutated strain of Ebola, but most likely an ancient strain that has been locked away in the Athenan tombs for almost twenty five hundred years."

What is most disconcerting, is the finding that this "new" (ancient) strain, dubbed "Ebola-A425", exhibits increasing evidence for possible airborne transmission. According to Dr. Gilbertman, "Researchers from USAMRAID have done formal aerosol experiments in which as little as 400 plague-forming units of Ebola-A425 caused a fatal disease in monkeys within four to five hours. All exposed monkeys developed Ebola-related pneumonia, and virus particles were found in many different areas of the respiratory system."

No one who entered the mausoleum chambers remains alive. A three kilometer quarantine radius around the site has been ordered by the government. In order to contain the outbreak, no one is allowed to enter or leave this perimeter. National Guard units from the Greco Ministry of Defense have been sent to the quarantine zone to suppress rioting that is on-going in the villages of Phaetalos and Necros which reside just inside the perimeter.

The Greco government has appealed through the United Federation of Nations for assistance in eradicating the threat by disinfecting the surface of the earth around the site through the use of a controlled fuel-air explosion, however the overpressure of the blast will destroy the mausoleum and its burial chambers. As recounted in a final transmission from the archaeological team prior to the sudden and violent death of its members, valuable and undocumented inscriptions on a hanging tapestry are contained over the most prominent sepulcher within one of the interior chambers. Above the entrance to the mausoleum containing the tapestry is the symbol for the sun god 'Ar' with rays pointing to the cardinal points and inscribed within the circle of life (see photo). Two great lights were set in place by the archaeologists to illuminate the front of this particular mausoleum for night excavations, and these are known to be operating still.

Your mission is to have an autonomous aerial robot carry sensors from the three kilometer perimeter into the mausoleum where it will locate the tapestry and relay pictures of the inscriptions back to scientists for analysis and translation. Because of delays in obtaining approval to conduct this mission, the reconnaissance run must be completed within 15 minutes of launch from the three kilometer safety perimeter due to the scheduled purifying explosion.

Common to all three mission examples is the ability to fly to a specified location from a distance of 3 kilometers and identify a particular structure. Once the structure has been identified, a sensor probe must be sent into the structure to perform reconnaissance of a particular type. In each example,

- the identification cues for the structure in each mission example are similar, access to the structure will be through open portals (*doors, windows, other openings*) that must be identified by the aerial robots, the total number of portals is not known beforehand, however at least two will be open at all times, the minimum dimension for any portal will be one meter in height and width, operation within the structure will be required in order to access the required information, the desired reconnaissance information will not be accessible remotely from outside the structure, the structure will contain several rooms with unimpeded openings as are common to structures inhabited by humans,
- the structure will contain each of the example scenario targets (hostages/terrorists, nuclear control room panels, hanging tapestry with inscriptions).

Each team will be given four attempts during the total time allotted for performance judging. Within these four attempts the team shall demonstrate as much as it can in order to gain qualifying points and to progress in qualifying levels.

Details surrounding the collection of reconnaissance data and the beginning and end of a mission are as follows:

- appropriate launch means are assumed (and may be simulated with a manually controlled takeoff), all runs will begin when an Aerial Robot has reached a 3 km perimeter from the target structure, as a goal, the mission should be performed from launch-to-data retrieval in less than 15 minutes, runs terminate when:
    - reconnaissance data is received and correctly interpreted, manual control is reasserted by the team for any reason, the judges terminate the run for safety reasons, or
    - a vehicle crashes,

  from a mission perspective, Aerial Robots approaching to within 100 meters of the target structure are considered unretrievable, so there is no need to return to the launch point for landing,
- reconnaissance information can be a still picture, slow scan TV, or live video. Reconnaissance information will be received remotely via a data link.

Qualifying points will be used to determine when a particular team is ready to progress to the next level of demonstration as explained in the Qualification and Scoring section. Logistical details include:

1. Teams will be allotted four attempts to accrue qualifying points. Each team will be assigned a specific starting time slot at which it must set up and begin their performance. Judges will score each valid attempt, with the highest score being used to determine the final qualifying score. Details of how teams will gain access to the arena and how they hand it off to subsequent teams is described here .
2. Teams may have no more than one entry, though that entry may be comprised of any number of subvehicles. Only one team may be affiliated with any particular university (though different universities may band together to form a single team). If several teams wish to enter from a single university, a decision must be made by the university (not AUVSI) as to which team will represent the school. This may be done as a result of an engineering analysis of each team's design and progress, or it may be as a result of an actual demonstration of hardware. The determination should be by a panel of impartial evaluators not directly affiliated with either team. Notification (prior to the journal paper submission) of which university entry is the "official" one must be provided in writing by someone equivalent to the "Dean of Engineering" since various departments or campus sponsors may be vying for the honor of representing the university. It is hoped that teams will join together to offer their best ideas for the benefit of a single unified team, while being willing to compromise and defer to team members with specific training and skills. The most successful teams are interdisciplinary groups of dedicated engineers and scientists with backing from their university

administration and industrial partners. To discourage multiple entries from a university, each team vying to represent the university must submit its individual applications in accordance with the schedule shown at the bottom of these pages, along with a nonrefundable (see rebate policy) 1000 U.S. Dollar application fee. No application will be considered valid without the accompanying fee being received. It is therefore in the interest of all potential competitors from a single university to form their team without the need for arbitration *prior* to submission of an application.

