



LINNAEUS model flowers and plants 2.20

Technical blueprint
LINNAEUS model flowers and plants



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Table of contents

Change history	6
1. Introduction	7
1.1 Background	7
1.2 Purpose of this document	7
1.3 Status	8
1.4 Management	8
1.5 Contents	8
1.6 Implementation	8
1.7 References	8
2. Linnaeus datamodel	9
2.1 Fixed data	9
2.2 Variable data	9
2.3 Data model notation	9
2.4 Technical data model	10
3. Linnaeus code lists	11
3.1 PRODUCT	11
3.1.1 Definition	11
3.1.2 Relationships	11
3.1.3 Contents code list CP/FP	11
3.1.4 Example	11
3.1.5 Explanation	11
3.2 APPLICATION	12
3.2.1 Definition	12
3.2.2 Relationships	12
3.2.3 Contents code list CA/FA	12
3.2.4 Example	12
3.2.5 Explanation	12
3.3 PLANT	13
3.3.1 Definition	13
3.3.2 Relations	13
3.3.3 Contents code list CT/FT	13
3.3.4 Example	13
3.3.5 Explanation	13
3.4 GENUS	13
3.4.1 Definition	13
3.4.2 Relationships	14
3.4.3 Contents code list CG/FG	14
3.4.4 Example	14

Floricode	LINNAEUS model flowers and plants 2.20 0.2/2.20	Technical blueprint
3.5	SPECIES	14
3.5.1	Definition	14
3.5.2	Relationships	14
3.5.3	Contents code list CS/FS	14
3.5.4	Example	14
3.6	CULTIVAR	15
3.6.1	Definition	15
3.6.2	Relationships	15
3.6.3	Contents code list CC/FC	15
3.6.4	Example	15
3.6.5	Explanation	15
3.7	PRODUCT FEATURE	15
3.7.1	Definition	15
3.7.2	Relationships	15
3.7.3	Contents code list CF/FF	15
3.7.4	Example	16
3.7.5	Explanation	16
3.8	FEATURE TYPE	16
3.8.1	Definition	16
3.8.2	Relationships	16
3.8.3	Contents code list CE/FE	16
3.8.4	Example	16
3.8.5	Explanation	16
3.9	FEATURE VALUE	16
3.9.1	Definition	16
3.9.2	Relationships	17
3.9.3	Contents code list CV/FV	17
3.9.4	Example	17
3.9.5	Explanation	17
3.9.6	Remark	17
3.10	FEATURE GROUP	17
3.10.1	Definition	17
3.10.2	Relationships	17
3.10.3	Contents code list CU/FU	18
3.10.4	Example	18
3.11	REGULATORY FEATURE TYPE	18
3.11.1	Definition	18
3.11.2	Relationships	18
3.11.3	Contents code list CY/FY	18
3.11.4	Example	18
3.11.5	Explanation	18
3.11.6	Business rules	19
3.12	REGULATION TYPE	19
3.12.1	Definition	19
3.12.2	Relationships	19
3.12.3	Contents code list CR/FR	19
3.12.4	Example	19
3.13	NAME	19
3.13.1	Definition	19

Floricode	LINNAEUS model flowers and plants 2.20 0.2/2.20	Technical blueprint
3.13.2	Relationships	19
3.13.3	Contents code list CN/FN	20
3.13.4	Example	20
3.13.5	Explanation	20
3.14	NAME TYPE	21
3.14.1	Definitions	21
3.14.2	Relationships	21
3.14.3	Contents code list CM/FM	21
3.14.4	Example	21
3.14.5	Explanation	21
3.15	LANGUAGE	21
3.15.1	Definition	21
3.15.2	Relationships	21
3.15.3	Contents code list CL/FL	21
3.15.4	Example	21
3.15.5	Explanation	22
3.16	PRODUCT GROUP	22
3.16.1	Definition	22
3.16.2	Relationships	22
3.16.3	Contents code list CO/FO	22
3.16.4	Example	22
3.16.5	Explanation	22
3.17	PRODUCT PHOTO REFERENCE	22
3.17.1	Definition	22
3.17.2	Relationships	22
3.17.3	Contents	23
3.18	PHOTO TYPE	23
3.18.1	Definition	23
3.18.2	Relationships	23
3.18.3	Contents	23
4.	Distribution of code lists	24
4.1	Management and distribution policy	24
4.1.1	Responsibilities	24
4.1.2	Complete set	24
4.2	Redefine data in code lists	25
4.3	Description of the code list distribution	25
4.3.1	Assumptions	26
4.3.2	Character set	26
4.3.3	Distribution channel	26
4.3.4	Naming of the distribution set Linnaeus product codes flowers and plants	26
4.3.5	Contents distribution set Linnaeus product codes flowers and plants	27
APPENDIX 1: MAPPING OF THE TECHNICAL DATA MODEL LINNAEUS TO THE EXCHANGE OF ELECTRONIC MESSAGES		28
APPENDIX 2: STRUCTURE OF THE PRODUCT GROUP CODING		30
APPENDIX 3: PROPOSAL TO CUSTOMISE THE LINNAEUS DATA MODEL		32

Change history

Version	Auteur	Changes
Previous versions on behalf of VBN	Frank Koldijk	
2.10	Fred Sanders	Published 7-5-2013
0.1/2.20	Henk Zwinkels	Complete renewed version Floricode
0.11/2.20	Henk Zwinkels	Correction in table 13: "second_code_list_item_id" from M to C
0.12/2.20	Henk Zwinkels	Correction in table 6 Cultivar: Format cultivar_id = N..7
0.2/2.20	Henk Zwinkels	4.1.2.: change of the effective day of codes 4.3.3. : addition to 'distribution channels' 4.3.5: change of the daily 'distribution time'.

	Date	Name/organisation	Initials
Approved by	23-06-2021	H. Zwinkels (Floricode) (Author)	HZ
Reviewed by	23-10-2017	M. Goedhart (Floricode) K. v.d. Meij (VGB) F. Sanders (Royal FloraHolland) R. Nieboer (Plantion)	MG KM FS RN
Accepted and released on behalf of workgroup standards		B. van Raaij (chair WG Standaarden)	BR

1. Introduction

1.1 Background

You are reading the 'Technical Blueprint' of the Floricode code system for the ornamental horticultural industry, the method of identifying, classifying and specifying floricultural products, adorned with the name 'Linnaeus' (the name of the great Swedish taxonomist Carl Linnaeus).

The international ornamental horticultural industry is continuously reinventing itself. Innovation of products, services, business processes and models, as well as technology, permanently put new demands on the volume and depth of data exchange among business partners in the supply chain.

Product codes and other codes related thereto make up the core of all data exchange about transactions in our business. New developments can't escape touching the Floricode code system as well.

To react on that in time Floricode started in 2016 an analysis to possible adjustments of the existing Linnaeus model. This was done with an inventory by the Floricode Coding workgroup and the steering team Regulations of VBN. After that a workgroup with technical specialists was formed to look at the change requests and to formulate proposals for adjustments and additions on the existing model. A few of these proposals will have significant impact on the existing applications in the supply chain and therefore Floricode decided first of all only to update this technical blueprint document. Only in second instance the greater adjustments in the data model will be taken into consideration, namely at the moment Floricode has decided to rebuilt its own computer system for the product registration and product coding. The adjustments and additions on the Linnaeus data model which were proposed are documented in an appendix of this document.

