

Minutes from the meeting with the StanForD-group 2007-11-29

Place:	Skogforsk, Uppsala, Sweden
Present:	Erik Kindlund, John Deere Per Annemalm, Komatsu Forest Lars Henriksson, SDC Jon Rudman, LogMax Mikael Eliasson, LogMax Tapio Räsänen, Metsäteho Jörgen Eriksson, Dasa Johan Bruun, Ponsse Teemu Paldanius, Ponsse Jyrki Partanen, Epec Jan Andersson, Sveaskog Perttu Isosaari, Vansco-Electronics Tapio Räsänen, Metsäteho Juha-Antti Sorsa, Metsäteho Joonas Kaarnametsä, John Deere Joakim Nygren, Haglöf Leif Orth, Södra
From Skogforsk:	John Arlinger, Secretary Johan J. Möller, Chairman Andreas Barth

§1 Opening of the meeting

Johan J. Möller opened the meeting. The proposed agenda was accepted.

§2 Clarifications and modifications of variables

IDENTIFYING MACHINE SOFTWARE VERSIONS

Suggestion by John Arlinger, 2007-04-03.

Var5_t1 is used in many types of files for example in prl- and drf-files from forwarders. The term "bucking computer" can therefore be somewhat misleading and should be changed to "system control computer (in case of harvester often identical with bucking optimisation computer)".

It was decided to update var5_t1 according to the following table:

Var no	Name	Type	Data type	Description
5	VARIANT	1	string	Version/model of bucking computer (control system) system control computer (in case of harvester normally identical with bucking computer) used for creating file. Recommended format is to be m v.n, where m is the make and v.n the version number.

Observe that this variable can hold up to 80 characters. When studying files from the test last year no manufacturer exceeded 32 characters. It is important that this variable contains detailed information in order to make it possible for users to identify individual software releases when errors are identified.

HARVESTING METHOD CODES TO BE USED IN FINLAND (STANFORD APPENDIX)

Recommendation for using general harvesting method codes and their descriptions in Finland has been specified by the Finnish StanForD group. The purpose of the recommendation is that these general harvesting method codes could be used when company-specific codes are not available or can not be used (normally company specific codes are used). Machine manufacturers should therefore have similar harvesting method alternatives in their systems. Harvesting method code is given in var23_t1 (SITEINFO) and the name of the method (description) in var23_t2.

The proposal was based on using codes from the Solmu private forest planning system. Special harvesting methods have been defined separately in this system. The code list has been accepted in the Finnish pre-StanForD meeting 2007-04-25.

It was decided to add these recommended codes into StanForD's country specific appendix for Finland (only the Finnish descriptions are included in the appendix).

Code	Kuvaus (Descriptions in Finnish)	Description (not included in appendix)
1	ylispuiden poisto	cutting of hold-over trees
2	Ensiharvennus	first thinning
3	harvennus (muu kuin ensiharvennus)	thinning (other than first thinning)
4	Kaistalehakkuu	clear cutting in strips
5	Avohakkuu	clear cutting
6	Verhopuuhakkuu	cutting of nurse crop
7	Suojuspuuhakkuu	shelterwood cutting
8	Siemenpuuhakkuu	regeneration cutting
9	erikoishakkuu (määrittelemätön)	special cutting (unspecified)
91	erikoishakkuu: myrskytuhojen korjuu	special cutting: cutting of windblown timber
92	erikoishakkuu: tie-, oja-, sähkö- tai muun linjan aukaisu	special cutting: opening of lines (roads, ditches, power lines etc.)
93	erikoishakkuu: tonttipuuston hakkuu	special cutting: cutting of trees from building land
94	erikoishakkuu: energiapuun korjuu (hakkuutähteiden korjuun kaikki työlajit, ml. kannonnosto)	special cutting: recovering of logging residues (including stumps)
95	erikoishakkuu: muu erikoishakkuu (esim.	special cutting: other special cutting (e.g.

