



Arlinger John*

12 September 2024

Minutes StanForD

2024-09-12

Place:	Teams, 2024-09-12, 10:00-14:00 CET
Participants:	John Arlinger, Secretary Johan J. Möller, Chairman Anders Rowell, Skogforsk Magnus Hansson, SP Antti Korkiakoski, JohnDeere Bobby Szwajkowski, Tigercat Henrik Persson, LogMax Jeremy Gibson, Forest PHD Jaakko Mäkinen, Technion Jonas Gustafsson, Sveaskog Joshua Hildebrand, Tigercat Lars Henriksson, Biometria Timo Melkas, Metsäteho Nicklas Nygård, LogSet Tapio Räsänen, Metsäteho Aapo Koskela, Logset Asko Leivonmäki, Exertus Jonas Thorsson, Dasa Heikki Komulainen, Ponsse Janne Pursiainen, Ponsse Aapo Koskela, Logset Mike O'Shea, Coillte Halvard Olderlund, Komatsu Emil Forsblom, EcoLog

Decision summary

Decided to do the following schema updates:

- No decisions affecting the schemas.

Conclusions from discussions:

- Proposal for new RelativeLimitationMatrix is postponed.
- New StanForD framework to be further discussed at the next meeting.
- New possible method for log measuring control presented and discussed.
- Possible new TreeMap schema presented and discussed.

Action list:

- Recommended that unclassified products are reported per SpeciesGroup.
- Recommended that the diameter vector and DBH is adjusted if a short log (butt-off) is completely excluded from the hpr.
- Recommended that by default all butt-offs from single tree processed stems should be registered independently of length.

§1 Opening of meeting and agenda

Chairman Johan J Möller opened the meeting.

The agenda was accepted.

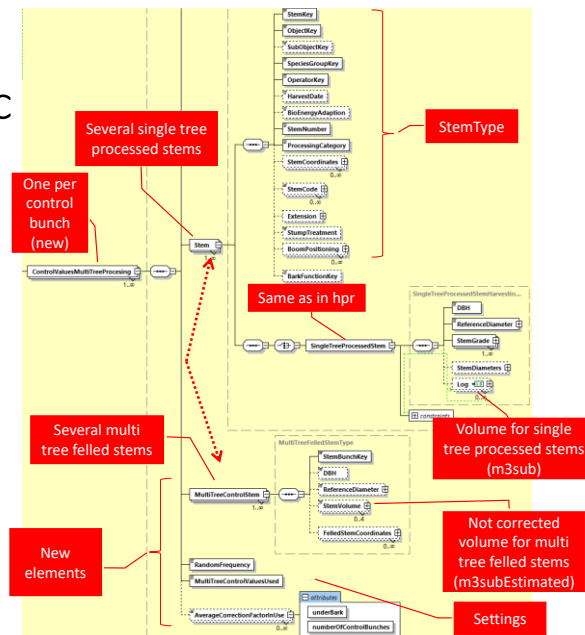
§2 Presentation of participants

Presentation of meeting participants.

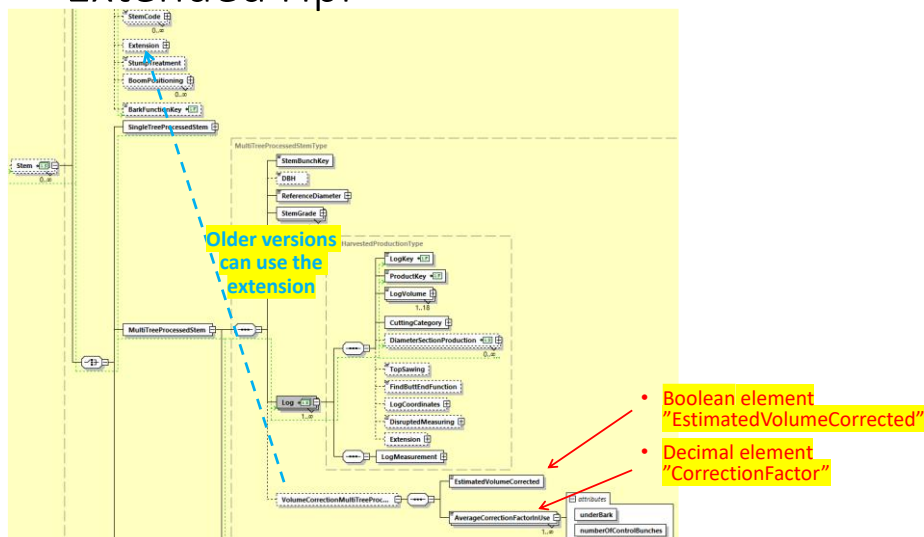
§3 Information about decisions and discussions at previous meeting