The coding in accordance with the Linnaeus data model has to meet the following requirements:

- flexibility: it should be easy to add new building blocks
- adaptability: changes should be effected easily and fast
- migratability: the system must implemented in a stepwise fashion
- cost effectiveness: all this against acceptable costs and effort.

The structure of the Linnaeus model provides companies in the supply chain to following possibilities:

- detailed specification of products
- table driven control of lot specification rules and constraints
- improved specification of lots
- ability to exchange transactions of lots as well as transactions of services
- logical grouping of features types in feature groups
- product code list clean-up
- translation of code lists in multiple languages

1.2 Purpose of this document

Purpose of this technical blueprint is to provide a complete, precise and unambiguous technical specification of the Linnaeus code system, in particular of the way in which the system will be reflected in the data exchange among supply chain parties, e.g. in code lists and electronic messages.

The contents and structure of code lists described in this document must enable implementation managers, system architects, designers and programmers, to adapt the systems of the involved parties to correctly produce, receive and process the exchanged 'Linnaeus data'.

To software developers, this technical specification will provide information about the impact of the Linnaeus coding system on their business applications.

The blueprint does not impose imperative guidelines or directives with regards to the implementation within business applications of the involved supply chain partners, but is restricted to giving general suggestions and recommendations.

1.3 Status

This version of the Linnaeus technical blueprint for flowers and plants is based on the previous version (version 2.10). In comparison with the older version:

- textual changes and improvements are applied,
- the chapter 'Linnaeus in EDI messages' has been deleted,
- paragraph 5.4 about 'composite products' has been deleted,
- some minor changes in the data model itself are applied, but without any consequence for the Linnaeus code lists,
- three new appendices are recorded.

1.4 Management

The management of this document is in the hands of Floricode. Suggestions for corrections, additions or clarifications on the content of this document can be sent to Floricode. These suggestions will be judged and eventually will lead to a new release of the technical blueprint.

Floricode will take care that this document stays in line for the different sub sectors in the ornamental horticultural industry (like bulbs, perennials and tree nursery) as well as the implementation of the model in the code management system of Floricode itself.

1.5 Contents

In addition to this introduction, this document contains the following sections:

- Chapter 2: presents Linnaeus' technical data model
- Chapter 3: specifies the structure and contents of Linnaeus code lists
- Chapter 4: deals with the way the code lists are distributed to supply chain partners

1.6 Implementation

The principles of the Linnaeus code system for the external data exchange among supply chain partners and for the internal business software used by the parties involved are:

- fixed reference data captured in various code lists
- variable lot data exchanged through electronic messages

Depending on the various roles of the parties involved, their specific needs, demands and IT levels, business applications will need to be able to:

- periodically processing of the fixed reference data as published by Floricode
- store and display multiple product- and lot features
- check that lot specification rules and constraints are duly respected
- processing of electronic messages of multiple types of products and orders

1.7 References

For further information about the background of and motives behind the Linnaeus model, its conceptual setup and the definitions of the vocabulary used, please refer to the following (Dutch language) documents:

- 'Linnaeus Conceptuele Blauwdruk' versie 4.1, April 15, 2005
- 'Linnaeus Technical Blueprint', version 2.10, May 7, 2013
- 'Linnaeus model Bloembollensector', versie 0.52, September 18, 2017
- 'General Implementation Guideline for Coding', version 1.3, July 6, 2017

2. Linnaeus datamodel

The structure of the Linnaeus coding system is reflected in a 'technical' data model. That data model differentiates between fixed and variable data about floricultural products.

2.1 Fixed data

Fixed data are reference data that will, in principle, be captured in the supply chain partners' business applications only once; such reference data need not be repeatedly included in the information exchange about floricultural business transactions. In the technical data model, these fixed data are represented as blue rectangles.

The administration of fixed reference data is taken care of by Floricode, who will secure the correctness, completeness and mutual consistency of the data. The distribution of these fixed data is centrally tended to as well. Hereby, Linnaeus provides floricultural supply chain partners with the opportunity to keep their internal reference data continuously updated and mutually synchronised.

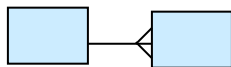
2.2 Variable data

Variable data are attributes of floricultural products which may vary with the lot to which they belong. This data will need to be captured in the database each time a product is featured in a lot and has to be explicitly included in the information exchange about lots at every turn.

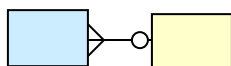
In the technical data model, these variable data are represented as yellow rectangles.

2.3 Data model notation

The model presented below will largely follow the classical entity-relationship notation, presenting entity types as rectangles and relationships as possibly forked line sections:



1-to-1-or-more relationship between two entity types



n-to-0-or-1 relationship between a blue entity type, representing fixed product data, and a yellow entity type, embodying variable lot data

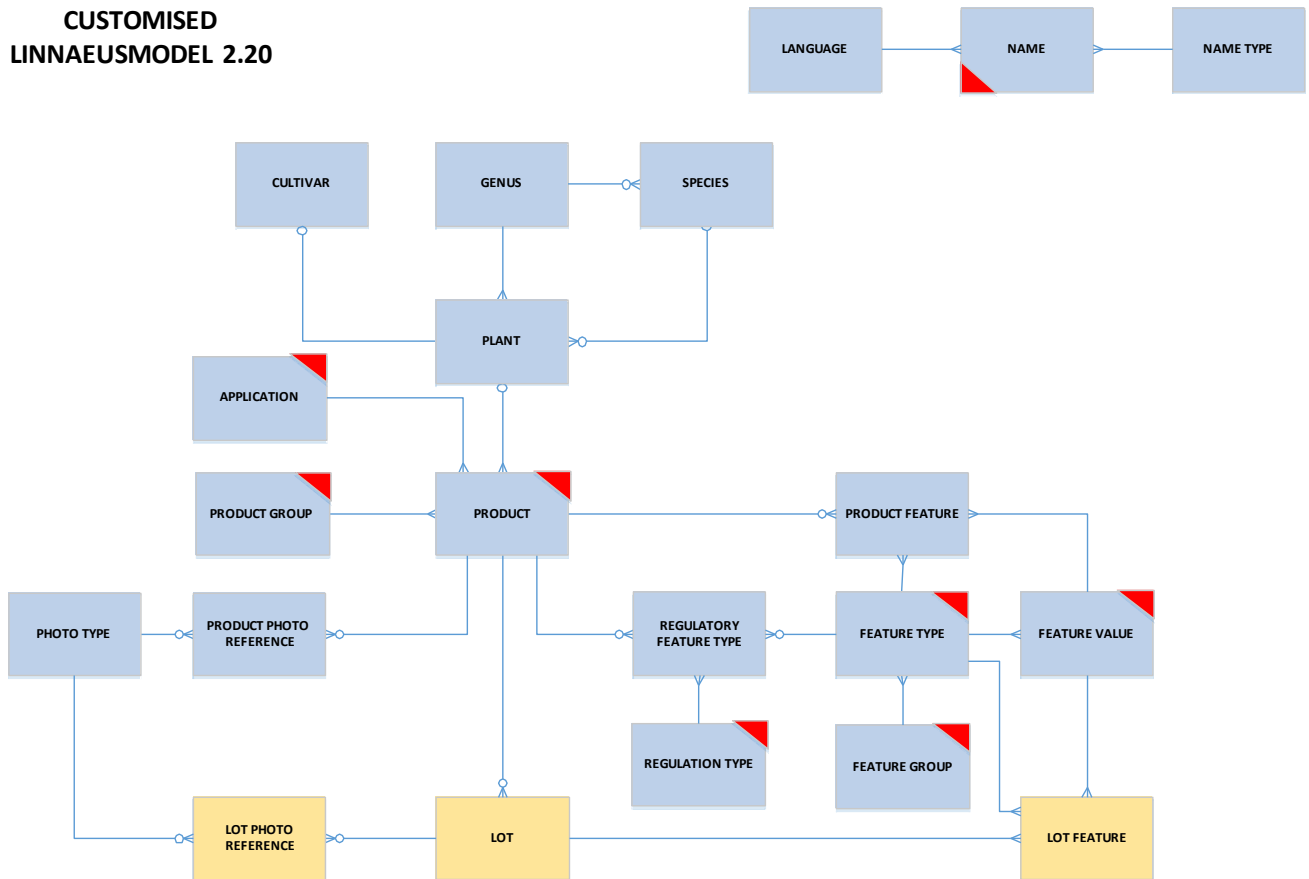


A red triangle is used for improved readability of relationships with the entity name.

