

Ontario Centres of Excellence Inc.

Expression of Interest Form – Centre for Earth and Environmental Technologies

Please complete and return by e-mail to: Don.Lewis@oce-ontario.org, or Michael.Fagan@oce-ontario.org, or Richard.Worsfold@oce-ontario.org

Project Title: Evaluation and Development of LiDAR Data Acquisition Standards for Forestry Applications

Project Leader: Paul Treitz Title of Position: Associate Professor and Graduate Chair

University/Department: Department of Geography, Queen's University

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Partner(s) / Problem Owner(s)

Name of Organization: Tembec Industries Inc.

Contact Name and Title: Ken Durst, Forest Information Services Coordinator

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Name of Organization: Forestry Research Partnership

Contact Name and Title: John Pineau, Extension Manager

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Name of Organization: Ontario Ministry of Natural Resources

Contact Name and Title: Murray Woods, Senior Analyst – Forested Landscapes

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Problem/Issue Research will Address: [In 3 or 4 sentences, what is the problem you intend to solve?] There has been a rapid growth in the application of lidar data for forestry, especially with respect to the potential production of an enhanced forest resource inventory and much improved land base feature delineation. However, standards for the acquisition, processing and application of LiDAR data for forestry and natural resources inventory and management do not currently exist. For example, data acquisition standards (e.g., sampling density) that determine the optimal acquisition of lidar data for forestry (in terms of forest variable estimation and cost efficiency) have yet to be developed. These standards are required if the forest industry is to gain the best possible return from the technology across a range of forest conditions and for specific operational requirements. This research will analyze lidar data that have been acquired with different lidar systems and under different operating conditions across a range of forest ecosystems in Ontario. This will provide the basis for the development of lidar data acquisition standards, and their incorporation into a large-scale forest inventory management system.

Target Technology/Solution: [In 3 or 4 sentences, what technology or solution is expected]. In addition to peer-reviewed and accepted standards for LiDAR use in forestry, a modular software application that respects and incorporates these standards will be developed, and made available as a component part of a full-scale and comprehensive forest inventory management

system. This LiDAR software module will allow the processing, viewing and manipulation of raw LiDAR data; and the production of various forestry outputs in keeping with the scope of the standards that are developed through the project.

Technology Receptor(s): [What organization(s) will use/commercialize the technology?]
 Tembec Industries Inc. and associated contractors involved in the acquisition and processing of LiDAR data will apply the standards and the software directly in day-to-day operations. The Ontario Ministry of Natural Resources (MNR) will also make use of these standards and associated software in the production of the enhanced forest resource inventory for the province. Lim Geomatics Inc., a newly established Ontario business will work closely with all partners in this project to develop and ultimately commercialize the software application component that will be modular/plug and play to the Forest Inventory Management System.

Project Duration: Months _____ or Year(s) 3

Investment and Leverage (Year 1): Differentiate between cash and in-kind support to the proposed project.

	All or Part of Year One		Year Two (if appl)		Year Three (if appl)	
	Cash	In-Kind	Cash	In-Kind	Cash	In-Kind
OCE (Requested):	\$15k		\$20k		\$20k	
Partner (1) Tembec		\$15k		\$20k		\$20k
Partner (2) FRP	\$5k	\$10k	\$5k	\$20k	\$5k	\$20k
Other(s) MNR		\$3k		\$3k		\$3k
Total	\$20k	\$28k	\$25k	\$43k	\$25k	\$43k