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Vortragstitel	Stepwise Development Testing and Technology Demonstration of a Landing System with Landing Legs
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Abstract	<p>One of the major milestones during the development of a landing system for robotic or manned exploration is the analyses and verification of the chosen design on Earth. Prerequisite for a successful verification is a realistic representation of the touchdown conditions and the target landing site properties in a laboratory environment. In particular the lower gravitational acceleration as it is present on Moon, Mars, comets or asteroids is a key driver for the design of the landing subsystem with respect to landing stability issues. Due to the fact that usually not all relevant environmental properties of the target landing site can be provided in one single and complete test, any verification approach has to be strongly supported by adequate numerical analyses.</p> <p>In 2008, a generic research study has been set up by the Astrium GmbH, funded by R&D money[1] and coordinated with the current European mission studies. The main purposes of these research activities are the successive increase of the technological maturity and knowledge of the landing subsystem up to TRL 5-6 and the development, correlation and validation of the dedicated numerical software tools.</p> <p>Within the used stepwise test and verification approach the complexity and level of integration is successively increased on breadboard and numerical analyses side in parallel. On each level of integration the numerical models are correlated with the results of the development tests. The paper will give a look inside of the performed tests and the achieved results. Special focus will be set on the discussion of the representativeness of the chosen test scenarios and numerical tools and the applicability for future mission studies.</p>