Code	Kuvaus (Descriptions in Finnish)	Description (not included in appendix)
	tuhopuiden poisto, harsintatyyppinen hakkuu tai metsänomistajien omien puiden valikoiva hakkuu)	selective cuttings, selection thinning, removal of single trees)
96	erikoishakkuu: nuoren metsän kunnostushakkuu, taimikon perkaus, raivaus	special cutting: early thinning of unmanaged young stands, pre-commercial thinning of young stands, clearing of logging site

It was also decided that data (var23) included in apt- or oai-file always have the highest priority. This means that the operator normally should not need to input any information related to var23 if this variable is included in apt- or oai-file.

Observe that these codes, if implemented in forest machines, must only be used in Finland. The code and the description must be entered as "free text" by operator if implemented in other regions.

§3 New variables

New M3-data in ktr-file

Proposal by Joakim Nygren, Haglöf, 2007-04-20.

A need for some additional information in ktr-files has been identified by Joakim Nygren. Some variables related to auditor measurements have been missing. It was decided by the meeting to add the following new variables in order to make auditor (M3) variables comparable with machine (M1) and operator (M2) measurements (priority 2 in ktr-files):

Var no	Name	Type	Data type	Unit	Description
<u>372</u>	<u>NUMBDIA</u>	<u>7</u>	<u>integer</u>	<u>No</u>	<u>Number of control diameters for measuring by auditor (M3) / log: 1...var290_t1</u> <u>Usually the same value as in var372_t3 and var372_t5.</u>
<u>374</u>	<u>CONTPOS</u>	<u>7</u>	<u>integer</u>	<u>cm</u>	<u>Control position for measuring by auditor (M3), used instead of var374_t3 if it exists:</u> <u>1...var372_t7/1...var290_t1</u> <u>Usually the same value as in var374_t3 and var374_t5.</u>

These new variables means that that the following descriptions (new text underlined) have to be updated:

Var	Name	Type	Data type	Unit	Description
373	CONTDIA	7	Integer	Mm	Measured control diameters over bark, measured by auditor (M3): <u>1...var372_t7/1...var290_t1</u>
373	CONTDIA	10	Integer	Mm	Manually measured control diameters over bark, first unfiltered diameter value from cross measurement, measured by auditor (M3): <u>1...var372_t7/1...var290_t1</u>
373	CONTDIA	11	Integer	Mm	Manually measured control diameters over bark, second unfiltered diameter value from cross measurement, measured by auditor (M3): <u>1...var372_t7/1...var290_t1</u>

§4 Impressions from eastern Canada

John Arlinger and Johan Möller were contracted by Feric for two weeks in Eastern Canada during October 2007. The work with Feric gave us a much better understanding of the situation in eastern Canada. Some of our observations were:

- Why not simple StanForD-files (prd- and stm-files) from the “simpler” bucking computers (without optimization)?
- Multi tree harvesting is an important issue on the east coast where the average stem size is very small.
- Operational monitoring have high priority! Drf-files in tracked machines /excavators? Use "shake-clock" to define terrain travel and head activities to define processing time. Introduce variable to describe if excavator (third-party-base-machine) is used? (see appendix 10)
- Productivity important! Possible with time stamps in pri- and stm-files? Why not a setting in the machines for registering stem harvesting time? New stem code 765 for registering time when stem was harvested / coordinates registered.

It was proposed by Johan and John that a new stem code (765) is added to the pri-file where the time of harvesting is registered. It was also suggested that it should be possible to register the time of harvesting in both stm- and pri-files.

The meeting decided to postpone these proposals. The primary objection was that the productivity information is already registered in the drf-file.

Skogforsk was after the meeting informed of the fact that several of the "simpler" bucking computers without optimisation can generate some kind of prd-files.

§5 Updating ghd-file

A Swedish ghd-meeting was arranged at Skogforsk on 2007-10-29 with representatives from a number of manufacturer of GIS-applications as well as a representative from Södra Skogsägarna.

