Energy Unmanned Traffic Management Trials (Energy UTM)

The Energy UTM Trials (EUT) will pilot (TSRL 7) a technology to allow safe and regulated drone flights beyond visual line of sight (BVLOS). Drones are an advantageous technology with countless applications. However, in Canada, as in most countries, regulations are not yet in place for full long range deployment at scale. Robust and reliable technologies are required to permit, approve, monitor and regulate drone flights to ensure public safety and the safety of piloted aircrafts. AirMarket and PTAC member oil and gas companies are collaborating for the piloting of the necessary UTM and connectivity technology in the context of national trials supervised by Transport Canada and NAV Canada.

FUNDING DETAILS

RECIPIENT:
PTAC Petroleum Technology Alliance Canada

PARTNERS:
AirMarket, TELUS, TC Energy

TOTAL BUDGET:
$3,293,558

AI FUNDING:
$506,000
TIER

PROJECT DATES:
APR 2020 – MAR 2022

PROJECT TRL:
Start: 6
End: 7

APPLICATION

The EUT will, in the short term, allow BVLOS in specific sites in the oil sands / remote region(s), and in the longer term contribute to the development of the BVLOS regulatory framework and create Alberta jobs in this emerging sector of the digital economy. The UTM technology is based on software in service in Dubai (United Arab Emirates) / New Zealand / Italy. To provide highly reliable telecommunications coverage, TELUS and AirMarket have built a mobile "UTM in a Box" solution, for remote areas requiring UTM services.

PROJECT GOALS

The project will establish 4G UTM services using:

- Existing TELUS fixed telecommunications
- Mobile "UTM in a Box" infrastructure, for the purpose of conducting trials in the oil sands region.

The outcome will be reduced environmental impact (reduced GHG emissions and land disturbance), substantial operating cost reductions, improved worker safety, and the progression of a technology and service that could be deployed in other industries and other regions, and open the door to automation, machine learning and artificial intelligence application in resource industries.

BENEFITS TO ALBERTA

Reduced GHG Emissions –Drones will replace piloted aircrafts, trucks and off terrain vehicles; they are more energy and fuel-efficient than heavier and slower vehicles thereby reducing GHG emissions. Reduced helicopter and truck rolls will also reduce environmental footprint, and positively impact land and vegetation.

Improved Oil Sands Efficiency - Oil sands sites are remote and often difficult to access. Helicopters, trucks, and off terrain vehicles are expensive, labor-intensive, and energy-intensive. By contrast, drones are fit for purpose efficient vehicles that can carry sensors providing real-time digital data that allow for machine learning to improve the efficiency of operations.

Digital Economy – The EUT is directed at oil sands operations as the first area to pilot the new technology. However, UTM technology is scalable to other oil and gas operating areas and other resource industries such as forestry and agriculture. This will create substantial technology business and employment opportunities for Albertans in a growing and highly prospective field.

10 Project Jobs   **40 Future Jobs**   **AirMarket 3 & Telus 2 New Products/Services**   **Enables Future GHG Emissions Reductions**

SEP 2021

The project team completed a significant amount of work on the necessary flight operations and regulatory initiatives. 100 VLOS and modified BVLOS flight hours were conducted. AirMarket conducted extensive regulatory work with Transport Canada (TC) in the development and approval of the Special Flight Operating Certificate (SFOC) for BVLOS in segregated airspace. AirMarket has a leading role in the national RTM Action Team that is co-chaired by TC and NAV Canada.