



VERSION 3.0

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1 The Google Lunar X PRIZE

1.1 Purpose

It has been over 30 years since any human artifact has soft landed on the surface of the Moon. This means that nearly half of the Earth's population has never witnessed a live transmission from the surface of the Moon. New exploration plans made by space agencies around the world indicate that it could be another 5 to 10 years before the next government funded program will return to the lunar surface. These missions will conduct great science and will expand the scope of human knowledge – but will come with correspondingly large price tags.

The X PRIZE Foundation (XPF) seeks to create a new private race to the Moon that engages and excites the global public while enabling the commercial exploration of space and dramatically reducing its cost. The Google Lunar X PRIZE will also increase the connection that individuals around the world feel to space exploration, science, and education by taking advantage of new tools for the rapid and targeted distribution of information.

The Google Lunar X PRIZE is expected to inspire and educate individuals from around the world, attracting new enthusiasm, new investments, and new ideas to a field of exploration technology that has previously been the domain only of large public efforts. By reigniting a race to the Moon, the PRIZE will engage a new generation, making lunar exploration not just a historical accomplishment, but a tangible reality.

The Google Lunar X PRIZE is designed to accelerate technology developments supporting the commercial creation of a system capable of reaching the lunar surface and performing operations over an extended period of time. The results of the PRIZE have the potential to facilitate cheaper access to the lunar surface via one or more new commercial platforms that can be used to test new space technologies. With space agencies from around the world planning extensive lunar exploration over the coming decades, numerous opportunities will exist for the use of these platforms in accomplishing new, diverse, worldwide lunar exploration goals.

1.2 Prize Overview

The total purse of the Google Lunar X PRIZE is \$30,000,000 (thirty million U.S. Dollars), subject to reduction as set forth in Section 2. To win the Google Lunar X PRIZE, a registered TEAM (hereinafter referred to as “TEAM”) must successfully meet the conditions of the Master TEAM Agreement, including landing a privately funded vehicle (hereinafter referred to as “CRAFT”) on the lunar surface that survives long enough to complete the mission goals of roaming for at least 500 meters and sending defined datasets, called “Mooncasts,” back to Earth. The \$30,000,000 purse of the PRIZE is available through the end of the year 2012, at which time the purse of the PRIZE will be reduced to \$25,000,000, available through the end of the year 2014. Following 2014, the PRIZE may be terminated or extended at the sole discretion of the X PRIZE Foundation.

1.3 Scope of this Document

These Guidelines represent a non-binding, non-final set of Rules for the Google Lunar X PRIZE. The X PRIZE Foundation seeks feedback from TEAMS on these guidelines. This document, as revised, will become the Official Rules of the Google Lunar X PRIZE no later than January 31, 2009. These Official Rules will be included as a section of or an addendum to the Master TEAM Agreement, which shall be signed by each Registered TEAM.

2 PRIZE Purses

2.1 Grand Prize

The Grand Prize will be awarded to the first TEAM to fully complete all Google Lunar X PRIZE Requirements, as described in the Master TEAM Agreement. The Grand Prize will have a value of \$20,000,000 (Twenty million U.S. dollars) until midnight Pacific Daylight Time at the end of December 31, 2012. If no Prize has been awarded by that point in time, the Grand Prize will have a value of \$15,000,000 (Fifteen million U.S. dollars) until midnight Pacific Daylight Time at the end of December 31, 2014. Following December 31, 2014, the Grand Prize may be terminated or extended at the sole discretion of the X PRIZE Foundation.

2.2 Second Place Prize

The Second Place Prize will be awarded to the second TEAM to fully complete the Google Lunar X PRIZE Requirements, as described in the Master TEAM Agreement. The Second Place Prize will have a value of \$5,000,000 (five million U.S. Dollars) until midnight Pacific Daylight Time at the end of December 31, 2014. Following December 31, 2014, the Second Place Prize may be terminated or extended at the sole discretion of the X PRIZE Foundation.

At the sole discretion of Google, the Second Place Prize may be awarded before the Grand Prize if a TEAM has met or exceeded the majority of the Google Lunar X PRIZE Mission Requirements by successfully soft-landing a privately funded CRAFT on the surface of the Moon and delivering to XPF a significant portion of the Arrival Mooncast, but fails to fully complete the Google Lunar X PRIZE Mission Requirements. For example, the Second Place Prize could be granted before the Grand Prize, leaving the Grand Prize still available, if a TEAM successfully lands a privately funded CRAFT on the lunar surface and returns to Earth the two pre-defined Mooncasts, but experiences a mechanical failure that prevents the CRAFT from roaming the required 500 meters. In order to be eligible, a TEAM must demonstrate that the failure to achieve the first prize requirement was unforeseen, and that the CRAFT was designed and built in an attempt to accomplish all of the Google Lunar X PRIZE Mission Requirements.

The Second Place Prize may not be won by the Grand Prize winner, except in the case where Google has elected to award the Second Place Prize prior to awarding the Grand Prize. In that case alone, the Second Place Prize TEAM may compete for the Grand Prize; if they should claim it, \$5,000,000 (five million U.S. Dollars) will be removed

from the Grand Prize to create a new Third Place Prize, which may not be claimed by the same TEAM. In all other cases, the Grand Prize winner may not claim Second Place, nor may any other TEAM win Second Place with a substantially similar vehicle purchased, borrowed, or licensed from the Grand Prize winner.

2.3 Bonus Prizes

A total of \$5,000,000 (five million U.S. Dollars) will be awarded to the TEAM or TEAMS that successfully complete Bonus requirements in addition to all of the Google Lunar X PRIZE Requirements, as described in the Master TEAM Agreement. Bonus Prizes will be awarded if the necessary requirements are met prior to midnight Pacific Daylight Time at the end of December 31, 2014. Following December 31, 2014, any Bonus Prizes may be terminated or extended at the sole discretion of the X PRIZE Foundation.

