



Arlinger John

17 November 2022

Minutes StanForD

2022-11-16

Place:	Uppsala/Teams, 2022-11-16, 09:00-15:00 CET
Participants:	John Arlinger, Secretary Johan J. Möller, Chairman Andreas Barth, CGI Antti Korkiakoski, JohnDeere Étienne Pilon, FP Innovation Heikki Komulainen, Ponsse Alexander Kaulen, KWF Henrik Persson, Logmax Ian Wilson, PHD Forest Jeremy Gibson, PHD Forest Jonas Gustafsson, Sveaskog Jeremy Gibson, PHD Forest Jonas Thorsson, Dasa Lars Henriksson, Biometria Tapio Räsänen, Metsäteho Timo Melkas, Metsäteho Martin Whillans, Gysinge skogar / Skogforsk Erik Kindlund, JohnDeere Hristo Hristoskov, EcoLog Roger Vahlberg, EcoLog Per-Olof Engholm, EcoLog Participating through Teams: Lars-Erik Andersson, Dasa Asko Leivonmäki, Exertus/Logset Halvard Olderlund, Komatsu Juha Korhonen, Technion Janne Pursiainen, Ponsse Martín Voulminot, Roman-group (Uruguay) Americo Patetta, Roman-group (Uruguay) Bobby Szwajkowski, Tigercat Bengt Sörvik, Otmetka

	Pasi Palonen, Logset
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Note that a meeting was held the previous day (15th of November) where CGI, Sveaskog and Skogforsk presented a number of solutions used for communicating, analyzing and administrating StanForD2010 data. A number of additional people participated only on the first date.

Decision summary

Decided to do the following schema updates:

- Correct volume and mass types for the fpr schema allowing also negative decimal numbers for partial loads. To be published as soon as possible!
- Description of element FillStyle is to be updated in version 4.1
- Add new mandatory GISCoordRefSystem attribute also to the background maps (element BackgroundMap) in version 4.1.
- Secretary to send out a questionnaire whether ReferenceDiameterHeight is possible to adjust in the machine interfaces at all.

Conclusions from discussions:

- No objections were raised when the secretary recommended that version 2 is excluded when developing new applications supporting 4.0.
- New manufacturer implementations of 4.0 by 2024.
- A concrete API proposal with a number of examples is probably needed to start working on a data API. Another comment was the this would be a “huge task” comparable with developing a new standard.
- Discuss the issue of how to handle EmbeddedGeoRefMap issue further at the next meeting
- Secretary to update the proposal for repeatable TopRendering to next meeting.
- Secretary to arrange a Teams meeting to discuss ReverseTopSawing further.

Action list:

- It has been noted that DiameterMeasuredStartHeight is always 0 cm in several controllers. It is recommended that DiameterMeasuredStartHeight should be identical with:
 - ButtEndProfileExtrapolation.ReferenceHeight (e.g. 130 cm) if ButtEndExtrapolationFunction is used
 - OR

- ReferenceDiameterHeight (e.g. 93 or 111 cm) if ButtEndExtrapolationFunction is NOT used
- An increased interest in following-up whether the harvester or feller-buncher is using herbicides or fungicides means that it is recommended that element StumpTreatment is implemented.
- The following guidelines should be followed when implementing LongTimberDefinition:
 - Must be possible to view and edit LongTimberDefinition in administrative tools.
 - Default value equal to DiameterMAXButt in administrative tools
 - LongLogButtMAX is never to be included in pin-file if value is 0 (it is optional).
 - Value 0 (zero) is to be interpreted as null.
- It is recommended to implement stem codes for both individual trees and groups of trees (so called “sticky registration of stem codes”). Whether the “sticky registration” is trigger by double click or any other operator interaction does not matter.
- Do not mix products and deliveries in forwarder applications.
 - Focus on Deliveries in the UI.
 - Avoid using pin-files since it often creates operator confusion.
- Map interface when creating Locations would be good to avoid incorrect coordinates.
- TextToMachine is an urgent variable to be shown when creating new object in harvester and forwarder.
- All randomly selected stems (both rejected and not rejected) must be saved in an hqc-file including a possible reason for rejection. This file should be possible to send directly to the forest company (in Sweden to Biometria).
- Coordinates in production files should always be activated by default in all forest machines (especially important after software updates when coordinate registration is commonly lost).

§1 Opening of meeting and agenda

Chairman Johan J Möller opened the meeting.

The agenda was accepted.

§2 Presentation of participants

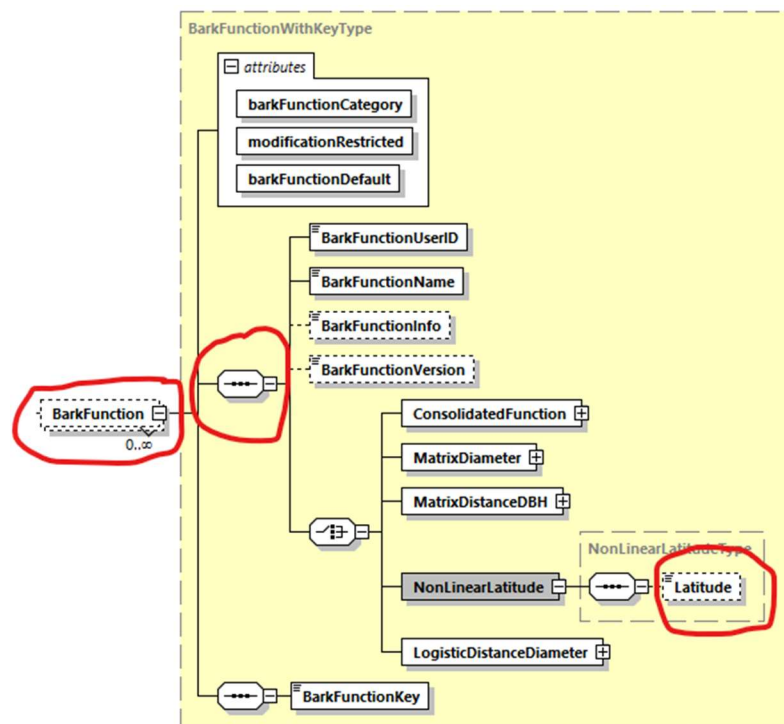
Presentation of meeting participants.

