

Minutes from the meeting with the StanForD-group 2005-10-25

Place:	Skogforsk, Uppsala, Sweden
Present:	Jonas Gustafsson, Sveaskog Tapio Räsänen, Metsäteho Samuli Hujo, Metsäteho Mikko Tainio, Timberjack Mika Talola, Timberjack Erik Kindlund, Timberjack Leif Orth, Södra Perttu Isosaari, Mitron Johan Bruun, Ponsse Teemu Paldanius, Ponsse Jari Korhonen, Epec Jyrki Parttinen, Epec Nicklas Götz, CC Systems Jörgen Eriksson, DASA Ruediger Dehn, DIS Informationssysteme Joakim Nygren, Haglöf Per Annemalm, Komatsu Ola Söderlund, Komatsu Lars Henriksson, SDC
From Skogforsk:	John Arlinger, Secretary Johan J. Möller, Chairman Jan Sondell

§1 Opening of the meeting

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

§2 Clarifications and modifications of variables

UPDATING PRL-FILE

Var443 – Number of loads

Jörgen Eriksson, DASA, found an error in the documentation concerning prl-files ("Prl-files, A new StanForD-file for reporting forwarder production").

Var228_t1 has been used for dimensioning var447_t1. However as the same load may be unloaded at several different transport objects we may have more unloading data in var447 than the number registered in var228_t1.

The following example illustrates the difficulties in using var228_t1 when parsing var447_t1.

Example three loads unloaded at four separate times

VarNo	Name	Type	Data					
228	NUMLOAD	1	3					
445	NUMLOADCOD	1	6					
446	LOADCODE	1	2	10	402	450	760	762
			<u>Load No</u>	<u>Transport object</u>	<u>Vol</u>	<u>Mass</u>	<u>CrdX</u>	<u>CrdY</u>
447	LOADDATA	1	1	1	9	7200	218	554
			1	2	3	2400	219	554
			2	3	13	10400	220	556
			3	1	12	9600	230	540

It was therefore decided to implement the new variable NUMLDATA (var443) with priority 1 in prl-files and to update variable 447 with the following definitions (new text is underlined):

Var no	Name	Type	Data type	Unit	Description
443	<u>NUMLDATA</u>	<u>1</u>	<u>Integer</u>	<u>No</u>	<u>Number of unloading data stored in var447_t1</u>
443	<u>NUMLDATA</u>	<u>2</u>	<u>Integer</u>	<u>No</u>	<u>Total number of unloading data registered on a site after the start date (STARTDATE, var16_t4). Never reset during forwarding at a specific site. Used for checking that all files have been included when calculating the total production of a site.</u>
447	LOADDATA	1	Integer		Measurement data for each <u>unloading load</u> : 1...var445_t1/1...var443_t1... <u>var228_t1</u> .

Units registered in prl-file

The issue of how to convert between different units (m3sob, m3sub, kg, no of logs) in prl-files was raised by Ilari Virtanen, John Deere.

It was realized that we have to introduce a variable that describes what was measured/estimated by the forwarder/operator. If we do, the receiver of the data may do conversions in a consistent way independently of settings in the machine.

It was therefore decided to implement the following new variables with priority 1 in prl-files:

Var no	Name	Type	Data type	Unit	Description
441	TRNSDESC	10	Integer	Code	Code describing the unit wich was estimated by operator or measured by forwarder (not calculated by machine) per transport object: 1...var440 t1 Codes: 1 =volume, m3sob (load code 401) 2 =volume, m3sub (load code 402) 3 =green mass, kg (load code 450) 4 =no of logs (load code 460) 5 =no of loads (all production data in var447 t1 is calculated)
		11	Integer	Code	Code describing how forwarder production data (in var447) was generated per transport object: 1...var440 t1 Codes: 0 = Other/unknown 1 = manual estimation by operator 2 = scale 3 = estimation through pri-file (harvester data)

Observe that the conversion factors for converting from m³sub to mass and from m³sob to mass can be stored in var169 type 1 and type 2. It will thus also be possible to calculate the conversion factor for converting from m³sub to m³sob and vice versa.

Energy assortments in prl-file

It is also of interest to update the prl-file in order to register information concerning energy assortments in the form of bundles or non-compressed harvesting residues (branches and tree tops, in Swedish "grot").

It was therefore decided to implement the following new codes in variable 441 and 446:

Var no	Name	Type	Data type	Unit	Description
441	TRNSDESC	10	Integer	Code	 6 = loose volume, m3 7 = solid volume including bark, branches and needles, m3 8 = solid volume of bundles (length*cross sectional area), m3 9 = number of bundles
441	LOADCODE	1	Integer	Code	 410 = loose volume, m3 411 = solid volume including bark, branches and needles, m3 412 = solid volume of bundles (length*cross sectional area), m3 461 = number of bundles

New code in var 446_t1 (LOADCODE)

A problem with the present prl-files is that the load data does not include the amounts (volumes, mass) by timber assortments. A new load code (1) describing the price matrix was therefore proposed by Ponsse. Variables 111, 116, 120 and 121 also have to be added to the prl.

It was decided to implement a new load code 1 in var446 in prl-files with the following definition: "Price matrix/assortment number. The number refers to

the order of the assortment according to variable 121. Number = 0...n, n = var111 x var116. Assortment no 1 is the assortment that comes directly after the type number in var 121. Observe that no. 0 is used only for loads that do not belong to a certain matrix, that is unclassified logs."

This also means that variables 111, 116, 120 and 121 are to be included in the prl-file with priority 2. This would mean that code 1 in var446 is handled in the same way as in var256 in the pri-file. Observe that the transport objects may very well be defined so that they only include one price matrix per object meaning that this new load code is of no use.

SUGGESTED UPDATES FROM KOMATSU

Ola Söderlund, Komatsu, suggested the following updates.

Var33 (VENDOR)

Type 2-6 includes information about the vendor/seller (code, name, adress, phone, e-mail). It was decided to give type 2-6 (var33) priority 3 in the apt-file.

