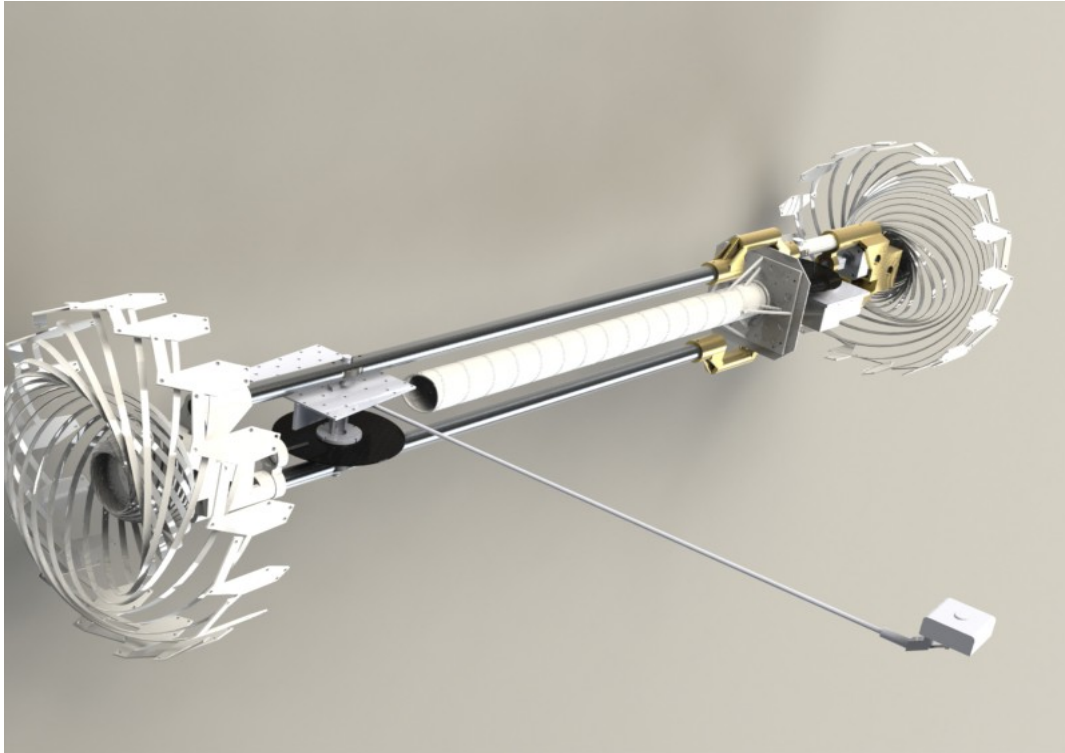


Team PlanB, Mobility subsystem, Media Plan



This document does not contain information and technologies restricted under Canada's Export Missile Technology Control Regime List, or any other export control laws or regulations of Canada

October 2013.

This document is based on open, web-available information. The source code and design are based upon information in the public domain that is available freely over the internet. Any Risk Assessment of the Planned Mission and tests designed to mitigate the risks have been developed by using only common sense.

Acknowledgments

The Team PlanB wishes to thank the support of all volunteers for their input in design of the mission, rover, and critical components; especially in a "plan B" scenario, because "plan A" is considered as "plan for Dreams" of the way to the moon. The Team Plan B would also like to acknowledge that technical information from Boris Chertok's books was extremely valuable in designing the blueprint for the mission.

Design and development by Team "Plan B" is available under a
[Creative Commons Attribution-ShareAlike 3.0 Unported License](#).

© 2010-2013. Adobri Solutions Ltd.

Mobility Subsystem Media Plan

The Restriction and Safety Issues:

There will be filming and audience restrictions for Mobility Subsystem Tests 5, 6, 8, and 9, which are conducted at government and/or international testing facilities. No direct coverage will be allowed, unless special permission is acquired. The other demonstrations will have no restrictions on entry or filming since special interest facilities are not being used. Any requests by property, or company owners will be respected. Limited capacity involves physical available space, along with facility capacity for equipment. Safety issues involve specific forms of interferences.