§3 Information about decisions and discussions at previous meetings

The most important decision at last meeting (2022-04-26) was to publish the new 4.0 schemas. However, a few errors and bugs were found after the meeting as described below. The secretary e-mailed all meeting participants a list with suggested updates, solving these issues, to be included (2022-06-28). No objections were raised and hence the updates were all done to the schemas that were finally published 2022-08-15.

BARKFUNCTION STRUCTURE

The sequence below BarkFunction (marked below) was made mandatory and element Latitude optional after last meeting (2022-02-06). However, a mistake was introduced regarding element BarkFunction which was kept as mandatory. This means a problem in situations where no bark function is used since the old enumeration “None” has been deleted from BarkFunctionCategory. The secretary therefore updated the schemas so that element BarkFunction is optional as illustrated below. This means that we can handle both “no-bark-function” and using the NonLinear without a pre-defined latitude.

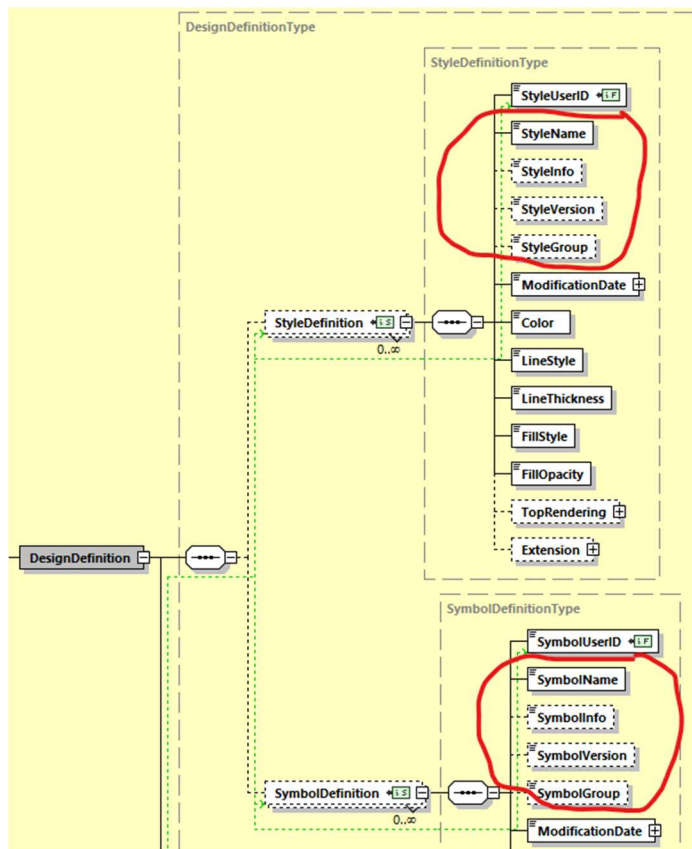


DIN

Some important but simple updates have been found beneficial when developing a test application for a GIS interface using `ogr`, `ogr` and `din`.

The `StyleDefinition` and the `SymbolDefinition` in the `din`-schema is updated as described below. This means that an understandable “text” can be used in the user-interface rather than a code stored in the `Style/SymbolUserID`. It also makes

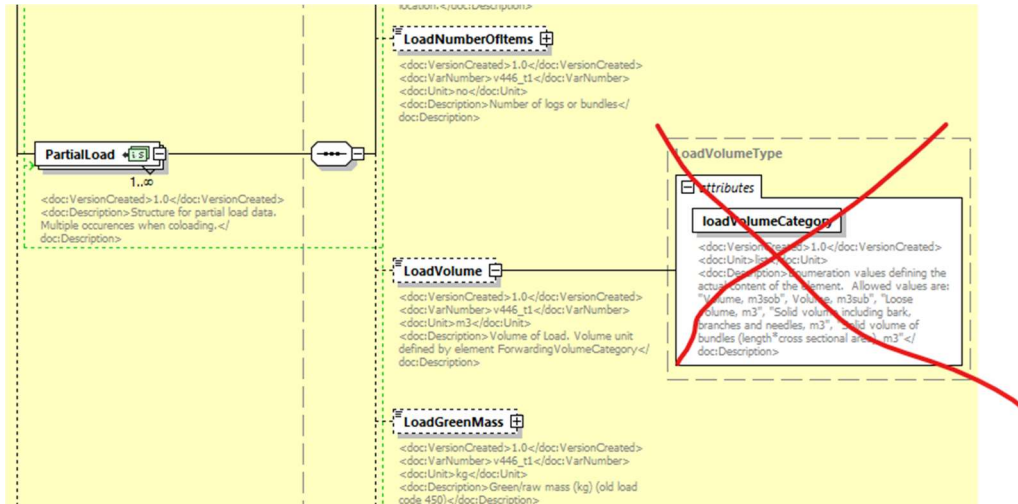
it possible to use e.g. a Forestand code in Style/SymbolInfo and Style/SymbolVersion.



