



Arlinger John

2019-09-01

Minutes StanForD2010

2019-08-17

Place:	Teams meeting, 09.00-11.00 CET
Participants:	Pasi Palonen, Parker Lars Henriksson, Biometria Jeremy Gibson, ForestPHD Mikael Jakas, Logset Ian Wilson, ForestPHD Antti Korkiakoski, JohnDeere Juha Yli-Hemminki, Logset Juha-Antti Sorsa, Metsäteho Tapio Räsänen, Metsäteho Filip Ciolkowski, Coillte Markuu Laaksonen, Technion Heikki Komulainen, Ponsse Niclas Eriksson, Komatsu Jonas Thorsson, Dasa Henrik Person, LogMax Timo Melkas, Metsäteho Jean Plamondon, FP Innovation Jacek Nawrot, Tigercat John Arlinger, Secretary Johan J. Möller, Chairman

§ 1 Opening of meeting

Johan J Möller opened the meeting which was held to discuss a new major version (4.0).

§ 2 Agenda

The agenda was accepted by the meeting.

§ 3 Background to discussion regarding new major version 4

A large number of modifications and proposals that cannot be implemented within major version 3 has been collected since 2014.

The proposals/modifications have been divided up in the following sections:

- Data type
- Visual / Spelling error
- Elements and attributes to be deleted
- Cardinality (optional vs mandatory)
- Constraints
- Implementation rules
- Other schema updates
- Significant re-structuring of schemas

The issue of upgrading standard to 4.0 was last raised at the meeting 2020-05-07 in connection with discussions regarding update of ogi and large file size due to diameter vectors (element StemDiameters in hpr). It was then decided to arrange a meeting on the 17th of August 2020 to have a specific discussion about upgrading to 4.0.

§ 4 Presentation of suggested updates and modifications since 2014

A complete list, slightly update after the meeting, is included in appendix 1.

§ 5 Proposals

Skogforsk suggested that we:

- implement a new major version 4.0 in November/December 2021.
- stay with version 3.6 at meeting 2020-12-03. However, we plan to introduce new yarder and skidder schemas within 3.6 at that meeting.

All participants stated that they agree with the proposal. With a few additional comments:

- Specify how to handle minor versions 3 and 4 parallel to each other (Antti Korkiakoski, JohnDeere). One suggestion from Henrik Persson (LogMax) was to state that control systems normally should run using one specific major version (e.g. do not mix 3.6 pin with 4.0 hpr).
- No significant changes to 3.6 should be made at the meeting in December 2020 (Jonas Thorsson, Dasa).
- No users are presently asking for a new major version (Heikki Komulainen, Ponsse).
- How do we avoid confusion in the “field” regarding the use of 3 vs 4? (Mikael Jakas, Logset).

It was decided that we:

- implement a new major version 4.0 in November/December 2021.
- stay with version 3.6 at meeting 2020-12-02 with the possibility to introduce new yarder and skidder schemas within 3.6 at that meeting.

§ 6 Other issues

No additional issues.

§ 7 Next meeting

Regular StanForD meeting 2020-12-02, Teams
Starts at 09:00 CET and ends at 16:00 CET

§ 8 End of meeting

Johan thanked everyone for their participation.



Arlinger John

1 September 2020

Major modifications for version 4.0

Introduction

This document includes a large number of modifications and proposals that cannot be implemented within major version 3. This list of updates have been continuously updated since 2014.

The proposals/modifications have been divided up in the following sections:

- Data type
- Visual / Spelling error
- Elements and attributes to be deleted
- Cardinality (optional vs mandatory)
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The issue of upgrading standard to 4.0 was last raised at the meeting 2020-05-07 in connection with discussions regarding update of ogi and large file size due to diameter vectors (element StemDiameters in hpr). It was then decided to arrange a meeting on the 17th of August 2020 to have a specific discussion about upgrading to 4.0.

A preliminary suggestion from Skogforsk is to do the 4.0 upgrade in the autumn of 2021.

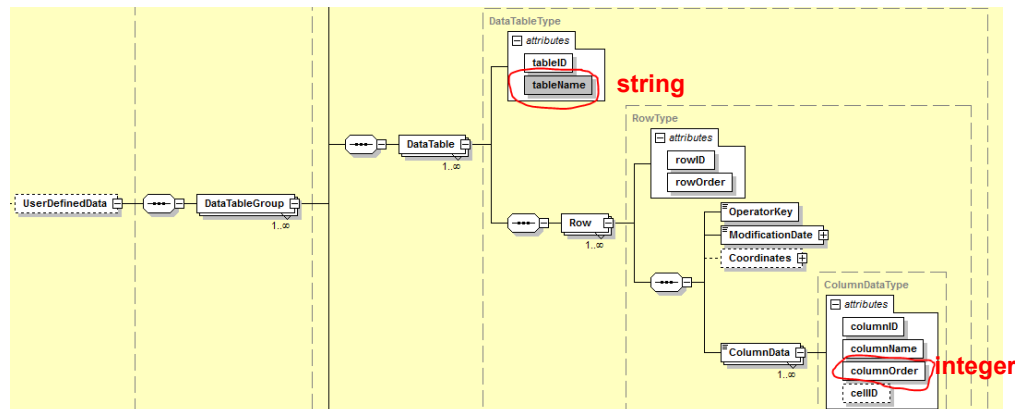
We could discuss whether we need to update the standard to 3.7 or if we should stay with 3.6. We have some new and urgent schemas (yarder and skidder) proposed for the next meeting. The possibility of adding these new schemas as version 3.6 could be discussed since they do not affect any other schemas.

Data type

UserDefinedData

John Arlinger, Skogforsk (2014-04-08).

