Introduction

This study aims to develop an information-sharing system for the Japanese forestry by developing a new harvester head with the aid of ICT and robot technology. In our previous report, we made a prototype of the information-sharing system that was implemented in relation to StanForD for Japanese forestry. In this study, we upgrade our system by adding some new tools.

New harvester head

Development concept

(1) automatic assessment of log straightness (warp) for the efficiency in operating, operator work saving, and objective assessment

(2) estimation of log strength (Young’s modulus) and density prior to processing for the increasing log price at landing by sorting the logs by quality

(3) efficient use of log data from the harvester for the use of unused data (skipping the log acceptance inspection) and matching between supply and demand

Sonic velocity sensor driven by hydraulic cylinder to estimate Young’s modulus and density

Our information sharing system based on StanForD revised version 2019

- Add log quality data (butt end diameter, young’s modulus, density, weight) into extend partition.
- Value backing based on the log qualities, aggregated hpr files, map interface showing the location of the logs

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