Var119 (FREEBUCK)

Var132_t2, which is mentioned in the description of var119 does, not exist. It was therefore decided to update the description of var119 according to the following text:

Code stating if bucking is permissible to any length between min and max according to ~~var132_t2~~ var132_t1 except for those lengths stated in var190_t2.

Var137_t1 (BUCKPRI)

The priority of var137_t1 has, probably by mistake, been given priority 4. It was therefore decided to give this variable priority 3 in the apt-file and to updated the description according to the following text:

Code describing the priority of a price matrix/price matrix/ tree species:

Var151 (MARKING)

A grave error occurred when the description of var151_t2 was translated into English, probably as early as 1997. Several manufacturers implemented the variable according to the original Swedish description which was "Märkning av fördelningsapterat/prismatris/trädslag: 1...var116/1...var111". It was therefore decided to update the description of type 2 according to the following text:

Marking of logs cut with apportionment bucking ~~pulpwood~~/price matrix/ tree species: 1...var116_t1/1...var111_t1"

Var169 (DENSITY)

It was decided that var169 is to be given priority 3 in apt-files in order to make it possible to send this information to forest machines.

Apportionment bucking, var136_t2

A variable for easily setting whether or not apportionment bucking should be allowed or not for an individual price matrix is needed.

It was therefore decided to implement the following new variable BUCKCRIT (var136_t2) with the following description:

Code for apportionment bucking, stating if apportionment bucking is allowed when this

matrix has the highest value /price matrix/tree species:

0 = apportionment bucking allowed, 1 = apportionment bucking not allowed

Administrative data in HKS-file

There is administrative data (identities) in the German variables 601, 602.
There are no simple way for sending this information to the harvester.

It was therefore decided to give var601 and var602 priority 3 in apt-files.

MAXDEVIAT (VAR192) & FREEBUCK (VAR119) IN PRD/PRI

The StanForD meeting 2005-04-05 (§2) decided to postpone the decision concerning the question if the variables var192 (MAXDEVIAT) types 1-5 and var119 (FREEBUCK) type 1 could be added to prd- and pri-files or not.

Variables MAXDEVIAT and FREEBUCK is needed primarily by Metsähallitus for following the bucking, especially if the stems have been bucked to their maximum value and if free-bucking has been used for certain pulpwood assortments. The values can be changed by the operator during the work and it is not very reasonable to send whole apt-files back to company system if the variables could be included in prd- and pri-files. A much more complicated file transferring system has to be implemented in that case

It was therefore again proposed the these variables should have priority 3 in both files.

It was decided by the meeting not to change the priorities of these variables as this would be in conflict with the basic StanForD objective to avoid mixing data from different file types (for example apt-data in prd- and pri-files). If everyone is to be able to do thorough analyses of prd/pri-files we may end up with a situation where basically all apt-data is included in the prd/pri-files, for example price matrix, apportionment matrix and limitation matrix.

VARIABLES IN KTR-FILE

A few errors concerning variables in ktr-files have been found by Jörgen Eriksson, DASA.

Stem number, var270_t2

The control stem number should be used even if a stem is not actually used for control measuring (meaning it is rejected and registered in var38). It was therefore decided to update the definition according to the following description (new text underlined):

Unique number of sampled stem, used for identifying control stems. Should be 0 (or excluded) if not sampled for control. Possible for operator to reset. To be used even if stem is not used for control measuring (rejected according to var38)

Log number, var306

Both type 1 and 2 are dimensioned using var290_t1 (number of logs). The log stem number (type 2) should be used even if stem and log is not actually used for control measuring (meaning it is rejected and registered in var38).

It was therefore decided to update the definitions according to the following description (new text underlined):

Var no	Name	Type	Description
306	LOGNUM	1	Log ID. e.g. position in stem, Log No., etc.: <u>1...var290 t1</u>
		2	Unique number of sampled log, used for identifying control logs. Should be 0 (or excluded) if not sampled for control. To be used even if stem is not used for control measuring (rejected according to var38): <u>1...var290 t1</u>

UPDATING VAR462 IN GHD-FIL

A standard for harvesting directives (incl. GIS) was implemented 2004-03-30.

It was decided that all data is to be stored in the GIS-files, for example coordinates of a stand in mif or shp-files, and the name/description of a stand in the data files (for example dbf, tab or dat-files). In order to identify the data, unique column names have to be defined (in dbf, tab or dat). It was decided that these column names are stored in the ghd-file using var462, see example in figure 1.

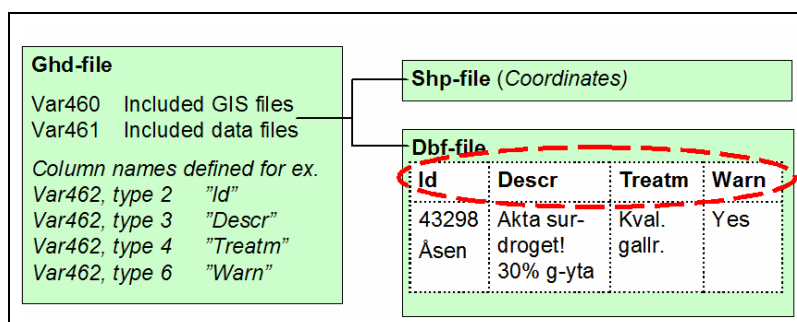


Figure 1. Example illustrating how data is stored in GIS-files, not all types in var462 are included.

It is a potential problem, discovered by Södra in September 2005, that it is not possible to use different column names in different data files.