No data type defined for some UserDefinedData attributes: tableName, columnOrder



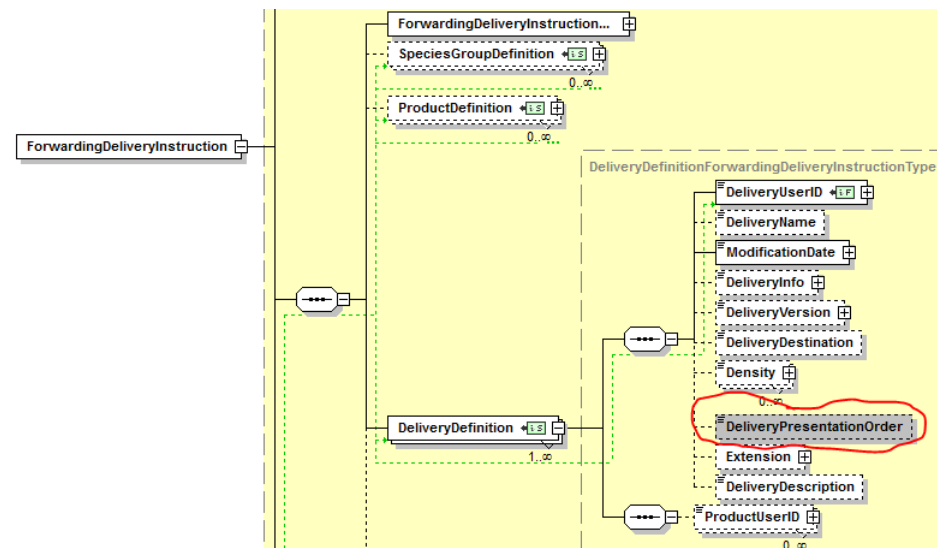
DeliveryPresentationOrder

Fredrik Tjernberg, Komatsu, 2015-11-16

Niclas Eriksson, Komatsu, 2017-10-16

Halvard Olderlund, Komatsu, 2020-02-14

Datatype for DeliveryPresentationOrder in CommonDeliveryDefinitionType is missing in fpr-schema (version 3.1).



DeliveryPresentationOrder should have datatype positiveInteger.

Error:

```
<xsd:element name="DeliveryPresentationOrder" minOccurs="0"/>
```

Correct

```
<xsd:element name="DeliveryPresentationOrder" type="xsd:positiveInteger"
minOccurs="0"/>
```

LoadNoOfItems

Lars Henriksson, Biometria, 2016-03-03

Today positive, change to include negative as well. Compare with GreenMass and Volume.

Present:

```
<xsd:complexType name="LoadNumberOfItemsType">
  <xsd:simpleContent>
    <xsd:extension base="xsd:positiveInteger">
      <xsd:attribute name="loadNumberOfCategory"
type="LoadNumberCategoryType" use="required"/>
    </xsd:extension>
  </xsd:simpleContent>
</xsd:complexType>
```

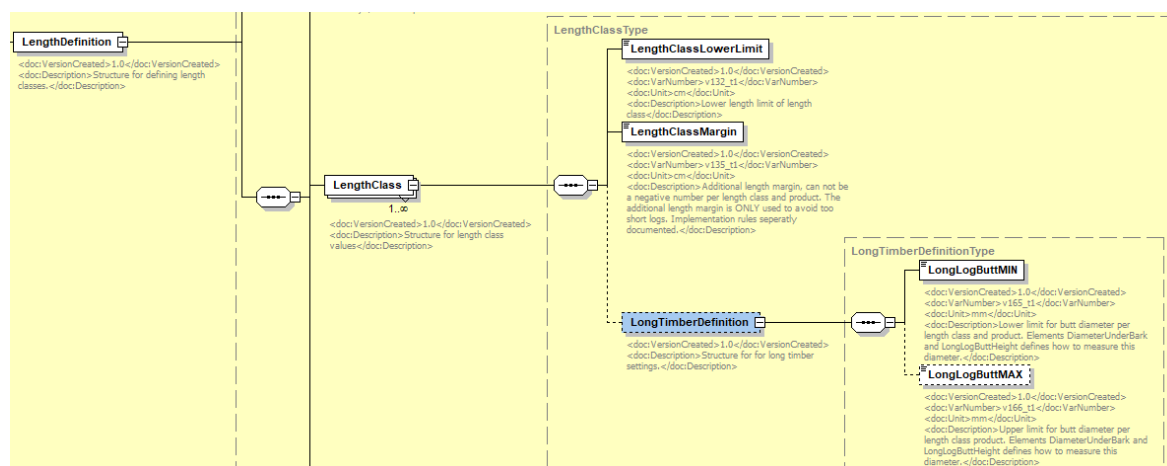
Proposal:

```
<xsd:complexType name="LoadNumberOfItemsType">
  <xsd:simpleContent>
    <xsd:extension base="xsd:Integer">
      <xsd:attribute name="loadNumberOfCategory"
type="LoadNumberCategoryType" use="required"/>
    </xsd:extension>
  </xsd:simpleContent>
</xsd:complexType>
```

LongTimberDefinition

Issue noted by Peter Sundlöf (2019-08-20) and again raised by Jonas Byström, Norra skogsägarna, and Stefan Bohlin, Mellanskog (2019-10-09).

The LongTimberDefinition exists for each length class as illustrated below:



It was noted by both Jonas and Stefan that these parameters in some cases are causing problems. The basic problem is that that in several administrative systems the default value for LongLogButtMAX is 0 mm.

It was decided that the datatype of LongLogButtMAX is changed to positiveInteger in version 4.0.

