ICAR

THE GLOBAL STANDARD
FOR LIVESTOCK DATA

Appendix A of Section 15 of ICAR Guidelines – Data Dictionary

Data Dictionary

Network. Guidelines. Certification.

Table of Contents

Tables

Figures

Summary of Changes

Date of Change	Nature of Change
July 2018	Data Dictionary moved from Section 15 Overview into this Appendix A and updated with new version from ADE-WG.
February 2019	Prepared for consideration by General Assembly. Approved on the basis of Procedures and Appendices being updated periodically under control of ADE WG.

1   Introduction

For standardized electronic data exchange a data dictionary is a basic requirement. It provides a complete listing, definition and description of all elements in use.

The xsd files are from now on regarded as the primary data dictionary. Descriptions of the elements have to be maintained inside the xsd files using special xsd:document elements:

```
Example:

<xsd:element name="GetAnimalRequest" type="icar:GetAnimalRequestType">

  <xsd:annotation>

    <xsd:documentation>Message GetAnimalRequest is used to request the core
data describing an animal stored in the farm management
system</xsd:documentation>
```

Figure 1. Example of xsd file contents.

A human readable hyperlink document will be created from the xds files using the export features of tools like e.g. XMLSpy. The dictionary document will be published on the ICAR ADE website together with the specifications and the wsdl/xsd files.

2   Definitions and Terminology

Table 1 contains a list of important definitions for terms and abbreviations used in these guidlelines.

Table 1. Definitions of Terms used in these guidelines.

Term	Definition
wsdl	Web Services Description Language (WSDL /ˈwɪz dəl/) is an XML-based interface definition language that is used for describing the functionality offered by a web service.
XMLSpy	XMLSpy is a proprietary XML editor and integrated development environment (IDE) developed by Altova.
xsd	XSD (XML Schema Definition), a recommendation of the World Wide Web Consortium (W3C), specifies how to formally describe the elements in an Extensible Markup Language (XML) document.

3   Scope

This appendix contains code lists and milking characteristic codes.

4   Code Lists

4.1   IANA_CharacterSetCode

For a full code list see file IANA_CharacterSetCode_20130108.xsd

4.2   IANA_MIMEMedia

In this context only code "application/zip" is used.

For a full code list see file IANA_MIMEMediaType_20130103.xsd

4.3 ICAR_BottleIdentifierCode

The type of bottle identifier method.

Code	Definition
BRC	Barcode
RFD	RFID

4.4 ICAR_ErrorSeverityCode

The error severity code.

Code	Definition
0	Warning
1	Data error
2	Fatal error

4.5 ICAR_GenderCode

The gender code.

Code	Definition
F	Female
M	Male

4.6 ICAR_HeatDetectionMethodCode

The heat detection method.

Code	Definition
C	Chemical
V	Visual
P	Pedometer
O	Other

4.7 ICAR_LabAnalyzerCode

The lab analyzer model.

Code	Definition
11	Foss FT6000
12	Foss FT+
21	Delta FTIR automatic
22	Delta FTIR 600
31	Bentley FTS

4.8   ICAR_LabelCode

The type of animal identifier.

Code	Definition
EVN	EU legal visual identifier
ISM	Animal ISO RFID identifier starting with a manufacturer code (ISO 11 784)
ISL	Animal ISO RFID legal identifier starting with a country code (ISO 11 784)
FAN	Farm animal name
HBN	Herd Book name
FNB	Farm number
NKN	Necklace number

4.9   ICAR_LivestockLocationIdentifierCode

The type of livestock location identifier.

Code	Definition
LEH	Legal Location Identifier
MRO	Location ID provided by a milk recording organization
HBO	Location ID provided by a herd book organization
OLI	Other local location identifier type

4.10   ICAR_LivestockLocationTypeCode

The type of location identifier.

Code	Definition
LEH	Legal European holding
	TODO: No clear idea of the usage at the moment. Item will be removed in the final version if nobody gives good reasons and provides a useful list of codes during the review period.

4.11   ICAR_LocalCodeListCode

This code list conveys a list of items of type udt:CodeType for which a local code list must be provided.

It also provides a list of code list names for locally allowed values in item **AdditionalDataCode** of entity **LocalAdditionalDataType**. These code lists can be identified by the prefix LocalAdditional + the name of the entity wherein the **LocalAdditionalData** entity is used.

Code	Definition
ArrivalReason	Arrival Reason for an animal

Breed	Breed for an animal
DepartureReason	Departure Reason for an animal
InseminationOrganisation	Insemination Organisation
LocalAdditionalAnimalCoreData	Local code for AnimalCoreData
LocalAdditionalAnimalMilkingResultData	Local code for AnimalMilkingResultData
LocalAnimalMilkingLabResult	Local code for AnimalMilkingLabResult
LocalAdditionalArrivalData	Local code for ArrivalData
LocalAdditionalDepartureData	Local code for DepartureData
LocalAdditionalDeviceData	Local code for DeviceData
LocalAdditionalLiveStockLocationData	Local code for LiveStockLocationData
LocalMilkCharacteristic	Codes for locally used milk characteristic
ParturitionEase	Ease level for a parturition

4.12 ICAR_ManufacturerCode

The code for the manufacturer of a device.

Code	Definition
LL	Lely
DL	Delaval
FW	Fullwood
GE	GEA
BM	Boumatic
AF	Afikim

4.13 ICAR_MilkCharacteristicCode

A list of ICAR approved milk characteristcs.