It was therefore decided to update the definitions according to the following description (new text underlined):

Var no	Name	Type	Data type	Unit	Description
462	LAYER-DSCR	1	String	Text	Column name for name of feature (free text), in files connected to GIS-files with complimentary/theme data (e.g. dbf, tab, dat, tw) <u>per layer: 1...var460 t1</u>
		2	String	Text	Column name for unique id (free text) <u>per layer: 1...var460 t1</u>
		3	string	Text	Column name for description (free text) <u>per layer: 1...var460 t1</u>
		4	string	Text	Column name for treatment (free text) <u>per layer: 1...var460 t1</u>
		5	string	Text	Column name for marked in terrain, eg. painted borders <u>per layer: 1...var460 t1</u> Codes: 0 = yes, 1 = no (default)
		6	string	Text	Column name for warning (whether machine activities are permitted or not) <u>per layer: 1...var460 t1</u> Codes: 0 = no warning (default), 1 = warning.
		7	string	Text	Column name for warning distance (m) <u>per layer: 1...var460 t1</u>
		8	string	Text	Column name for format class <u>per layer: 1...var460 t1</u> . Used for controlling the appearance of all features included in specific layer (format classes are defined in var465)

UPDATING CODE 1 IN VAR316_T3 (RUNTIME), DRF-FILES

It was noticed by Ilari Virtanen, John Deere (April 2005) that code 1 ("Total time") in var316_t3 (RUNTIME) has not been sufficiently defined. It could for

example be interpreted as either calendar time, utilised time or effective work time.

This code was implemented in 1999. It was not update in the last major revision (2004-03-30) of the drf-file. No clear definition of code 1 could be found in the minutes from 1999-04-12.

It was therefore decided to update the definitions of code 1 in var316_t3 according to the following description (new text underlined):
"1 = Utilized time which is the sum of all down times (var317) and all effective times (Et)"

§3 New variables

MCHNNO (VAR3, TYPE 5-7)

A proposal from the Finnish pre-StanForD meeting 2004-05-11.

The last StanForD meeting 2005-04-06 decided to implement a new variable var3_t5 (MCHNNO) in order to describe the name of the machine manufacturer, the designation of the machine model as well as the head model using free text. It was proposed by Jörgen Eriksson, DASA. There was some discussion of this variable in the Finnish StanForD meeting and it was realized that there will be problems in separating the different text fields. As no machine manufacturer has implemented var3_t5 yet, it was decided to suggest that this information is separated into four variables (machine manufacturer, machine model, head manufacturer and head model) according to the following table:

It was therefore decided that the following new variables are to be implemented with priority 2 in prd, pri, stm, drf and ktr-files:

Var	Name	Type	Data type	Unit	Description
3	MCHNNO	5	String	text	Machine manufacturer. Free text that describes the machine manufacturer.
3	MCHNNO	6	String	text	Machine model. Free text that describes the model of the machine.
3	MCHNNO	7	String	text	Harvester head manufacturer. Free text that describes the head manufacturer.
3	MCHNNO	8	String	text	Harvester head model. Free text that describes the model of the harvester head.

DIAMETER SECTIONS PRICING METHOD

A proposal from the Finnish pre-StanForD meeting 2004-05-11.

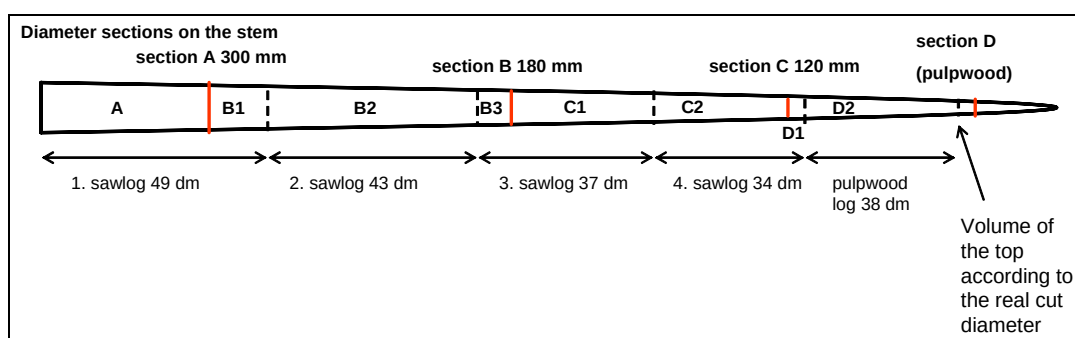
New timber pricing method based on diameter sections of the stems has been developed and tested in a Finnish project starting in 2002. The project was financed by Metsäliitto and UPM-Kymmene The first timber deals have been made this year with private forest owners. The method can be used also for inter-company cost accounting

New variables are needed for the new timber pricing system that will be taken into use in Finland. The variables have been handled together with the machine manufacturers during the project 2002-2003. The variables were checked with Skogforsk in autumn 2003 and variable numbers 530 – 549 were

reserved for the diameter sections method. The variables have been implemented by the machine manufacturers. Variables were discussed for the first time in the Finnish pre-StanForD meeting 2005-05-11. The descriptions were accepted with the change that var530_t1 and var531_t1-5 should be given also in stm files (priority 2).

The following examples illustrate how the method is supposed to be used.

Diameter section	A	B	C	D (pulpwood)
Minimum diameter of section	300 mm	180 mm	120 mm	65 mm
Minimum length of section	430 cm	370 cm	300 cm	
Price	100	80	60	40



Volume per log:

1. sawlog	A + B1
2. sawlog	B2
3. sawlog	B3 + C1
4. sawlog	C2 + D1
pulpwood log	D2

An example of user interface for setting the diameter section parameters per tree species (ap1 or apt), Note that the operator can not change the values on the machine:

Selection of tree species (view by tree species)

Pine Spruce Birch Other tree sp.

Name of the diameter section

Code of the diameter section

Diameter section name

Diameter section code

Diameter, mm

Min. length, cm

Use for commercial volume measurement

A B C D

1 2 3 0

300 170 120 65

430 370 300

☐ ☒ ☒ ☒

del del del del

Value of the minimum diameter of the section

Value of the minimum length of the section

Use of the section in prd "on / off"

Deleting the diameter section

New section Add a new diameter section

Example of volumes per assortment and diameter section in prd-file:

Diameter section	A 300+ mm	B 180–299 mm	C 120–179 mm	D 65-120 mm	Sum
Assortment					
Sawlog X	75	52			127
Sawlog Y		90	4		94
Veneer	110	38			148
Sawlog Small		8	55	1	64
Pulpwood A		3	12	210	225
Pulpwood B				15	15
Reject		1	1		2
Sum	185	192	72	226	675

The meeting decided to implement the following variables as described in appendix 1:

- var530_t1 NUMDIAMSEC
- var531_t1-5 DIAMSEC
- var532_t1-4 DIAMSECVOL + var1532_t1-4 for decimals
- var540_t1 NUMDIAMSECSTM
- var541_t1-2 DIASECDESSTM
- var542_t1 DIASECSTM
- var543_t1 DIASECHGHT
- var544_t1 LOGDIASECVOL

Unclassified volumes are not included in the diameter section volumes, as they are not included into the merchantable volumes (var241). The basic principle is that sum of the diameter section volumes must be equal to the sum of volumes of the assortments. Unclassified volumes are handled in the matrix of unclassified volumes.