2.4 Technical data model

The complete Linnaeus data model for the ornamental horticultural industry is as follows:

CUSTOMISED LINNAEUSMODEL 2.20



The entity types and relationships, belonging to the fixed reference data will be defined and explained in the next chapter.

N.B. the entities product photo reference and photo type are not yet implemented in the actual version of the data distribution of these code lists; this will be implemented at the moment that Floricode rebuilt its systems, because these data are available indeed.

3. Linnaeus code lists

This chapter will describe the code lists used to electronically distribute the fixed Linnaeus reference data.

For the comment aspects of the Floricode code lists you are referred to the document 'General Implementation Guideline for Coding, version 1.3, July 6, 2017. In this document the general implantation guidelines are described that apply for all the code lists that are managed and distributed by Floricode.

3.1 PRODUCT

3.1.1 Definition

A product is a type of good traded within the floricultural industry and identified with a product code. A product may be of botanical nature (a living plant or a cut flower), a service or hardware.

3.1.2 Relationships

Product has the following relationships:

- a product always has 1 and only 1 specific application
- a product belongs to 1 and only 1 product group
- a product may involve 1, and then only one, type of plant
- a product may have 0, 1 or more product features
- to 1 product 0, 1 or more regulatory feature types may apply
- of 1 product 0, 1 or more photo references may exist.

3.1.3 Contents code list CP/FP

The code list *PRODUCT* has the following contents.

Field	Field_name	M/C	Format	Key	contents
1	code_list_id	M	N..3		'1'
2	product_id	M	N..7	P#	<i>PRODUCT</i> identifier
3	application_id	M	N..2	F#	<i>APPLICATION</i> identifier
4	FLC_product_name	M	AN..105		Product name
5	short_product_name	C	AN..20		Short product name
6	registrator_id	C	N..2	F#	<i>PLANT</i> registrator id
7	plant_registration_number	C	N..7	F#	<i>PLANT</i> registration nr.
8	composite_indicator	M	N1		'0'
9	FLC_productgroup_code	M	N8	F#	FLC Product group identifier
10	entry_date	M	N8		ccyymmdd
11	expire_date	C	N8		ccyymmdd
12	change_date_time	M	N12		ccyymmddhhmm

3.1.4 Example

1;10050;2;Calathea roseapicta 'Angela';CALAT ANGELA;1;102421;0;102421;1;20600301;20050101;;200412311510

3.1.5 Explanation

- 1: code list '1' for *PRODUCT*. This ID allows for the possibility to make an explicit reference to this list from code list *NAME*
- 3: application code, see §;3.3; reference to code list *APPLICATION*

- 4: Floricode product name: if the product is a plant, as a rule, its product name is formed by the concatenation of its genus name, species name (if any), cultivar group name (if any) and its cultivar name (if any); in some cases the name may contain a non-botanical element. In case the requester (mostly the breeder of the product) signs in a trade designation ('trade mark') at the product registration, this name is taken as the Floricode product name (providing that the conditions are fulfilled). In these cases the botanical name can be derived via the table *PLANT* to the name of the *GENUS*, *SPECIES* and *CULTIVAR*.

The product name of a botanical product with the application 'cut flowers' may differ from the name of the application 'house plants' or 'garden plants'.

- 5: display abbreviation: short name for (clock) display purposes
- 6: ID of the organisation that has registered the plant, for example:
- 1: Floricode (previously VKC)
 - 2: Naktuinbouw (previously VARB)
 - 3: KAVB

Together with field 7, this field constitutes a reference to code list *PLANT*

- 7: taxonomic registration number (in the Floricode database Plantscope) of the botanic plant
- 8: indicator telling whether the product is an individual product or a mixed plant; meant to support possible future rules and constraints regarding mixed products, for example individual product (=1) or mixed plant (= 2)
- 9: product group code: the code of the product group to where the product belongs.

3.2 APPLICATION

3.2.1 Definition

Application is the way a product is applied

To each application (mode of use) of a product a unique product code can be allocated. For example the plant *Tulipa* 'Apeldoorn' has a product code for the application 'flower bulbs' as well as the application 'cut flowers' and the application 'house plants'.

3.2.2 Relationships

One application will apply to several products.

3.2.3 Contents code list CA/FA

The code list *APPLICATION* has the following contents.

Field	Field_name	M/C	Format	Key	contents
1	code_list_id	M	N..3		'2'
2	application_id	M	N..2	P#	<i>APPLICATION</i> identifier
3	Dutch_application_description	M	AN..35		Description in Dutch
4	entry_date	M	N8		ccyymmdd
5	expire_date	C	N8		ccyymmdd
6	change_date_time	M	N12		ccyymmddhhmm

3.2.4 Example

2;1;snijbloemen;20050101;;200412311510

3.2.5 Explanation

- 1: code list number '2' for *APPLICATION*
- 2: application code:
1: snijbloemen (cut products)

2: kamerplanten (house plants)

3: tuinplanten (garden plants)

4: hardware

5: bloembollen (flower bulbs)

Possible additional application codes are still to be defined.

3: Dutch description of the application.

3.3 PLANT

3.3.1 Definition

A plant is a botanical product of the floricultural industry, taxonomically unambiguously identified with a taxonomic ID (Plantscope) and the ID of a Floricode acknowledged supplier of plant data

3.3.2 Relations

Plant has the following relationships:

- a plant belongs to 1 and only 1 genus
- a plant may belong to 1, and then only to 1 species
- a plant may be cultivar, and then only 1.

Examples of a plant in relation to genus, species and cultivar are:

- Hedera helix 'Adam': genus with species and cultivar
- Grivillea 'Spiderman': genus with cultivar without species
- Grivillea asplenifolia: genus with species without cultivar.

3.3.3 Contents code list CT/FT

De code list *PLANT* has the following contents.

Field	Field_name	M/C	Format	Key	contents
1	code_list_id	M	N..3		'3'
2	registrator_id	M	N..2	P#	<i>PLANT</i> registrator id
3	plant_registration_number	M	N..7	P#	<i>PLANT</i> registration nr.
4	genus_id	M	N..5	F#	<i>GENUS</i> identifier
5	species_id	C	N..5	F#	<i>SPECIES</i> identifier
6	cultivar_id	C	N..7	F#	<i>CULTIVAR</i> identifier
7	entry_date	M	N8		ccyymmdd
8	expire_date	C	N8		ccyymmdd
9	change_date_time	M	N12		ccyymmddhhmm

3.3.4 Example

3;1;102421;6003;546;10050;20050101;;200412311510

3.3.5 Explanation

- 1: code list number '3' for *PLANT*
- 4: Floricode genus code constitutes a reference to code list *GENUS*
- 5: Floricode species code (if the plant belongs to a species, subspecies variety and/or cultivar group): reference to code list *SPECIES*
- 6: Floricode cultivar code (if the plant is a cultivar): reference to code list *CULTIVAR*.

