Moon ship – 1

Mission And System requirements

# SKY WEB

Sky Web is a commercial space start-up company which was started in hope of sending humans to LEO and outer space again to make mankind a multi-planetary space civilization. These are the main objectives of Sky Web for next 6 years (2024-2030).

* Create a LEO(Low Earth Orbit) station that will act as a starting point for deep space and moon missions.
* Send humans to moon and create a moon base.
* Send humans to mars and beyond.

SKYWEB is still at the startup stage. But with a correct vision and solid ideas, we have full confidence that we can achieve the goal of putting Europe as the pioneer of the future of space exploration. Following document is about how SKY WEB hopes to help ESA’s Terrae Novae 2030+ strategy.

System and Mission Requirements file

The moon is the nearest space object near to earth and it is the only natural satellite earth has. Distance from earth to moon is 384,400km. But mankind reached the moon during 60’ and 70’s.

Moonship – 1 is a concept design for ESA ‘s upcoming lunar mission program under the ‘Terrae Novae Strategy’. The primary goal of the Lunar-I rover is to study and explore the moon’s south pole and preserved water in the PSR(permanent shadowed region).

Moonship -1 has these main objectives.

* Reach the moon’s south pole/PSR area.
* Moon landing.
* Deploy the lunar-I rover to moon surface.
* Deploy other mission crafts. (additional)
* Moon launching.
* Return to earth.

Mission Requirements

NASA’s apollo program has a Lunar Module (LM) aka ‘EAGLE’ was the first crewed vehicle to land on the moon. It was a manned mission.

So, we must design a moonship module for landing on the moon and relaunch from the moon.

The purpose of the mission is to Design a moon landing and relaunching module as a beta test program for future missions.

Progress and data of this mission will be the main factor for future moon landing and launching missions.

Moonship – 1 has these mission requirements.

1. Functional –

Main mission objective to land moonship on the moon surface and successfully relaunch.

To meet this requirement, we must create the module, with good landing procedures/maneuvers and relaunching maneuvers.

Main challenges for the functions of the rover system are vacuum space, surface of the moon, finding a suitable area to land near south pole.

1. Operational –

Main operational maneuver of the landing module is to successfully land on the moon surface and successfully relaunch from the moon surface.

Successfully enter the earth’s atmosphere and reach the earth’s surface.

1. Constraints –

Moonship will be the first module type for future unmanned missions. Moonship will demonstrate the mission operations of landing of moon, relaunching from the moon, enter the earth atmosphere and successfully reach the earth surface.

System Requirements

Moonship should meet several system requirements to perform with 100% accuracy in landing, relaunching and return flight to earth.

1. Performance (expecting) and design –

Main performance of this demo version is to reach moon, successfully land on the moon, relaunch from the moon, reach and land on the earth.

To perform these duties, space craft must have a perfect engineering process including many systems.

Moonship will include with pre-programmed onboard computer system to perform the main tasks of all these events.(in any emergency, ground control can control the space craft manually.)

Moonship will include a propulsion unit with up to 3 descent engines and thrusters to adjust the angel of the space craft on the upper side.

Moonship will have a camera system to actively observe the environment around covering different angles.

Adjustable 4-leg stand system for landing.

Solar panels for energy needs while on the moon.

A Heat shield on the front for entering back to earth.