The Media:

The following is a complete list of appropriate media available for contact for all 3 of the Subsystem Demonstrations:

Vancouver News Media (Radio and Newspaper)

24 Hours Vancouver
CBC Radio
CKWX AM 1130
Metro Vancouver
Vancouver Courier
Vancouver Observer
Vancouver Province
Vancouver Sun

Student Media

The Peak
90.1FM CJSF

Vancouver Entertainment Media (TV News)

CBC British Columbia
City TV Vancouver
CTV British Columbia (CIVT TV)
Global TV BC

Vancouver Society Media (Newspaper)

Tyee

Other Media

Select Ontario News Media

Select Ukrainian News Media (Donetsk, Dnepropetrovsk, National)

Select USA Media

The Mobility Subsystem will be tested publicly and privately in Vancouver BC, Ontario Canada, and Dnepropetrovsk Ukraine. Media formats with Canada wide affiliation will be especially sought after. The ideal media will be selected from the above list, from newspaper, radio, or TV formats, based on the story, sound, or live action taking place during the test.

The Audience:

The targeted audience will be based in Canada, especially BC, and Ontario, as well as Ukraine. The targeted audience will include radio listeners across, television news viewers, newspaper readers, as well as students of local universities.

Press Release Information:

Team Plan B uses 3 actual hockey pucks, in conjunction with 3 stepper motors, connected to the frame of the brake engine, to assist landing on the Moon. This includes actually firing a puck at the Moon during landing. The role of the pucks is to assist craft rotation during the trip, without using fuel. The team is the only Canadian competitor in the Google Lunar X Prize.

The hockey pucks are used as rotation or reaction wheels, where other craft might use a single iron ball. Rational momentum is created, which allows the craft to rotate using only electrical energy, instead of fuel. This type of ballast system generally requires either one ball, or 3 orthogonality mounted reaction wheels for easy and slow control of the craft, to rotate it in any desired direction.

Team Plan B chose to use 2 rotation axes - one being the rover wheels themselves. When these freely rotate, they will create rotation moment, and the hockey puck's rotational axis cuts through the engine's nozzle, spinning the craft on that axis.

The wheels on rover will be used after landing on the Moon, but the hockey puck is ballast after last task: when craft achieves final orientation, the Moon braking engine will be ignited for the final landing burn. Ignition of the brake engine is the moment when the hockey puck, along with the stepper motor, and part of the mount of the motor will be separated from a craft. The location of the mount, the stepper motor, and the hockey puck is inside nozzle of the brake engine. Engine ignition will launch the puck to "be faced off to the lunar surface".

Demonstrations and Tests:

Media demonstrations for the Imagine Subsystem starts off sharing 2 tests with the Landing and Mobility Subsystems. Each of the subsystems is specifically tested during these shared setups.

Mobility Subsystem Test 1 (25 Kilometer Communication Range)

A rehearsal of the communication range and landing elements will be tested at 25 kilometers. For this

test, the Nano-satellite (a test mission satellite) will be set up on the Burnaby campus of Simon Fraser University. The campus is isolated on a mountain, with an elevation of 370 meters, and located 20 kilometers from the downtown Vancouver core. A ground station is also set up in Stanley Park (25 kilometers away), close to the downtown core.

This allows for at least two locations to be covered by media groups. The Simon Fraser University location will involve student media, with students being encouraged to attend. The test will be promoted to The Peak newspaper (a student newspaper of the university), as well as advertised on the 90.1FM CJSF community radio station, inviting attendees of the general public from the campus and surrounding area. Also this will be a good location to film for TV.

The Stanley Park, and mission control locations will be introduced to the local Vancouver news papers and radio. These are also welcome to attend the SFU location as well.

At Simon Fraser University, the Nano-satellite will be suspended on a wire, to allow rotation on a horizontal projection. To the left and right of the suspended Nano-satellite will be the pictures of the Moon, and the Earth, respectively. The Nano-satellite will be turned to the direction of SFU, and connect with the ground station.