Data type for TrackingKey

Heikki Komulainen, Ponsse (2019-08-20)

Data type is not set in TrackingKey element under TrackCoordinatesType complextype. The data type must be xsd:positiveInteger as all other key elements.

This is probably one of these issues that cannot be implemented within major version 3 but would have to wait until we implement major version 4.

It was decided that the datatype of TrackingKey is changed to positiveInteger with version 4.0.

Data type for BarkParameters

Halvard Olderlund, Komatsu, 14th of February 2020

ConstantA and FactorB (bark elements) both should be decimal:

```
<xsd:complexType name="SwedishZaccoType">
<xsd:element name="ConstantA" type="NonNegativeDecimal"> → <xsd:element
name="ConstantA" type="Decimal">
<xsd:element name="FactorB" type="NonNegativeDecimal"> → <xsd:element
name="FactorB" type="Decimal">
```

Format of UserIDs

Heikki Komulainen, Ponsse (2019-08-20)

Ponsse have had several problems with UserID format over the last few years. The SF2010 implementation is database based and some of these issues are associated with reserved characters of database, some of these are our bugs, and there is also a few times when incoming message contains “invalid” userID. Some examples:

- Whitespace characters before or after the actual userID value
 - Our systems removes the whitespaces
- UserID value contains only whitespaces (one or more)
 - → Our system removes whitespaces, so result is empty string
 - In UI this value looks empty, even we do not remove the whitespace
- UserID contains database reserved characters like percentage or underscore.

- These characters affects problems when doing database level comparison of two userIDs
- Character casing (uppercase/lowercase) issues.
 - This was our own bug, SF2010 already defines that userid comparison is case intensive.

Of course, we (can) handle all of these issues in way or another in our code, but some other manufacturer may do it different way so in long run it is much better if SF2010 schemas contains some more accurate constraints.

We does not have any ready proposal of constraints yet, but at least length of the userid and allowed/prohibited characters would be good to define.

Comment from secretary

The secretary would be happy to try to find some good solution for enforcing stricter rules on the “string format”. However, this is probably one of these issues that cannot be implemented within major version 3 but would have to wait until we implement major version 4.

We will start a discussion at the meeting. Getting rid of e.g. white spaces seems to be a good idea.

Comments meeting 2019-11-13

Henrik Persson, 2019-11-13

```
<xs:simpleType name="Tokenized500Type">
  <xs:restriction base="xs:string">
    <xs:pattern value="\S+(\ \S+)*"/>
    <xs:maxLength value="500"/>
    <xs:minLength value="1"/>
  </xs:restriction>
</xs:simpleType
```

Should perhaps work with UserIDs in version 4.0.

ObjectUserID sometimes used in file names!

Might be a problem with existing forest company pin-databases if this is implemented!

The following text was added to the definition of all UserIDs:

*Do not use a single space or null value. Do not begin or end with a space. Do not include any of the following characters: Double space, Linefeed, carriage return, %, ?, lt, gt, :, " (double quote), /, \, |, *.*

LogLength datatype

Mikael Eliasson, LogMax 2016-04-07

LogMax has noted when studying length measurements that it would quite often be an advantage to be able to adjust the calibration somewhere between 0 and +1

cm or between 0 and -1 cm. Since all length measurements are registered as an integer with unit cm (without any decimals) it is difficult to do a "perfect" adjustment.

When using the DigiTape different types of roundings can be done in the caliper which might be a source of errors.

It would therefore be an advantage to be able to use at least one decimal when registering manually measured lengths using DigiTape.

It would therefore be of interest to discuss the possibility of changing the data type of LogLength (in LogMeasurementHarvestingQualityControlType) from nonNegativeInteger to nonNegativeFloat.

During the discussion it was confirmed by Joakim Nygren that using one decimal would indeed increase the precision also considering the measuring error.

The meeting concluded that changing the LogLength from cm to mm or a decimal number is a significant update. Thus it was decided to postpone this issue until a future update to 4.0.

It may also be wise to update the definition of LogMeasurementType to allow for decimals in order to handle all log lengths in hpr in the same way as the hqc.

Spelling error / Visual

ReportFilterCategory

David Zackrisson, LogMax 2014-04-22

Modification of StanForD2010CommonDefinitions_V3p0.xsd.

There is a "space" in enumeration "Object filter " that should be excluded

```
<xsd:simpleType name="ReportFilterCategoryType">
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="No filter"/>
    <xsd:enumeration value="Object filter "/>
  </xsd:restriction>
</xsd:simpleType>
```

Bark functions

Anders Nylund 2014-04-08.

Exclude country specific names for different bark functions.

Older bark functions excluded.

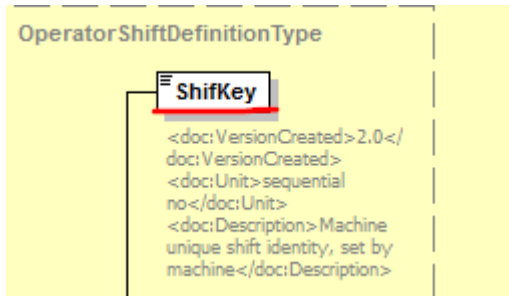
TopLogFreeBuck

Johan Möller, 2016-04-05

Change element name TopLogFreeBuck to MINDiameterSearch since this is what it really means.