Purse values and Mooncast Requirements shall be assigned to each Bonus Prize no later than January 31, 2009, though new Bonuses may be subsequently offered.

2.3.1 Heritage Bonus Prize

The Heritage Bonus Prize will be awarded to the first TEAM that returns to the Earth a Mooncast including imagery and video of an anthropogenic historical artifact taken by a mobile CRAFT or mobile secondary vehicle after it has landed on the surface of the Moon..

TEAMS wishing to attempt to win the Heritage Bonus Prize must receive prior approval of the Heritage Mission plan from the Google Lunar X PRIZE Judging Panel in order to eliminate unnecessary risks to the historically significant Sites of Interest. These Sites of Interest include landing or crash sites of manmade space hardware such as Surveyor or Luna probes, Lunokhod rovers, Apollo landing sites, the SMART-1 impact site, *et cetera*. Other Sites of Interest may be considered pending approval from the Google Lunar X PRIZE Judging Panel.

2.3.2 Water Detection Bonus Prize

The Water Detection Bonus Prize will be awarded to the first TEAM that provides scientifically conclusive proof of the presence of naturally occurring water on the Moon. The detection of water must be made from a vehicle that has landed on the surface of the Moon and must be featured in a peer-reviewed paper to the satisfaction of the Google Lunar X PRIZE Judging Panel.

2.3.3 Range Bonus Prize

The Range Bonus Prize will be awarded to the first TEAM that moves its CRAFT or a secondary vehicle along the surface of the Moon for no less than 5 kilometers. This journey may be completed on, above, or below the lunar surface, so long as all other mission requirements are met. This 5 kilometer journey is inclusive of the 500 meters already traveled to satisfy the baseline Google Lunar X PRIZE requirements. This total distance traveled may be a straight line displacement, or may be a journey connecting a series of waypoints. If the TEAM wishes to travel a path that is not in a straight line, the

general nature of this path must be approved by the Google Lunar X PRIZE Judging Panel.

2.3.4 Survival Bonus Prize

The Survival Bonus Prize will be awarded to the first TEAM that successfully operates its CRAFT or a secondary vehicle on two lunar separate lunar days, performing the Mission Requirements detailed in Section 4 of this document on one lunar day, and a separate set of Survival Bonus Mission Requirements on a subsequent lunar day.

2.3.5 Diversity Bonus Prize

The Diversity Bonus Prize will be awarded to reward diversity of TEAM membership and participation. Diversity of nationality, gender, ethnicity, and other factors may be considered.

3 Registration Process

3.1 Registration Overview

Registration for the Google Lunar X PRIZE takes place in three parts, one of which is optional. These are:

3.1.1 Letter of Intent to Compete

TEAMS may submit a Letter of Intent to Compete, which, when submitted along with a corresponding fee and accepted by XPF, allows potential TEAMS to indicate their intention to Register for and compete in the Google Lunar X PRIZE. The Letter of Intent to Compete must be accepted by XPF. The Letter of Intent to Compete is optional, and therefore is not required in order to complete Registration.

The Letter of Intent to Compete, if accepted by XPF, entitles a TEAM to the following benefits:

- TEAMS will occasionally be listed in the order of their registration; the Letter of Intent to Compete will preserve a TEAM's order of registration.
- The TEAM will receive timely updates on significant competition developments, including the finalization of the Official Rules of the Google Lunar X PRIZE.
- While there is no guarantee that the TEAM's suggestions will be accepted, the X PRIZE Foundation will provide written responses to all comments and suggestions submitted by the TEAM in response to these Draft Competition Guidelines.
- The TEAM will be entitled to use the official Google Lunar X PRIZE Contender Logo, to be provided by the X PRIZE Foundation. The

Contender Logo may no longer be used if the TEAM's deposit is refunded or if the TEAM's formal registration application is rejected.

- The TEAM's Registration fee will be guaranteed not to exceed \$10,000, even if a higher Registration fee is ultimately established.

The application for the Letter of Intent to Compete may be obtained online by completing the brief form available at <http://www.googlelunarxprize.org>.

3.1.2 Registration Package

TEAMS must submit a Registration Package and provide the X PRIZE Foundation with sufficient information to preliminarily enroll the TEAM in the Google Lunar X PRIZE, and to provide certain benefits, including promotion of the TEAM as part of the competition.

The Registration Package may be obtained online by completing the brief form available at <http://www.googlelunarxprize.org>.

3.1.3 Master TEAM Agreement

TEAMS must sign a complete Master TEAM Agreement. The Master TEAM Agreement will contain the final, binding Rules to the Google Lunar X PRIZE.

The Master TEAM Agreement will be made available to Registered TEAMS.

3.2 Eligibility

3.2.1 “Any TEAM, Any Nation” Principle

TEAMS from all countries and with any background are eligible to compete for the Google Lunar X PRIZE, including but not limited to small companies, not-for-profit foundations, and university TEAMS. XPF will work with all TEAMS to overcome any issues that may arise due to international aspect of the Google Lunar X PRIZE, although ultimate responsibility for adherence with international and national laws lies with each TEAM. Prize payments, however, will be made in accordance with U.S. law, which may restrict or prohibit payment to TEAMS within countries subject to U.S. sanctions.

3.2.2 Privately Funded

The TEAM shall be privately funded, with at least 90% of the funds used to compete in the Google Lunar X PRIZE coming from private or non-governmental sources. The TEAM shall provide certification to XPF that this requirement has been met. Due to the unique nature of potential university TEAMS, the Google Lunar X PRIZE Judging Panel will pay close attention to the Google Lunar X PRIZE principles of private funding in an effort to allow publicly supported universities and students to compete without direct governmental financing specific to Google Lunar X PRIZE efforts.