From mission control, and the ground station, the Nano-satellite will be instructed to take pictures and video. All videos, pictures, and data will be transferred to the mission control server, and available to view from the mission control server. In this rehearsal, the commands will be sent to orient the antenna from SFU to Stanley Park (Nano-satellite ground location). This orientation will test the mobility of the ground station (the ground station is the stripped version of rover, and all ground stations will use the same basic setups, hence the rover mobility controls can also be tested).

There will be a line of communication between the mission control and the media at both locations, via mobile phone.

Mobility Subsystem Test 2 (100 Kilometer Communication Range)

This will be a communication and control test, same as before, only at a range of 100 kilometers, with the same principles tested at the 25 kilometer tests. The media involvement in this test will depend on the response from the first, and might involve media from another city, or possibility from the United States of America.

Mobility Subsystem Test 3 (Thermal Test)

A test of the thermal subsystem of the Nano-satellite, the same as test “Mobility Subsystem Test 1 (25 Kilometer Communication Range)”, but this time the Nano-satellite will be suspended on wire and placed between heat elements: +80C, and containers with dry ice -75C. The same behavior is expected as in the first test, only now the Nano-satellite will rotate to expose its sides, sequentially, to heat, and to cold. Any interested media will be invited for this test as well, since contact information will be exchanged in the first test. This test is the same as “Imaging Subsystem Test 4 (Thermal Test)”, but focuses on the mobility aspect.

Mobility Subsystem Test 4 (Preliminary Vibrational Study)

A vibrational test study will be conducted using a shaking table, between the frequencies of 0-200Hz. Then an acoustic study study will be conducted with expose to music, with frequencies ranging from 200-5000Hz. This will be done to detect resonance frequencies in the communication exchanges. Musical suggestions can be polled, and the ideal media for this test will be newspaper and radio.

Mobility Subsystem Test 5 (Vacuum Out Gassing Test)

A vacuum test for out gassing will be conducted in Ontario. A government facility will be testing the Nano-satellite, which will be placed in chamber, exposed to a vacuum, have heat applied, and monitored for 2 hours. A successful test will result in no pressure change.

There will be filming restriction depending on the owners of the faculty, so for this test the primary media will be a correspondence will local Vancouver and Ontario newspapers, based on the results of the test. The article might be in a question and answer format, covering other aspects of Team Plan B's mission.

Mobility Subsystem Test 6 (Vibrational Study)

A vibration test for the certification of the Nano-satellite to fly will be conducted in Ontario, again most likely the same facility as Test 4. The might be video allowed for this, and if the owner agrees, this will be the only media format for this test.

Mobility Subsystem Test 7 (Mockup Vibrational Study)

A vibration study of a mock up of the actual entire craft. All parts and frame are made from carbon fiber, and a mock-up of the engine is filled with wax. This test has the same as the “Mobility Subsystem Test 4 (Preliminary Vibrational Study)”, but with logos and complete main mission craft. This test will conducted at the Vancouver Space Museum instead, and will likely allow for video, newspaper, and radio. This test might be done at the same date and location as the “Landing Subsystem Test 5 (Rover Unmounted, and Control Test)”:

Mobility Subsystem Test 8 (Final Craft Out Gassing Test)

A vacuum test for out gassing will be conducted in Ontario. A government facility will be testing the main craft, which will be placed in chamber, exposed to a vacuum, have heat applied, and monitored for 2 hours. A successful test will result in no pressure change.

There will be filming restriction depending on the owners of the faculty, so for this test the primary media will be a correspondence will local Vancouver and Ontario newspapers, based on the results of the test. The article might be in a question and answer format, covering other aspects of Team Plan B's mission.

Mobility Subsystem Test 9

A vibration test for the fully assembled craft must be done on launch vehicle facility, which in the case of Dnepr Rocket, will be in Dnepropetrovsk, Ukraine. Recording of any kind will most likely be

prohibited. Any correspondence will likely be with local newspapers in the form of a question and answer session with Team Plan B, before the launch of the main mission. As much media as possible will be involved.