Spelling of ShiftKey

Teemu Paldanius, Ponsse (2018-11-01) has discovered that the element ShiftKey is misspelled in OperatorShiftDefinition as illustrated below:



Elements and attributes to be deleted

Need for agency

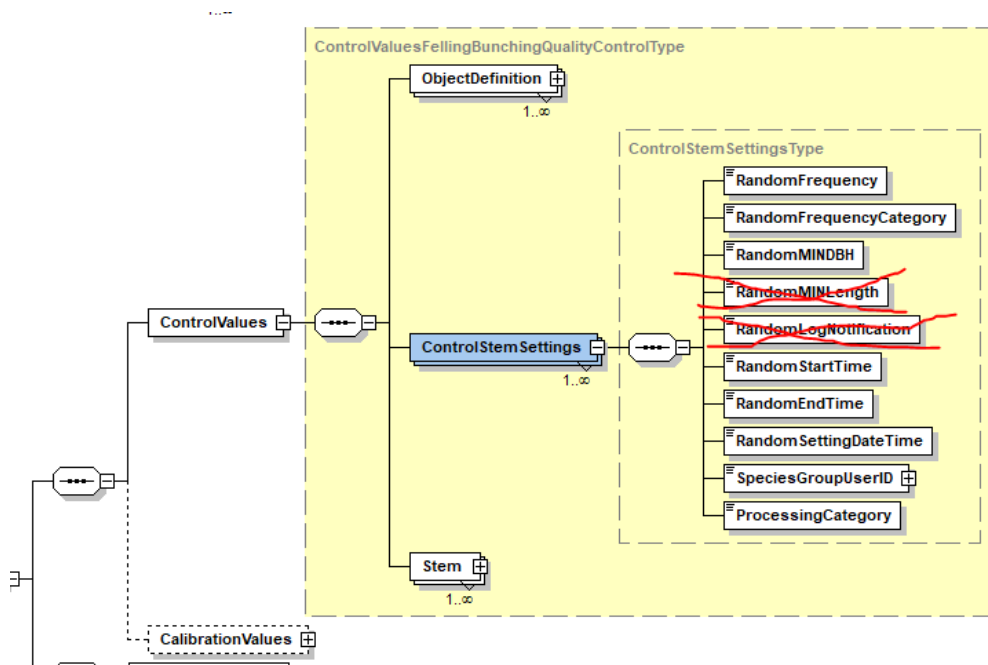
Attribute "agency" needed for "UserIDs? Discussed 2014-11-09.

Suggested to be excluded.

ControlStemSettings in bq

John Arlinger, Skogforsk, 2020-05-11.

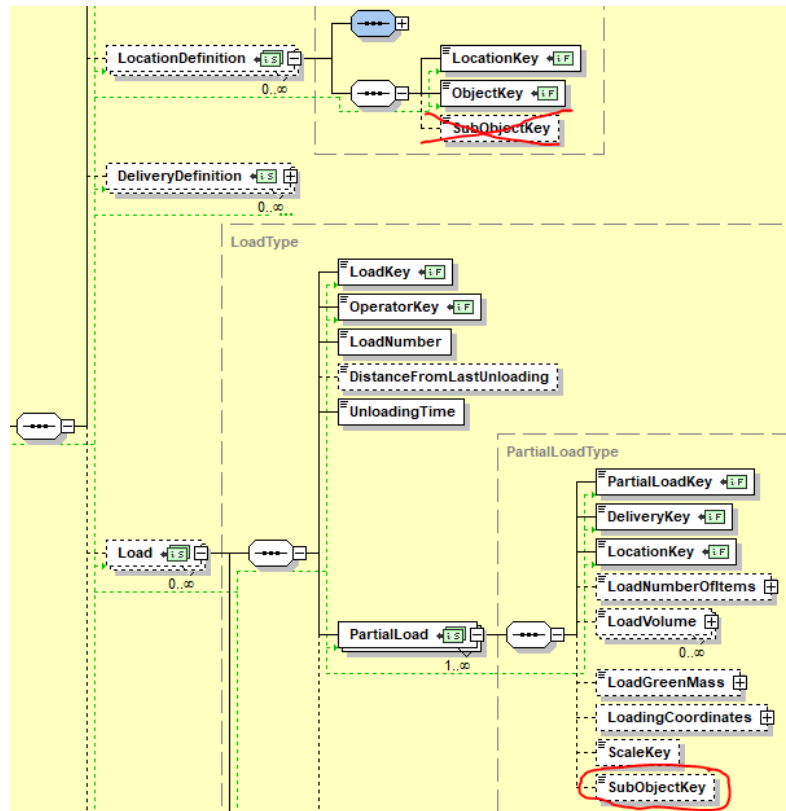
A large number of parameters in ControlStemSettings are irrelevant for feller bunchers since they depend on logs and/or length measuring. The settings to be excluded from bq are illustrated below:



SubObject and Location

Fredrik Tjernberg, Komatsu, 2017-08-28

SubObjectKey is included under LocationDefinition. However, SubObjectKey was also added for registering under PartialLoad (2017-11-22) since having it under LocationDefinition makes it impossible to use one Location for several SubObjects. It is suggested that SubObjectKey is deleted from LocationDefinition.



TrackingCategory and TrackingCategoryFile

TrackingCategory and TrackingCategoryFile are mandatory in ogi and ogr. There is also an optional TrackingFile in ogi.

Since a Tracking element has been added it is questionable whether these elements are needed. At least if they should be mandatory.

This proposal probably not relevant if ogi is re-modelled.

Cardinality (optional vs mandatory)

LoggingOrganization

Teemu Paldanius, Ponsse, 2017-11-22

It was decided that ContactInformation is to be made optional in LoggingOrganisation with version 4.0

Country codes

Juha-Antti Sorsa, Metsäteho, 2017-10-25

It was decided to add countryCodeCategory as an optional with version 3.4. The allowed enumeration value is "ISO 3166".

Whether to change it to mandatory in 4.0 will be discussed.