The objective of the meeting was to discuss a few technical issues (for example related to coordinate systems, encoding of dbf-files) related to standardized harvesting directives (ghd-file). Some additional issues of more general nature were also added to the agenda. The meeting resulted in the following proposals.

TRANSITION FROM RT90 TO SWEREF99 IN SWEDEN

The transition of coordinate reference systems from RT90 to SweRef99 is caused by changes at Lantmäteriverket (National Land Survey of Sweden). They will shortly only deliver gis-data (for example shp-files) using SweRef99

instead of RT90. The change will take place during 2008 in for example Södra's GIS platform.

A new variable for defining coordinate reference system in the ghd-file was discussed at the ghd-meeting. The codes should be based on some existing standard. It was suggested by Jonas Svensson, Södra, that the so called EPSG codes are to be used. This standardized set of codes is administrated by the "OGP Surveying and Positioning Committee" (OGP is the International association of oil and gas producers). An access database with all the EPSG codes can be downloaded at <http://www.epsg.org/>.

It was decided by the StanForD-meeting to implement the following new variable with priority 2 in ghd-files:

Var	Name	Type	Data type	Unit	Description	Priority
467	GHDINFO	2	String	code	Coordinate reference system used for all layers/gis-files, codes according to the EPSG database (http://www.epsg.org/), see also appendix.	2

It was also decided to add the following examples of EPSG-codes (according to EPSG database version 6.14, released 2007-09-02) to the StanForD-appendix:

Name	Code	Scope	Area of use	Axis
WGS 84	4326	Horizontal component of 3D system. Used by the GPS satellite navigation system and for NATO military geodetic surveying.	World.	Latitude (degree) Longitude (degree)
RT90 2.5 gon V	3021	i) Medium and small scale mapping. (ii) Large scale (1:10,000 and greater) topographic mapping, engineering and cadastral survey.	Sweden	X (metre) Y (metre)
SWEREF99	4619	Horizontal component of 3D system.	Sweden	Latitude (degree) Longitude (degree)
SWEREF99 TM	3006	Medium and small scale topographic mapping.	Sweden	X (metre) Y (metre)

A general description of the EPSG database as well as the web site address will also be added to the appendix.

EDITABLE GIS-LAYERS.

Variable 460, type 3 defines whether or not the operator of a forest machine is allowed to edit or modify a certain layer. There is presently no strict definition of what it means to edit a layer. Does it include changing colors, order, positions etc?

The conclusion of then ghd-meeting was that if a layer is set to non-editable (read only) the operator should only be allow to change the order of the layers and to switch it on or off. The operator can thus not change for example the colors or the line type of a "read-only" layer. The operator is of course not allowed to change the shape (location) of a geographical object (point, line or polygon).

It was decided by the StanForD-meeting to update the description of var460_t3 (new text underlined):

Var	Name	Type	Data type	Unit	Description	Priority
460	GISFILE	3	integer	Code	Layer editable in forest machine: 1...var460_t1 0 = true (default), 1 = false <u>False means "Read-only", the operator is only allowed to change the order of the layer and to switch it off (hide). Operator is, for ex, not allowed to change color or positions.</u>	2

DEFAULT FORMAT CLASSES

An important question is how to handle null values for format classes in dbf-files.

Sometimes a correct format class is not defined for a specific geographical object when Södra generates a ghd-files. The layout of an undefined object will today be random in a forest machine.

It would, according to the ghd-meeting, be a great advantage to be able to define a "default" format class for each layer. Thus making it possible to set the format/layout of undefined objects where there is no match between var465_t2 and the format class in the dbf-file. This "default" format class can also be used in case all objects in one layer shall have exactly the same layout (colors, background, line type etc).

