IAF SYMPOSIUM ON COMMERCIAL SPACEFLIGHT SAFETY ISSUES (D6)
Enabling safe commercial spaceflight: vehicles and spaceports (3)

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THE MICHIGAN LAUNCH INITIATIVE – CREATING A NEW INLAND POLAR ORBIT LAUNCH SITE USING EXISTING INFRASTRUCTURE

Abstract

There are now 12 FAA/AST licensed spaceports in the US, with several more in the works. Most of these licenses are for suborbital horizontal takeoff and landing tourism and research flight operations. Only four spaceports are now licensed for orbital flight, and only two sites (Kodiak and Vandenberg) are available for launch to polar orbit inclinations. However, by far the largest segment of the LEO market demand is for high inclination orbits from Sun Synchronous Orbit (SSO) for almost all Earth Observation applications, to near-polar (85 - 88) for the LEO telecom and internet mega-constellations. For horizontal takeoff and landing systems there currently is only one option at Vandenberg, and that capability has never been used.

To address this market need in the largest segment of the LEO launch sector, the Michigan Launch Initiative has been established as a PPP between the Michigan Aerospace Manufacturers Association, the State of Michigan, and local airport operators with existing runways and airspace infrastructure suitable for polar orbit launch operations. The state has appropriated $2 million for the licensing effort including engineering, environmental and safety studies. The fundamental operating premise is to use existing 12,000' runways that were former B-52 SAC bases as takeoff and landing sites and use the Lake Huron military restricted airspace as a safe over-water launch corridor launching to the north. The Oscoda Wurtsmith airport in the Saginaw Bay area of Lake Huron would be the takeoff site and the downrange landing sites would be in the Upper Peninsula at Kinchloe or Sawyer Airports. Overflight of northern Ontario by the upper stages will require approval by the Canadian government, which is being discussed now. A vertical takeoff expendable rocket launch site has also been selected along the Lake Superior coast which would also use a common Command Control Center at Kinclloe. Several launch companies – both horizontal and vertical – have expressed initial interest in conducting launch operations from Michigan if a license can be obtained. Hypersonic flight testing is also envisioned.

This paper will describe the use of existing infrastructure and the planned coordination between the US and Canadian governments to create an international polar launch corridor that can service the largest demand segment of the LEO launch sector. Technical details of the launch sites and flight corridors will be described along with economic development efforts by state and local stakeholders.