

57th IAA SYMPOSIUM ON SAFETY, QUALITY AND KNOWLEDGE MANAGEMENT IN SPACE  
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AVIO S.p.A., ItalyTHE INTEGRATED SAFETY AND ENVIRONMENT MANAGEMENT SYSTEMS: A ROUND  
APPROACH TO A DUAL PROPULSION TECHNOLOGIES FOR SOLID AND LIQUID SPACE  
LAUNCHER STAGES**Abstract**

The continuous and growing demand for space launches and the increase in competitiveness are increasingly pushing to invest in human resources, technologies and efficiencies. This evolution requires constant supervision combined with rigour and discipline. A systemic approach, based on integrated management systems, guarantees this safeguard, allowing evolution by creating the technologies and products of the future. Avio is experiencing this evolution and consolidated a twofold integrated management systems: Health, Safety and Prevention of Major Accidents Management System and Environmental Management System, certified accordingly to ISO45001 and ISO14001, respectively. This practice enabled to keep the production of the solid rockets safe and reliable and to invest, at the same time, in the new liquid propulsion technologies. The methodical and rigorous application of the rules in procedure, taking the new human resources by the hand, educating them to the rigor and discipline of the "spatial" profession, are allowing the transformation and growth of Avio. The base logic and the mature structures of the Systems are presented in this paper as best practice to rule the extremely large and complex manufacturing sites. The main crossed links enable tight controls to preserve the environment, leading to the safe deal of high quantities of dangerous substances.