The smallest diameter section does not include a calculated top. The volume of the last piece is calculated to the real, measured top diameter. No estimations are done on how much wood there would still be until the diameter section limit diameter value is reached. The same basic idea as in the previous section is applied: the sum of assortment volumes is equal to the sum of diameter section volumes.

All processed volumes are to be registered even if part of the processed stem is smaller than smallest diameter section, these parts are added to the last section. Volumes have to be registered somewhere. This makes in fact the minimum diameter value of the last diameter section useless.

The minimum length is only used for the first section within a stem, that means from the butt cut if the first log is not unclassified. However unclassified logs higher up in the tree are to be included when calculating the length of a section but not when registering the volume of a section. The volume of the first section will be included in the next section if it is shorter than the minimum length. The volume of all sections will be registered in the

last (smallest) section if the lengths of the sections never fulfill any minimum length.

The following example illustrates how to use the minimum length of a section. The length from butt to diameter limit of A is for example 150 cm and the length from that point to the diameter limit of B is 230 cm, together 380 cm. The length 150 cm does not fulfill the minimum length of A (430) so the volume will not be assigned to section A. However 380 cm is longer than the minimum length of B (370). The volume of this part of the stem (A and B) is then both included in the volume of section B.

Examples illustrating the problem with unclassified logs and minimum lengths. The length from butt to diameter limit of A is for example 440 with the minimum length of section A 430 cm and the minimum length of section B 370 cm. The consequences are described in the following table:

Example	Log 1	Log 2	Volume in section A	Volume in section B
1	40 cm unclassified	400 cm saw log	No	Yes
2	400 cm saw log	40 cm unclassified	Yes	No
3	400 cm saw log	No log 2	No	Yes

CONTRMEAS (VAR38_T11)

A proposal from the Finnish pre-StanForD meeting 2004-05-11.

There is a need to transfer all control and calibration data from the harvesters to the company's system using ktr-files. Finnish operators are expected to check the accuracy of length measurement possibly several times a day. So far these "self-control" measurements have been registered only on paper or in some specific application (e.g. Excel). It has not been possible to use calipers for saving only length measurements.

A new variable was therefore proposed for describing the control/calibration measurement mode of the caliper in ktr-file. The modes are: 1 = both diameters and lengths have been measured or 2 = only lengths have been measured (length measurement data saved in caliper).

It was decided to implement the following variable with priority 2 in ktr-files:

Var	Name	Type	Data type	Unit	Description
38	FILETYPE	11	integer	Code	Code for measurement mode per stem in ktr-file. Set in caliper. Codes for caliper measurement modes: 1 = both diameters and lengths registered, 2 = only lengths registered

PRD-FILES FROM BUNDLERS (JOHN DEERE).

There is, according to John Deere, a need for new production variables for bundler machines. John Deere is now using timber volume and stem pieces variables in the current bundler prd-files from the Timbermatic 900 system.

It was decided to implement the following variables and updates with priority 3 in prd-files:

Var	Name	Type	Data type	Unit	Description
3	MCHNNO	3	integer	Code	New code: <u>Code 10 = bundler</u>
515	BNDLNO	1	Integer	No	Total number of bundles/site
515	BNDLNO	2	Integer	No	Number of bundles/price matrixes/tree species: <u>1..var116_t1/1...var111_t1</u>
515	BNDLNO	3	Integer	No	Number of bundles/operator/ price matrixes /tree species: <u>1..var211_t1/1...var116_t1/1...var111_t1</u>
516	BNDLDIM	1	Integer	Mm	Default diameter of the bundle. All assortments have the same diameter.
516	BNDLDIM	2	Integer	Cm	Default length of the bundle. All assortments have the same length.
516	BNDLDIM	3	Integer	M3	Bundle bulk volume/ price matrixes /tree species, this is calculated with default diameter and length: <u>1...var116_t1/1...var111_t1</u>
161	PRICECAT	1	Integer	Code	New price category: <u>12 = Price/bundled m3 (bulk volume calculated with default diameter and length of the bundle)</u>

BUTT LOG LENGTH CORRECTION (VAR47_T2)

It was discussed in the Finnish meeting that length adjustments should be given separately for butt logs and other logs (var47 CORRLNGTH). New type var47_t2 is proposed for butt log and t1 can be reserved for other logs. Separate butt log length correction is often used. It was also suggested that the adjustment values should be given for a nominal 5 meter log length and the unit can be millimeter.

It was decided to postpone the issue to next meeting as it was discovered, during the meeting, that several inconsistencies exist in the definitions of variables 15, 40-49 (all relating to calibration). Skogforsk will prepare a proposal for the next meeting.

§4 Items for discussion and information

AP1-FILES AND OAI-FILES FOR USE IN APTERI-SOFTWARE.

Introductory comments from secretary: Observe that all proposals concerning the ap1-file were combined into this section.

Proposals decided in Finnish pre-StanForD meetings 2005-05-11 and 2005-10-11.

There are presently two different file types, apm and fpm, described in the standard for the price matrixes and other information for a single timber assortment. However, these files are not used, at least not in Finland. Instead, Apter software uses ap1-file, which is an “unofficial” name of the file for giving timber assortment specific data from the company system to the harvester. Apter software composes apt files out of oai- and ap1-files. It was therefore suggested that ap1-file should be described in StanForD according to how it is used. At the same time the need and status of apm- and fpm-files could be revised.