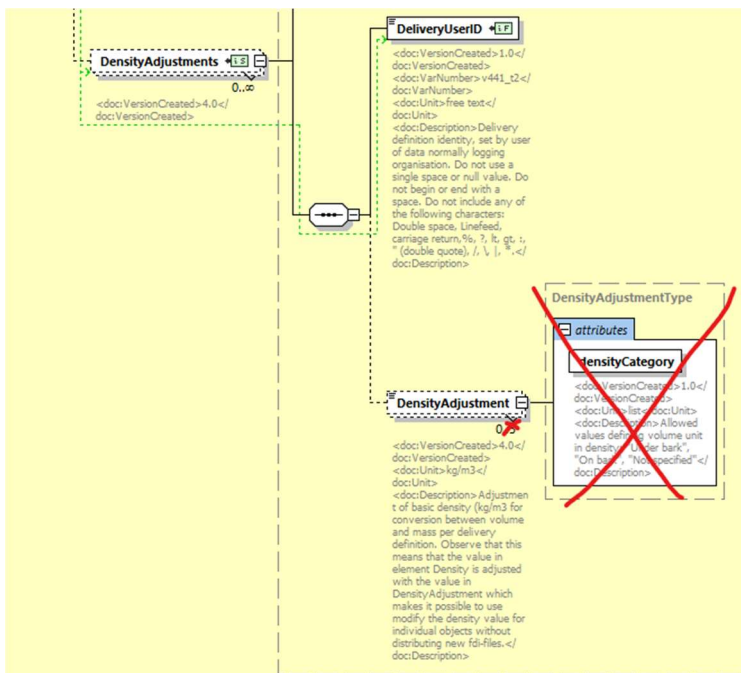
Name	Data type	Unit	Description
StyleName	String (mandatory)	Free text	Name per symbol
StyleInfo	String (optional)	Free text	Free text identity information per style. Identity element normally to be used by logging organization. No constraints in standard concerning how to use this element.
StyleVersion	String (optional)	Free text	Additional identity information of style. Identity element normally to be used by logging organization. No constraints in standard concerning how to use this element.
SymbolGroup	String	Free text	Descriptive text for a group of styles.
SymbolName	String (mandatory)	Free text	Name per symbol
SymbolInfo	String (optional)	Free text	Free text identity information per symbol. Identity element normally to be used by logging organization. No constraints in standard concerning how to use this element.
SymbolVersion	String (optional)	Free text	Additional identity information of symbol. Identity element normally to be used by logging organization. No constraints in standard concerning how to use this element.
SymbolGroup	String (optional)	Free text	Descriptive text for a group of symbol.

FPR

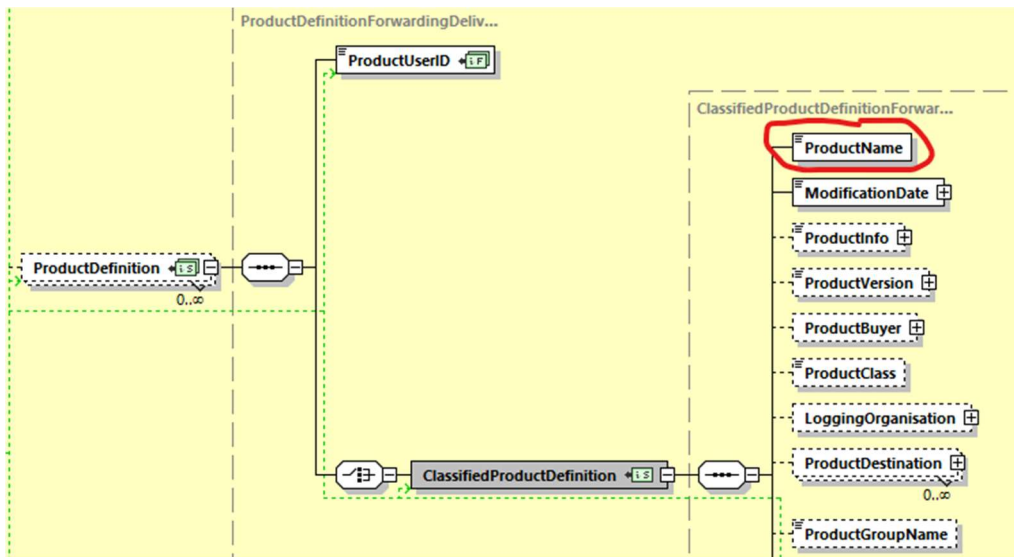
The structures for handling density in foi, fdi and fpr was updated during the spring of 2022. However, it was noted that these updates were not complete. Attribute loadVolumeCategory was therefore deleted from PartialLoad since this information is defined in the element DeliveryDefinition as previously decided.



Due to the same reason as mention above DensityType och DensityCategoryType were removed and the data type of Density element was changed to xsd:decimal in CommonDeliveryDefinitionType.

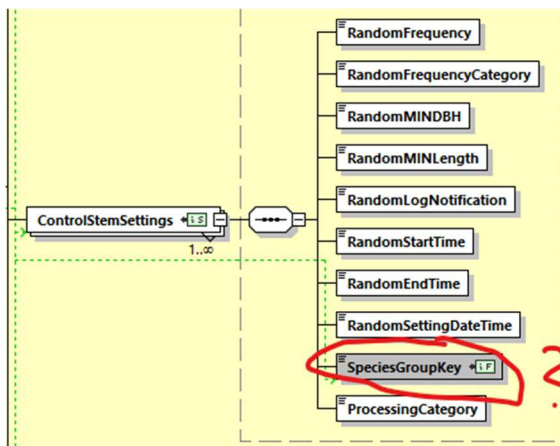


Element ProductName was made mandatory in ClassifiedProductDefinition-ForwardingDeliveryInstructionType. This means that the product-list of a Delivery must include ProductNames.