- **Version 4.1.** It was decided to release version 4.1. during the fall of 2024. Probably in conjunction with the meeting in November.
It has previously been decided to clearly state at the web site that any one today developing support for version 4 should focus on 4.1 and thus avoid 4.0. Basically the 4.0 should be viewed as deprecated.
- **Multi-Tree measuring control in harvesters.** It was decided to update both hqc and hpr as illustrated below.

Extended hqc



Extended Hpr



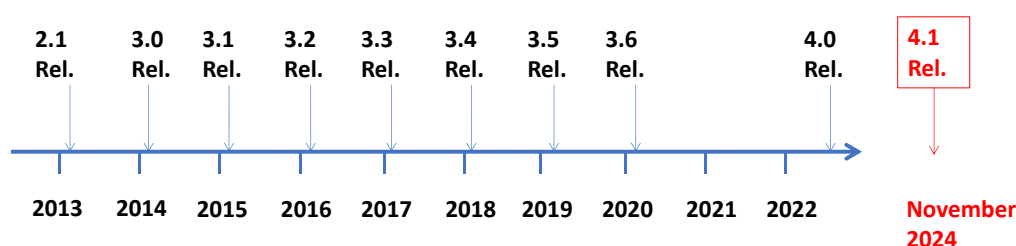
Henrik Persson raised a question regarding calculation of the correction factor. Are there any recommendations on how it is to be calculated? The idea is to use the 30 last control bunches for calculating a floating average value. The correction factor is to be the same for all species. A report has recently been published in Swedish by Skogforsk (Utveckling och utvärdering av en metod för kalibrering av flerträdshanterad volym, Arbetsrapport 1211 - 2024). The report describes in detail how the correction factor is to be calculated. The secretary will compile a separate document describing the new method from a StanForD perspective.

- **Description of AccuracyCoordinate.** It was decided to update the description in order to clarify that this element describes the horizontal accuracy.

- **Invalid XML characters.** GeoJSON allows some characters that will destroy an xml-structure such as &, < and >. It was decided to recommend the use of XML escaping by updating the description of elements MultiPointGeoJSON, MultiLineGeoJSON and MultiPolygonGeoJSON
- **Old hpr versions and new bark functions.** It was decided not to do any structural updates to the bark function in hpr-files as we hopefully will not add any new bark functions in the future and therefore do not solve any problems by adding a new layer of complexity

§4 Future frequency of StanForD updates

The figure below illustrates the timeline for publishing all versions since 2.1.



The goal is to release version 4.1. during the fall of 2024 as we now have several significant updates proposed such as coding of features in the ogi and the new log positions and IDs in the fpr-file. We will therefore make a final decision to publish version 4.1 in November

It was decided at the previous meeting to clearly state at the web site that any one today developing support for version 4 should focus on 4.1 and thus avoid 4.0. Basically the 4.0 should be viewed as deprecated.

§5 Reporting of issues related to version 4.0

No issues (questions or comments) reported by the meeting participants.

§6 New proposals

No proposals suggested, nor discussed.

