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THE PATH TO MISSION SUCCESS: THE UK'S MISSION ASSURANCE FRAMEWORK FOR COMMERCIAL LAUNCH SERVICES

Abstract

Mission assurance is critical to the success of commercial launch services, ensuring that payloads are safely and reliably delivered to their intended orbit, particularly for institutional launches. The United Kingdom (UK) has started work on a mission assurance framework to support the commercial launch industry and enable UK-based companies to compete in the global market. The framework is being developed as part of R&D performed by the UK Space Agency Office of the Chief Engineer, which has a broad mandate to provide technical assurance to UK Space Agency activities and also the capability to perform feasibility studies on topics that may inform future UK policy.

The UK's mission assurance framework focuses on reliability and mission success, identifying, mitigating, and managing risks through verification of the rigorous testing, analysis, and validation of launch systems and processes. It is distinct from the licencing and safety aspects of commercial launch operations, which are regulated in the UK by the CAA (Civil Aviation Authority). The framework may include provisions for incident reporting and investigation and potentially be supported by a network of specialists.

The work for the development of the UK's mission assurance framework shall be carried out in consultation with industry stakeholders, and is intended to facilitate the growth of the commercial launch sector in the UK. The framework is expected to be adaptable to various types of launch vehicles and missions, and will be designed to be flexible and responsive to the changing needs of the industry.

This paper presents the concept, plans, and expected timeline for the UK's mission assurance framework to become operational, including the key elements of the framework, its focus on reliability and mission success, its relationship with the CAA's regulatory framework, and its potential to benefit from new digital engineering approaches and synergies with other national or international frameworks. The paper concludes by highlighting the expected impact of the framework on the growth of the commercial launch industry in the UK, and the potential for the UK to become a leading player in the global commercial launch market.