3.4 GENUS

3.4.1 Definition

A genus is a subdivision of a taxonomical family.

3.4.2 Relationships

Genus has the following relationships:

- a genus may comprise no, one or more species
- a genus may comprise one or more plants.

3.4.3 Contents code list CG/FG

The code list *GENUS* has the following contents.

Field	Field_name	M/C	Format	Key	contents
1	code_list_id	M	N..3		'4'
2	genus_id	M	N..5	P#	<i>GENUS</i> identifier
3	latin_genus_name	M	AN..35		Latin genus name
4	entry_date	M	N8		ccyymmdd
5	expire_date	C	N8		ccyymmdd
6	change_date_time	M	N12		ccyymmddhhmm

3.4.4 Example

4;6003;Calathea;20050101;;200412311510

3.5 SPECIES

3.5.1 Definition

A species is a subdivision of a taxonomical genus.

From the botanical viewpoint this subdivision may consist of one or more different components (name parts):

- Species
- Subspecies
- Cultivar group
- Variety

The specific botanical subdivision of each registered product is recorded in one of the different botanical databases worldwide, among which Floricode database Plantscope. But in this code list these name parts are included and distributed in this table *SPECIES*.

3.5.2 Relationships

Species has the following relations:

- a species may comprise no, 1 or more plants
- a species belongs to 1 and only 1 genus.

3.5.3 Contents code list CS/FS

The code list *SPECIES* has the following contents.

Field	Field_name	M/C	Format	Key	contents
1	code_list_id	M	N..3		'5'
2	species_id	M	N..5	P#	<i>SPECIES</i> identifier
3	genus_id	M	N..5	F#	<i>GENUS</i> identifier
3	latin_species_name	M	AN..80		Latin species name
4	entry_date	M	N8		ccyymmdd
5	expire_date	C	N8		ccyymmdd
6	change_date_time	M	N12		ccyymmddhhmm

3.5.4 Example

5;546;6003;roseapicta;20050101;;200412311510

3.6 CULTIVAR

3.6.1 Definition

Cultivar is a specialisation of a botanical species or genus at the lowest possible taxonomical level.

3.6.2 Relationships

A cultivar may comprise one or more plants.

3.6.3 Contents code list CC/FC

The code list *CULTIVAR* has the following contents.

Field	Field_name	M/C	Format	Key	contents
1	code_list_id	M	N..3		'6'
2	cultivar_id	M	N..7	P#	<i>CULTIVAR</i> identifier
3	cultivar_name	M	AN..35		cultivar name
4	entry_date	M	N8		ccyymmdd
5	expire_date	C	N8		ccyymmdd
6	change_date_time	M	N12		ccyymmddhhmm

3.6.4 Example

6;10050;'Angela';20050101;;200412311510

3.6.5 Explanation

3: here, provided that it's available, the official cultivar name is included (represented between 'quotes'). The eventual trade designation name ('trade mark') only is included in table *PRODUCT*.

3.7 PRODUCT FEATURE

3.7.1 Definition

A product feature is a fixed property of a product, expressed as the value of a feature type. Examples of product features are:

- Bloemkleur: rood (flower colour: red) (Floricode uses the following standard colour codes: VBN-main colour, UPOV colour and RHS colour; separately a linked table is available to RGB as well))
- BTW percentage: hoog (VAT percentage: high)
- Verkoopseenheid: stuk (selling unit: piece)

3.7.2 Relationships

Product feature has the following relationships:

- a product feature involves 1 and only 1 feature type
- a product feature has 1 and only 1 feature value
- a product feature pertains to 1 and only 1 product.

3.7.3 Contents code list CF/FF

The code list *PRODUCT_FEATURE* has the following contents.

Field	Field_name	M/C	Format	Key	contents
1	code_list_id	M	N..3		'7'
2	product_id	M	N..7	PF#	<i>PRODUCT</i> identifier
3	feature_type_id	M	AN3	PF#	<i>FEATURE TYPE</i> id
4	feature_value_id	M	AN..3	PF#	<i>FEATURE VALUE</i> id
5	entry_date	M	N8		ccyymmdd
6	expire_date	C	N8		ccyymmdd
7	change_date_time	M	N12		ccyymmddhhmm

3.7.4 Example

7;9156;B01;NT;20050101;;200501021510

3.7.5 Explanation

- 3: the format of the feature_type_id is always 3 alpha numerical digits; reference to code list *FEATURE TYPE*
- 4: the format of the feature_value_id is at most 3 alpha numerical digits; reference to code list *FEATURE VALUE*.

3.8 FEATURE TYPE

3.8.1 Definition

A feature type defines the type of property to which a product feature of a good (product, hardware, service) pertains. Examples of feature types are:

- RHS hoofdkleur 1 (RHS main colour 1)
- Potmaat (pot size)
- steellengte (stem length)
- rijpheidsstadium (ripeness stadium)
- aantal bloemen per steel (number of flowers per stem)

3.8.2 Relationships

Feature type has the following relationships:

- a feature type may have 1 or more feature values
- a feature type will belong to 1 and only 1 feature group.

3.8.3 Contents code list CE/FE

The code list *FEATURE_TYPE* has the following contents.

Field	Field_name	M/C	Format	Key	contents
1	code_list_id	M	N..3		'8'
2	feature_type_id	M	AN3	P#	<i>FEATURE TYPE</i> id
3	feature_group_id	M	N..3	F#	<i>FEATURE GROUP</i> id
4	dutch_feature_type_description	M	AN..35		Dutch description
5	entry_date	M	N8		Ccyymmdd
6	expire_date	C	N8		ccyymmdd
7	change_date_time	M	N12		ccyymmddhhmm

3.8.4 Example

208;S01;2;Potmaat;20050101;;200501021510

3.8.5 Explanation

- 2: the format of the feature_type_id is always 3 alpha numerical digits.

3.9 FEATURE VALUE

3.9.1 Definition

A feature value encodes a specific product property of a certain feature type. Examples of feature values are:

- 10 cm (10 cm)
- 30-15-15 cm (30-15-15 cm)

- 10% vertakt (10 % branched)
- Gemengd 2 kleuren (mixed 2 colours).

3.9.2 Relationships

The relationships of feature value are the inverse of the relationships already defined for feature and feature type with this entity type.

3.9.3 Contents code list CV/FV

The code list *FEATURE_VALUE* has the following contents.

Field	Field_name	M/C	Format	Key	contents
1	code_list_id	M	N..3		'g'
2	feature_type_id	M	AN3	PF#	<i>FEATURE TYPE</i> id
3	feature_value_id	M	AN..3	P#	<i>FEATURE VALUE</i> id
4	dutch-feature_value_description	M	AN..35		Dutch description
5	entry_date	M	N8		ccyymmdd
6	expire_date	C	N8		ccyymmdd
7	change_date_time	M	N12		ccyymmddhhmm

3.9.4 Example

9;S01;010;10 CM POT;20050101;;200501021510

3.9.5 Explanation

- 2: the format of the feature_type_id is always 3 alpha numerical digits; reference to code list *FEATURE TYPE*
- 3: the format of the feature_value_id is at most 3 alpha numerical digits (this is true for flowers and plants; for flower bulbs it differs)
- 4: dutch-feature_value_description is at most 35 alpha numerical digits.