3.2.3 Purchased Hardware

The TEAM may not purchase heritage hardware when such hardware is unique and non-reproducible, except in such cases where more advanced equivalents are commercially available. This includes purchase of preexisting hardware from resources such as museums, space agencies, or defunct companies. TEAMS shall demonstrate to the Google Lunar X PRIZE Judging Panel that such systems or system components can be bought in large quantities or are easily reproducible, as well as demonstrating compliance with the principle of ‘Any TEAM, Any Nation.’

3.2.4 Use of Government Resources

TEAMS are permitted to use or pay for the use of any governmental facilities, personnel, hardware, or information previously developed by a government organization, if access to the above listed is available on an reasonably open, cooperative, nonexclusive, and reimbursable basis to all TEAMS.

Government personnel shall be allowed to work for a TEAM so long as they are working outside of the scope of their government employment.

TEAMS are permitted to use government resources that do not meet these requirements, but these resources will be considered public funding and will count against the requirements described in Section 3.2.2.

3.2.5 X PRIZE Foundation Employees

X PRIZE Foundation employees and their families may neither participate in, nor have a financial interest in the Google Lunar X PRIZE TEAMS or CRAFTs.

Officers and Trustees of the X PRIZE Foundation must comply with the Foundation’s Conflict of Interest policy, which requires that they disclose possible conflicts and recuse themselves from any relevant deliberations or decisions regarding the development of PRIZES under development or offered by the Foundation in which they may have a direct or indirect financial interest.

3.3 Approval

Registration must be approved by XPF. Registration Packages will be reviewed by XPF for completeness and for compliance with the principles and Rules of the Google Lunar X PRIZE using all available information. XPF shall attempt to issue an acceptance or rejection of each Registration Package within 60 days after receipt of the complete Registration Package. XPF may, at its sole discretion, pose additional questions or requests for clarification to supplement the Registration Package as part of its evaluation. All rejection or acceptance decisions made by XPF shall be final. If a TEAM’s Registration is rejected, the submitting TEAM may reapply for Registration.

3.4 Withdrawal from Competition

TEAMS can withdraw from the Google Lunar X PRIZE until such point as the TEAM has submitted a Notification of Launch Attempt. TEAMS will not be refunded the Registration fee unless withdrawal is a result of a substantial modification to the Rules.

4 Mission Requirements

4.1 Landing

The TEAM must land a vehicle, hereinafter referred to as a CRAFT, on the surface of the Moon. All TEAMS shall obtain prior approval from the Google Lunar X PRIZE Judging Panel of the proposed lunar landing site. This requirement is in place in order to eliminate unnecessary risks to historically or scientifically significant sites on the lunar surface. Such approval may be sought by the TEAM at any point after submission of an executed Master TEAM Agreement. A response from the Judging Panel will be provided within 45 days of receipt of a complete plan. Any subsequent modifications must also be approved by the Judging Panel, with approval given as quickly as possible.

4.2 Mobility

The CRAFT or a single secondary vehicle carried by the CRAFT must move a distance of at least 500 meters along the surface of the Moon in a deliberate manner. This journey may be completed on, above, or below the lunar surface, so long as all other mission requirements are met. This total distance traveled may be a straight line displacement, or may be a journey connecting a series of waypoints approved by the Google Lunar X PRIZE Judging Panel prior to movement.

4.3 “Mooncast” Minimum Dataset

The CRAFT or a secondary vehicle shall transmit from the surface of the Moon two “Mooncasts”—an “Arrival Mooncast” and a “Mission Complete Mooncast,” both defined below—for delivery to XPF. A “Mooncast” is a minimum dataset that must be transmitted back to Earth from the CRAFT or secondary vehicle after landing on the surface of the Moon..

4.3.1 Mooncast Minimum Size

The CRAFT or secondary Vehicle shall transmit as much data as required to completely deliver the two Mooncasts. The Mooncast requirements are designed around the expectation of successful delivery of at least 500 Megabytes (MB) of useful data per Mooncast.

4.3.2 Mooncast Quality

4.3.2.1 The Quality requirements in this section are subject to change and revision in consideration of evolving technology and other considerations.

4.3.2.2 Still image requirements from the lunar surface include the following:

- Detail Images shall have the following attributes after processing:
 - Logos clearly legible
- All Images shall be of high quality to show that their intended contents are clear and recognizable. TEAMS shall perform a ground demonstration prior to launch to demonstrate acceptable quality. An example of a high quality image is one that meets the following attributes after decompression:
 - Quantization: Minimum of eight bits per pixel per color
 - A signal to noise ratio of 50:1 for a scene of albedo approximately equal to 0.1
 - Minimum Resolution: 0.3 milliradians/pixel
 - In color
 - Calibrated for color correction
 - Reasonable illumination
 - Reasonable contrast at the pixel level, such as would be provided with a system Sagittal and Meridional Modulation Transfer function of 40% in the entire focal plane for the entire spectral range at the Nyquist frequency

4.3.2.3 Video requirements from the lunar surface include the following:

- Near Real Time Video shall have the following attributes after processing:
 - Transmitted to Earth and delivered to XPF as a high priority communication made at the earliest feasible moment, as agreed to by XPF
 - Resolution: 320x240 or better
- High Definition (HD) video shall have the following attributes after processing:
 - Resolution: 1280 x 720 progressive scan (720p)
- All Videos shall be of high quality to show that their intended contents are clear and recognizable. All videos shall also display dynamic content, to clearly differentiate them from still photography. TEAMS may elect to perform a ground demonstration prior to launch to demonstrate acceptable quality. An example of a high quality video is one that meets the following attributes after decompression:
 - Frame rate appropriate to the action in the frame, and which results in smooth motion.
 - In color
 - Calibrated for color correction

4.3.3 Arrival Mooncast Content

The Arrival Mooncast is the first of two required minimum datasets that must be transmitted from the surface of the Moon and delivered to XPF. The contents of the Arrival Mooncast shall detail the CRAFT's arrival on and initial exploration of the lunar surface.