SubObject

Discussion StanForD-meeting 2017-11-22

SubObject are in several machine systems mandatory, this means that a SubObject is always created per default when creating a new object.

A possibility could be to make SubObjectKey and SubObject mandatory in files sent from forest machines in 4.0?

ColumnNameObject in ogi

Today mandatory, not a good solution since some layers are totally independent of harvesting object.

This proposal probably not relevant if ogi is re-modelled.

Constraints

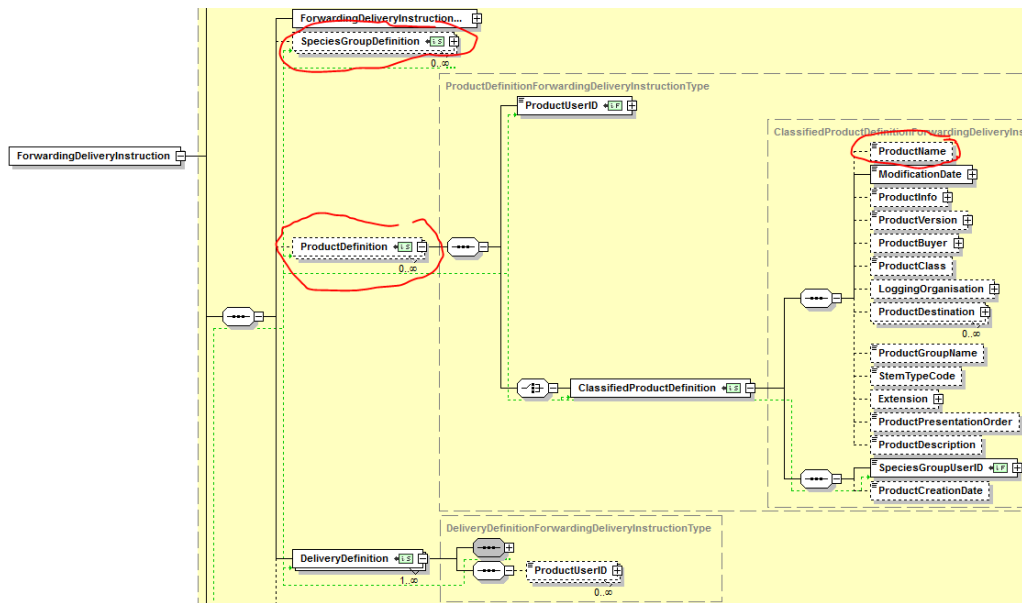
FDI without ProductDefinition

Fredrik Tjernberg, Komatsu, 2015-11-04

It has been noted that it is possible to create an fdi-file where the DeliveryDefinition includes a ProductUserID but without including a ProductDefinition and SpeciesGroupDefinition as illustrated below:

weightUnit	kg		
xmlns:xsi	http://www.w3.org/2001/XMLSchema-instance		
xsi:schemaLoca...	urn:skogforsk:stanford2010 ForwardingDeliveryInstruction_V3p0.xsd		
ForwardingDeliveryInstructionHeader			
SenderApplication			
CreationDate	2015-09-08T14:59:27+03:00		
ModificationDate	2015-09-14T14:28:45+03:00		
ApplicationVersionCreated			
ApplicationVersionModified			
CountryCode			
DeliveryDefinition (9)			
	DeliveryUserID	ModificationDate	ProductUserID
1	SE_1604E_M2570_R003006_Y	2015-10-09T14:03:56+03:00	SE_1604E_M2570_R003006_Y
2	SE_1604E_T6700_R103007S_S	2015-10-09T14:03:56+03:00	SE_1604E_T6700_R103007S_S
3	SE_1604E_T3600_R002001_Y	2015-10-09T14:03:56+03:00	SE_1604E_T3600_R002001_Y

It will be proposed with version 4.0 that the schema is updated in order to make it mandatory to include ProductDefinition and SpeciesGroupDefinition in case ProductUserID is included with the DeliveryDefinition. It might also be relevant to make ProductName mandatory in order to make certain that there is some kind of relevant information connected to the products.



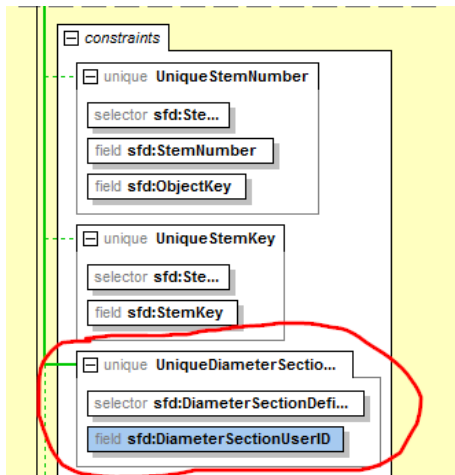
The following constraint (Juha-Antti Sorsa, 2015-11-17) will solve this issue:

```
<xsd:key name="ProductUserIDProductDefinition">
  <xsd:selector xpath="sfd:ProductDefinition"/>
  <xsd:field xpath="sfd:ProductUserID"/>
</xsd:key>
<xsd:keyref name="ProductUserIDRefProductDefinition"
refer="ProductUserIDProductDefinition">
  <xsd:selector xpath="sfd:DeliveryDefinition"/>
  <xsd:field xpath="sfd:ProductUserID"/>
</xsd:keyref>
```

DiameterSectionDefinition

StanForD-meeting 2018-11-20 and Teemu Paldanius, Ponsse, 2018-11-01.

There is a constraint in the hpr message that DiameterSectionUserID must be unique under Machine element. It means that it is not possible to “update” DiameterSections by giving new DiameterSectionKey. It will lead to invalid hpr message. Of course we could “replace” the old DiameterSectionDefinition and keep the Key, but we then lose the traceability if calculation parameters changes. And, because this constraint is under Machine level, we can’t update DiameterSections even between Objects.