Ap1-files can be seen as a modification from apm, even if it is, so far, used only in one software. There are company-specific versions of Apter in Finland (Metsähallitus, Metsäliitto, UPM and Stora Enso is now developing their own), but the software in harvesters is quite similar independently of the company. Therefore it has been possible to set the list of recommended variables for use of ap1- and oai-files in Apter.

There are no priorities for the variables to be used in ap1-files and the priorities for oai-variables are not up to date when dealing with Apter. In order to clear the situation a proposal for the variables and their priorities have been made based on the present Apter software users' views in Finland. All the variables have been discussed and accepted in the Finnish pre-StanForD meeting.

It was thus proposed that ap1-files should be described in main StanForD document and that priorities of variables in ap1- and oai-files should be updated.

All recommended variables and their priorities are described in appendix 2.

Var5 VARIANT t5

Proposal from UPM (Ari Ronkainen)

A new variable is needed for presenting name and version of the Apter - program that is used for creating apt-files from oai- and ap1-files. Variable could be used also for identifying some other similar application. (Note that var5_t2 is used for presenting the version of SilvIA –program or some other apt editor.)

Proposal:

Var	Name	Type	Data type	Unit	Description	Priorities
5	VARIANT	5	String	text	Name and version of program or software application used for creating apt-file from oai- and ap1-files. Program is some other than the one in the bucking computer itself, normally program of the forest company or some commercial software product.(Apter in Finland).	ap1/3, oai/3 apt/3, prd/3 pri/3, stm/3

Var191 SPECLIST t4 non-positive values in ap1-files

According to the standard, only values ≥ 0 are allowed in var191_t4. However, Apter –program uses also negative values in ap1-files. The description of var191_t4 should therefore be updated.

The purpose for using negative values is to manage the length distributions in a more controlled way. The number of short lengths is often a problem and scaling the changes of prices with three different relative values (e.g. 20%, 15% and 10%, respective codes 0, -4 and -5) is a way to control the length distribution.

The meaning of these special values when using var191_t4 in ap1-files described below. The description can be placed in an appendix.

	Values set in apt-fil
--	-----------------------

value var191, t4	Description	Change of price matrix, %	var191 SPECLIST	var190 MAXLOG
0	Additional diameter/length (not desired). The value of this cell in price matrix (var155 BASEPRICE) is lowered by the percentage value given in settings of the software.	20	0	0
-1	Forbidden to buck. The value of this cell in price matrix (var155 BASEPRICE) is lowered by the percentage value given in settings of the software or price is set fixed to 0.	90 or 100	0	-1 (forbidden to buck the log even manually)
-2	Only bucking manually allowed. The value of this cell in price matrix (var155 BASEPRICE) is lowered by the percentage value given in settings of the software or price is set fixed to e.g. 20 or 2.	99	0	-3 (only logs bucked manually allowed)
-4	Another additional diameter/length (not desired). The value of this cell in price matrix (var155 BASEPRICE) is lowered by the percentage value given in settings of the software. This is used for keeping the the number of short lengths close to the desired distribution.	15	0	0
-5	see previous	10	0	0

Variables var121_t4 and t5 for identification information of timber assortments

Proposals from UPM (Ari Ronkainen) and Metsähallitus (Tuomo Vuorenpää)

The present timber assortment identification information is not enough for all follow-up needs. Types 1-3 are reserved for specifying and describing different timber assortments of the forest company. However, the assortment data (prices, values of var191 ...) changes all the time and there can be different versions of the assortment in use at the same time. It is also possible that some changes to the assortment data are made in the harvesters by the operators. Therefore some further identification information for the different versions of the assortments is needed.

One way of managing the versions is to add the time and date when the assortment data was changed and saved in the data system of the company (e.g. Apteri). A new variable 121 ASSTDESCR t4 is therefore proposed. Var121_t4 is sent in oai- or ap1-files to the harvester (to Apteri) and then saved in apt-, prd-, pri- and stm-files in the machine.

Time and date of the change of the assortment is not the only way of managing the versions. Company-specific codes or free text can also be used. This information can come e.g. from the company's database in which the assortment data is managed (database table and line number etc.). Companies may also have their version management based on running version numbers and the matrices can have an expiry date. All the different ways of managing the versions can be difficult to formulate into variable types now. Therefore only new type var121_t5 for using codes is proposed this time together with previous t4.

Var	Name	Type	Data type	Unit	Description	Priorities
121	ASST- DESCR	4	string	Yyyy- mmdd- hhmmss	Time and date when the ap1-file of the assortment was last saved in the data system of the forest company/ price matrix/tree species: 1...var116_t1/1...var111_t1	ap1 / 3, oai / 3 apt / 3, prd / 3 pri / 3, stm / 3

121	ASST-DESCR	5	integer	Code	Assortment identification information of the assortment data/ price matrix/tree species: 1...var116_t1/1...var111_t1. User-specified codes.	ap1 / 3, oai / 3 apt / 3, prd / 3 pri / 3, stm / 3
-----	------------	---	---------	------	---	--

Discussion at meeting

A quite large number of questions and comments were expressed concerning the proposals. A thorough description of the ap1-files and how they are to be used is definitely needed if the ap1-file is to be included in the standard. There must absolutely be some kind of common understanding of how these files are to be used in order to achieve an effective standardization.

How are machine specific variables like var198 (APPMETHOD), var101-104 (LNGTHFORCA, MEASLNGTH, ESTUPLIM, ESTLOWLIM), var197(FROMMATRIX) handled? Which variables are set in the Apteris-
software?

How do we handle variable 191 (SPECLIST) if implementing the suggested changes? It seems like var191 is to be used in a special way in the Apteris software. Is the idea to have different interpretations of var191 in different files (ap1 vs. apt-files)? I do not now if we have any variables which have different definitions in different types of files.

Price according to var155 (BASEPRICE) is not enough from Swedish perspective as m³to is widely used. No price category is defined (var161) in either file! How is the base price defined?

Some variables are included in both oai- and ap1-files (for example var155, var122, var192). How is, for example BASEPRICE (var155), to be used if it exists in both files?