3.9.6 Remark

All feature values, exclusively consisting of numeric characters, are filled out to 3 positions using preceding zeroes.

3.10 FEATURE GROUP

3.10.1 Definition

A feature group is a set of feature types concerning a common aspect. Existing feature groups are:

- botanical features
- sorting features
- order features
- logistic features
- auction features
- article features
- quality features
- transaction features
- logistic features
- other features.

3.10.2 Relationships

A feature group will comprise 1 or more feature types.

3.10.3 Contents code list CU/FU

The code list *FEATURE_GROUP* has the following contents.

Field	Field_name	M/C	Format	Key	contents
1	code_list_id	M	N..3		'10'
2	feature_group_id	M	N..3	P#	<i>FEATURE GROUP</i> id
3	dutch-feature_group_description	M	AN..35		Dutch description
4	entry_date	M	N8		ccyymmdd
5	expire_date	C	N8		ccyymmdd
6	change_date_time	M	N12		ccyymmddhhmm

3.10.4 Example

10;4;Kwaliteitskenmerken;20050101;;200501021510

3.11 REGULATORY FEATURE TYPE

3.11.1 Definition

Regulatory feature types are types of feature belonging to a product which are prescribed and should of may be specified on certain prescribed presentation positions. Therefore the regulation of feature types consists of 3 elements: feature type, regulation type and presentation order.

3.11.2 Relationships

Regulatory feature type has the following relationships:

- a regulatory feature type pertains to 1 and only 1 product
- a regulatory feature type involves 1 and only 1 feature type.
- a regulatory feature type involves 1 and only 1 regulation type.

3.11.3 Contents code list CY/FY

The code list *REGULATORY_FEATURE_TYPE* has the following contents.

Field	Field_name	M/C	Format	Key	contents
1	code_list_id	M	N..3		'11'
2	product_id	M	N..7	PF#	<i>PRODUCT</i> identifier
3	feature_type_id	M	AN3	PF#	<i>FEATURE-TYPE</i> id
4	regulation_type_id	M	N..2	PF#	<i>REGULATION-TYPE</i> id
5	presentation_order	M	N..2		Presentation order number
6	entry_date	M	N8		Ccyymmdd
7	expire_date	C	N8		ccyymmdd
8	change_date_time	M	N12		ccyymmddhhmm

3.11.4 Example

11;9152;S01;1;1;20050101;;200501021510

3.11.5 Explanation

2,3,4,5,6: as soon as in a combination of product_id,feature_type_id, regulation_type_id, entry_date one or more fields (regulation_type_id, presentation_order) change, a new line with a new entry_date comes in to being. In the "old line" the expiry date will be indicated.

4: the regulation type code indicates whether the involved feature type is mandatory, conditional, advised or permitted. Possible implementation:

- 1: verplicht (mandatory)

- 2: geadviseerd (advised)
 - 3: toegestaan (permitted)
- 5: the position in the order in which the feature values are presented on several media

With modern ICT tools (e.g. using a pop-up) it's possible in principle to show all feature types and feature values at once on the screen of a PC, laptop or smartphone. The auction clock and the packing list have restrictions where the presentation order is used to select and present the most relevant feature types and values.

3.11.6 Business rules

Both of the following business rules apply:

- on one moment a feature type for one product cannot be used more than once.
- on one moment a presentation position for one product cannot be used more than once.

3.12 REGULATION TYPE

3.12.1 Definition

A regulation type defines the scope of a regulation.

3.12.2 Relationships

A regulation type may pertain to various regulatory feature types.

3.12.3 Contents code list CR/FR

The code list *REGULATION_TYPE* has the following contents.

Field	Field_name	M/C	Format	Key	contents
1	code_list_id	M	N..3		'12'
2	regulation_type_id	M	N..2	P#	<i>REGULATION_TYPE</i> id
3	dutch-regulation_type_description	M	AN..35		Dutch description
4	entry_date	M	N8		ccyymmdd
5	expire_date	C	N8		ccyymmdd
6	change_date_time	M	N12		ccyymmddhhmm

3.12.4 Example

12;1;verplicht;20050101;;200501021510

3.13 NAME

3.13.1 Definition

A name is:

- a description of an item in a language other than the standard language
- an alternative name
- an abbreviation of an item in the standard language or in a translation
- a common synonym name of an item (e.g. the product name).

For botanical names, Latin is the standard language; for all other descriptions, the standard language is Dutch.

3.13.2 Relationships

Name has the following relationships:

- a name applies to 1 and only 1 occurrence of a certain entity type (product, application, feature type, feature value, feature group or group)
- an occurrence of a certain entity type may have 0, 1 or more different names

- a name is put in 1 and only 1 language
- a name involves 1 and only 1 name type.

3.13.3 Contents code list CN/FN

The code list *NAME* has the following contents.

Field	Field_name	M/C	Format	Key	contents
1	code_list_id	M	N..3		'13'
2	involved_code_list_id	M	N..3	P#	Code list identifier
3	code_list_item_id	M	AN..14	PF#	Code list key field
4	second_code_list_item_id	C	AN..7	PF#	2e code list key field
5	name_type_id	M	N..2	PF#	<i>NAME TYPE</i> identifier
6	language_id	M	AN2	PF#	<i>LANGUAGE</i> identifier
7	name or translation	M	AN..225		Name or translation
8	entry_date	M	N8		ccyymmdd
9	expire_date	C	N8		ccyymmdd
10	change_date_time	M	N12		ccyymmddhhmm

3.13.4 Example

13;2;2;"";1;EN;house plants;20050101;;200501021510
 13;2;2;;1;DE;Zimmerpflanzen;20060923;;200609201455

3.13.5 Explanation

- 2: number of the code list containing the named item
- 3: (first) key value (ID) of the named item in the involved code list
- 4: if the item involves a feature value, then this field will specify the second key value (feature_value) making up the item's primary key. This field can be filled with blanks.
- 5: name type: values in use
- 1: Vertaling (Translation)
 - 2: Alternatieve naam (Alternative name)
 - 3: Afkorting (Abbreviation)
 - 4: Korte omschrijving (Short description)
 - 5:
 - 6: Synoniem naam (Synonym name)
- The codes 1, 3 and 4 are used in this table for flowers and plants; code 6 is used for flower bulbs
- 6: ISO 639 code of the language in which the name is written; in case of formal botanical names, the language code 'la' for Latin is used
- 7: name, description or abbreviation of the involved item in the indicated language.

All items in code lists accompanied by reference data (when this is deemed relevant) are provided with translations at this moment in English, German and French. As required in the future this can be extended with other languages and/or also with other data fields out of these tables.

3.14 NAME TYPE

3.14.1 Definitions

A name type defines what a name denotes and what's its intent.

3.14.2 Relationships

Inverse of the relationships between name and name type described in the previous paragraph.

3.14.3 Contents code list CM/FM

The code list *NAME_TYPE* has the following contents.

