An Overview of the Canadian Federal Airborne LiDAR Data Acquisition Guidelines

*Steven MCARDLE¹, Glenn FARRINGTON², Jian YANG¹, Aleksey NAUMOV¹, Eitenne BONHOMME³, David BELANGER³, Nouri SABO³, Paula MCLEOD³

1. 4DM, 920 Yonge Street Suite 803, Toronto, Ontario
   smcardle@4dm-inc.com, jyang@4dm-inc.com, anaumov@4dm-inc.com
2. IcePalm Research, Oshawa, Ontario
   icepalmresearch@gmail.com
3. Canada Center for Mapping and Earth Observation, Natural Resources Canada, 560 Rochester Street Ottawa, Ontario
   Eitenne.bonhomme@canada.ca, david.belanger@canada.ca, nouri.sabo@canada.ca, paula.mcleod@canada.ca

* Corresponding Author

The Canada Centre for Mapping and Earth Observation (CCMEO) key mapping strategy is to improve the national elevation data set through the application of airborne LiDAR technology. LiDAR has extensively been adopted across Canada by the provinces, territories and federal government departments as the main technology for acquiring high precision elevation data. However, there had been no national coordination nor identification of common guideline that could be used. The implication is that LiDAR data collection across the country has not been uniform and possess serious data integration challenges across different jurisdiction. To foster harmonization across all levels of government as well as industry, a National base LiDAR guideline was developed through a consultation process with government, industry and academic plus a review of international best practices was conducted to establish a base guideline as a common ground. The development of the National guideline addresses many complex considerations including data acquisition, processing, validation, and deliverables, with the focus on developing accurate elevation data. The guideline emphasis was on quality and accuracy requirements while not constraining innovation and technology advancements. The guideline also contains supplemental information for individual tree/forest mapping, flood risk mapping, urban infrastructure mapping and high relief mapping. Details on the guideline are presented to inform the remote sensing community on the requirements for minimum requirements for nation wide elevation data set.

*For Oral Presentation