§7 Items for discussion

RELATIVELIMITATIONMATRIX

The practical tests of the proposal to update the limitation matrix is to be carried out during September 2024 by Ponsse. The proposal has been discussed at a number of previous meetings in 2023 and 2024.

As the tests have not been finalized yet the final decision will be made at the meeting in November.

It was recommended by the chairman that Ponsse should invite Skogfrosk and Metsäteho to a meeting in October to go through the test results..

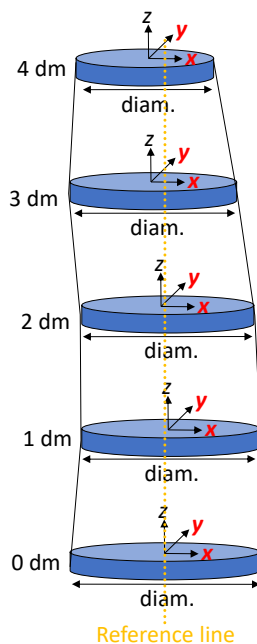
TREEMAPPING

Several different R&D projects are on-going where the application of laser scanning sensors on harvester is tested. The purpose of using laser scanners is to develop better routines for thinning follow-up and detection of stem defects (e.g. stem curvature).

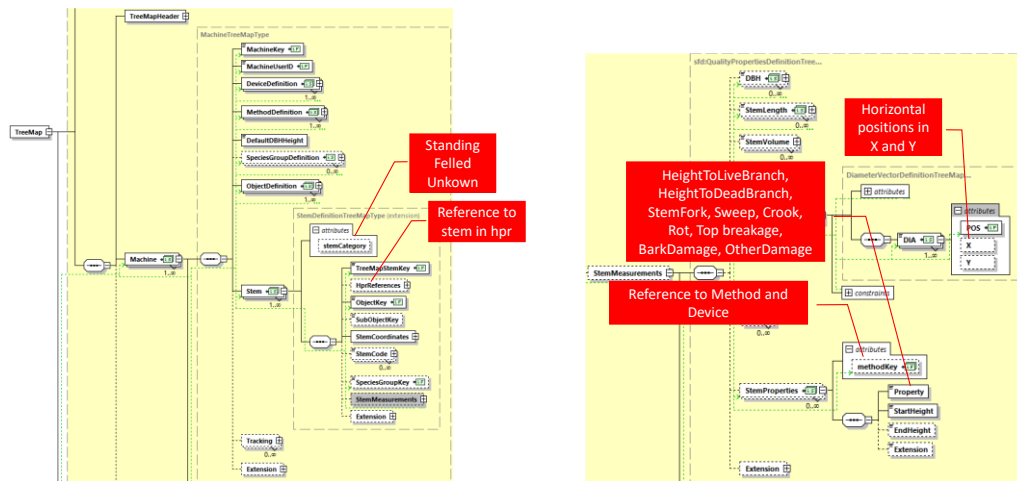
The secretary has been approached by at least two different actors about the possibility to use the StanForD format for reporting data back from the machine.

Observe that this is presently not a proposal. The objective of raising this issue at the meeting is to keep everyone informed.

The issue of adding data from laser scanners into a StanForD message is not new. The stm-file was updated in 2007 to be able to describe the curvature (Y and X) of a stem as illustrated below.



The secretary has therefore modified a HarvesterProduction schema into a new draft TreeMapping schema. The main modifications are that no logs are included and that some additional measurements values are added as illustrated below. The schema has been tested in one of the development projects.



Henrik Persson, LogMax, noted that the cross sections described in the presentation are horizontal, on pine probably fine if an oak is measured you might get a big error if you compare the laser scanning data with the harvester data. There might be a need for more parameters as right now it is assumed that the stem is predominantly vertical, presents a problem if it differs a few degrees, forked stem etc. Henrik also pointed out that the importance of synchronizing how a crook or a bend is defined with the saw mills.