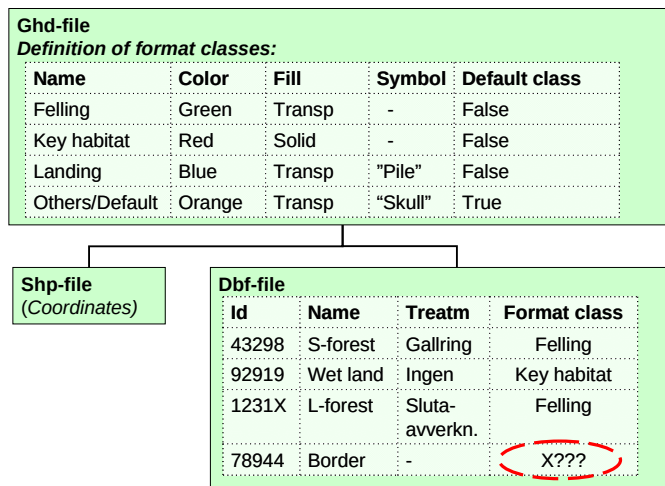
It was decided by the StanForD-meeting to implement the following new variable with priority 2 in ghd-files:

Var	Name	Type	Data type	Unit	Description
465	<u>VIS-FORMAT</u>	<u>20</u>	<u>integer</u>	<u>Code</u>	<u>Default format class to be used if no match is found for certain objects: 1...var465 t1/ 1...var460 t1</u> <u>0 = true, 1 = false (only one format class per layer expected to have value 0)</u>

Observe that the visual presentation (colors, line type, fill type etc) of the default format class is defined in var465 type 1-8.

Example

The last geographical object in the example below does not match any of the format classes names in the ghd-file. The object "Border" will thus be presented as the format class "Others/Default" since this was defined as the default class.



ADDING "NEW" MAP SYMBOLS IN THE MACHINE

Do we need to open the possibility for the harvester operator to add his/her "own" map symbols which can be transferred to the forwarder? It may for example be an advantage to be able to tell the forwarder that it is not possible to drive through a certain area due to soft ground.

The conclusion of the ghd-meeting was that a new variable is to be introduced in order to make it possible to define a font file per format class in the ghd-file instead of as previously one font file per format class. The old var466 is to be used if this new variable is missing.

It was decided by the StanForD-meeting to implement the following new variables with priority 2 in ghd-files:

Var	Name	Type	Data type	Unit	Description
465	VIS-FORMAT	21	string	Text	Name of font file used for symbols to be presented in GIS application per format class and layer: 1...var465 t1/ 1...var460 t1 Var466 t1 to be used if this variable is missing or empty
		22	integer	Code	Font file sent together with ghd-file per format class and layer: 1...var465 t1/ 1...var460 t1 0 = true, 1 = false (file expected to exist in receiving computer) Var466 t2 to be used if this variable is missing or empty
		23	String	Text	Font name used for symbols to be presented in GIS application per format class and layer: 1...var465 t1/ 1...var460 t1 Var466 t3 to be used if this variable is missing or empty
466	FONT-FILE	3	String	Text	Font name used for symbols to be presented in GIS application.

ENCODING/CHARACTER TABLE

Södra has encountered problems with encoding of some dbf-files. The problem was found to primarily be a Södra problem since the encoding can be registered in the dbf-file. John Arlinger will update the specification to point out this problem for future users.

ERRORS

An error in the description of var466_t2 (FONTFILE) was found in the standard documents.

The following update of the variable description was therefore decided:

Font file (tff) sent together with ghd-file: 1...var466_t1

0 = true, 1 = false (file expected to exist in receiving computer)

HIERARCHICAL ORDER OF OAI VS GHD

It was discussed during the meeting whether the oai file has a higher hierarchical order than the ghd-file or not. This is not clearly stated in the specification of the ghd-file or in the standard documents.

It was decided (based on suggestion by Jörgen Eriksson, Dasa) that the oai-file should be considered to have the highest hierarchical order. It was also decided that it should be clearly stated that the oai-file should always be included in a compressed package with geographical harvesting directives (ghd-file).

OTHER GHD ISSUES

Lars Lodin, Bracke Systems, pointed out at the ghd-meeting that we could improve the definitions of format classes by also defining "fill color" and "background color".

Lars Lodin also asked about whether "alarm coordinates" has been defined in the standard. This information can be registered in var523 which was updated on 2006-04-04 (see table below).

