

SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)
Future Space Transportation Systems (4)

Author: Mr. Piotr Perczynski
MT Aerospace AG, Germany, piotr.perczynski@mt-aerospace.de

Mr. Marc Scheper
OHb System AG-Bremen, Germany, marc.scheper@ohb.de
Mr. Sascha Larch
MT Aerospace AG, Germany, sascha.larch@mt-aerospace.de
Dr. Ulrich Clormann
MT Aerospace AG, Germany, ulrich-clormann@mt-aerospace.de

ECONOMICAL SELF-SUSTAINABILITY OF A NEW EUROPEAN LAUNCH SERVICE (NELS)

Abstract

MT Aerospace has lead on behalf of OHb Technology Group one of two ESA funded feasibility studies for NELS (New European Launch Service). The objectives of the study were to find alternative technical, financial and organizational concepts for a future, self sustainable European launch service. The first phase of this study was completed in October 2012. A second phase to detail the financial and organizational concepts of the preselected PPH launcher configurations was completed until April 2013.

During the study, a preliminary layout of eight launch system architectures has been established. The launcher concepts included ones with solid propulsion, LH2/LOX and LOX/Kerosene. For each architecture, a preliminary subsystem dimensioning and detailed mass breakdown have been established. This has served as an input to a detailed recurring and non-recurring cost assessment, performed with commercial cost estimation tools and calibrated to the specific inputs from various industrial partners. For each launcher architecture a business case simulation has been performed, based on the estimated costs and the market forecasts for 2020-2040. The results have been an assessment of economical self sustainability for a variety of scenarios.

The feasibility assessment shows that the economical self sustainability and launch cost targets can be achieved for several concepts. MT Aerospace will present a summary of the results and the exploitation cost key drivers with focus on the market performance of the PPH concept.