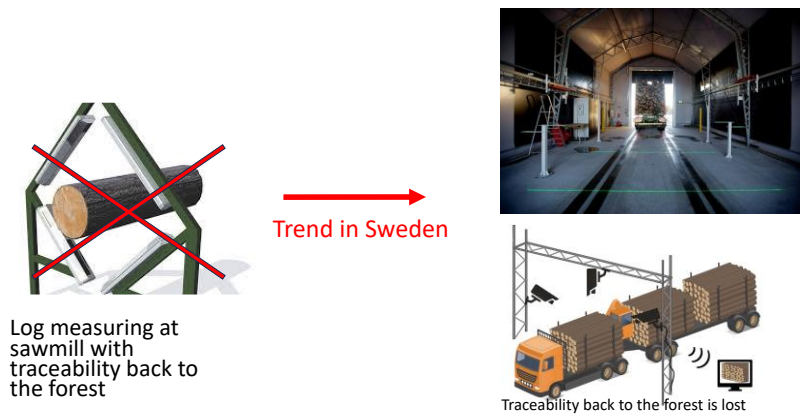
Jeremy Gibson noted that getting feedback on the quality (e.g. curvature and forks) of the remaining stock after a thinning is highly relevant for the forest owner in order to do better forecast of the yield from a future final felling and to avoid having to do a manual field inventory after thinning.

Mike O'Shea pointed out that the data from a scanner could be used to evaluate if the operator is cutting an optimal amount of saw logs or if he/she is too careful and cut to much industrial wood.

§8 StanForD2010 projects / implementations

NEW METHODS FOR LOG MEASURING CONTROL

Historically logs have been measured individually at the saw mill as a basis for paying the forest owner. This means that there is traceability back to the forest. However, more and more companies are now moving to measuring the whole truck load at the mill gate. The logs are thereafter often mixed with logs from other harvesting objects. This means that traceability is lost even if the logs are measured individually at a later stage, e.g. when sorted based on diameter and length prior to sawing.

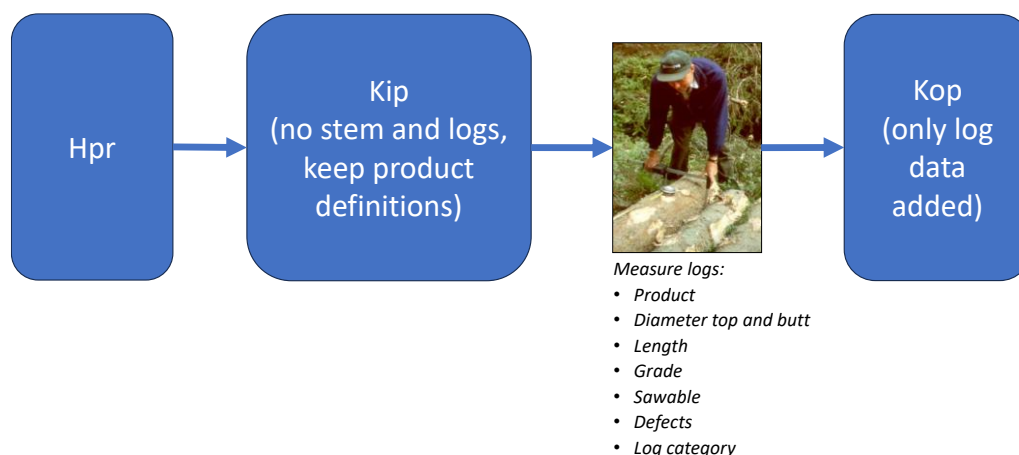


This means that certain key-figures used for giving feed back to the logging team is not possible to calculate, e.g. average “extra length margin” or proportion of downgraded saw logs.