Var	Name	Type	Data type	Unit	Description
523	COORD	7	integer	code	Code for type of object with position according to coordinates in var523, point of measurement is according to var520_t1: 1 = harvested stem (in stm-file) 2 = alarm coordinates (one per harvesting site)

This variable was unfortunately not described in the specification, which will be done by John Arlinger. Types 1-6 in var523 was not given a priorities in the ghd-file. It was thus decided that var523, type 1-6 are given priority 3 in ghd-files.

§6 Updating spp-file

DIAMETERS TO REGISTER IN STM-FILE

The issue was raised by Jörgen Eriksson, Dasa and the proposal was written by John Arlinger.

A basic principal should be that both all measured diameters and the spp-diameters (extrapolated using the spp-file) should be registered in the stm-file.

This means that extrapolated spp-values (when spp-file is in use) below 130 cm should be registered separately in stm-file.

It is also important to consider that the real measured values below 130 cm have to be registered in the stm-file in the case of harvester heads that are capable to measure diameters at low heights (e.g. from 40 cm).

It was discussed whether the spp-diameters should be included in the old var273 (type 1-4) or not. However, it was suggested by Jörgen that these are to be kept totally separate in a new variable in order to avoid having to modify the interpretation of the present variables.

It was decided to postpone the proposal for a new variable for registering spp-diameters in stm-files when spp-functionality is used (priority 3):

Var	Name	Type	Data type	Unit	Description
273	STEM-DIAM	10	integer	Mm	Extrapolated spp diameters (butt end) based on spp-file with start height = 0 and end height = var170_t2: 0... var170_t2/10 (normally 14 observations) Absolute filtered values on bark. Variable only used when spp-file is used in harvester.

The proposal that var170_t2 is given priority 3 in the stm-file was also postponed.

Example if first measured diameter is at 40 cm

273<SPC>10<SPC>411<SPC>395<SPC>382<SPC>370<SPC>361<SPC>353<SPC>346<SPC>340<SPC>335<SPC>331<SPC>328<SPC>324<SPC>321<SPC>318~

The main reason for postponing the proposal was that several manufacturers had already implemented a solution where the extrapolated spp-diameters are register in var273 (type 1-4). However the meeting did decided to give var271_t3 (start height for measured diameter values in var273) priority 1 in stm-files.

PRIORITIES IN SPP-FILE

After having compared the variables in the official Finnish spp-file with the StanForD documents several variables where found to not have a priority in the StanForD documents. It was therefore decided that the following variables are given a priority in spp-files:

Variable	Description	Prio
Var2_t5	The name of the spp-file	2
Var12_t4	Date when file was last saved	1
Var111_t1	Number of tree species	1
Var200_t2	Optional free text for sending information to the machine. No changes are allowed in the machine. Maximum 300 characters allowed.	3

DOCUMENTATION OF SPP

A descriptive document of butt end diameter extrapolation methods and the spp-file will be written by Skogforsk and Metsäteho. A first draft was written and sent out prior to the StanForD meeting

TREE SPECIES ORDER IN SPP

Tree species order has been found somewhat problematic in spp by John Deere. The problem is related to the tree species variables in general and to the need of updating them.

The issue of how to deal with species will be addresses when developing a new standard version (StanForD 2010).

§7 Updating multi tree handling

A document has been compiled based on minutes from StanForD-meetings (2006-2007) where multi tree harvesting was discussed.