A number of variables in the oai-file relates to certain price matrixes for example base price (var155), stem type no (var122) and maximum deviation (var192). How are these variables to be connected with a certain price matrix? How do you identify a certain matrix, through var121_t1, var121_t2 or var121_t3? What if there is a conflict between the different types of var121?

Adding detailed information concerning individual price matrixes seems, from my point of view, to violate the idea of primarily using the oai-file for site specific information.

Conclusions

It was decided that Metsäteho is to organize a meeting in Finland during January 2006 where all matters relating to the Apteris-software is to be discussed. Representatives from Skogforsk, Finnish forest companies and machine manufacturers will be invited. The final decision concerning how to handle the document will be decided at the spring meeting. All suggested variables to be used in oai/ap1-files together with Apteris are included in appendix 2.

It was decided to describe the non standard implementation of var191 in the separate Apteris-document.

It was decided with the minutes that a new var605 and var121_t4 are implemented (observe that the suggested var121_t4 now is defined as var605_t2 and var121_t5 as var121_t4):

Var	Name	Type	Data type	Unit	Description	Priorities
605	APTERI	1	String	text	Special variable used by Finnish Apteris- software, described in appendix: Name and version of program or software application used for creating apt-file from oai- and ap1-files. Program is some other than the one in the bucking computer itself, normally program of the forest company or some commercial software product.	ap1/3, oai/3 apt/3, prd/3 pri/3, stm/3
605	APTERI	2	string	Yyyy- mmdd- hhmmss	Special variable used by Finnish Apteris- software, described in appendix: Time and date when the ap1-file of the assortment was last saved in the data system of the forest company/ price matrix/tree species: 1...var116_t1/1...var111_t1	ap1 / 3, oai / 3 apt / 3, prd / 3 pri / 3, stm / 3
121	ASST- DESCR	4	integer	Code	Assortment identification information of the assortment data/ price matrix/tree species: 1...var116_t1/1...var111_t1. User-specified codes.	ap1 / 3, oai / 3 apt / 3, prd / 3 pri / 3, stm / 3

STANFORD-XML (METSÄTEHO)

Tapio Räsänen presented ideas concerning a conversion to an XML-format.

Whether StanForD-XML comes depends on us. Discussion in StanForD group should be started concerning the standard and its guidelines of the future

Some good reasons for using XML:

- XML is used a lot for transferring documents between organizations
- presenting data and documents using XML in applications based on web browsers
- XML-supported products available widely
- XML-knowledge has increased, lots of development
- users' needs towards sending and receiving information from machines are becoming more and more diverse
- traditional entrepreneur patterns are changing (main and sub-contractors) and flexible and easy applications are needed
- XML is already now used in Finland when StanForD files are sent to the machines (Metsäliitto)

What are the possibilities to change over to using XML also in StanForD in the long run? Transforming the files into XML might be the first step in the development.

The opinion of the meeting was that Metsäteho and Skogforsk may go ahead and think about possible ways to continue this work.

PRIORITY LIST FROM SWEDISH USERS

Johan Möller informed the meeting about discussions with the Swedish user group, organized by Skogforsk, concerning how Skogforsk should give different issues varying priorities during the next year. The highest priority was 4 and the lowest was 1. The discussion was not primarily with a focus on StanForD.

Activity	Priority 2005	Priority 2002	Priority 2003
Pri-file from harvesters	4	2	4
Better system for diameter measuring	4	3	3
Definition of key figures for measuring	4		3
Test of new bucking program/ timber value trial (virkesvärdestest)	4	3	Checking, continuously
Gps-functionality (avstörning)	4		
Backup system, external software + saved data	4		
Better calibration systems	3,4	3	4
Harvesting directives (Avverkningsdirektiv)	3,4		
Quality control system (sample tree)– VMR instruction/ SDC-program for following up	3	4	4
Better bark functions	3	3	4
Simpler reporting of data from machines	3	3	3
Follow up harvester heads	3		3
Communication machine SDC	2		4
PRI-file – introduction to all machines	2	3	3
Automatic sound knot bucking	2	2	2
Second goal for length cutting	2		2
Marking of timber	2		
New identity standard, implementing in machines	-	4	3
Slow computers	-		2

TIMBER VALUE TRIAL AUTUMN 2006 (VIRKESVÄRDESTEST)

Johan Möller informed the meeting about the fact that the Swedish forest companies have expressed a wish that Skogforsk should carry out a new test of harvesters in 2006 (previous test were carried out in 2001 and 1996).

The preliminary plan is to run a trial in October/November 2006 and to create a test protocol that will be used in the trial as well as in the future tests of new machines/equipment. The following table illustrates the basic idea of a test protocol:

Function	Methods			
Bucking optimization	Stm-file 100 stems, 50 with 1 quality and 50 with 2 qualities	Manual measuring of 10 stems randomly sampled	Apt-file (normal & small timber, pulp)	Lumber quality (debarking, etc)
Apportionment bucking	1000 logs cut	3 % max deviation, length neutral list	Control of function	
Quality bucking	Control of quality, sound knot and log type bucking, etc			
Dimension	Manual measuring of 10 randomly sampled stems	Control measuring each meter + length	Calculation of volume, butt, bark	
Calibration	Adjustment of measuring value and test of calibration function			
Harvester measuring	Function for saving data and back-up	Identity variables	Quality certification	User interface
Communication	External equipment, calipar,	Printing		

Function	Methods			
	CD, mail, usb, etc			
Machine specific functions	Positive/ negative news			
StanforD	Questionnaire	Control of ktr, pri, drf, stm etc.		

§5 Other issues

Leif Orth presented Jan Sondell with a gift as an acknowledgement for his work with StanForD during more than 15 years.

Jan Sondell expressed his gratitude for the gift and the good cooperation with all StanForD-members during his time as chairman.

§6 Next meeting

Next meeting will take place on Tuesday April 4th, 2006, at Skogforsk in Uppsala, starting at 10.00 a.m. Proposals for the meeting shall be the secretary by hand preferably not later than March 20th 2006.

§7 End of meeting

Johan J Möller (chairman) closed the meeting.