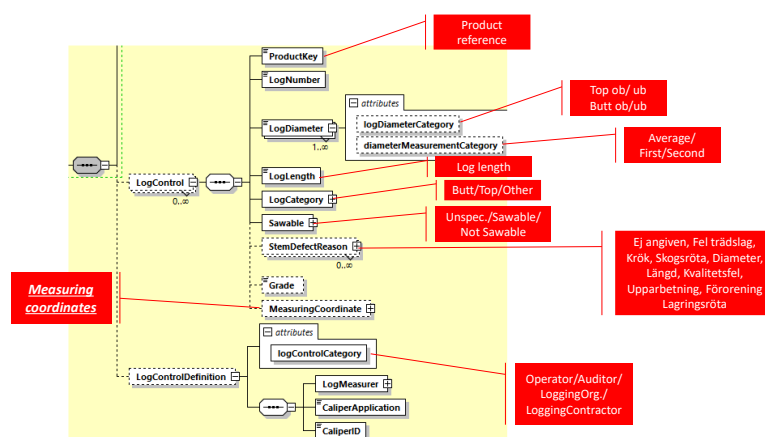
A pilot project has therefore been started based on an initiative from Södra and Biometria. The project includes testing of a new log measuring procedure where logs from a specific harvester and object can be measured in the forest or at the roadside. A caliper software has been developed by Haglöf whereby log measurements can be done according to the following procedure:

1. Hpr-file from the harvesting object is retrieved.
2. Hpr-file is converted according to a new draft schema called LogSampling.xsd. The main difference between the kip and the hpr is that all stems and logs are excluded from the kip-file in order to keep the file size reasonably small. The most important information kept in the hpr are object identities, harvester identities and product definitions (including length and diameter classes).
3. The *.kip-file is imported caliper.
4. Operator selects which product to measure.
5. The following values are registered in the caliper for each log:
 - a. Product
 - b. Length
 - c. Diameter
 - d. Defects
 - e. Grades
 - f. Log category
6. A kop-file with measuring results are thereafter exported from the caliper, including measurement data.

The procedure can also be illustrated through the figure below.



The new data structures, under the Machine element, in the LogSampling schema when comparing with the HarvestedProduction schema is illustrated below.



A new project will probably be organized by Skogforsk where this method is further tested and developed. One future possibility to use this procedure to simplify the control of log lengths. It might even be possible to replace part of the present random measurement controls if we can combine detailed log coordinates in the hpr and the new kop-file.

Comments

Jaremy Gibson pointed out that this method probably is not useable in the forest due to health and safety concerns. This means that the method is only relevant for roadside measurements. It is thus difficult to use the data for some kind of calibration.

Henrik Persson sees this as a good idea on some markets, especially when processing is done at roadside. The procedure would make it possible to tell if the product is ok or not. Or how close to failure the log lengths are. It could tell us whether a more detailed control and possible calibration is needed or not.

§9 New StanForD agreement/framework

The secretary presented a document describing how the standard is organized, its main tasks and how it is financed. The document will be discussed and decided on

at the meeting in November. The document as well as the main agreement template is enclosed in appendix 1.

Comments

LogMax: It is a good idea to formalize what previously has been based on informal handshakes. We are still in the phase where we want more members, we do not want competing systems to appear. We do have one competitor which is the old standard... the biggest issue the old standard. There is no trademark, the closest is the test. LogMax is willing to continue a discussion on having a certification but then we have to manage a system for re-certification. The main conclusion is "Be a member or be on your own".

Secretary and chairman: We could delete the old standard documents from the web site in order to point out that it is supposed be viewed as deprecated. Anyone being interested in getting documentation on the old standard thus have to contact the secretary or the chairman.

Dasa: The proposed framework is good. The issue of having some type of certification scheme is probably very complex-

Secretary and chairman: Skogforsk only invite members to our machine tests. We have been contacted by other actors who want too do harvester tests. However, we would then charge for all the work carried out.

Logset: The current system works, agree with previous comments.