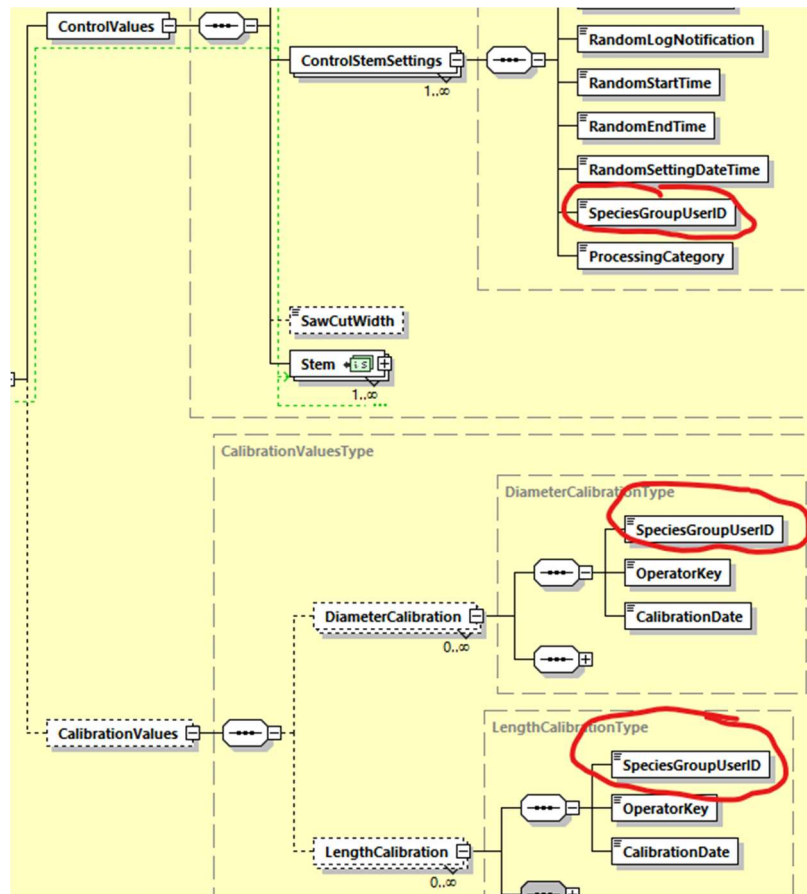


HQC

It was noted that the references to a **SpeciesGroupDefinition** in **ControlStemSettings**, **LengthCalibration** and **DiameterCalibration** by accident was changed from **SpeciesGroupUserID** to **SpeciesGroupKey** as illustrated below.

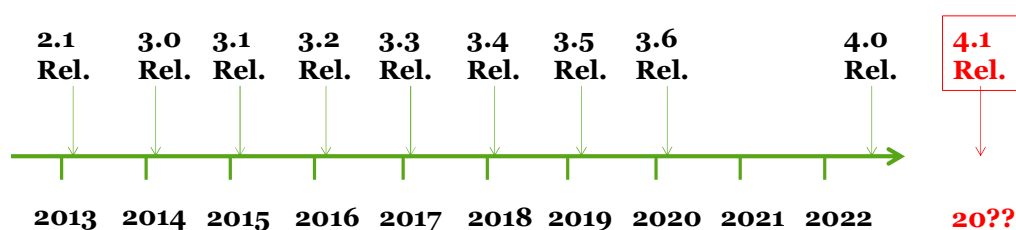


These references have thus been changed back to SpeciesGroupUserID as illustrated below.



§4 Frequency of StanForD updates in the future

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



The secretary pointed out that there is probably no reason for publishing a new version 4.1 until a significant number of manufacturers have started to implement the 4.0 version since this is basically the only way to securely find possible bugs and errors. It is estimated by the secretary that the probability that we are in that situation before the autumn of 2023 is low. The conclusion was therefore that a new 4.1 version is not to be implement before November 2023.

When discussing the time frame for implementation of 4.0 most manufacturers estimated that it will be available on the market by 2024. No concrete

implementation schedules were presented at the meeting by any manufacturer. However, at least one manufacturer indicated that they probably will start implementing ogi according to 4.0 within a shorter time frame.

The need for supporting version 2.0 and 2.1 in future machine updates was discussed. No objections were raised when the secretary recommended that version 2 is excluded when developing new applications supporting 4.0.

From a data user perspective the most important improvements with 4.0 are:

- New positioning data (e.g. log positions)
- Better and more flexible bark functions

The importance of these improvements was emphasized by all data users at the meeting.

§5 Reporting of issues related to new version 4.1

ERROR FORWARDEED VOLUMES AND MASS

Negative volumes and mass are not allowed in new simple types VolumeType and MassType as illustrated below:

```
<xsd:simpleType name="VolumeType">  
  <xsd:restriction base="NonNegativeDecimal"> </xsd:restriction>  
</xsd:simpleType>
```

```
<xsd:simpleType name="MassType">  
  <xsd:restriction base="NonNegativeDecimal"> </xsd:restriction>  
</xsd:simpleType>
```

This is a significant problem in fpr-files files since at least one manufacturer has implemented the possibility to register negative volumes and masses. This means a significant problem since this is a functionality that is viewed as important on at least the Swedish market. This was actually a problem already in version 2.0 which was corrected with version 3.0.

From an “orthodox perspective” we should wait with any adjustments until version 4.1. However, from the secretary’s perspective it would not be harmful to break the version rules in this case since no 4.0 implementations exist on the market and the change is completely backward compatible.

It was therefore decided to correct these mass and volume types for the fpr schema allowing also negative decimal numbers. To be published as soon as possible!

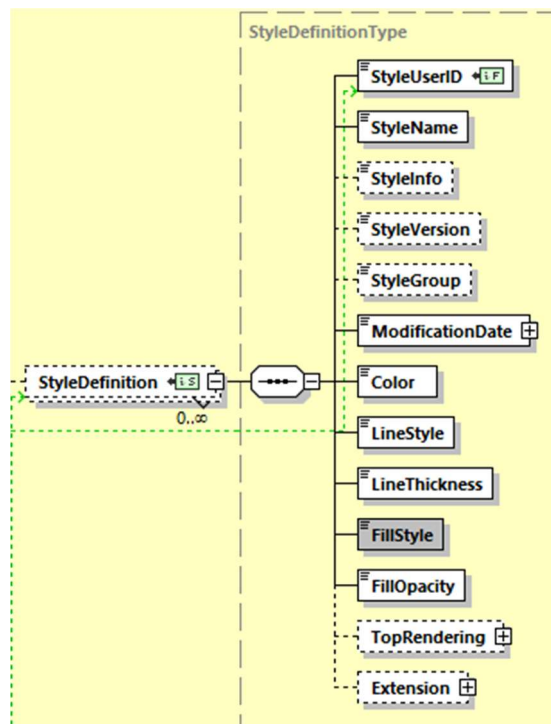
It is recommended by the secretary, with the minutes, that this is viewed as a “one time event”. However, the secretary will be open to do other similar updates as long as no one has done any final of implementation of 4.0 and the change is backward compatible.