Qualification and Scoring

Qualification will be based on performance of particular autonomous behaviors. Only those reaching Level 4 are eligible to receive the grand prize cash award. In addition to the demonstrated behaviors described below, the journal quality paper describing the team's entry (as defined below) must be submitted by the designated date prior to qualifying for the next level.

Level 1 Qualification

A team must demonstrate autonomous flight over a distance of 3 km beginning at a designated starting point and terminating in an autonomous hover or orbit about a designated final way point, with up to four other way points visited along the path. If necessary, this may be achieved in a flight lasting longer than 15 minutes.
If this behavior is demonstrated during the *first qualifier*, $250 of the entry fee will be returned to the team for use in further development.

Level 2 Qualification

A team may progress to Level 2 only after it has demonstrated Level 1 behaviors. To achieve Level 2, a team must demonstrate that it can identify the desired target structure from an autonomously flying aerial robot. This identification shall be from the cues given in the Example Missions. Further, at least one open entry into the structure must be identified by the Aerial Robot. The judges shall be able to determine clearly that the Aerial Robot and its sensors have located the target building and its open portals without human intervention. These identification processes can be conducted over a period exceeding 15 minutes if necessary.
If this behavior is demonstrated during the *first qualifier*, $250 of the entry fee will be returned to the team in addition to the $250 returned for achieving Level 1 Qualification.

Level 3 Qualification

A team may progress to Level 3 only after it has demonstrated Level 2 behaviors. To achieve Level 3, a team must relay reconnaissance data derived from an autonomous Aerial Robot (or subvehicle) operating from within the target structure, back to the actual starting point (or a simulated starting point 3 km distant). Immediately prior to a run, the team must declare to the judges which of the three missions (and hence, which of the three target types) they are attempting. Sufficient image quality to allow the judges to

obtain the desired reconnaissance information described in the chosen Example Mission must be demonstrated.
The autonomous Aerial Robot may be launched from the vicinity of the structure (between 10 meters and 30 meters distant), simulating the 3 km ingress. The launch may be manual, but the flight into the structure must be autonomous. This reconnaissance activity can be conducted over a period exceeding 15 minutes if necessary.
If this behavior is demonstrated during the *first qualifier*, $500 of the entry fee will be returned to the team in addition to the $500 returned for achieving Level 1 and 2 Qualification. If this behavior can be demonstrated during the *second qualifier*, $250 of the entry fee will be returned to the team for use in further development.

Level 4 Qualification

A team may progress to Level 4 only after it has demonstrated Level 3 behaviors. Level 4 is execution of the full mission profile in under 15 minutes. Immediately prior to a run, the team must declare to the judges which of the three missions (and hence, which of the three target types) they are attempting. The first team to execute the full mission will win the AUVSI prize money and be declared the winner of the entire competition if no other teams have progressed to Level 4. During a particular year, if more than one team is able to achieve Level 4, then the team that is able to execute the full mission in the least amount of time will be declared the winner. In the unlikely event that multiple teams execute the full mission in the same amount of time (±1 minute), the judges shall use the scoring formula to determine the winner.
A tie-breaking score will be based on a number of factors as follows:

Effectiveness Measures: Points will be gained for the following:

- Correctly flying over or to the outside of all designated way points and ending in a hover or orbit over a final designated way point (**A**) (200 points).
- Correctly identifying all open portals (**B**) (500 points) and their two dimensional vertical plane centroids to within 0.25 meter accuracy. This information must be displayed to the judges in a convincing fashion to prove that the Aerial Robotic system has actually identified and located the centroids.
- Any useful component of an Aerial Robot system remaining in flight outside of the target structure that can successfully land autonomously and shut down its propulsion system during a successful Level 3 performance (**C**) (200 points).
- Except for launch and emergency recovery, fully autonomous operation (**z**) is required (+1), else (0).

Subjective Measures:

Elegance of design and craftsmanship (**D**) (up to 75 points).

- Component integration (0 - 25).
- Craftsmanship (0 - 25).
- Durability (0 - 25).

Innovation in air vehicle/subvehicle design (**E**) (up to 150 points).

- Primary propulsion mechanisms (0 - 30).
- Attitude/heading adjustment schemes (0 - 30).
- Navigation techniques (0 - 30).
- Target identification techniques (0 - 30).
- Threat avoidance schemes (0 - 30).

Safety of design to bystanders (**F**) (up to 200 points).

- Isolation/shielding of propulsors (0 - 75).
- Containment of fuel and exhaust by-products (0 - 25).
- Crashworthiness (0 - 25).
- Emergency termination mechanisms (0 - 75).

