

SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)
Launch Services, Missions, Operations, and Facilities (2)

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A NEW ORBITAL LAUNCH SITE IN THE UK

Abstract

The UK's new National Space Policy, published in December 2015, states the intention of the UK Government to launch small satellites from UK territory for the first time. This would specifically include vertical launch by rocket, in addition to options for horizontal launch from aircraft which may be associated with space tourism at other UK sites.

This paper examines the case for vertical launch to polar and sun-synchronous orbits from a coastal launch site in northern Scotland. A clear set of criteria for the siting of such a launch facility, designated UKVL (UK Vertical Launch), are outlined and their relative importance appraised. Geography gives the Scottish Highlands and Islands area a competitive advantage over the rest of the UK and Europe in this sector. It is one of only very few places in Europe from which satellites can be launched safely over the ocean into polar orbits. The formal assessment process results in the selection of an optimum site with an oceanic outlook for safe launch which meets mission requirements.

The UKVL project aims to provide a facility for the preparation and launch of small orbital rockets carrying satellites up to 400kg to low Earth orbit. The facility will include a generic launch pad suitable for different launch vehicle types, a launch vehicle assembly area, payload integration room and associated visitor facilities for launch viewing. Environmentally sensitive areas and existing rural pastoral activities will be accommodated within the site ground plan. The project will have subsidiary objectives to create employment in a remote area, to generate revenue through business growth, to increase skills and promote the STEM (science, technology engineering and mathematics) educational agenda, and improve regional infrastructure, all of which will be of benefit to the local community and the national economy.

The project is seen as an important measure to help grow the UK space industry and protect the competitiveness of the UK's satellite manufacturing supply chain. The UK space sector has delivered year on year economic growth rates of around 8