CONFLICTING FILLSTYLE ENUMERATIONS

The following enumeration values can be in conflict with elements FillOpacity and Color. These enumerations should be excluded in future major standard version.

```
<xsd:enumeration value="LightGrayFill"/>
<xsd:enumeration value="GrayFill"/>
<xsd:enumeration value="DarkGrayFill"/>
<xsd:enumeration value="HalfTransparentFill"/>
```

Structure for StyleDefinition including FillStyle, Color and FillOpacity:



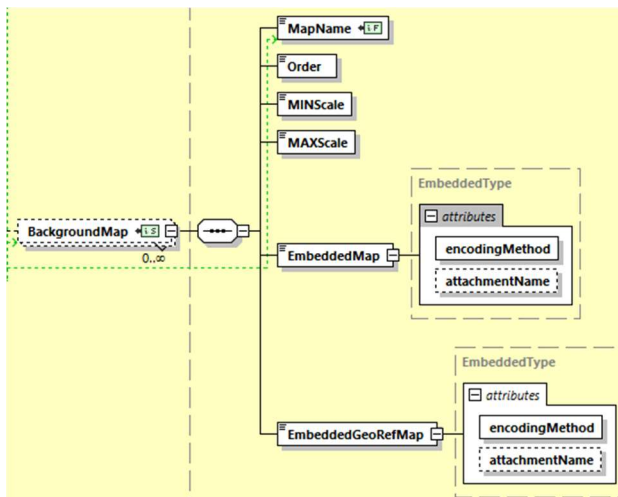
It was decided that the description of element FillStyle is updated with the following text in version 4.1:

Fill style per StyleDefinition ~~format class and layer~~. Allowed values are: SolidFill, TransparentFill, HorizontalFill, VerticalFill, UpwardDiagonalFill, DownwardDiagonalFill, CrossFill and DiagonalCrossFill. The following values not to be used as they are in conflict with elements FillOpacity and Color: LightGrayFill, GrayFill, DarkGrayFill and HalfTransparentFill

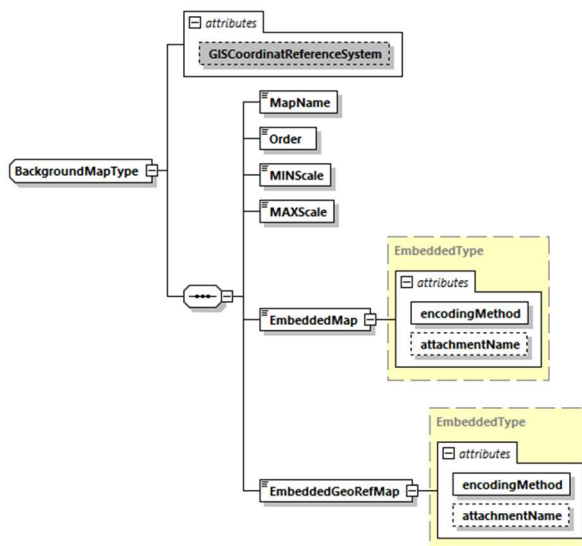
Observe that enumeration values cannot be deleted within a major version due to the requirement to have backward compatibility. This means these enumeration values must be kept until a future version 5.0.

COORDINATEREFERENCESYSTEM FOR BACKGROUNDMAP

The positioning of a background map (e.g. jpg, tif) is given by a world file (e.g. jgw, tfw) that is enclosed in element EmbeddedGeoRefMap. However, these files normally does not include information about what geo-reference system is used.



It was therefore decided that we add a mandatory GISCoordRefSystem attribute also to the background maps (element BackgroundMap) in version 4.1. as illustrated below:



In order to handle this issue when testing ogi the secretary added an extension to the ObjectDefinition as illustrated below:

ObjectDefinition	
ObjectUserID	s43f
ObjectName	Väsby 2018
ObjectModificationDate	2022-06-28T12:00:00.000+00:00
ForestCertification	Not known
Extension	
BackGroundMap	
= GISCoordinateReferenceSystem EPSG:3006	
SubObject <SubObjectUserID> 24325432 <SubObjectName> Delskogen	
FeatureCollection (5)	
BackgroundMap (3)	
InformationToOperator	

Henrik Persson pointed out a problem with the present structure since it requires that a world-file must be included in element EmbeddedGeoRefMap. This is a problem since there exists bitmap-files that includes the geo-references. This means that the EmbeddedGeoRefMap is not always needed. A rule must be defined for handling this situation. There are two different alternatives:

1. Enclose the same file in both EmbeddedMap and EmbeddedGeoRefMap.
This mean a complete redundancy
2. Another solution is to include an empty element EmbeddedGeoRefMap with only the attribute "EncodingMethod" containing any data.

The second alternative as illustrated below is probably the most logical alternative.

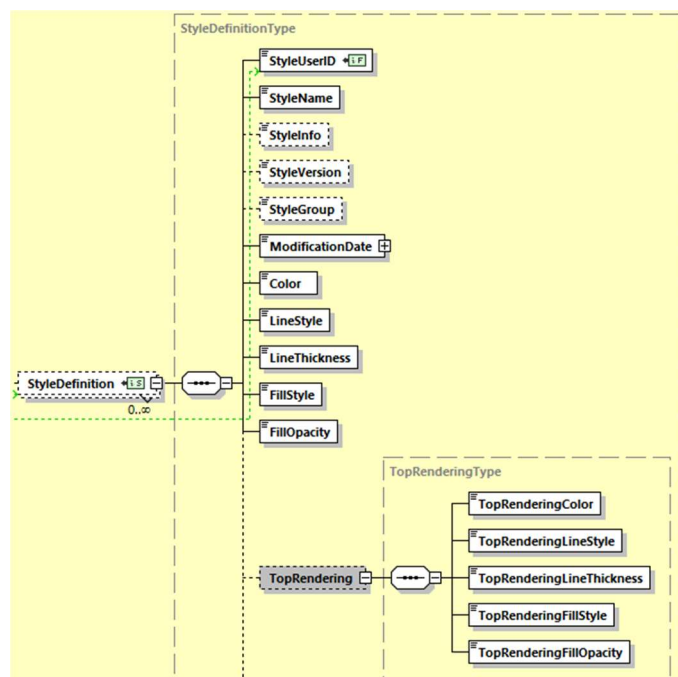
```
<BackgroundMap>
  <MapName>Aerial photo</MapName>
  <Order>1</Order>
  <MINScale>1</MINScale>
  <MAXScale>50000</MAXScale>
  <EmbeddedMap encodingMethod="Base64" attachmentName="010rtofoto3.jpg">
    /9j/4AAQSkZJ...qxd+fccIIqqW5u4f4RHI+kbbfTQT//2Q==String
  </EmbeddedMap>
  <EmbeddedGeoRefMap encodingMethod="Base64"/>
</BackgroundMap>
```

The meeting decided to discuss the issue of how to handle EmbeddedGeoRefMap issue further at the next meeting.