The TEAM shall submit a Mooncast Content Plan detailing the expected content of Arrival Mooncast no later than 180 days prior to launch. TEAMS are encouraged to work with XPF well prior to this deadline to streamline the acceptance process. A sample of an acceptable Mooncast Content Plan will be provided by XPF upon request. The Arrival Mooncast shall contain, at minimum:

- At least eight (8) minutes of dynamic video, to be broadcast as both Near Real Time and as High Definition video;
 - Transmitted as a high priority item at the earliest possible opportunity, in a quality no worse than that described above as the minimum standard for Near Real Time video, defined above
 - Transmitted before completion of the mission in High Definition, as defined above. The High Definition video and the Near Real Time video may be sent as a single transmission so long as the requirements for both are met
- Panoramic photograph or photographs to yield a full 360° view of the landing site, centered on or about the horizon and with a vertical dimension of no less than 60°;
- A minimum of one self portrait Detail Image each for the CRAFT and any secondary Vehicle, containing a substantial and recognizable portion of the CRAFT or Vehicle;
- A sufficient number of Detail Images to meet the requirements for imaging of the Logo Cluster and the XPF Payload;
- One video, provided by XPF as part of the XPF Data Set Aside described in Section 4.3.5, sent as the first pre-recorded video message to be delivered from the surface of the Moon;
- One email, provided by XPF as part of the XPF Data Set Aside described in Section 4.3.5, sent as the first email to be delivered from the surface of the Moon;
- One text message, provided by XPF as part of the XPF Data Set Aside described in Section 4.3.5, sent as the first text message to be delivered from the surface of the Moon.

TEAMS may elect to use a Standard Mooncast Content Plan, provided by XPF, or to provide a new Mooncast Content Plan.

4.3.4 Mission Complete Mooncast Content

The Mission Complete Mooncast is the second of two required minimum datasets that must be transmitted from the surface of the Moon and delivered to XPF. The contents of the Mission Complete Mooncast shall detail the CRAFT's exploration of the lunar surface and the final completion of the Google Lunar X PRIZE Mission Requirements.

The TEAM shall submit a Mooncast Content Plan detailing the expected content of Mission Complete Mooncast no later than 180 days prior to launch. TEAMS are encouraged to work with XPF well prior to this deadline to streamline the acceptance process. A sample of an acceptable Mission Complete Mooncast Content Plan will be provided by XPF upon request. The Arrival Mooncast shall contain, at minimum:

- At least eight (8) minutes of dynamic video, including some taken while the CRAFT or secondary Vehicle is in motion, to be broadcast as both Near Real Time and as High Definition video;
 - Transmitted as a high priority item at the earliest possible opportunity, in a quality no worse than that described above as the minimum standard for Near Real Time video, defined above
 - Transmitted before completion of the mission in High Definition, as defined above. The High Definition video and the Near Real Time video may be sent as a single transmission so long as the requirements for both are met
- Panoramic photograph or photographs to yield a full 360° view of the CRAFT or secondary Vehicle's location at the end of the 500 meter journey, centered on or about the horizon and with a vertical dimension of no less than 60°;
- A minimum of one self portrait Detail Image each for the CRAFT and any secondary Vehicle visible from the end of the 500 meter journey, containing a substantial and recognizable portion of the CRAFT or Vehicle;
- A sufficient number of Detail Images to meet the requirements for imaging of the Logo Cluster and the XPF Payload.

TEAMS may elect to use a Standard Mooncast Content Plan, provided by XPF, or to provide a new Plan.

4.3.5 XPF Set Asides

XPF reserves 10 MB of data to be transmitted from the CRAFT or secondary vehicle while on the surface of the Moon. This data shall be provided to TEAM no later than 6 weeks prior to launch for integration with the CRAFT. Data will include, but is not limited to:

- Video message to be sent as the first video greeting sent from the surface of the Moon;
- Audio track to be sent accompanying the video shot on the surface of the Moon;
- Email message to be sent as the first email message sent from the surface of the Moon;
- Text message to be sent as the first text message sent from the surface of the Moon.

4.4 Data Uplink

The TEAM must transmit to the CRAFT while on the surface of the Moon at least 10 MB of data provided by XPF, for later transmission back to Earth. This transmission and retransmission may occur at any point during the course of the CRAFT's lunar mission, as determined by TEAM, subject to prior written consent from XPF.

4.5 Payload Requirements

The CRAFT must carry a payload or set of payloads collectively referred to as the "XPF Payload" to the surface of the Moon. The XPF Payload will be produced by XPF. Technical drawings and specifications of the XPF Payload item or items will be provided no later than July 20, 2009. The XPF Payload may include plaques and other systems that must be carried on the exterior of the CRAFT. The XPF Payload shall pose the minimum practical risk to the Mission or to relevant legal and regulatory compliance.

The mass of the XPF Payload shall be calculated according to the mass of the mobile CRAFT or secondary vehicle, and shall constitute 1% of that CRAFT or secondary vehicle's dry mass. In no case shall the mass of XPF Payload be less than 100 grams or more than 500 grams.

TEAMS must submit a Payload Placement Plan to XPF no later than 180 days prior to launch. TEAMS are encouraged to work with XPF well prior to this deadline to streamline the acceptance process.. The XPF Payload may not be subdivided into smaller volumes without prior written consent from XPF.

5 TEAM Requirements

5.1 Compliance with Laws and Regulations

TEAMS must adhere to local, regional, national, and international laws, and regulations for all aspects of the project, from purchasing of components to the launch of the CRAFT. TEAMS are responsible for acquiring the appropriate licenses, waivers, or permits from the applicable regulatory bodies or other applicable third parties.. XPF shall in no way be responsible for providing to TEAMS any advice or counsel, legal or otherwise, with regard thereto.

5.2 Reporting

On a quarterly basis, TEAMS shall provide to XPF an update on TEAM progress. Using a provided form, TEAMS shall update XPF on major TEAM developments, sponsorships, and investment to date.