Field	Field_name	M/C	Format	Key	contents
1	code_list_id	M	N..3		'14'
2	name_type_id	M	N..2	P#	<i>NAME TYPE</i> identifier
3	dutch_name_type_description	M	AN..35		Name type in Dutch
4	entry_date	M	N8		ccyymmdd
5	expire_date	C	N8		ccyymmdd
6	change_date_time	M	N12		ccyymmddhhmm

3.14.4 Example

14;6;Synoniemnaam;20050101;;200501021510

3.14.5 Explanation

2: code of the name type:

- 1: Vertaling (Translation)
- 2: Alternatieve naam (Alternative name)
- 3: Afkorting (Abbreviation)
- 4: Korte omschrijving (Short description)
- 5:
- 6: Synoniem naam (Synonym name)

3: Dutch name of the name type.

3.15 LANGUAGE

3.15.1 Definition

A language is the way in which members of a language community express thoughts and notions.

3.15.2 Relationships

One particular language may serve to express several names.

3.15.3 Contents code list CL/FL

The code list *LANGUAGE* has the following contents.

Field	Field_name	M/C	Format	Key	contents
1	code_list_id	M	N..3		'15'
2	language_id	M	AN2	P#	<i>LANGUAGE</i> identifier
3	dutch_language_name	M	AN..35		Language in Dutch
4	entry_date	M	N8		ccyymmdd
5	expire_date	C	N8		ccyymmdd
6	change_date_time	M	N12		ccyymmddhhmm

3.15.4 Example

15;EN;Engels;20050101;;200501021510

3.15.5 Explanation

- 2: ISO 639 2-digit language code
3: Dutch name of the language.

3.16 PRODUCT GROUP

3.16.1 Definition

A product group is a classification of similar products in one group that's relevant distinctive from the point of view of the production and trade.

3.16.2 Relationships

A group consists of 0, 1 or more products. The PRODUCT GROUP code list contains groups on level 1, 2, 3 or 4, who are interrelated. Only product groups on level 4 relate with PRODUCT.

N.B. In appendix 2 is explained how the PRODUCT GROEP codes are built up.

3.16.3 Contents code list CO/FO

The code list 'PRODUCTGROUP' has the following contents.

Field	Field_name	M/C	Format	Key	contents
1	code_list_id	M	N..3		16'
2	productgroup_id	M	N8	P#	PRODUCTGROUP identifier
3	dutch_productgroup_description	M	AN..35		Dutch product group description
4	entry_date	M	N8		ccyymmdd
5	expire_date	C	N8		ccyymmdd
6	change_date_time	M	N12		ccyymmddhhmm

3.16.4 Example

16;10000000;Snijbloemen;19800101;;200410191514
16;10300000;Knol- en bolbloemen;19930809;;199512281206
16;10300500;Freesia;19951220;;199520121426
16;10300502;Freesia dubbel;19951220;;200203061046
16;59999999;Bloembollen;20160101;;201601010000

3.16.5 Explanation

With a product group code for example all products of the genus Tulipa can be placed in one group. Grouping of products is also possible for products from the same genus-species or the same genus-cultivar group.

3.17 PRODUCT PHOTO REFERENCE

3.17.1 Definition

A PRODUCT_PHOTO_REFERENCE is an identification and a specification of the digital image belonging to a product.

3.17.2 Relationships

Product_photo_reference has the following relationships:

- a product_photo_reference concerns 1 and only 1 product
- a product_photo_reference has 1 and only 1 photo type.

3.17.3 Contents

The precise contents of the *PRODUCT_PHOTO_REFERENCE* will be examined later and will be included in the distribution set of code list at the moment Floricode rebuilds its code management system.

3.18 PHOTO TYPE

3.18.1 Definition

Photo type specifies the type of a photo.

3.18.2 Relationships

One photo type may apply to several photo references.

3.18.3 Contents

The precise contents of the *PHOTO_TYPE* will be examined later and will be included in the distribution set of code list at the moment Floricode rebuilds its code management system.

At the moment Floricode distinguishes the following photo types:

- Taxonomical photo
- Detailed photo flower
- Detailed photo leaf
- Type of appearance
- Close-up flower / fruit
- Flower with leaf

4. Distribution of code lists

For the distribution of the Linnaeus code lists the 'General Implementation Guideline for Coding', (version 1.3, July 6, 2017) are applicable.

The additional details concerning the Linnaeus code lists are explained in this chapter.

4.1 Management and distribution policy

With regards to the Linnaeus management and distribution policy, the following principles apply.

4.1.1 Responsibilities

Concerning the responsibilities there is a distinction between the role of 'management' of code lists and the role of distribution' of the code lists.

The contents of the Linnaeus code lists are maintained by Floricode as responsible management agency. The tasks of the management include:

- Process requests for new codes
- Maintenance of the existing codes (change of data, deactivate codes)
- Responsible for the correctness, completeness and the correct coherence of the data
- Provide help and information about the contents of the code lists
- Provide information about the procedures for applying codes and the maintenance of codes.

The code lists are also distributed by Floricode. The organisation responsible for the distribution has no responsibility for the contents of the code list. The 'distributor' makes its technical platform available to obtain the code lists. De tasks of the distribution include:

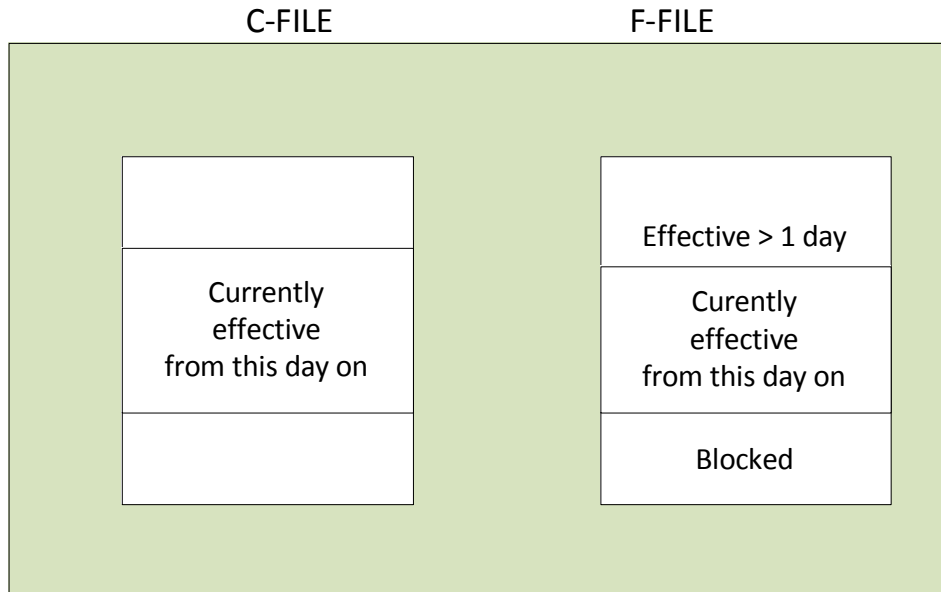
- system management and problem solving by distributing the code lists
- ensuring the availability of the distribution platform
- registering users and distributing login-ID's and passwords (if applicable)
- providing support and technical information about the distribution of the code lists.

4.1.2 Complete set

The starting point for the distribution of code lists is that it should be possible at any time for every partner in the chain to obtain the complete set of Linnaeus code lists, along with any future codes and any blocked codes that refer to historic data, as a cohesive unit from the distribution system. This set of data, to which the technical blueprint applies, concerns the set starting with the letter F, i.e., the F files.