Proposal from Joonas Kaarnametsa, Mikko Tainio (John Deere) and John Arlinger (Skogforsk). A problem with the present variables for multi tree harvested stems is that it is not possible to register the coordinates of the stems. This may for example be important if production data is to be presented in a GIS-application. Mixing multi tree harvested stems with "normally" harvested stems (single harvested stems) in var257 and var267 is problematic since the measurements are fundamentally different

It was therefore decided that the following new StanForD-variables are to be introduced specifically for use in pri-files (priority 2):

Var no	Name	Type	Description
<u>230</u>	<u>NUMBNCH</u>	<u>4</u>	<u>Number of occasion that multi tree handling (several stems delimbed and cross cut simultaneously, logs are length measured) is carried out. Could also be described as tree bunches. All occasions registered in the current file are to be included.</u>
<u>246</u>	<u>BUNCHEDPROD</u>	<u>10</u>	<u>Number of log bunches (equal to no of cross-cuts excluding felling cut) from multi tree handled stems All log bunches registered in the current file are to be included.</u>
<u>255</u>	<u>NUMLOGCODES</u>	<u>3</u>	<u>Number of log/bunch codes for multi-tree-handling in var256 t3</u>
<u>256</u>	<u>LOGCODE</u>	<u>3</u>	<u>Code set for measurement data (var257 t2). All the multi tree handled logs/bunches follows the definition in var256 t3: 1...var255 t3 See appendix</u>
<u>257</u>	<u>LOGDATA</u>	<u>2</u>	<u>Measurement data in the pri-file for multi-tree-handled logs /1...var255 t3/1...var246 t10. Variable 257 should be read until the sign "end of variable". After that one can use var246 t10xvar255(number of log data) as a control of the correct reading of this variable.</u>
<u>265</u>	<u>NUMTRECOD</u>	<u>2</u>	<u>Number of tree (tree bunch) codes for multi-tree-handling in var266 t2</u>
<u>266</u>	<u>TREECODE</u>	<u>2</u>	<u>Codes set for measurement data in var267 t2, all multi tree handled trees follows the definition in this variable:1..var265 t2. See appendix.</u>
<u>267</u>	<u>TREEDATA</u>	<u>2</u>	<u>Measurement data in the pri-file for multi-tree-handled trees (tree bunches) /1...var265 t2/1...var230 t4.</u>

The following update is also suggested:

Var no	Name	Type	Description
246	BUNCHEDPROD	9	<u>Total</u> number of log bunches (equal to no of cross-cuts excluding felling cut) from multi tree handled stems <u>on a site after the start date (STARTDATE, var16 t4). Never reset during harvesting at a specific site.</u>

Log (log bunch) codes in var256_t3

Code	Description
220	Top diameter of multi tree handled stems (measured as if only one stem is processed), mm ob.
221	Mid diameter of multi tree handled stems (measured as if only one stem is processed), mm ob.
223	Root/butt end diameter of multi tree handled stems (measured as if only one stem is processed), mm ob.
303	Length of a log bunch when multi tree harvesting is used, cm
407	Volume m3sob Volume is based on the total diameter (diameter measured as if only one stem is processed).
1407	Volume m3 sob decimal parts Volume is based on the total diameter (diameter measured as if only one stem is processed).
408	Volume m3sob. Volume of multi tree handled stems as calculated in harvester. Calculation method not defined.
1408	Volume m3sob decimal parts. Volume of multi tree handled stems as calculated in harvester. Calculation method not defined.
409	Volume m3sub. Volume of multi tree handled stems as calculated in harvester. Calculation method not defined.
1409	Volume m3sub decimal parts. Volume of multi tree handled stems as calculated in harvester. Calculation method not defined.
427	Volume dl sob Volume is based on the total diameter (diameter measured as if only one stem is processed).
428	Volume dl sob. Volume of multi tree handled stems as calculated in harvester. Calculation method not defined.
429	Volume dl sub. Volume of multi tree handled stems as calculated in harvester. Calculation method not defined.
510	Processing order (tree bunch number) for multi tree handled stems (same as var270_t4). Incremented with each multi tree processing of stems. Reset when starting at a new harvesting object. Not to be modified by operator.
511	Bunch number in stem, 1st bunch/cut =1, 2nd = 2 ...etc

2000-series - User defined codes, not standardized

The following log data must be included in a pri-file: 220, 301, 407 Or 427, 510, 511