Secretary

John Arlinger

Appendix 1

Var	Type	Prio	Files	Name	Data Type	Unit	Description
530	1	1 2	APT PRD STM	NUM-DSEC	Int	number	Number of diameter sections / tree species: 1...var111
531	1	1 2	APT PRD STM	DSEC	Str	text	Description of diameter section / diameter section / tree species: 1...var530_t1 / 1...var111 Descriptions can be free text and are company specific (not standardized).
531	2	2 2	APT PRD STM	DSEC	Str	code	Code for diameter section / diameter section / tree species: 1... var530_t1 / 1...var111 Codes are company specific.
531	3	1 2	APT PRD STM	DSEC	Int	mm	Minimum diameter o.b. of diameter section / diameter section / tree species: 1... var530_t1/1...var111
531	4	1 2	APT PRD STM	DSEC	Int	cm	Minimum length of diameter section / diameter section / tree species: 1... var530_t1/1...var111 Value 0 means that minimum length requirement is not in use. The smallest diameter section of a tree species does not have a minimum length requirement. More detailed descriptions can be found in Diameter Sections documents (only in Finnish).
531	5	1 2	APT PRD STM	DSEC	Int	code	User code /diameter section/ tree species: 1... var530_t1/1...var111 Diameter section is used either for commercial volume measurement (code 1) or only for buyer's own needs (code 0):
532	1	1	PRD	DSEC-VOL	Int	m3 sob	Yield volume (m3 solid o.b., excluding unclassified logs) / diameter section / tree species:1... var530_t1/1...var111. Volumes according to diameter sections with use code (var531_t5)=1
532	2	1	PRD	DSEC – VOL	Int	m3 sob	Yield volume (m3 solid o.b., excluding unclassified logs) /diameter section /price matrix / tree species:1... var530_t1/1...var116/1...var111 Volumes according to diameter sections with use code (var531_t5)=1
532	3	1	PRD	DSEC-VOL	Int	m3 sob	Yield volume (m3 solid o.b., excluding unclassified logs) / diameter section / tree species: 1... var530_t1/1...var111 Volumes according to all diameter sections (use code (var531_t5)=0 or 1)
532	4	1	PRD	DSEC-VOL	Int	m3 sob	Yield volume (m3 solid o.b., excluding unclassified logs) /diameter section /price matrix / tree species: 1... var530_t1/1...var116/1...var111. Volumes according to all diameter sections (use code (var531_t5)=0 or 1)
540	1	2	STM	NM-DSECST	Int	number	Number of diameter sections / stem
541	1	2	STM	DSEC-DSCST	Str	text	Description of each diameter section / stem: 1...var540_t1 According to var531_t1
541	2	2	STM	DSEC-DSCST	Str	code	Code for each diameter section / stem: 1...var540_t1 According to var531_t2
542	1	2	STM	DSECST	Int	mm	Registered diameter section limit values (minimum diameters) of diameter sections / stem: 1...var540_t1
543	1	2	STM	DSEC-HGTST	Int	cm	Heights of the registered diameter section limit values of diameter sections / stem. Heights from the butt end (cutting level): 1...var540_t1 The last height should be equal to the height of the top of the last log
544	1	2	STM	DSEC-LOGVOL	Int	0.0001 m3 sob	Volume (m3 solid o.b., excluding unclassified logs) of diameter sections per log: 1...var540_t1/1...var290_t1 Volume of a diameter section which does not exist in a log is 0. Reject pieces have volume 0.

Appendix 2

Priorities for ap1- and oai-files used by Apter software

Var	Name	Type	Description	Ap1	Oai
1	FILETYPE	2	The variable shall assume one of the following values: apt, prd, tid, drf,etc	1	1
1	FILETYPE	3	Code page character set, ISO-code	1	1
2	ID	2	The name of the apt-file.		3
3	MCHNNO	1	Machine number.		3
3	MCHNNO	2	Unique machine identity for each company, which is used when using the harvester to measure for payment		2
5	VARIANT	1	Version/model of bucking computer used for creating file. Format to be m v.n, where m is the make and v.n version number.	3	2
5	VARIANT	2	Version/model of administrative program used for creating file. Format to be m v.n, where m is the name of the software and v.n version number.	3	
6	NATION	1	Country code: numerical code as per Swedish Std. SS-ISO 3166		1
12	DATESAVED	4	Date when the file last was saved.	3	
13	BUIDATE	4	Time and date when the current bucking file (APT-file) was originally created in a administrative program with the present name.	3	
21	SITENO	1	Logging unit number (mandatory in PRD, PRI and DRF files)		3
21	SITENO	2	Marking for cutting		1
21	SITENO	3	Compartment number		1
21	SITENO	4	Lot number		2
21	SITENO	5	Code to express if the logging site is certified or not: 0=not certified 1=certified		3
31	ORG	1	Organization		2
31	ORG	2	Region		2
31	ORG	3	District		2
31	ORG	4	Working team		2
31	ORG	5	Wood pile		2
32	BUYER	1	Buyer		1
32	BUYER	2	Buyer/price matrix/tree species: 1...var116_t1/1... var111_t1	1	1
33	VENDOR	1	Vendor		3
33	VENDOR	2	Vendor, code		3
33	VENDOR	3	Vendor, name		3
33	VENDOR	4	Vendor, address		3
33	VENDOR	5	Vendor, e-mail		3
33	VENDOR	6	Vendor, phone/fax		3
34	SUBCON	1	Contractor		2
34	SUBCON	2	Contractor, code		2
34	SUBCON	3	Contractor, name		2
34	SUBCON	4	Contractor, address		2
35	CONTRACTNO	1	Contract number		2
111	NUMTREESPEC	1	Number of tree species	1	1
116	NUMASST	1	Number of price matrices/tree species: 1...var111_t1	1	1
117	NUMDIACL	1	Number of diameter classes/price matrices/tree species: 1...var116_t1/1...var111_t1	1	
118	NUMLNTHC	1	Number of length classes/price matrices/tree species: 1...var116_t1/1...var111_t1	1	
119	FREEBUCK	1	Code stating if bucking is permissible to any length between min and max limits according to var132 except for those lengths stated in var190_t2: 1...var116_t1/1...var111_t1. 0 = No; 1 = Yes; 2 = Yes, only for top logs:	1	
120	TREESPEC	1	Name of tree species: 1...var111_t1	1	1
120	TREESPEC	3	Tree species code(see swedish appendix) for tree species/tree species: 1...var111_t1	1	1