Code	Definition
SCC	Somatic cell count
FAT	Fat
PROTEIN	Protein
LAC	Lactose
UREA	Urea
BLOOD	Blood
ACTETONE	Acetone
BHB	Beta hydroxybutyrate
LDH	Lactate dehydrogenase

PRO	Progesteron
AVGCOND	Average conductivity value of the milk at 25 ° C
MAXCOND	Maximum conductivity value of the milk at 25 ° C
AVGFLWR	AverageFlowRate
MAXFLWR	MaxFlowRate
WEIGHT	Weight of animal

4.14 ICAR_MilkingTypeCodeType

A list of codes representing the types of milking.

Code	Definition
1	Official milk result supplied by milk recording organisation
2	Measure by ICAR approved equipment
3	Measure of not approved equipment

4.15 ICAR_PregnancyCheckCode

A list of codes representing the result types of a pregnancy check.

Code	Definition
U	Unknown
E	Empty
P	Pregnant

4.16 ICAR_PregnancyCheckMethodCode

A list of codes representing the methods of a pregnancy check.

Code	Definition
E	Echography
P	Palpation
O	Other

4.17 ICAR_QuarterCode

A list of codes representing the position of an udder quarter.

Code	Definition
LF	Left front
RF	Right front
LR	Left rear
RR	Right rear

4.18 ICAR_ReproductionEventTypeCode

A list of codes representing the types of reproduction event.

Code	Definition
CAL	Calving
PGC	Pregnancy Check
INS	Artificial insemination, Embryo transfer, Assisted mating
PEM	Period mating
DRO	Dry off
HET	Heat
ABT	Abortion

4.19 ICAR_RequestProcessingStatusCode

A list of codes representing the possible return status of a request processing.

Code	Definition
O	Processed without errors
P	Data accepted for asynchronous processing (client can retrieve the processing result later using provided ticket)
E	Processed and rejected due to errors
W	Processed with warnings

4.20 ICAR_SemenTypeCode

A list of codes representing the semen types.

Code	Definition
F	Fresh
Z	Frozen

4.21 ICAR_SexingSemenCode

A list of codes representing the sexed semen type.

Code	Definition
Y	Sexing semen : Male or Female
F	Sexing semen : Female
M	Sexing semen : Male
N	No sexing semen

4.22 ICAR_SpecieCode

The code for the animal species.

Code	Definition
BUF	Buffalo
OVI	Ovine
BOV	Bovine
GOT	Goat

4.23 ICAR_ValidSampleFillingIndicatorCode

A list of codes representing the milk sample filling indicator.

Code	Definition
0	successful milking (> 80% of expected milk)
1	incomplete (< 20 % of expected milk) or interrupt milking
2	milking complete, measurement not complete (between 20 and 80 %)

4.24 ISO_ISO3AlphaCurrencyCode_20120831

A list of two letter codes representing the currencies according to ISO.

For details see file ISO_ISO3AlphaCurrencyCode_20120831.xsd

4.25 ISO_ISOTwoletterCountryCode

A list of two letter codes representing the countries according to ISO.

For details see file ISO_ISOTwoletterCountryCode_SecondEdition2006VI-13.xsd

4.26 UNECE_AgencyIdentificationCode

A list of codes representing the measurement unit defining agencies according to UNECE.

For details see file UNECE_AgencyIdentificationCode_D12A.xsd

4.27 UNECE_CharacterSetEncodingCode

A list of codes representing character set encodings according to UNECE.

For details see file UNECE_CharacterSetEncodingCode_40106.xsd

4.28 UNECE_MeasurementUnitCommonCode

A list of codes representing measurement units according to UNECE.

For details see file UNECE_MeasurementUnitCommonCode_8.xsd

5   ICAR Milk Characteristics Codes

Measurement of milk characteristics or characteristics related to milking like "weighing during milking" is a quickly evolving domain. For that reason the preference of the ICAR ADE standardization body tended toward defining a flexible container conveying milk characteristics as an open list of key value pairs with the identifying key being the characteristics code.

For details see section 5.1 "Milking.Common Components.MilkCharacteristicsType"

Code	Description	Unit	TYPE	DIGITS DECIMAL PLACES	PATTERN	MIN	MAX	UnitCode UNCEFACT	Annotation UNCEFACT
SCC	Somatic cell count	x1000 cells/ml	NR	4	9990	0	9999	NCL	number of cells
FAT	Fat	percentage	NR	4.2	90.99	0	15.00	VP	percent volume
PROTEIN	Protein	percentage	NR	3.2	0.99	0	9.99	VP	percent volume
LAC	Lactose	percentage	NR	3.2	0.99	0	9.99	VP	percent volume
UREA	Urea	ppm, mg/l	NR	3	990	0	999	M1	milligram per litre
BLOOD	Blood	boolean	NR	1	0|1	0	1	undefined	implied
ACTETONE	Acetone	mmol/l	NR	4.3	0.999	0	9.999	M33	milli mole per liter
BHB	Beta hydroxybutyrate	mmol/l	NR	4.3	0.999	0	9.999	M33	milli mole per liter
LDH	Lactate dehydrogenase	IU/l	NR	4.3	0.999	0	9.999	undefined	implied
PRO	Progesteron	mmol/l	NR	4.3	0.999	0	9.999	M33	milli mole per liter
AVGCOND	Average conductivity value of the milk at 25 ° C	mS/cm	NR	2.1	0.9	0	9.9	H61	millisiemens per centimetre
MAXCOND	Maximum conductivity value of the milk at 25 ° C	mS/cm	NR	2.1	0.9	0	9.9	H61	millisiemens per centimetre
AVGFLWR	AverageFlowRate	Kg/min	NR	3.2	0.99	0	9.99	F31	kilogram per minute
MAXFLWR	MaxFlowRate	Kg/min	NR	3.2	0.99	0	9.99	F31	kilogram per minute
WEIGHT	Weight of animal	Kg	NR	4	9990	0	1500	KGM	kilogram