DocumentID	241420
Vortragstitel	The common Core Booster Architecture as Basis for a Cost Efficient European Next Generation Launch Vehicle
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Preisträger	
Vortragssprache	englisch
Seiten	10
Veranstaltung	Deutscher Luft- und Raumfahrtkongress 2011
Veranstaltungsort	Bremen
Veröffentlicht in	Deutscher Luft- und Raumfahrtkongress, Tagungsband - Manuskripte, 2011; Seite 1321 - 1331; DGLR e.V.; Bonn; 2011
Stichwörter	Trägerrakete
	Kosteneffizienz
Abstract

In an internal R&D study a variety of concepts for a next generation launcher (NGL) were investigated with a special focus on minimal life cycle cost (LCC). The comprehensive experience of the involved companies in the development and production of tanks and structural elements for different launcher programs was an important asset for these investigations.
Cost estimations were performed on basis of Transcost 7.3 [1], internal tools and in house data bases. For the comparison of different concepts a payload manifest was established and extrapolated to a service life time of 20 years. Preliminary trajectory analyses were performed by ASTOS for a proposed common core booster (CCB) launch vehicle family that evolved as the lowest cost approach.
This CCB launch vehicle family was further investigated with regard to production aspects and detailed technical solutions like a modular interstage adapter for axial load bearing. Additional approaches for further cost savings, especially for production and operations, were considered.