§6 Proposals for next version 4.1

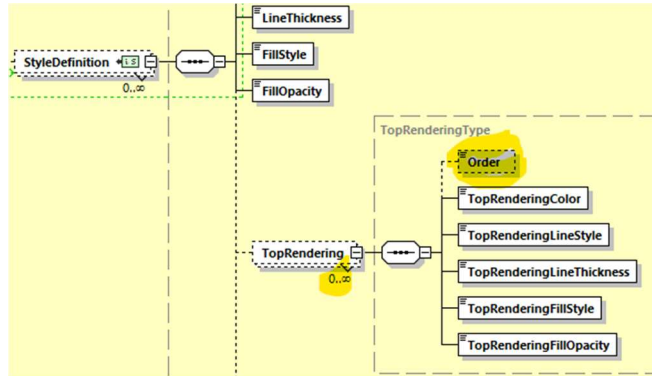
TOPRENDERING REPEATABLE

TopRendering is presently not repeatable:



Making TopRendering repeatable would make it possible to have more complex styles for different features. However, it is needed to also add an attribute for PresentationOrder in order to make it a useful update.

It was decided to let the secretary update the proposal for the next meeting, probably according to the figure below.



REVERSE TOP SAWING

Heikki Kumulainen, Ponsse 2022-10-24

Valuable hardwood trees often have double stems, forks or very thick branches that cannot be properly delimbed by a harvester.

In order to cut a valuable log all the way up to the branch a top saw could be used. However, most harvesters are not equipped with top saws which means that a shorter, less valuable, log must be cut. A solution could be to measure the log all the way up to the branch using the upper knives and thereafter open the head and then turn the head around in order to cut the log as close as possible to the branch. However, the measurement accuracy of the log length will certainly be lower, it is therefore deemed necessary to register that this procedure (reverse top sawing) has been used.

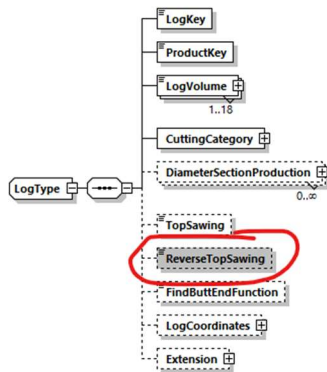
The procedure can be illustrated by the following three steps:

1. measure the log up to the branch and
2. open the head and turn it around
3. cut the log as close as possible to the branch.



It was therefore suggested that we add a new optional element ReverseTopSawing:

Name	Type	Unit	Description
ReverseTopSawing	boolean	true/false	Indicates if the log has been measured when feeding all the way up to an obstacle (typically a thick branch) using the upper knives and thereafter open the head and then turn the head around in order to cut the log as close as possible to the obstacle (branch) using the saw.



It would be possible to use the Extension element for this new element in older schema version. This is an advantage with adding a new element rather than e.g. add a new enumeration value to the CuttingReason which is primarily used for indicating whether the cut was done manually or not and which does not have an effect on measuring precision.

The meeting discussed the possible needs to handle other functionalities used to handle “feeding obstacles”. An example is the possibility to open the knives partially to feed a sharp bend or fork without releasing the stem from the head.

It was decided to let the secretary arrange a Teams meeting to discuss this issue further. The first step is then probably to try to define different possible methods that can be used when by-passing “feeding obstacles”.

§7 Items for discussion

NEW REST APIS FOR PROCESSED DATA

The secretary has recently discussed a new type of data-APIs with one manufacturer.

The basic driving force is that there are customers asking for APIs that returns processed (aggregated) data. These customers also typically expect the results being communicated using the JSON format.

An example could be an API that returns the total volume per assortment and shift for a specific machine and operator.

Some comments from secretary:

- Processed data will probably mean a high degree of flexibility since we know from working with the old prd that it is usually difficult finding a “one size that fits all”.

- Is it possible to find a way to use the StanForD terminology in JSON?
- A possible solution could be to come up with a very basic framework that could be used in a flexible way.
 - Maybe it is enough to set up some rules regarding what parameters to use and how they are to be used without specifying exactly what the API is to return. APIs always mean an "integration" not just plug-and-play. It should be flexible so that it can be easily extended but in some way use the parameter definitions in StanForD.
 - An idea could be to look at the possibility of developing some simple but strictly defined APIs e.g. to extract harvested log volumes or stems within a specific time frame.

A suggestion could be to set up a smaller work group to discuss this issue in more detail.

The main conclusion from a long discussion was that a concrete proposal with a number of examples is probably needed. Another comment was that this would be a “huge task” comparable with developing a new standard.

NEW TOOL: “STANFORD_HPRVERIFIER”

Bucking optimization and reporting of resulting data is complex. A tool for automatic evaluation of production data from a harvester could be a useful for both manufacturers and data users.

Fredrik Tjernberg at Komatsu initiated a discussion with Skogforsk regarding the development of a new software tool (StanForD_HprVerifier) for controlling StanForD-data with a focus on hpr. For example including:

- Controll calculations of log volumes based on diameter vector
- Comparison of ProductDefinition in hpr vs pin
- Checking hpr vs “rules document”
- Overlapping cutting windows
- Bark parameters using e.g. new consolidated function
- Testing pin files from 3rd parties

Some basic requirements:

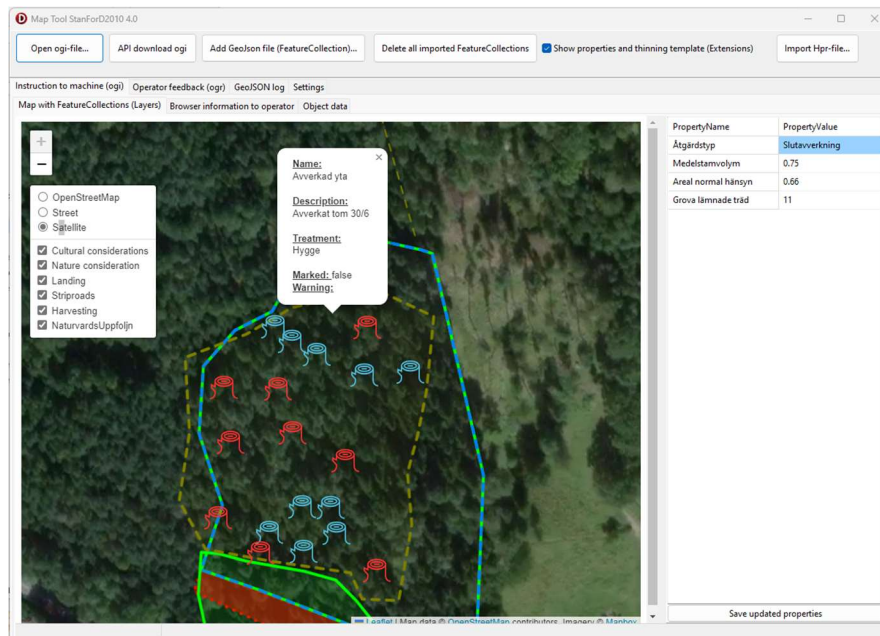
- A control/settings document defines what controls to make.
- Diameter vector with a diameter per cm should be possible to use.

- Coding should be using C# or Java and be handled as “open source code”. The tool should not have any advanced user interface but just be returning some type of log file.
- Should also be available as an API

SKOGFORSK EXPERIENCE FROM WORKING WITH OGI 4.0

The secretary will present his work on creating a number of demo files based on ogi and ogr. The main problems and errors found during this work have been described in previous sections.

One issue, not mentioned earlier in the minutes, is that there is often a need to communicate a wide range of data per Feature as illustrated in the screen shot below. This was handled, in the tests, through adding so called “Properties” to the GeoJSON string. However, this is probably not a perfect solution since it means that data, except the geometries, is stored both in StanForD and JSON formats.



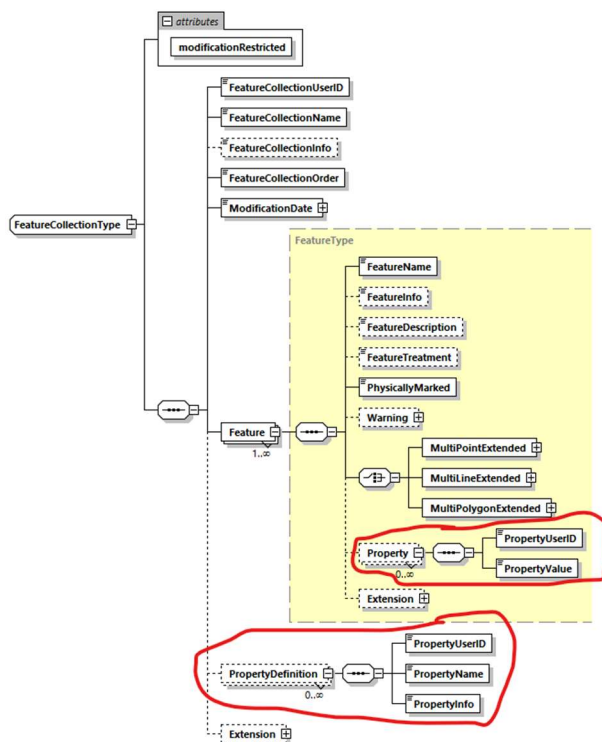
It will thus be suggested with 4.1 that we add a flexible structure for properties in the ogi and ogr per Feature. This has been handled by using Extension elements per Feature and FeatureCollection in the demo-files as illustrated below.

Feature (5)							
	FeatureName	FeatureInfo	FeatureDescr	FeatureTreatm	PhysicallyMar	MultiPointExt	MultiPolygon
1	Träsk	xw	-	Träsk	false	MultiPointExt	
2	Kulturstubbe	e64	10 st enligt hpr	-	false	MultiPointExt	
3	Högstubble	c64	9 st enligt hpr	-	false	MultiPointExt	
4	Plockhuggen yta	ew2	105 st/ha lämnade enl beräkning. TGL: 45-0-55	-	false		MultiPolygonE
5	Averkad yta	7364734	Averkat tom 30/6	Hygge	false		MultiPolygonE

Property (5)		
	PropertyUser	PropertyValue
1	typ	Slutavverkning
2	Mstm	0.75
3	ArH	0.66
4	hstb	4
5	glm	11

PropertyDefinition (6)			
	PropertyUser	PropertyName	PropertyInfo
1	Typ	Åtgärds typ	
2	Mstm	Medelstamvolym	{ "forestand_element": "< ObsP_MeanStemVolumeSub>", "forestand_code": "< http://www.sis.se/ss637009/code_inventory/objective/E20>", "forestand_uom": "m3" }
3	ArH	Areal normal hänsyn	{ "forestand_code": "http://forestand.skogforsk.se/hansynsuppfoljning/hansynsniva/normal", "forestand_element": "< Places/area> </Place>", "forestand_uom": "ha" }
4	hstb	Högstubbbar per ha	{ "forestand_code": "http://forestand.skogforsk.se/stemcodes/hogstubble", "forestand_element": "per_ha" }
5	gtlm	Grova lämnade tallar	{ "forestand_code": "http://forestand.skogforsk.se/hansynsuppfoljning/hansynsniva/normal", "forestand_element": "< ObsP_AreaStemNumber>", "forestand_uom": "per_ha", "filter": { "dbhmin_mm": 150, "forestand_code": "http://forestand.skogforsk.se/species/E_1_1_1" } }
6	glm	Grova lämnade träd	{ "forestand_code": "http://forestand.skogforsk.se/hansynsuppfoljning/hansynsniva/normal", "forestand_element": "< ObsP_AreaStemNumber>", "forestand_uom": "per_ha", "filter": { "dbhmin_mm": 150 } }

A possible new structure based on the example above could look like the following figures:



SCARIFICATION AND PLANTING

The secretary has started working on a first draft proposal. The secretary plans to meet and discuss this issue with a number manufacturers before next meeting.