It is thus suggested that we should remove the DiameterSectionUserId constraint from the hpr and keep the unique DiameterSectionKey constraint.

Implementation rules

Priorities (mandatory vs optional)

Henrik Persson, LogMax, 2019-06-28

New functional requirements could be added to the e.g.:

In order to publish ver 4 all applications must support the following functionalities even though these functions might not be used in all situations:

- *Tracking*
- *StemCode*
- *TopLogFreeBuck*
- *modificationRestricted*
- *UserDefinedData*
- *BoomPositioning*
- *StumpTreatment*

Adding these types of requirement could be difficult since the communication between controller and base machine might have limitations (e.g. boom positioning) or the need for some functions might not exist on certain markets at all (e.g. StumpTreatment or UserDefinedData).

One suggestion (2020-08-17) is to add attribute under Machine that indicates what functions are supported. Another solution could be to state that this is an issue that depends on the market requirements. Some major markets could probably “join forces” to give very clear signals about what is expected from 4.0 versions.

Other schema updates

ShiftKey

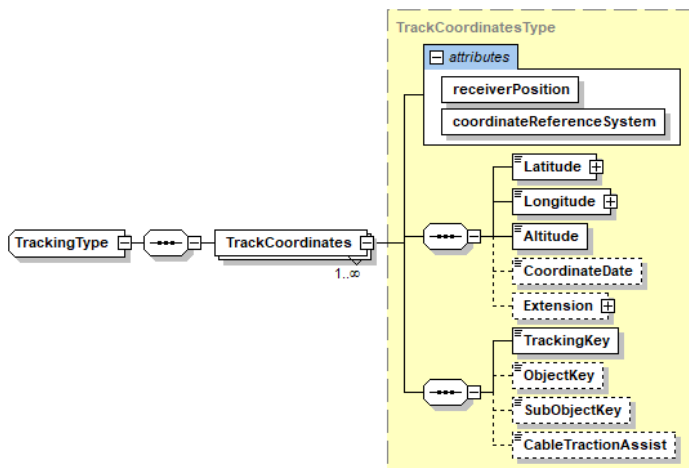
Issue discussed 2015-02-06

Mikael Eliasson, LogMax, raised the question whether the minutes in (paragraph 5, page 10, MONITORING DATA PER SHIFT) are correct. Did we really decide to add optional element ShiftKey to both Individual- and Combined-MachineWorkTime?

The meeting decided to not include ShiftKey in Individual- and Combined-MachineWorkTime. This issue may very well be discussed again when implementing a new version 4.0. The main argument for this decision was that all implementations must be able to handle a situation where ShiftKey is not registered at all since it is an optional element.

Tracking

The present Tracking structure is illustrated below:



Niclas Eriksson, Komatsu, 2017-11-29, Henrik Persson, LogMax, 2017-11-30 and 2019-02-28.

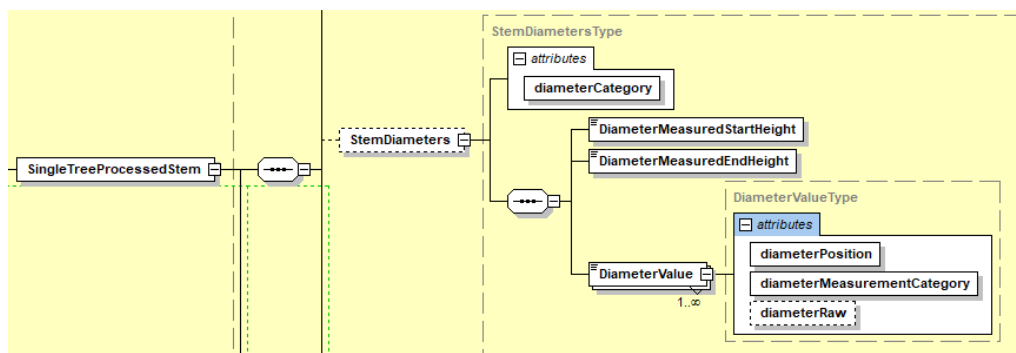
Maybe introduce a new TrackingSettings with elements TrackingSettingKeys, ObjectKey, SubObjectKey, TrackingDescription, ShiftKey, IndividualMachineWorkTimeKey and Extension.

Observe that IndividualMachineWorkTimeKey does not exist today.

DiameterVector elements

Proposal Fredrik Tjernberg, Komatsu, 2015-09-07

Present structure for diameter vector in hpr illustrated below:



We could minimize the size of StemDiameter-vector by modifying element and attribute names according to the following list:

- DiameterValue = d
- diameterPosition = dp
- diameterMeasurementCategory = dc
- diameterRaw = dr

Old example files including 6140 stems:

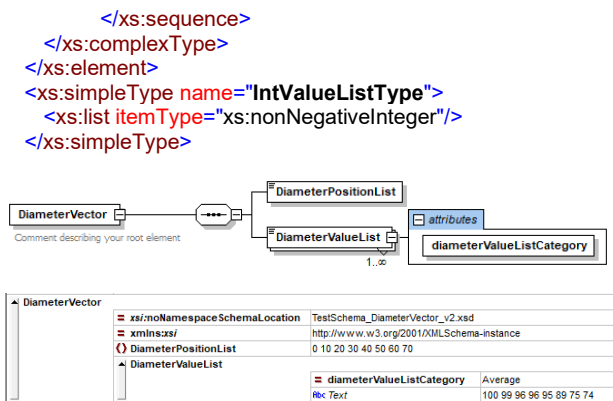
	5710085J-05_20120210_141903 Exkl DiaVektor.hpr	2015-09-03 11:19	HPR File	24 707 KB
	5710085J-05_20120210_141903 Exkl DiaVektor.zip	2015-09-08 15:48	WinZip File	915 KB
	5710085J-05_20120210_141903 Inkl DiaVektor.hpr	2015-09-03 11:34	HPR File	133 039 KB
	5710085J-05_20120210_141903 Inkl DiaVektor.zip	2015-09-08 15:47	WinZip File	5 059 KB
	5710085J-05_20120210_141903 Inkl minimeradDiaVektor.hpr	2015-09-03 11:38	HPR File	65 397 KB
	5710085J-05_20120210_141903 Inkl minimeradDiaVektor.zip	2015-09-08 15:47	WinZip File	4 061 KB

Observe that the effect on a zipped file is significantly smaller than the effect on an uncompressed file.

Another solution (John Arlinger and Juha-Antti Sorsa, 2020-09-01) is to implement a list element as illustrated below. The individual values in the list are separated by a “space”. Observe that diameterValueListCategory includes the following enumeration values: Average, First, Second and Raw.

```

<xs:element name="DiameterVector">
  <xs:annotation>
    <xs:documentation>Comment describing your root element</xs:documentation>
  </xs:annotation>
  <xs:complexType>
    <xs:sequence>
      <xs:element name="DiameterPositionList" type="IntValueListType"/>
      <xs:element name="DiameterValueList" maxOccurs="unbounded">
        <xs:complexType>
          <xs:simpleContent>
            <xs:extension base="IntValueListType">
              <xs:attribute name="diameterValueListCategory" use="required">
                <xs:simpleType>
                  <xs:restriction base="xs:string">
                    <xs:enumeration value="Average"/>
                    <xs:enumeration value="First"/>
                    <xs:enumeration value="Second"/>
                    <xs:enumeration value="AverageRaw"/>
                  </xs:restriction>
                </xs:simpleType>
              </xs:attribute>
            </xs:extension>
          </xs:simpleContent>
        </xs:complexType>
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:element>
  
```

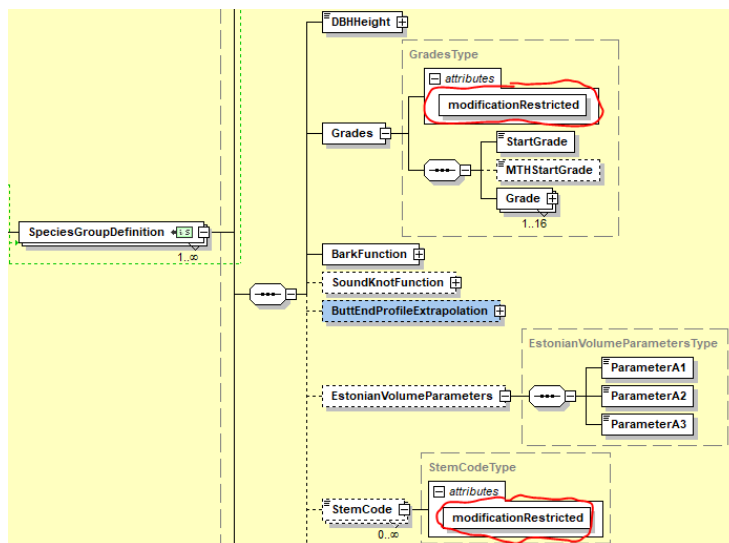


modificationRestricted

StemCodes and EstonianVolumeParameters

Stanford meeting spring 2016,

The suggestion there should be one single `modificationRestricted` for all `StemCodes` (just like for grades) and `EstonianVolumeParameters` will be postponed. This can probably not be solved in a convenient way until version 4.0.



ProductUserID

Jonas Gustafsson, Antti Korkiakoski, Erik Kindlund, Johan J Möller och John Arlinger, 2017-09-27

Patrik Anderchen, 2020-03-12

There is no attribute `modificationRestricted` affecting `ProductUserIDs` in an oin-file.

The idea is to add a flag to the oin that forbids changes to the list of products (`ProdUserID`). Some administrative systems require that products in oin and hpr are matching. In the new VIOL3 system developed by Biometria the harvester is only allowed to report products that has been specified for a specific contract.

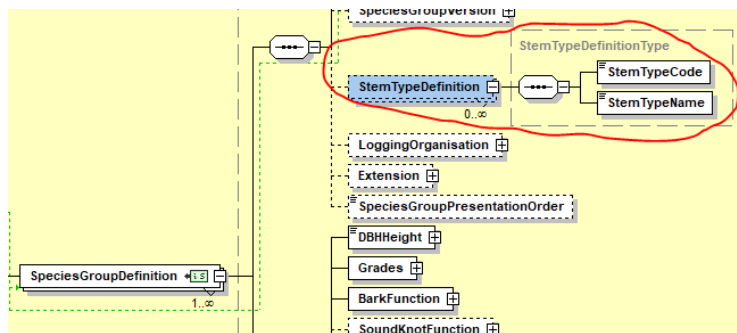
This means that if the operator adds an additional product the hpr will be rejected by the receiving system.