Tree (tree bunch) codes in var266_t2

Code	Description
3	Species no of first felled stem
510	Processing order (tree bunch number) for multi tree handled stems (same as var270_t4). Incremented with each multi tree processing of stems. Reset when starting at a new harvesting object. Not to be modified by operator.
512	No of stems processed simultaneously
513	Stem number for previously normally harvested stem (single stem), identical with tree code 500 for single harvested stems
721	Estimated DBH of first felled stem
750	Operator number. The number refers to the order of the drivers in variable 212, type 1. Number = 1...var211_t2. Operator no. 1 is the operator that comes directly after the type number in Var 212.
760	Latitude, integer as 0.00001 degrees, stored according to var521_t1, var521_t2 and var520_t1.
761	1=North, 2=South The code in var522_t2 is valid for all trees if this code is excluded.
762	Longitude, integer as 0.00001 degrees, stored according to var521_t1, var521_t2 and var520_t1.
763	1=East, 2=West The code in var522_t4 is valid for all trees if this code is excluded
764	Altitude, meters above sea level, stored according to var521_t1, ar521_t2 and var520_t1.

Tree data 760, 762 and 764 must be "-1" when no signal (invalid) is received from the gps.

2000-series - User defined codes, not standardized

The following tree data must be included in a pri-file: 510, 512, 513

It was decided with the minutes that a new variable for registering "stem number" for multi tree handled stems in stm-files is to be introduced (priority 2 in stm-file):

Var	Name	Type	Data type	Unit	Description
270	STEM- NO	4	integer	integer	Processing order for multi tree handled stems. Incremented with each multi tree processing of stems. Reset when starting at a new harvesting object. Not to be modified by operator. Observe that var270_t4 is not to be used for single tree handled stems.

An example

Table 1. Example of log and tree data from multi tree harvested stems

Processing order	No of stems	DBH of 1st stem	Species of 1st stem	Operator	Stm no*	Bunch no	Vol. m3sub	Top diam o. b., mm	Log length, cm
1	3	143	2	2	54	1	0,135	218	290
1	3	143	2	2	54	2	0,099	185	295
1	3	143	2	2	54	3	0,061	147	288
1	3	143	2	2	54	4	0,039	115	300
2	2	136	1	2	71	1	0,081	182	250
2	2	136	1	2	71	2	0,056	140	293
2	2	136	1	2	71	3	0,042	119	302

* Stem number for previously normally harvested stem (single tree harvesting) stored in tree code 500 in var266_t1 & var267_t1

Table 2. Part of a pri-file as it is presented using the Timan software, the same information as in table 1 can be found below.

Var No	Var name	Type	Data						
1		2	pri						
2		1	XX.apr						
230	NUMBNCH	4	2						
246	BUNCHEDPROD	10	7						
255	NUMLOGCOD	3	6						
256	LOGCODE	3	510	511	407	1407	1407	301	
2856	LOGCDESCR	2	Process no	Bunch No	Vol ob	Vol ob	DiamTo ob	Length	
257	LOGDATA	2	1	1	0	135	218	290	
			1	2	0	99	185	295	
			1	3	0	61	147	288	
			1	4	0	39	115	300	
			2	1	0	81	182	250	
			2	2	0	56	140	293	
			2	3	0	42	119	302	
265	NUMTRECOD	2	5						
266	TRECODE	2	510	512	513	721	750	3	
2866	TREECDESCR	2	Process no	No of stm	StmNo	DBH 1st stm	Operator	Species 1st stm	
267	TREEDATA	2	1	3	54	143	2	2	
			2	2	71	136	2	1	

§8 StanForD 2010, questionnaire and time table

Johan J. Möller presented the questionnaire that was sent out to the manufacturers as well as users in the Nordic countries as well as in other countries like Germany, Canada, France, Norway and Great Britain.

The questionnaire written by Metsäteho and Skogforsk covers:

- How StanForD is used, main advantages and problems
- Objectives of a new standard version
- Other issues related to a new standard
- Estimated economic potential

The answers will be compiled into a document called "Benefits, needs and requirements for users and manufactures"

A Swedish seminar to discuss the result will preliminary be held on 3rd and 4th of April 2008.