BARK FUNCTION LATVIA

A meeting was held between Skogforsk and “Latvian timber measuring organization” (LKUUV) in September. The possibilities to use the new “consolidated bark function” was discussed. Jānis Magaznieks (LKUUV) was informed about how to estimate new parameters, e.g. based on the recently developed bark function for birch. LKUUV will continue this issue with Skogforsk.

NEW RULE FOR REFERENCEHEIGHT IN FINLAND.

Antti Uurtamo, Masser Oy, proposed at the Finnish StanForD meeting that we should have a StanForD Rule which specifies that ReferenceHeight in spi (SpeciesGroupDefinition.ButtEndProfileExtrapolation.ReferenceHeight) must always be 130 cm in Finland.

This could be added to group 6 “National schema rules” as follows:

Rule#	Rule	Description/Reason	Related messages	Date
R6.4	ReferenceHeight in ButtEndProfileExtrapolation must always be 130 cm for all tree species in Finland.	Butt end profile extrapolation tables and functions used in Finland are based on diameter which is measured at height 130 cm from the stump. Reference height values for tree species have been defined in Order 1/2015 by Natural Resources Institute Finland.	spi	2022-11-16

It was decided to let the secretary send out a questionnaire whether this parameter is possible to adjust in the machine interfaces at all. The suggestion seems unnecessary if such an interface is not available. A possibility is to create a separate Finnish recommendation that can be published at the StanForD web site as is the case with some Biometria recommendations valid for the Swedish market.

STEMCODES IN FINNISH AND SWEDISH SPI

Tapio Räsänen presented the new Finnish stem codes to be included in the default spi.

	StemCode	English description	stemCodeInfo	stemCode-Group
1	Tekopökelö	High stump	Rungosta on jätetty osa tekopökelöksi	Nature
2	Säästöpuuryhmä	Retention tree group	Säästöpuuryhmän ympäriltä kaadetut rungot merkitään	Nature
3	Luonto- tai suojelukohde	Nature reservation	Käsittlemättä jätettävän alueen (esim. avainbiotooppi, suojeltava alue tai muinaismuistokohde) ympäriltä kaadetut rungot merkitään	Nature
4	Myrskytuho	Windthrow	Hakkuukoneella käsiteltävät myrskytuho- tai tuulenskaatorungot merkitään	Special harvesting
5	Hyönteistuho	Insect damage	Runko, jonka puutavaran laatua hyönteistuho (esim. kirjanpainaja) on heikentänyt, tai joka kaadetaan tuhoalueen laajenemisen estämiseksi	Special harvesting
6	Lahorunko	Decayed tree	Juurikäävän tai muun lahonaiheuttajan infektoima runko	Special harvesting
7	Latvakatko	Top breakage	Runko, jonka latva on katkennut ennen hakkuuta	Special harvesting

8	Muu tuho	Other damage	Runko, jossa muu tuhonaiheuttaja kuin hyönteiset on aiheuttanut runko- tai puuaineksen laatuvaurioita tai joka kaadetaan tuhoalueen laajenemisen estämiseksi	Special harvesting
9	Poikkeava käsittely	Exceptional processing	Esim. kaksiaaraisen tai hyvin järeän rungon käsittely kahtena runkona	Special harvesting
10	Korjuuvaurio	Logging damage	Korjuuvaurio	Special harvesting
11	Ajoura	Trees cut from strip road outside object	Leimikon rajauksen ulkopuolella tehty ajouran aukaisu tai muun vastaavan syyn takia kaadettu puu	Other
12	Varastopaikka	Trees cut from landing outside object	Leimikon rajauksen ulkopuolella tehty varastopaikan aukaisu	Other
13	Korjuu suojavyöhykkeeltä	Trees cut from water protection buffer or nature reservation area	Runko kaadettu vesistön suojavyöhykkeeltä, säästöpuuryhmästä tai luonto- tai suojelukohteelta	Nature
14	Muu	Other	Muu syy	Other

John Arlinger presented the new Swedish stem codes to be included in the default spi.

```
<StemCodes modificationRestricted="true">
  <StemCode stemCodeInfo="*/hogstubble" stemCodeGroup="Nature">Högstubbe</StemCode>
  <StemCode stemCodeInfo="*/kulturstubbe" stemCodeGroup="Culture">Kulturstubbe</StemCode>
  <StemCode stemCodeInfo="*/evighetstrad" stemCodeGroup="Nature">Evighetsträd</StemCode>
  <StemCode stemCodeInfo="*/tradgrupp" stemCodeGroup="Nature">Trädgrupp</StemCode>
  <StemCode stemCodeInfo="*/plockhuggning" stemCodeGroup="Special">Plockhuggning</StemCode>
  <StemCode stemCodeInfo="*/grovtopp" stemCodeGroup="Nature">Grovtopp</StemCode>
  <StemCode stemCodeInfo="*/overfart" stemCodeGroup="Other">Överfart</StemCode>
  <StemCode stemCodeInfo="*/vindfalle" stemCodeGroup="Special">Vindfälle</StemCode>
  <StemCode stemCodeInfo="*/insektsskada" stemCodeGroup="Special">Insektsskada</StemCode>
  <StemCode stemCodeInfo="*/toppbrott" stemCodeGroup="Special">Toppbrott</StemCode>
  <StemCode stemCodeInfo="*/brandskada" stemCodeGroup="Special">Brandskada</StemCode>
</StemCodes>
```

Stem codes that easily can be activated if needed

* <http://forestand.skogforsk.se/stemcodes>

§8 StanForD2010 projects / implementations

“WOOD VALUE TEST” BASED ON VERSION 4.0

Johan J Möller presented the plans for carrying out a test new harvester test since it is now 6 years since it was last done.

The conclusion from the discussion with the manufacturers at the meeting was that the next test will probably be carried out in the autumn of 2024.

§10 Other issues

No other issues

§9 Next meetings

StanForD meeting 2022-04-25--26, Vantaa, Finland/Teams (10:00-14:00 EET)

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

§10 End of meeting

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