Appendix 2

Var	Name	Type	Description	Ap1	Oai
121	ASSTDESCR	1	Description of assortment/price matrix/tree species: 1...var116_t1/1...var111_t1	1	1
121	ASSTDESCR	2	Code/price matrix/tree species: 1...var116_t1/1...var111_t1	1	1
121	ASSTDESCR	3	Additional identity descr. of price matrix/price matrix/ species: 1...var116_t1/1...var111_t1	3	3
122	NUMSTEMTY	1	Number of stem types/tree species: 1...var116_t1/1...var111_t1		3
123	STEMTYPNU	1	Stem type number/price matrix/tree species: 1...var116_t1/1...var111_t1	3	3
124	STEMTYPDES	1	Description of stem type/stem type/tree species: 1...var122_t1/1...var111_t1	3	3
124	STEMTYPDES	2	Code for stem type/stem type/tree species: 1...var122_t1/1...var111_t1	3	3
125	NUMPRODGR	1	Number of product groups/tree species: 1...var111_t1		2
126	PRODGRPNU	1	Product group number/product group/tree species: 1...var111_t1	2	
127	PRODESCR	1	Description of product /product group/tree species: 1...var125_t1/1...var111_t1	2	
131	DIAGRDLMT	1	Lower diameter limit (last value, var117_t1+1, gives upper diameter limit): 1...var117_t1+1/ 1...var116_t1/ 1...var111_t1	1	
132	LWRLNGTHL	1	Lower length limit of length class (last value, var118_t1+1, gives upper length limit): 1...var118_t1+1/1...var116_t1/1...var111_t1	1	
134	OTHERDIA	1	Minimum top diameter/price matrix/tree species: 1...var116_t1/1...var111_t1	2	
134	OTHERDIA	2	Maximal diameter in the large end of the log per price matrix per tree species: 1...var116_t1/1...var111_t1	1	
135	OVERSIZE	3	Lower length limit for "cutting window"/price matrix/tree species. Lower length class limit (var132) and variable 135, type 1 and 3 together, define the length class of a log if lower limit of the cutting window is below lower length class limit: 1...var116_t1/ 1...var111_t1.	1	
135	OVERSIZE	4	Upper length limit for "cutting window"/price matrix/tree species. It does not affect length classification of a log. It cannot be above lower length class limit (132_t1) nor above lower length limit for the "cutting window" (135_t3), of the next length class: 1...var116_t1/ 1...var111_t1.	1	
136	BUCKCRIT	1	Code for bucking criterion/price matrix/tree species: 1...var116_t1/ 1...var111_t1 0 = Buck always; 1 = Buck never; 2 = Buck butt log only; 3 = Do not buck butt log 4 = Do not include the matrix in the calculation of value when bucking the stem	1	
155	BASEPRICE	1	Basic price/price matrix/tree species: 1...var116_t1/ 1...var111_t1: Primarily for use in administrative applications.	1	1
165	POLELOWLIM	1	Lower limit for butt diameter/length class/price matrix/tree species: 1...var118_t1/1...var116_t1/1...var111_t1	2	
166	POLEUPPLIM	1	Upper limit for butt diameter/length class/price matrix/tree species: 1...var118_t1/1...var116_t1/1...var111_t1 Zero = No diameter requirement	2	
167	POLEMEASPT	1	Height above stump of measuring point for butt diameter/price matrix/tree species: 1...var116_t1/ 1...var111_t1.	2	
190	MAXLOG	1	Type of limitation per price matrix and tree species.	3	
191	SPECLIST	4	Relative number (percentage) of logs/diameter class/length class/proce matrices/tree species: 1...var117_t1/1...var118_t1/1...var116_t1/1...var111_t1	1	
192	MAXDEVIAT	2	Maximum deviation (percentage) in dimension-apportionment bucking/price matrix/tree species: 1...var116_t1/1...var111_t1	1	1
196	OVERPROD	1	Action if production target is fulfilled (overproduction according to var190): 1...var116_t1/1...var111_t1: 0 = No action (default), 1 = Production is stopped, forbidden to buck logs, only manually bucked logs allowed, 2 = Production is stopped, forbidden to buck logs including manual bucking of logs	3	
200	OPTNLTXT	1	Variable for inclusion of optional text.		3
200	OPTNLTXT	2	Optional free text for sending information to the machine. No changes are allowed in the machine. Maximum 300 characters allowed.		3
500	DBHHT	1	Height above stump of DBH when DBH is a measured value (normally 120cm above stump in Finland and Sweden, 110cm in Norway), per tree species: 1...var111_t1		3
501	NUMDBHCL	1	Number of dbh classes/tree species: 1...var111_t1		3
502	LOWDBHBRK	1	Lower DBH limit on bark/dbh class/tree species: 1...var501_t1/1...var111_t1		3

Appendix 2

Var	Name	Type	Description	Ap1	Oai
530	NUMDIAMSEC	1	Number of diameter sections / tree species: 1...var111		3
531	DIAMSEC	1	Description of diameter section / diameter section / tree species: 1...var530 / 1...var111 Description can be free text and is company-specific (not standardized).		3
531	DIAMSEC	2	Code for diameter section / diameter section / tree species: 1...var530 / 1...var111. Codes are company-specific.		3
531	DIAMSEC	3	Minimum diameter o.b. of diameter section / diameter section / tree species: 1...var530/1...var111		3
531	DIAMSEC	4	Minimum length of diameter section / diameter section / tree species: 1...var530/1...var111 Value 0 means that minimum length requirement is not in use. The smallest diameter section of a tree species does not have a minimum length requirement. More detailed descriptions can be found in Diameter Sections documents.		3
531	DIAMSEC	5	Diameter section is used either for commercial volume measurement (code 1) or only for buyer's own needs (code 0): diameter section use code (0 or 1) /diameter section/ tree species: 1...var530/1...var111		3