5.3 Public Relations

TEAMS must fulfill a minimum set of public relations activities in order to provide continuous information to the public regarding the PRIZE, the TEAM's story, and the TEAM's progress. TEAMS shall use good faith efforts to jointly coordinate all publicity and press releases regarding the Google Lunar X PRIZE. XPF retains the right to introduce approval requirements for pending press releases.

5.3.1 Public Outreach Liaison

The TEAM shall name a volunteer or paid embedded communications specialist local to the TEAMS headquarters, production facilities, or launch site. This Public Outreach Liaison will be expected to fulfill or help fulfill many of the Public Relations Requirements detailed in this Section, including the Blogging and Video requirements below, and as such should be familiar with and able to competently discuss TEAM activities and plans..

5.3.2 Blogging and Video

The Public Outreach Liaison or other TEAM member or members shall publish a minimum of one blog per week to an XPF-designated website or XPF-designated Blogger account.

TEAMS shall also provide online streaming videos, posted to an XPF-designated website or XPF-designated YouTube account with a minimum monthly cumulative duration of 15 minutes. TEAMS shall publish a minimum of 8 discrete, substantively different videos per month, 4 of which shall have a minimum length of 30 seconds. TEAMS are permitted to post but not publish video pieces in advance, with video pieces counting towards monthly totals only in the month in which the video is published. Upon request, video shall be provided to XPF and its Partners in its original format.

5.3.3 CRAFT Schematics

The TEAM shall provide to XPF regularly updated graphics showing the CRAFT and related hardware for the purposes of education and promotion of the TEAM and the Google Lunar X PRIZE. Additionally, the TEAM shall provide details to XPF to assist with the creation of mock-ups of the CRAFT and related hardware.

5.3.4 Public Appearances

5.3.4.1 TEAMS shall send representatives to appear as spokespeople, judges, or attendees for Google Lunar X PRIZE-related public education and outreach events at the request of XPF. TEAMS are encouraged to attend to as many of

these as possible, and may be required to attend as many as one per year, and shall do so at its own expense.

5.3.4.2 TEAMS may be required to send CRAFT or reasonable mock-up thereof to appear at one Google Lunar X PRIZE-related public education and outreach event per year. Alternatively, TEAM must assist XPF in the creation of such mock-ups.

5.3.4.3 TEAMS awarded any Google Lunar X PRIZE purse are required to send the TEAM leader to XPF events after being declared a winner. XPF shall provide a notional schedule of such events after receiving a Notification of Launch Attempt. These events shall include, but are not limited to:

- a. Google Lunar X PRIZE Award Press Conference and Ceremony
- b. Google Lunar X PRIZE post-award tour or required speaking engagements.

5.4 Naming of CRAFT

TEAMS shall name their CRAFT and retain all rights to name their CRAFT, subject to obtaining prior approval from XPF as to such name to prevent conflict with the goals of the PRIZE.

5.5 Logo Placements

TEAMS shall display certain Google Lunar X PRIZE logos as specified by XPF. As each CRAFT will have a different design, the actual placement on a CRAFT will be considered on a case-by-case basis. Each TEAM shall work with the XPF to evaluate logo placement on the CRAFT. XPF reserves the right to put logos on all CRAFTs, as well as launch facilities, launch vehicles, secondary vehicles, and other relevant equipment.

The TEAM shall submit a Logo Placement Plan indicating desired size and placement of TEAM, TEAM sponsor, and XPF-provided logos no later than 12 months prior to launch attempt. XPF-provided logos must be in imageable locations, and must account for 50% of available logo space on the CRAFT and all relevant logo-carrying vehicles. XPF shall provide physical Google Lunar X PRIZE logos to the TEAM, or work with the TEAM to create the Google Lunar X PRIZE logos upon receipt of the Notification of Launch Attempt.

5.6 Sponsorships

TEAMS shall provide notice of pending sponsorships no later than 15 days prior to the execution of any sponsorship agreement, for purposes of coordination with Google, XPF, and other Google Lunar X PRIZE partners. TEAMS shall not enter into sponsorship agreements with any entity that interferes with the goals of the PRIZE.

5.7 TEAM Summits

TEAMS shall be required to send a knowledgeable representative to a minimum of one TEAM Summit per year at the TEAM's expense. At these summits, XPF will provide TEAMS with necessary information, review progress, and discuss any key issues.

5.8 Access to Facilities and Information

TEAMS shall permit XPF and the Google Lunar X PRIZE Judging Panel to access the TEAM's facilities and information, upon reasonable prior notice, on or prior to the proposed launch date submitted in the Notification of Launch Attempt package. TEAMS shall provide reasonable assistance and cooperation with regards to understanding all documentation, plans, materials, and technology (including the TEAM's launch vehicle) that is reasonably necessary for the judging of rules compliance or content capture. In order to respect TEAM's intellectual property and regulatory compliance, XPF will work with the TEAMS.

5.9 Launch Vehicle

The TEAM shall secure any launch via a commercial purchase that is fair and repeatable, including contracts with Preferred Launch Partners. All TEAMS must submit a Launch Plan, which must be approved by the Google Lunar X PRIZE Judging Panel, and which demonstrates that the launch is commercially reasonable. Additionally, TEAMS shall submit a notification of execution of any Launch Contract to XPF, to be kept confidential by XPF. Such notification shall include a summary of the relevant terms of the contract. Launch on board government-owned or government-developed launch vehicles shall be permitted, so long as the launch contract is commercially reasonable, in the judgment of Google Lunar X PRIZE Judging Panel.

5.10 Launch

The TEAM shall disclose to XPF its intent to attempt to launch no later than 180 days prior to a TEAM's scheduled launch date via a Notification of Launch Attempt package. XPF will keep TEAM's launch attempt confidential until 3 months prior to the scheduled date, if desired by the TEAM, after which time XPF will announce and promote the TEAM's launch attempt. TEAMS shall notify the XPF at the earliest opportunity of any launch delays.

