

SPACE EXPLORATION SYMPOSIUM (A3)
Moon Exploration – Part 2 (2B)

Author: Mr. Thomas Diedrich
Airbus DS GmbH, Germany, thomas.diedrich@airbus.com

Dr. Peter Kyr
Airbus DS GmbH, Germany, peter.kyr@airbus.com
Mr. Joerg Bolz
Airbus DS GmbH, Germany, joerg.bolz@airbus.com
Mr. Robert Buchwald
Airbus DS GmbH, Germany, robert.buchwald@astrium.eads.net

LUNAR LANDER PHASE B1 - STATUS, MISSION AND SYSTEM CONCEPT

Abstract

Following Phase A studies the European Space Agency (ESA) has initiated in 2010 a mission study on Phase B1 level to investigate a Lunar Lander mission focussing on soft precision landing by means of landing legs and also providing hazard avoidance capability. The primary objective of this first European Lunar Lander mission is to demonstrate the European ability to deliver payload safely and accurately to the Moons surface to enable future human lunar exploration. Once successfully landed, the mission will also offer the opportunity to conduct important scientific investigations in view of future human exploration.

The Astrium GmbH has been awarded the contract by ESA/ESTEC as Prime Contractor for the execution of the Phase B1 activities. The whole Phase B1 is scheduled for 18 month divided in two parts. The first part of 6 month duration is concentrating on the definition and analysis of potential landing sites near the Lunar South Pole while assessing in parallel the impact on the system design. This first part will be finished by a Polar Landing Review (PLR). After the PLR a 12 month second part is foreseen to work on design iterations on the system and mission concept ending with a preliminary System Requirements Review (Pre-SRR). The system related part of the study will be supported in parallel by breadboarding activities related to GNC and propulsion aspects.

The paper gives an overview on the status of the Phase B1 to be finished mid of 2012, describing the mission, the system and preliminary results obtained up to now.