

Technical Reports

BC Coastal Forest Sector Hem-Fir Initiative

Challenges to Implement Scanner Scaling in British Columbia

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Abstract

Whole-log laser scanners installed at sawmills or other permanent locations show potential to reduce scaling costs while providing accurate log measurements. However a number of regulations and operating practices must be examined and possibly changed before log scanners can be used operationally. Some national issues affect the use of scanners for scaling but this report mainly focuses on log scaling in British Columbia with particular emphasis on applying this technology for the B.C. coastal forest sector. The BC Ministry of Forests, Lands, and Natural Resources Operations formed a Provincial Log Scanning Technical Review Committee to provide a set of recommendations for implementing scanner scaling to the Director of Timber Pricing Branch. This report is intended to provide the committee with background information to help assist its review, analysis and formulation of recommendations to the Director Timber Pricing Branch.

Measurement Canada is responsible to certify that mechanical devices used for trade in Canada meet recognized standards. Scanners used for scaling are such devices, but no standard currently exists for the scanners to be tested against. Accordingly, the Canadian Standards Association Technical Committee on Scaling of Primary Forest Products is currently developing a standard for log scanning devices, and Measurement Canada will ensure that log scanners meet the CSA standard, with the eventual goal to certify them for trade.

The method by which the raw log dimensions from a scanner will be used to generate scale measurements is governed by the individual scaling regulations for each province. This report identifies some issues about length and diameter measurements that are specific to the BC regulation. Log scanners can measure the gross volume of each log, but the species, grade, and net volume of each log must also be determined. Current scanning technology cannot capture this information, therefore alternate procedures must be developed. Two approaches are to:

- Employ a qualified scaler to examine each log visually, determine species, assign a grade and measure defect, or
- Use a sampling procedure similar to the system used for weight scaling.

The Log Scaling Technical Review Committee is considering the merits of both approaches.

Procedures will need to be developed to identify and record the timber mark and other pertinent details that apply to the loads of timber that are being scanned. As with all transportation arrangements, the procedures that are developed will need to identify the provenance of the timber and ensure load integrity to the point of scanning and/or

scaling in order to be consistent with the Timber Marking and Transportation Regulation. A proposed solution for logs transported by boom is that all the logs in a boom have the same timber mark.

If the mill chooses to have scalers identify species and grade for each log as it is scanned, procedures need to be developed to check the accuracy of that scaler's work. This may include selecting samples for checking. Alternatively there may be front end controls to mitigate against errors (e.g. sort restrictions, use of cameras). Depending on choices made and mitigation controls that can be put in place, audit procedures may not resemble existing check scale requirements. The Harvest Billing System, which is the Provincial data-collection system for stumpage payments, accepts data in an XML format or entered online from stick scale, weight scaling, or other scaling methods. Procedures and software must be developed to accommodate data from scanner scaling.

BC Provincial scaling regulation and practices are generally specific to piece and weight-scaling, and contain items that are incompatible with the optimal measurement procedures and technology used by log scanners. Three approaches should be considered to reconcile the differences between new technology and established practice.

- Implement scanner scaling such that it conforms to existing regulations, practices and industry and ministry business systems.
- Write new rules and regulations that are specific to scanner scaling.
- Write new regulations and policies that address outstanding errors and or omissions and which consider integration of new and evolving technology.

Logging contractors interviewed during the study spoke favourably about scanner scaling and felt that the system should improve accuracy compared to piece or weight-scaling. They felt that existing systems to reconcile scale volumes with contract payments were sufficiently robust to be used with scanner scaling.

Measurement Canada has indicated it may take up to five years to develop, test, and approve the procedures in regulation necessary to certify scanner scaling technology; however there is interest by MFLNRO Provincial Log Scanning Technical Review Committee members to conduct a pilot project to evaluate scanner technology as soon as possible. It may be possible to use a non-certified scanner for testing the required scanner scaling procedures providing it has been calibrated and the legal requirements for its use in a trial are clarified with Measurement Canada. However, the log scanner device may have to be marked as not approved for trade and the scale data may not be able to be used for trade. One pilot project scenario is to pre-sort logs in the cutblock, transport them in a single timbermark boom and then scan them with a log scanner that is independently calibrated. The methods to establish the log grade and ensure an adequate paper trail are yet to be determined

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