In addition to the F files, C files will be delivered. The C files contain a selection taken from the F files ("C" standing for "current" and "F" standing for "full"). The C files will contain the product codes, with related items, for which the deadline has not yet been reached and for which **the effective date is the date of today**. Items that become effective in the future and are included in the F files will thus not appear in the C file until the time when **the effective date is the date of today**. Items having a deadline and that are included in the F files will thus be removed from the C file as soon as their deadline has passed.

As an example:



Items with an expiry date before 1-1 for 7 years ago are not distributed anymore.

Items depending on products, are only distributed when related to at least one product. Such items are: plant, genus, species and cultivar.

This means that the item plant is there when there is at least one product related to that plant.

Bij aan het product gerelateerde items geldt dat zowel de status van het product als de ingangs- en einde datum van het item zelf een rol spelen bij de beslissing het item aan te leveren.

For to the product related items applies that status of the product as well as the entry and expiry date plays a role by the decision to distribute that item.

Product related items is: product feature type. For this item applies the status of the product as well as the validity of the product feature type itself.

Not to the product related items are: feature type, feature group, feature value, regulation type, photo type, group, application, photo reference, language and name type. These items are selected on the basis of entry and expiry dates.

For the item name applies that only names of distributed attributes are being distributed. And only names of a distributed name type will be delivered.

4.2 Redefine data in code lists

Once a quarter some specific changes of data in code lists will be implemented (the so called quarterly clean up). These type of changes concern:

- Introduction of new product groups and redefining product codes in other product groups
- Redefining names of products or product groups
- Withdrawal of product codes because of the reuse of product names by the breeder

These changes are announced in advance so that these data can be processed correctly in the applications of the users.

4.3 Description of the code list distribution

In this paragraph the distribution set of the Linnaeus code lists for flowers and plants as distributed by Floricode is described. The filenames of these code lists are included.

deze paragraaf wordt de gegevensset(s) beschreven van de productcodelijsten voor de bloemen en planten die door Floricode wordt gedistribueerd. In dit document zijn de bestandnamen van de codelijsten opgenomen.

4.3.1 Assumptions

- ‘General Implementation Guideline for Coding’, version 1.3, July 6, 2017
- The code lists are published as a compressed file. The compression method is PKZIP.

4.3.2 Character set

As a standard character set Floricode uses UTF-8 (a sub set of the ISO/IEC 10646 Unicode for the distribution of all the code lists. *But on this moment **Windows 1252** is in use for the distribution set of the Linnaeus code lists. At the moment of a technical migration to a new version of this distribution set with a new composition this will be changed (foreseen after the rebuilding of the systems of Floricode).*

Furthermore applies:

No semicolons in fields

In this distribution set the semicolon is not used in the code lists.

Special characters in product names

Some applications in the supply chain, like most auction clocks, are unable to display diacritic characters. This implies that product names with special characters may not be correctly displayable on a clock front. The international rules for the naming of ornamental products allow the use of a limited set of these specific characters.

It’s up to the applications of the supply chain partners to process the characters that are not supported in such a way that these are replaced by suitable dummy characters.

4.3.3 Distribution channel

The distribution set can be obtained as follows::

- Via API : <https://api.floricode.com/v2/#>
- On the website Floricode, menu option ‘distribution/masterdata’
- via FTP(S): codes.floricode.com

To get access to the code lists a subscription is required. Therefore an application form is available on the website of Floricode <https://www.floricode.com/en-us/floricode/application-forms>

Starting ‘Uploading’ of the distribution sets via FTP the file aFTPflagNowUploading is placed in the FTP directory. After the uploading the file aFinished appears.

4.3.4 Naming of the distribution set Linnaeus product codes flowers and plants

In charge of the periodically publication a data set is composed by the Floricode code management system consisting of the code lists belonging to the Linnaeus product codes. This data set is transferred for distribution to the Floricode distribution system. The distribution set is composed consisting of the C(urrent) and F(ull) files filled with the correct start- , expire- and change data.

Distribution set	MD-5 Control file	Contents	Frequency
Florecompc2.zip	florecompc2.txt	Linnaeus code lists	Daily

N.B. The naming of this distribution set is not following the Floricode convention for the naming of distribution sets. This set was the first to be published; only in a later phase with the advent of other distribution sets this naming convention was drafted. Only when a migration to a newer version of this distribution set takes place the name will be changed in conformance with these naming conventions.

4.3.5 Contents distribution set Linnaeus product codes flowers and plants

The distribution set is composed as follows:

Florecompc2.zip

File code	Code list	Naming	Frequency	Completeness
1	Product	CP / FP followed by ddmmyy	Daily	Effective/Effective + blocked
2	Application	CA / FA followed by ddmmyy	Daily	Effective/Effective + blocked
3	Plant	CT / FT followed by ddmmyy	Daily	Effective/Effective + blocked
4	Genus	CG / FG followed by ddmmyy	Daily	Effective/Effective + blocked
5	Species	CS / FS followed by ddmmyy	Daily	Effective/Effective + blocked
6	Cultivar	CC / FC followed by ddmmyy	Daily	Effective/Effective + blocked
7	Product Feature	CF / FF followed by ddmmyy	Daily	Effective/Effective + blocked
8	Feature type	CE / FE followed by ddmmyy	Daily	Effective/Effective + blocked
9	Feature value	CV / FV followed by ddmmyy	Daily	Effective/Effective + blocked
10	Feature group	CU / FU followed by ddmmyy	Daily	Effective/Effective + blocked
11	Regulatory feature type	CY / FY followed by ddmmyy	Daily	Effective/Effective + blocked
12	Regulation type	CR / FR followed by ddmmyy	Daily	Effective/Effective + blocked
13	Name	CN / FN followed by ddmmyy	Daily	Effective/Effective + blocked
14	Name type	CM / FM followed by ddmmyy	Daily	Effective/Effective + blocked
15	Language	CL / FL followed by ddmmyy	Daily	Effective/Effective + blocked
16	Product group	CO / FO followed by ddmmyy	Daily	Effective/Effective + blocked

The distribution set is published daily from Monday up and including Friday on 14.00 o'clock.

Appendix 1: Mapping of the technical data model Linnaeus to the exchange of electronic messages

This text is available in Dutch only:

In deze bijlage worden de relaties beschreven tussen de entiteiten in het Linnaeus datamodel en de basis entiteitstypen die worden gebruikt in de bedrijfsapplicaties van gebruikers zoals kwekers, veiling en handelaren. Deze entiteitstypen vormen de basis voor de elektronische berichtuitwisseling ter ondersteuning van de commerciële-, logistieke - en financiële processen van ketenpartijen in de sierteelt.

Het technisch datamodel van Linnaeus beschrijft de volgende entiteitstypen die betrekking hebben op de uitwisseling van informatie tussen ketenpartners over partijen.

Partij (Item) (zie ook: Floricode glossary)

Definitie: Een partij (item) is een hoeveelheid handelswaar waarvan de eenheden exact gelijke kenmerken hebben, beschikbaar op één plaats binnen een tijdsspanne, afkomstig van één leverancier, bestemd voor één of meer afnemers.

Relaties: Partij heeft de volgende relaties:

- een partij betreft 1 en slechts 1 product
- een partij kent geen, één of meer partijenmerken
- van een partij kunnen geen, één of meer partij_fotoreferenties beschikbaar zijn.

Partijenmerk

Definitie: Een partijenmerk is een eigenschap van een partij, uitgedrukt als de waarde van een kenmerktype.