StemTypeCode

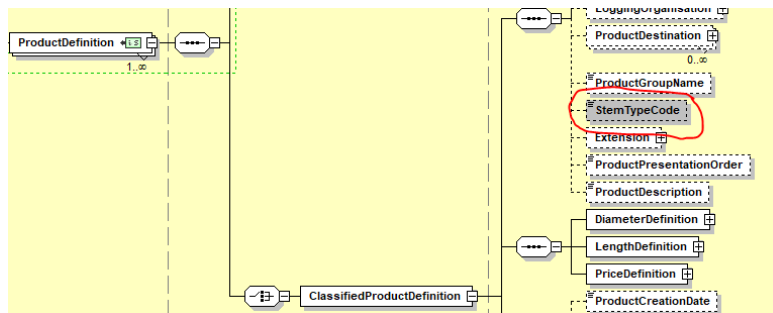
Based on discussion between John Arlinger and Peter Sundlöf, Ponsse, 2019-02-01.

Structure of StemType probably should be changed since there is no referencing between spi and pin as in most other similar cases.

Present Spi:



Present Pin and Hpr:



A possible solution could be to

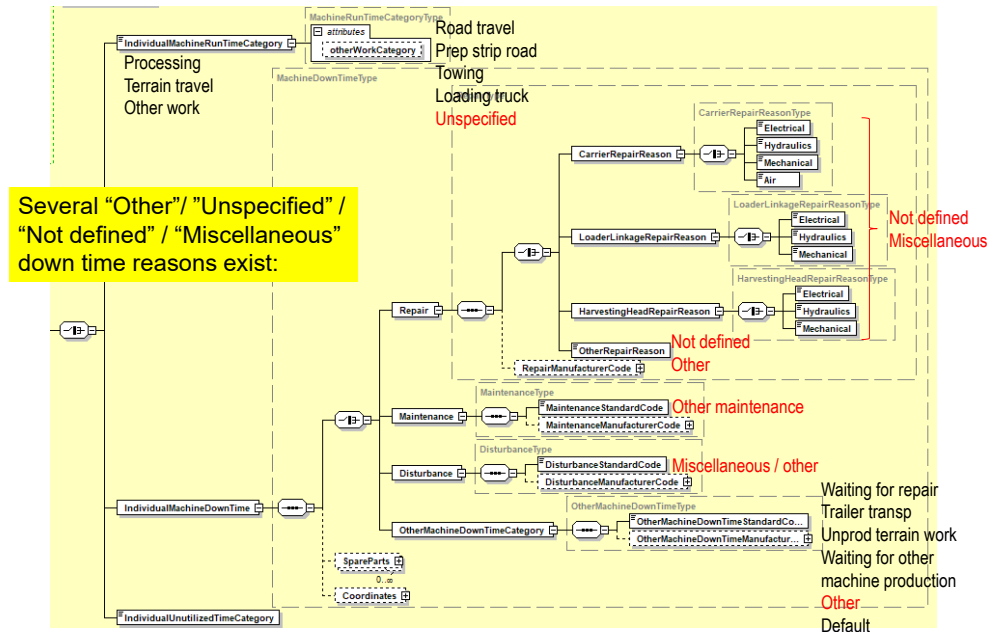
- Implement StemTypeUserID in pin, spi and hpr.
- Delete StemTypeCode from ProductDefinition in order to only have one single instance of StemTypeCode and StemTypeName in the SpeciesGroupDefinition.
- Add StemTypeKey to the hpr-file (both ProductDefinition and SpeciesGroupDefinition).
- StemTypeCode should probably be an enumeration list.

Another solution could be to just add StemTypeName to the pin and totally exclude the StemTypeDefinition from the spi.

Re-model “Other downtimes” in mom

Robert Fries and John Arlinger, 2019-11-06

Clean up among all different “Other” down time reasons. Make it possible to only use “Default” in cases where operator does not want to specify down time reasons.



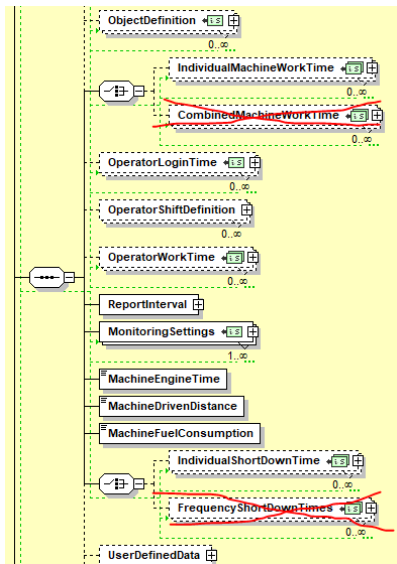
Schema re-structuring

ogi-file

The possibility of re-modelling ogi has been discussed in order to make it simpler and not dependent on a number of other file types such as shape and font.

mom-file

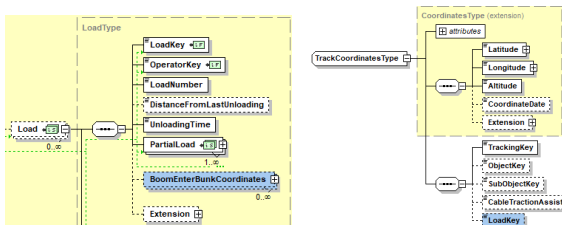
Excluding “combined” times from the mom schema would make the standard more consistent and simpler to use.



fpr-file

Adding more detailed information related to where logs are loaded in the forest would make it possible to improve traceability (connect harvester data with forwarder data). The aim is to find a model that is not relying on time stamps.

An idea could be to look at the possibility to register a “BoomEnterBunkCoordinates” each time the boom has been moved into the bunk (e.g. when boom angle changes from 80 degrees to 5 degrees). These boom activities should be each registered per Load in order to make it possible to connect each “BoomEnterBunkCoordinates” to a specific load. Adding a LoadKey to the tracking when a load has been unloading would make it possible to connect tracking with the load data without time stamps.



Another idea could be to add “BoomEnterBunk” (e.g. boom has been moved into or outside bunk) and “LoadKey” to the tracking structure.