Each team is required to submit a journal-quality paper (written in English) documenting its project. This paper (**G**) is worth between -100 and 100 points depending on technical quality (0 points minimum for submitting a credible paper, and -100 points for those *not* submitting a paper by the deadline). Papers are limited to 12 pages (including figures and references, if any). The format shall be single-sided with text occupying a space no greater than 9 inches tall by 6.5 inches wide centered on each page. Font size shall be 12 point (serif font) with 14 point leading. The example format is provided as an addendum to the rules (see example format). Topics to be covered are detailed in a printable document found here. A file in .pdf format of your paper is due via E-MAIL to millennialvision.llc@gmail.com by June 1 of each qualifier year. All papers will become part of the AUVSI Symposium proceedings for that year and will therefore serve as a publication reference on team member resumés.

Best team Tee Shirt (**H**) (10 points to the best, 5 points to others having team Tee Shirts, and 0 points to those not having team Tee Shirts).

In addition to the points scored during the Static Judging (*Subjective Measures*), the teams will be rank-ordered by the judges based on score. The starting time slots will be allocated based upon the choice of the teams, with the first choice going to the highest ranked team, the next choice going to the second highest ranked team, and so on until the final time remaining is assigned to the team ranking lowest based on the Subjective Measures during the Static Judging.

The best points for a given round will be totaled according to the following formula:

SCORE = z (A + B + C + D + E + F+ G+ H)

The highest score accumulated by a given entry after all runs have been completed in any qualifier year will be considered that team's current qualifying score for that year. Once a Level has been achieved, the team will move to the next level and scores will be frozen. Later, if a team exceeds its own performance in any area at a new level, its new higher scores will replace previous lower ones.

"Air Vehicle" Definition and Attributes

1. "Air Vehicles" are considered to be those capable of sustained flight *out of ground effect* while requiring the earth's atmosphere as a medium of interaction to achieve lift (as such, pogo sticks and similar momentary ground-contact vehicles are not considered to be *flying air vehicles*). The scoring formula and arena have been carefully designed to normalize advantages inherent to a given class of air vehicles such that all may compete fairly to perform the same tasks. Prospective teams must decide how best to allocate resources to maximize their potential score in light of the constraints imposed by the arena, the task, and the scoring algorithm.
2. Air vehicles may land and takeoff autonomously within the arena if desired. Vehicles crossing no-fly boundaries, or which seem to be going away from a logical path leading to the target zone, will be brought back under safety pilot control or terminated on command of the judges. Way points may be dictated beforehand to avoid populated areas during ingress, or to avoid reviewing areas near the target structure.
3. Each air vehicle and subvehicle must be equipped with an independently-powered, independently-controlled, non-pyrotechnic termination mechanism that can render the vehicle ballistic upon command of the judges (e.g., if using R/C radio equipment, a separate battery, transmitter, and receiver must serve as the independent relay for the onboard termination signal). This termination mechanism must be demonstrated to the judges prior to the first round of each qualifier. Air vehicles may land under manual control of a safety pilot in the event of an emergency, but credit for that run will be forfeited unless manual control is exercised AFTER the mission has been completed in full, or the level has been achieved. Both autonomous and manually-assisted landings must occur within the boundaries of the Competition Arena (i.e., not in the no-fly zones).

Judging

A team of at least three judges will determine compliance with all rules. Official times and measures will be determined by the judges. Subjective measures (1-5) will be judged in accordance with a schedule to be announced a week prior to the competition. Team papers will be ranked and scores assigned to them at this time, though they will have been reviewed by the judges in advance of this static judging.

Prize Awards

The following benefits accrue to the teams participating in, and winning the International Aerial Robotics Competition:

1. Ten thousand dollars will be added to the prize each year. In the unlikely event that the full mission is achieved in the first qualifying year, a US$10,000 prize would be awarded. If for example, the full mission were achieved after the sixth qualifying year, a US$60,000 cash prize would be awarded to the winner of the competition.
2. Any other awards prior to the completion of the full mission, shall be distributed at the discretion of the judges.
3. International recognition for the winning students' university.
4. International recognition through AUVSI for the winning industrial/government/faculty organization.
5. Free full-page advertisement for the winning company, governmental agency, or university faculty department in *Unmanned Systems* magazine.

Schedule

REMEMBER THESE IMPORTANT DATES:

Notification of intention to compete ..... ASAP

Attendee List due ..... May 15, 2008

DD2401, DD2402, and DD1494 due ..... June 1, 2008

Current Team web page on line .....,,..... June 1, 2008

Journal quality paper (all teams)..... June 1, 2008

*Having flown your attempted levels at home twice... June 1, 2008
(*Recommended strongly)

Teams can arrive on site (earliest 8 AM) ..... July 28, 2008

Static Judging (8AM - 9PM) ..... July 29, 2008

Performance Judging (visitors welcome) ..... July 30-31, 2008

Rain-day for Performance Judging ..... August 1, 2008

Awards Banquet ..... August 1, 2008