Relaties: Partijenmerk heeft de volgende relaties:

- een partijenmerk betreft 1 en slechts 1 kenmerktype
- een partijenmerk betreft 1 en slechts 1 kenmerkwaarde
- een partijenmerk heeft betrekking op een partij.

Voorbeeld: Voorbeelden van partijenmerken zijn:

- potmaat: 14 cm
- aantal stekken per pot: 4
- transporthoogte: 80 cm

Partij_Fotoreferentie

Definitie: Een partij_fotoreferentie is de identificatie van een foto die behoort tot een bepaalde partij.

Relaties: Partij_fotoreferentie heeft de volgende relaties:

- een partij kan 0, 1 of meer partijfoto's hebben
- een partij_fotoreferentie heeft betrekking op 1 en slechts 1 partij
- een partij_fotoreferentie heeft betrekking op 1 en slechts 1 fototype
-

N.B. De partijfoto's zelf zijn veelal opgeslagen in een aparte fotobeeldbank; de foto's worden niet in de elektronische berichten (orders etc.) meegezonden.

Samengestelde producten

De afgelopen jaren is meerdere malen een analyse uitgevoerd naar de wijze waarop de gegevens van samengestelde producten uitgewisseld kunnen worden. In het vorige datamodel van Linnaeus was

hiervoor reeds een opzet opgenomen, waarbij een partij kan bestaan uit een basisproduct met nul, één of meerdere onderdelen. Omdat dit model in de praktijk in de afgelopen 10 jaar niet als zodanig is geïmplementeerd heeft Floricode besloten dit onderdeel in deze versie van het Linnaeus model achterwege te laten. Dat wil niet zeggen dat het probleem van de 'samengestelde artikelen' is opgelost en dat er geen praktische problemen meer zijn.

In de praktijk wordt veel gebruik gemaakt van 'kwekerartikelnummers' om samengestelde producten uniek te kunnen identificeren; hierbij wordt soms, maar lang nog niet altijd, de GTIN codering van GS1 toegepast voor het toekennen van kwekerartikelnummers.

Appendix 2: Structure of the product group coding

This text is available in Dutch only:

Producten worden gegroepeerd in productgroepen met een groepscode. Met behulp van deze groepscode kan onder andere management informatie worden gegenereerd over aanvoer, omzet, prijs, marktaandeel etc..

Op basis van ontwikkelingen in de markt zoals vernieuwing van het assortiment of omvang van de productgroep worden nieuwe groepscodes toegekend. Deze taak ligt bij de VBN stuurgroep Regelgeving, waarbij Floricode als adviseur is betrokken. Floricode beheert, net als alle coderingen van het Linnaeusmodel, de productgroep codering. Mutaties in de groeps codering worden maximaal vier maal per jaar, ingaande ieder kwartaal, doorgevoerd.

De productgroep code kent een hiërarchische opbouw van 4 niveaus. Dit betekent dat de groepscode een betekenisvolle code is! De codering is als volgt opgebouwd:

1. Toepassing: dit eerste niveau geeft aan of de betreffende productgroep betrekking heeft op snijproducten, kamerplanten of tuinplanten
2. Eigenschap: het tweede niveau wordt gebruikt om producten te groeperen die een aantal globale eigenschappen gemeen heeft. Op dit niveau wordt bijvoorbeeld onderscheid gemaakt tussen bolbloemen, orchideeën en decoratiemateriaal en snijgroen
3. Geslacht: het derde niveau wordt gebruikt voor de indeling naar geslacht
4. Het vierde en laatste niveau geeft een onderverdeling naar onder meer soort (species), bloemtype of verkoopenheid

Een voorbeeld:

Productnaam: Tulipa (Darwinhybride Grp) 'Apeldoorn'

Productcode: 317

Groepscode:	1	03	011	01
	Niveau 1	Niveau 2	Niveau 3	Niveau 4
	Snijproduct	Bol- en knolbloemen	Tulipa	Tulipa enkel

De toepassingscodes op niveau 1 hebben de volgende betekenis:

- 1= snijbloemen
- 2 = kamerplanten
- 3 = tuinplanten

De nummers op niveau 2 hebben in combinatie met de groep snijproducten de volgende betekenis:

- 1 01 = snijbloemen
- 1 02 = trekheesters
- 1 03 = bol- en knolbloemen
- 1 04 = chrysanten
- 1 05 = orchideeën
- 1 07 = snijgroen en decoratiemateriaal

De nummers op niveau 2 hebben in combinatie met de groep kamerplanten de volgende betekenis:

- 2 10 = bes/vluchtplanten
- 2 02 = bloeiende planten

2 03 = bol/knolgewassen
2 04 = bromelia
2 05 = cactus/succulenten
2 06 = groene planten
2 07 = coniferen
2 09 = orchideeën
2 10 = palmen
2 11 = varens
2 12 = vleesetende planten

De nummers op niveau 2 hebben in combinatie met de groep tuinplanten de volgende betekenis:

3 02 = coniferen
3 05 = bomen/heesters/klimplanten
3 06 = patio kamerplanten (gaat vervallen)
3 09 = één- en tweejarige perkplanten
3 10 = vaste planten
3 14 = arrangementen
3 16 = decoratiemateriaal
3 17 = droge bollen en knollen

N.B. vanwege de te verwachten integratie met de productcodering boomkwekerij wordt een nadere specificatie binnen de tuinplanten voorzien.

Appendix 3: Proposal to customise the Linnaeus data model

This text is available in Dutch only:

De analyse door de werkgroep Linnaeus 3.0 in 2016/2017 heeft geleid tot een aantal voorstellen tot uitbreiding van het huidige Linnaeus datamodel. Dit uitgebreide datamodel is hieronder weergegeven. De uitbreidingen worden kort toegelicht:

1. Toevoegen data van samengestelde producten

Bij Floricode worden met regelmaat zogenaamde samengestelde producten geregistreerd en gecodeerd. Voorbeelden hiervan zijn een doos gemengde gerbera's of een tray gemengde Kalanchoe. Voorwaarde hierbij is dat de samenstelling bestaat uit afzonderlijk geregistreerde en gecodeerde producten (cultivars). Tot op heden worden de data van deze samenstellingen niet in de Linnaeus codelijsten opgenomen, terwijl deze data wel beschikbaar zijn.

2. Aansluiting naar de wereld van de retail

Floricode zorgt er voor dat gebruikers in staat zijn in de informatie uitwisseling met ketenpartijen de Floricode standaarden en coderingen te koppelen aan de standaarden van GS1 die gangbaar zijn in de retail. Hierbij gaat het met name om de volgende in de retail gangbare coderingen:

- Productcodering m.b.t. van GTIN codes (t.b.v. scanbare barcodes per artikel)
- GPC codering voor de classificatie van producten
- GLN codering voor het identificeren van bedrijven en locaties
- SSCC codering ter ondersteuning van de logistiek processen.

In het Linnaeus datamodel wordt de koppeling gelegd naar de entiteiten GTIN-product en de GPC brick. Van deze laatste heeft Floricode inmiddels separaat een distributieset beschikbaar.

3. Goederencodering

De koppeling naar de internationale goederencodering (GN codering) t.b.v. de verplichte meldingen aan CBS en douane is voor exporteurs van belang. Floricode heeft hiervoor inmiddels separaat een distributieset beschikbaar.

In het onderstaande data model wordt de koppeling tussen het Linnaeus data model en deze 3 entiteiten weergegeven.

**PROPOSAL TO CUSTOMISE
LINNAEUS MODEL 3.0**