TEAM shall use commercially reasonable best efforts to provide XPF and its Partners access to the Launch Facility and to relevant video and data feeds covering the launch and related activities. A Launch Site Access Plan shall be submitted for review to the Google Lunar X PRIZE Judging Panel no later than 180 days prior to launch. XPF will work with the TEAMS in order to respect TEAM's intellectual property and regulatory compliance.

5.11 Communication

5.11.1 Communications Overview

The TEAM shall be responsible for all communications with the CRAFT and any other related vehicles throughout the length of mission. TEAMS may use existing communications architectures, including Preferred Communications Partners, but are not obliged to do so. TEAMS may use any frequency band, so long as appropriate licenses or other permissions are obtained.

TEAMS shall provide XPF access to all communications, including telemetry during launch, flight to the Moon, and lunar surface operations, with the CRAFT and associated vehicles during the course of the mission, unless prior agreement is obtained from XPF. XPF will work with the TEAMS in order to respect TEAM's intellectual property and regulatory compliance.

5.11.2 Encryption Requirements

The TEAM shall encrypt all data returned from the surface of the Moon as part of a Mooncast dataset or as a part of the fulfillment of Google Lunar X PRIZE Mission Requirements. The TEAM is responsible for decrypting this data before providing it to XPF. In addition, the TEAM shall make encryption keys available to the Google Lunar X PRIZE Judging Panel in order to ensure the integrity of the data.

5.11.3 Data Delivery to XPF Servers

The TEAM shall provide all data related to the Mooncast and fulfillment of the Google Lunar X PRIZE Mission Requirements to XPF servers in a useable fashion. XPF shall use best efforts to provide an opportunity for the TEAM to conduct a test of such data delivery prior to launch, if desired.

5.11.4 Exclusivity of Content

The TEAM shall make the provision of any data related to the Mooncast and fulfillment of the Google Lunar X PRIZE Mission Requirements exclusive to XPF and XPF-identified Partners for the length of exclusivity demanded in Section 6.3.

6 Rights

6.1 Rights Overview

Final language regarding all rights associated with the Google Lunar X PRIZE will be included in the Master TEAM Agreement signed by all TEAMS. This section provides summary guidelines to the more detailed arrangements made in the Google Lunar X PRIZE Master TEAM Agreement.

6.2 Intellectual Property

The TEAM owns all rights in and to all of the TEAM's Intellectual Property associated with the design, manufacture, and operation of CRAFT, secondary vehicles, and subsystems, except as defined below. Nothing contained herein shall be construed as granting any proprietary rights, by license or otherwise, to XPF with respect to such property, except as defined below.

6.3 Competition Media Rights

Competition Media Rights are the rights held by and/or conveyed to XPF based on the competition, registered TEAMS, participants, missions, and events of the Google Lunar X PRIZE. XPF has hired a major Agency (the "Agent") expert in the packaging and sale of television, on-line, documentary, and other media rights to represent the Google Lunar X PRIZE, XPF, and all Registered TEAMS. XPF shall work with the Agent to negotiate the best media deals, focusing on developing extensive coverage, ensuring a fair proportion of coverage among relevant parties, and providing maximum revenue and distribution. The Agent will be under contract to XPF. XPF will report on a regular basis (no less than twice per year) to all registered TEAMS on the status of all activity and sales.

Ownership and ability to sell or otherwise exploit media rights is assigned according to the period of time in which the media was recorded and/or produced. These periods of time shall be: the Registration Interval, which consists of the period of time between the acceptance of a TEAM's application and the acceptance of a TEAM's Notice of Intent to Launch, as described in Section 5.10; and the Mission Interval, which consists of a period of time between the delivery of a TEAM's Notice of Intent to Launch, as described in Section 5.10, and the TEAM's withdrawal, the expiration of the PRIZE, or after a TEAM has successfully won the PRIZE and participated in the appropriate Award Ceremonies, as described in Section 5.3.4.3.

6.3.1 Registration Interval

Except as otherwise set forth in the Master TEAM Agreement, each TEAM shall retain the irrevocable, perpetual, world-wide, royalty-free, sublicensable right and license to capture and exploit all audio, video, or photographic material related to the TEAM's inclusion in the Google Lunar X PRIZE captured within the Registration Interval. However, all such media must remain in full compliance with restrictions upon the use of XPF Marks and the Marks of Google or other PRIZE partners as appropriate. Additionally, such media shall not be used in an attempt to slander or otherwise injure other Registered TEAMS.

XPF shall retain the perpetual right royalty-free usage on a non-exclusive basis of the raw footage or other raw material captured during the Registration Interval; these requests shall not be unreasonably denied. These rights shall extend to, but shall not be limited to, usage of raw material collected during the Registration Interval on YouTube or other media distribution channels.

XPF shall retain the right to request access to any and all TEAM facilities or events for the purposes of the capture of media for later usage; these requests shall

not be unreasonably denied. Additionally, XPF shall retain all rights and title in and to any and all audio, video, or photographic material created by, or on the behalf of, XPF or its agent and assignees. XPF shall have the right, exercisable in its sole discretion, to sell, assign, license, transfer or otherwise dispose of its rights and title in and to such audio, video, and photographic material in any manner. TEAMS shall retain the right to request royalty-free usage of such material as is pertinent to their own involvement in the PRIZE for the purposes of video news releases, internal TEAM communications, TEAM engineering work, TEAM employee or investor recruitment, or similar; such requests shall not be unreasonably withheld.

6.3.2 Mission Interval

Except as otherwise set forth in the Master TEAM Agreement, XPF, represented by the Agent, shall retain for license, sale, and other exploitation an irrevocable, perpetual, world-wide, royalty-free, exclusive, sublicensable right and license to capture and exploit all audio, video, or photographic material related to the Google Lunar X PRIZE and the story of each TEAM's role therein recorded during the Mission Interval. This package shall also include right and license as specified above to exploit all video blogs, as required in Section 5.3.2, produced during the Mission Interval.

