Log Tracking Technology

Introduction

The Log Tracking Systems used in the NRMS Timber Flow Control Service make use of durable information technology hardware, which can be used in the forest or in logyards. Use of this technology enables products to be tracked more securely than by a paper-based system.

The benefits of using log tracking technology

- Data can be gathered more quickly and accurately than by filling in paper forms
- There is no need for multiple entry or copying of data, which often leads to mistakes
- Illegal practices can be identified and addressed
- Data is easily available for extracting management information, such as determining statistics and historic trends
- Traditional log numbering and marking systems can be updated, giving savings of time and money

Elements of technology used

Bar-coded tags

Bar-coded tags are designed to withstand heat, humidity, sunlight and wear and tear. Each tag carries a unique number, together with a bar-code which contains that number in encrypted form, readable by a correctly-configured scanner.

A tag is fixed onto each log, board or wood bundle. The unique number of the tag is registered in the database as a key to the information about that individual log or wood product. This enables each item to be tracked throughout its history.

Misuse of tags can be detected in the course of routine periodic reporting and inspection, as it is evident if the tag has been moved from one item to another. To prevent forgery, the tags have security features arising from the material from which they are made, and invisible markings.

Tags can be pre-printed to show the concession or operator to which they have been assigned. If required, more sophisticated labelling methods can be used, such as 2-D barcodes or memory chips that carry detailed information about the log to which they are attached, or radio tags that are detected by a receiver as they pass a checkpoint.

Hand-held computers and scanners

Palm-top portable computers are used to collect data in the forest and at checkpoints. Many different models are available, varying according to size, robustness and method of data storage. For example there is a wide range of specifications according to the machine's ability to withstand harsh conditions.

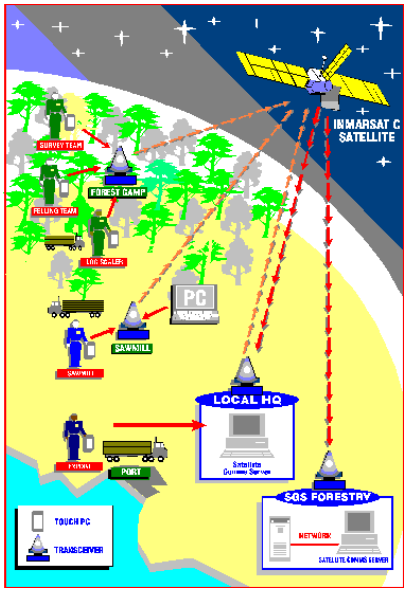
The hand-held computers usually need to be programmed differently for each implementation, according to exactly what data is to be collected and how much validation is required at the time of data entry. For example for logs, the dimensions, species, quality and ownership are usually collected, as well as data about the measurement itself (when, where, by whom).

Scanners for reading the bar-coded tags may either be incorporated into the computer or used as separate units, according to the requirements of the situation.

Some of these computers use non-rechargeable batteries that can be replaced even during use. Others require the presence of an adequate external power supply to recharge their batteries overnight. In remote areas with unreliable electricity supplies this may require the use of a UPS system and/or a generator.

Data transmission systems

Once saved onto the hand-held computer, data is copied onto a central database. This can be done by email, whether using telephone lines or satellite communications, or else by diskette, memory card or direct data transmission from a cradle.



There is a final step of loading the data into the correct tables in the database.

Database systems

The ultimate destination of the data is a database, which is able to furnish useful management information about the activities of companies in the forest sector. A range of reports may be produced, which summarise the data over any required region and/or time period, investigate the activities of particular operators or meet other management information needs.

The details of the database system used in a particular situation must reflect its relationship with the rest of the regulating authority's data holdings and strategy.

How to contact SGS NRMS

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