Ponsse: Planting and tree mapping must be included in the standard. It would be good to extend the set of country-specific default spi-files published at the web site.

Secretary: Creating more country specific spi-files is a very good idea but local contacts is essential. Do not hesitate to contact the secretary regarding this issue.

Tigercat: the meeting format is fine. It is very good to document the organization and the structure.

Komatsu: Agree with LogMax regarding the old classic standard. No objections to the proposal.

LogMax: the meetings have served us well. It is good to formalize. We ca not assume that everyone will be gentlemen. To paraphrase senator Cato the elder "Furthermore, I consider StanForD Classic to need to be destroyed"

Make an inventory why classic is used? Does it contain things 2010 does not include? Do they not know better? Value bucking? Are there non documented features that causes differnces between the two standard versions? Instead of having the ducktapesolution that we have today.

Technion: Agrees with previous comments, the classic version must be gone.

PHD Forest: Formalizing StanForD is a good idea. Classic is a part of several organizations journey still but a timeline would be good. Some machines working, will never have 2010. A conversation on when it is to be killed, 2026? Later?

Biometria: The document looks good.

Ecolog/SP: it sounds good.

Coillté: Supports the changes, and proposals to formalize and change the fee. Would love to embrace 2010, but problems with connectivity, timeline would be good as PHD noted.

The following members were not present or silent: John Deere, Rottne, CGI, Skogdata.

Conclusions from discussion

No objections were raised. A new agreement and the document describing organization, funding and tasks of the standard as an appendix to be decided on at the upcoming meeting.

Some other conclusions:

- Continue being an open standard that any one can use.
- No viable certification scheme suggested.
- Deprecating the old classic version would be beneficial.
- Extend the standard also into soil preparation, planting and tree mapping.

§10 Other issues

No other issues were discussed

§11 Next meeting

StanForD meeting members only 2024-11-13, Uppsala/Teams (10:00-12:00 CET)

StanForD meeting, open to anyone, 2024-11-13, Uppsala/Teams (13:00-17:00 CET)

All participants will be invited to a dinner in the evening.

By default, all financially contributing members will receive an Outlook invitation to all meetings in advance.

§12 End of meeting

The chairman Johan J Möller thanked everyone for attending the meeting.



Möller, Johan J
Arlinger, John

2024-09-18

StanForD Organization, tasks and financing

A BASIC FRAMEWORK

Introduction

This is a draft for an updated StanForD “agreement/framework” with the main objective of achieving a long term stability for maintaining, supporting and developing the StanForD standard. We have not had any general meeting discussing these issues since 2006/08 (before that in 1998 and 2002). This draft framework will be presented at the September meeting and then discussed at the meeting on the 20th of November 2024.

Observe that the main objective of the standard is to:

- Make it possible to control and monitor forest machine activities in an efficient way. The aim is that it should be developed in such a way that it is relevant globally.

Organization and financing

Skogforsk is responsible for organizing a central working group consisting of a chairman, a secretary as well as at least one representative from Metsäteho.

Skogforsk will also include at least one additional personnel in the working group to lessen the risks associated with only having two persons involved in the standard work. The objective of involving additional personnel is to maintain the necessary long-term competence.

At least 3 meetings are to be arranged annually where the two main meetings (typically April and November) are open for anyone to attend, while other meetings are members only.

The work of the permanent secretary is to be financed through the membership fee. The work of the chairman, other Skogforsk personnel and Metsäteho representatives are financed by Skogforsk respectively Metsäteho. See section “Administrative organizations” for more information concerning Metsäteho and Skogforsk.

Research and development projects carried out by Skogforsk or other organizations are not financed through StanForD. Examples of recent Skogforsk development projects are “Multi tree handling calibration”, “GNSS tests” and “Log traceability”. The financing of such projects is thus based on Skogforsk core funding, research grants and/or consultancy work.