XPF will release certain limited rights to TEAMS to allow them the ability to recruit and activate TEAM sponsorships, , provide short video news releases, communicate internally to the TEAM, perform TEAM engineering work, recruit TEAM employees or investors, as defined in the Master TEAM Agreement. Additionally, each TEAM may request audio, video, or photographic material release from XPF for such purposes; such requests will not be unreasonably denied.

XPF, as represented by the Agent, shall also retain an irrevocable, perpetual, world-wide, royalty-free, exclusive, sublicensable right and license to XPF for all video and imagery, regardless of its inclusion in the Google Lunar X PRIZE Mission Requirements, taken from the launch site, mission control center(s), or spacecraft(s) by XPF, its Partners, or the TEAM over a period of time beginning upon submission of the Notification of Launch Attempt (see Section 5.8 and Section 5.10) and ending after the completion of all Mission Requirements, including any relevant Bonus Mission Requirements, as verified by the Google Lunar X PRIZE Judging Panel. This collection of rights and licences shall include any media captured around or during award ceremonies, as mentioned in Section 5.3.4.3. Additionally, this package or rights and licenses shall include exclusive licensing of all video and imagery set forth in the Google Lunar X PRIZE Mission Requirements, including Bonus PRIZE requirements, regardless of when said imagery or photography is taken. The sole exception to this inclusion shall be any scientific data produced outside of the requirements of the Google Lunar X PRIZE Mission Requirements.

Exploitation, as used above, shall include: all copyrights, all motion picture rights of every kind, including, without limitation, theatrical and documentary motion picture rights, television motion picture rights, and home video rights, and all allied, subsidiary and derivative rights, including, without limitation, sequel, prequel and remake rights, novelization, comic book, comic strip, newspaper comics, “making of” book, merchandising rights, commercial tie-ups, stage rights, radio rights, webcast rights, internet display rights, and promotional and advertising rights (including, without limitation, the right to broadcast over radio, television, the internet, and all other media, advertisements with respect to any production produced based on the Google Lunar X PRIZE or the story of the Google Lunar X PRIZE). This package shall include all rights and title in and to any and all audio, video, or photographic material created by, or on the behalf of, XPF or its agent and assignees. XPF shall have the right, exercisable in its sole discretion, to sell, assign, license, transfer or otherwise dispose of its rights and title in and to such audio, video, and photographic material in any manner.

6.3.3 Media Rights Revenue Sharing

XPF shall share with Registered TEAMS all media revenues net of its expenses associated with the formulation of these media deals and of expenses associated with the production and distribution of any Competition Media . All registered TEAMS shall be provided a detailed revenue sharing plan no later than January 31, 2009. This plan shall detail the exact percentage of media-related net revenues, given to the Grand Prize Winner, the Second Place winner, and other Registered TEAMS, including provisions for alternate apportionment if the Grand Prize or Second Place prize is not claimed.

6.3.4 Promotion of Google Lunar X PRIZE and of TEAMS

XPF will use its best efforts through its public relations abilities to promote the Google Lunar X PRIZE and all registered TEAMS via media agreements with a variety of partners. The goal of this effort is to maximize visibility of the Google Lunar X PRIZE, TEAMS, and all sponsors within the constraints of any media deals negotiated by the Agent.

6.3.5 Release or Sublicensing of Rights to TEAMS

XPF shall negotiate joint use of all raw images and videos related to a TEAM’s participation in the PRIZE after the expiration of a commercially reasonable period of exclusivity.

6.4 Use of Marks

The TEAM shall not use the names, trademarks, copyrights, logos, insignias or similar intellectual property of XPF, Google, or other Google Lunar X PRIZE partners, contractors, or collaborators in any way without such party's prior written permission in each instance, which such party may grant or withhold in its sole discretion.

XPF grants TEAM a non-exclusive, royalty-free, worldwide license to use the XPF title logo and the Google Lunar X PRIZE logo for the approved purposes set forth in the Master TEAM Agreement.

6.4.1 Licensing of Logos

XPF, Google, and the TEAM shall have no obligation to, but may at their option jointly undertake the licensing of their respective logos (including the name, likeness, image and signatures of the TEAM) on merchandise and other services other than products or services that fall within the primary services provided by Google. The specific terms and conditions of any such licensing arrangement(s) shall be as mutually agreed to in a separate written license agreement.

6.5 X PRIZE Rights to TEAM and Vehicle Appearances

6.5.1 Merchandise

The TEAM hereby grants to XPF an irrevocable, perpetual, world-wide, royalty-free, non-exclusive, sublicensable right and license to use and exploit TEAMs logo(s) and the likeness of TEAM, the TEAM's CRAFT, related hardware with regard to merchandise and apparel in connection with XPF or the Google Lunar X PRIZE; provided, however, that XPF is not obligated to use any such likeness on any merchandise. If XPF uses any such logo, design or likeness on any such merchandise, it agrees to pay to the TEAM an agreed-upon percentage of the profits actually received by XPF for such merchandise, excluding applicable deductions for payments to third parties (including, without limitation, agents' fees) and other customary deductions. The specific economic terms pertaining to such merchandise are:

- Merchandise created by a TEAM: The TEAM has all rights related to such merchandise and will keep 100% of the proceeds. The TEAM must abide by all restrictions on the Use of Marks as dictated in Section 6.4.
- Merchandise created by the X PRIZE Foundation. The X PRIZE Foundation retains the right to sell merchandise related to the registered TEAMs during and after the Competition. In exchange for use of the TEAM logo, vehicle likeness, *et cetera*, the TEAM or TEAMs will be entitled a total of 50% of revenues net of expenses, to be split proportionally among those depicted in the merchandise.
- Merchandise created by the X PRIZE Foundation after the Grand Prize or Second Place Prize is won: The X PRIZE Foundation retains the right to sell merchandise related to the winning TEAM or TEAMs after the Competition.