The decision to continue or not will be taken at the end of May 2008

§9 Items for discussion and information

ENERGY WOOD QUANTITY VARIABLES (METSÄTEHO)

Tapio Räsänen, Metsäteho, presented some ideas concerning how to include energy wood quantity variables in the prd-files. Skogforsk has just received financial recourses for working with this issue during the next year. This work will be carried out in co-operation with Metsäteho.

No decisions were made at the meeting.

FINNISH VARIABLE RECOMMENDATIONS (KTR-, STI-, STM-FILES)

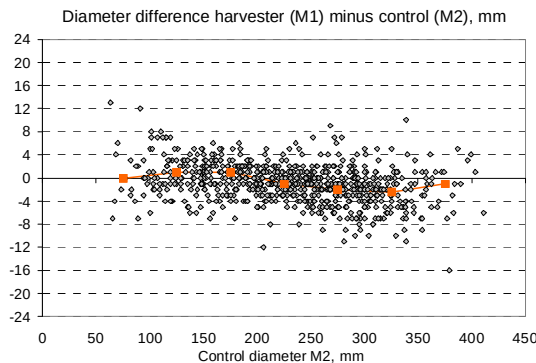
A list of variables with their priorities to be used in ktr-, sti- and stm-files in Finland has been prepared by the Finnish StanForD group. The variables was discussed at the meeting 2007-04-25. Since then it has been possible for the machine manufacturers and users to comment the list. Some changes to the variables and their priorities are still expected.

It was decided in the Finnish meeting that Finnish users should replace the use of sti-files with stm-files within the next couple of years. Some machine manufacturers' opinion was that 2 -3 years would be a suitable time frame, meaning that only stm-files would be used in 2010. The change can be connected to the StanForD 2010 project.

The issue of variable recommendations was discussed already at the last meeting. Metsäteho will present the recommendations at a future meeting, if there is general interest for it. The aim is to add the recommendations to the StanForD appendix. Some descriptive text to the appendix document must also be written (not done so far).

DISPLAYING KTR-DATA

Johan J Möller initiated a discussion concerning how to present diameter and length deviations in diagrams when analysing ktr-files. Whether to use M1-M2 or M2-M1 (on the Y-axis) is basically a philosophical question that does not have a single "true" answer. However it is always an advantage if everyone do it in the same way. Both Skogforsk and SDC has drawn these diagrams in the following way (M1-M2) since the 1980's:



It is therefore suggested by Skogforsk that the manufacturers do it likewise.

WORKSHOPS SPRING 2008

Skogforsk plan to organize some StanForD related meetings in the spring of 2008.

- A meeting with StanForD members (manufacturers) to discuss a future development of the drf-file in order to adapt it to the situation where a harvester head is used on a tracked third party base machine (normally an excavator). Suggested date is the 12th of March.
- A workshop for informing Swedish users (forest companies and forest owners associations) about recent development of StanForD as well as StanForD 2010. Suggested dates are 3rd and 4th of April.
- A meeting for users and developers of the ghd-file and gis-applications used in forest machines. Probably together with the meeting mentioned in previous section. Suggested dates are 3rd or 4th of April.

PRL USE IN SWEDEN (SVEASKOG & SÖDRA)

Johan J Möller presented the present use of prl-files in Sweden.

Södra today sends prl-files from approximately 50 forwarders to SDC. They will soon have 100 forwarders sending prl-files using the data for logistical planning. They today require that all new forwarders must be able to report the production using prl-files. Sveaskog has also started to use the system on a wide scale. They presently have 35 forwarders reporting prl-files. Some other Swedish companies are today testing prl-files.

§10 Other issues

No other issues were discussed.

§11 Next meeting

Next meeting will take place on Tuesday the 6th of May 2008, at Skogforsk in Uppsala, starting at 10.00 a.m. Proposals for the meeting shall be the secretary by hand preferably not later than April 15th 2008.

§12 End of meeting

Johan J Möller (chairman) closed the meeting.

Secretary

John Arlinger