It is suggested by Skogforsk to adjust the membership fee to 4500 Euro/year. The fee has not changed since year 2006 (4000 Euro/year). The fee today covers the work of secretary (support/admin/preparing proposals/information). The work of the chairman (Johan J Möller/Anders Rowell) is financed by Skogforsk and technical schema development and Finnish coordination (Juha-Antti Sorsa/Timo Melkas/Tapio Räsänen) is financed by Metsäteho.

Observe that Skogforsk has so far invoiced the membership fee in Swedish crowns (SEK). However, as the number of members outside Sweden is in clear majority it is suggested that we switch to Euro (€).

Membership benefits

A StanForD membership includes the following:

- Invitation to at least 3 meetings per year, where changes in the standard are discussed and decided. Observe that additional meetings are fairly frequently arranged, e.g. when significant updates are under discussion prior to a new release.
- Support on StanForD-related issues. For example:
 - Testing and evaluation of standard compliance.
 - Guidelines and recommendations when implementing new standard functionality.
- Analysis of suggested changes to the standard and compilation of proposals.
- Invitation to recurrent tests of StanForD functionality in forest machines organized by Skogforsk.
 - Evaluation of StanForD compliance is financed through StanForD primarily by the secretary. However practical test of functions, bucking optimization, measuring, calibration, etc. is financed separately by Skogforsk.

Main responsibilities of secretary/working group

The secretary with support from the chairman and in close cooperation with Metsäteho is responsible for:

- Maintaining and updating the standard through
 - Tracking trends in forestry with a global perspective
 - Monitoring for new needs and requirements of manufacturers and users.

- Processing, developing and gaining approval for new proposals.
- Presenting proposals.
- Documenting new decisions and versions.
- Documenting and specifying new standard functionalities or schemas.
- Arranging meetings
 - Creating and distributing agendas
- Compiling and publishing information on www.skogforsk.se/stanford including:
 - Minutes
 - Standard document (e.g. xml schemas)
 - Annual report including some type of general time reports.
- Supporting members
 - Including physical meetings
- Promoting the use of StanForD
 - Informing potential new users about StanForD

The membership fee will finance the activities described above.

Administrative organizations

Skogforsk is the Swedish forest research institute. It is a private institute owned and financed by Swedish forest companies and forest owners associations. The first StanForD versions were developed by Skogforsk and, from 1987 to 1999, financed by Skogforsk.

Metsäteho is a Finnish Forestry R&D company owned by the Finnish forest industry. Metsäteho started to actively participate in the standardization work at the latest from 1991.

Forest companies financing Skogforsk, Metsäteho and Skogdata are considered to be members of StanForD.

Strategic questions to discuss

Extending the standard? How far to go? Should the following areas be included or not?

- Forest regeneration
- TreeMapping
- Truck data for loading in forest

Continuing with two annual open meetings that can be attended by any one?

Can give members credit for being members? “StanForD Certified”?



Agreement on membership in the StanForD group

StanForD 2010 is the global de-facto standard for data communication with forest machines. The standard is developed and administrated by Skogforsk in close collaboration with Metsäteho. This work is jointly financed and prioritized by the members of the StanForD group.

A StanForD membership includes the following:

- Invitation to 2-3 meetings per year, where changes in the standard are discussed and decided.
- Support on StanForD-related issues.
- Analysis of suggested changes to the standard and compilation of proposals.
- Invitation to recurrent tests of StanForD functionality in forest machines.

The annual membership fee is 4 500 EURO, which is paid upon invoicing during the second half of each year or upon becoming a member of the group. Notice of membership termination must be sent to Skogforsk before the first meeting of the year.

By signing this agreement, we agree on becoming a member of the StanForD group under the conditions described above.

A detailed description of the StanForD organization, tasks and financing is described in the enclosed appendix.

City, dd-mm-yy

Uppsala, dd-mm-yy

Xxx Yyyyyyy, QQQ AB

Johan J. Möller, chairman StanForD