In exchange for use of the TEAM logo, vehicle likeness, *et cetera*, the relevant TEAM or TEAMS will be entitled a total of 25% of revenues net of expenses, to be split proportionally among those depicted in the merchandise.

6.5.2 Mock-Ups

The TEAM hereby grants to XPF an irrevocable, perpetual, world-wide, royalty-free, non-exclusive, sublicensable right and license to use and exploit the TEAM's logo(s) and the likeness of the TEAM, the TEAM's CRAFT, and related hardware with regard to mock-ups of CRAFT and associated hardware used for education or promotion in connection with XPF or the Google Lunar X PRIZE; provided, however, that XPF is not obligated to use any such likeness on any merchandise. XPF will use best efforts to comply with requests for the updating of TEAM sponsor logos.

7 General Provisions

7.1 Official Language

The Official Language of the Google Lunar X PRIZE is English. All communications with the X PRIZE Foundation, including required public relations material, shall be in English unless the TEAM has received prior written permission. Additional copies in other languages are welcomed.

7.2 Acceptance and Removal

XPF reserves the right for any reason to reject the application of any potential TEAM, TEAM Leader, or TEAM Member to participate in the Google Lunar X PRIZE and to prohibit the participation of any person or any group of persons in the Google Lunar X PRIZE.

The TEAM Leader and each TEAM Members agrees to abide by a decision for removal, termination or disqualification made by XPF, without contest, legal recourse, or any other action of protest of the decision.

7.3 Indemnification

The TEAM shall defend, protect, indemnify, and hold XPF and Google free and harmless from all claims, demands, losses, costs, expenses, obligations, liabilities, damages, recoveries, and deficiencies, including interest, penalties, attorneys' fees, and costs, that XPF or Google may incur as a result of a breach of the Master TEAM Agreement by the TEAM.

7.4 Waiver of Requirements

Google, at its sole discretion, may elect to waive or relax specific requirements if the basic objectives of the Google Lunar X PRIZE are found to have been satisfied. Notionally, this would allow a TEAM that has roamed the lunar surface but failed to meet the full 500 meter roaming requirement to still qualify to win.

7.5 PRIZE Payment

TEAMS are only paid upon winning of the PRIZE and will not receive payment for preparation or participation in the Google Lunar X PRIZE.

7.6 Currency

All references to a currency shall be deemed references to United States Dollars.

8 Google Lunar X PRIZE Judging Panel

8.1 Judging Panel Overview

The official judges of the Google Lunar X PRIZE will be called the Google Lunar X PRIZE Judging Panel, or “Judging Panel”. The Judging Panel will be responsible for evaluating compliance with the Official Rules of the Google Lunar X PRIZE, including responses given by XPF as part of Official Question and Answer documents.

8.2 Representatives

The Judging Panel will be comprised of highly qualified and impartial Judges from around the world. XPF, at its sole discretion, shall name all Judges. Members of the Google Lunar X PRIZE Judging Panel will have backgrounds that include but are not limited to business, law, launch services, and engineering in order to ensure the Committee will be able to address all of the requirements of this PRIZE and its Rules.

8.3 Key Responsibilities

The key responsibilities of the Google Lunar X PRIZE Judging Panel include, but are not limited to the following topics specifically related to the Google Lunar X PRIZE Rules and Notification of Launch Attempt requirements.

8.3.1 Privately Funded Review

The Judging Panel must approve the TEAM’s financials in accordance to the 90% privately funded requirement addressed in Section 3.2.2.

8.3.2 ‘Fair Launch’ Review

The Judging Panel must approve the TEAM’s launch arrangements in accordance to the launch guidelines addressed in Section 5.9.

8.3.3 Payload Placement Review

The Judging Panel must approve the TEAM’s Payload placement arrangements in accordance to the payload requirements addressed in Section 4.5.

8.3.4 Mobility Verification Review

The Judging Panel must approve the TEAM’s mobility arrangements to approve of plans for calculating desired waypoints, if any, and methodology for

determining distance of roaming, in accordance with the mobility guidelines addressed in Section 4.2.

8.3.5 Landing Site and Site of Interest Approval

The Judging Panel must approve the TEAM's landing site and, if the TEAM intends to compete for the Heritage Bonus, plans to approach any Site of Interest, to eliminate unnecessary risks to historically or scientifically significant sites on the lunar surface.

8.3.6 Final Checkout

The Judging Panel must be invited to the final checkout of the CRAFT prior to a TEAM's launch attempt to ensure the CRAFT's integrity from the time of Google Lunar X PRIZE Judging Panel approval until the time of launch.

8.4 Access

The Judging Panel shall be allowed free and open access to the TEAM's facilities before and during Google Lunar X PRIZE missions. Additionally, the Google Lunar X PRIZE Judging Panel shall be granted free and open access to all data streams going to or from the CRAFT during the course of Google Lunar X PRIZE missions, for the purposes of verification. XPF will work with the TEAMS in order to respect TEAM's intellectual property and regulatory compliance.

8.5 Non-Disclosure

All members of the Google Lunar X PRIZE Judging Panel shall be required to sign Non-Disclosure Agreements, as well as statements acknowledging that all of the Intellectual Property developed by the TEAM is the sole property of the TEAM.

8.6 Conflict of Interest

To prevent conflicts of interest, or the appearance of said conflicts, the TEAM may request that one and only one member of the Google Lunar X PRIZE Judging Panel be recused from judging of the TEAM.

8.7 Rulings and Judging

All decisions made by the Google Lunar X PRIZE Judging Panel shall be rendered by a majority of the judges and will be considered binding on both the TEAM and the X PRIZE Foundation.