

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Industrial-process measurement, control and automation – Digital factory
framework –
Part 2: Model elements**

**Mesure, commande et automation dans les processus industriels – Cadre de
l'usine numérique (digital factory) –
Partie 2: Éléments de modèles**



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CONTENTS

FOREWORD.....	7
INTRODUCTION.....	9
1 Scope.....	10
2 Normative references	10
3 Terms, definitions, symbols, abbreviated terms and conventions	10
3.1 Terms and definitions.....	10
3.2 Abbreviated terms.....	10
3.3 Conventions for representing the definition of a model element.....	11
3.3.1 Convention for names.....	11
3.3.2 Representation of specific DataElementTypes	11
3.3.3 Representation of the definition of model elements.....	12
3.3.4 Convention for UML notation	13
4 Definitions of specific DataElementTypes	13
4.1 General.....	13
4.2 ConceptIdentifier	13
4.3 DataValue.....	14
4.4 DateAndTimeOfRelease.....	14
4.5 Description	15
4.6 DETcategory	15
4.7 DFmdataType	15
4.8 DictionarySupplierID	16
4.9 ElementIdentifier.....	16
4.10 ItemCode	16
4.11 LetterSymbol	17
4.12 ParentModelElement.....	17
4.13 PhysicalUnit.....	17
4.14 PreferredName	18
4.15 PSassetIdentifier	18
4.16 ReferenceToCDEL	18
4.17 ReferenceToCDELdefinition.....	19
4.18 ReferenceToDataElement.....	19
4.19 ReferenceToDET	19
4.20 ReferenceToDFasset	20
4.21 ReferenceToDFassetClass	20
4.22 ReferenceToDFassetClassAssociation.....	20
4.23 ReferenceToDFassetClassDefinition.....	21
4.24 ReferenceToGenericAssociation	21
4.25 RoleBasedEquipmentIdentifier	21
4.26 RuleOfRelationship	22
4.27 SearchSpace	22
4.28 SupplierName	22
4.29 SynonymousName	23
4.30 TechnicalDiscipline	23
4.31 TimeCreated	25
4.32 TimeStamp	25
4.33 ValueQuality	25
4.34 VersionIdentifier.....	26

4.35	VersionNumber	26
5	Definitions of model elements	26
5.1	General.....	26
5.2	Model elements related to dictionaries	26
5.2.1	ConceptDictionary	26
5.2.2	ConceptDictionaryEntry	28
5.2.3	Model elements related to permissible values	30
5.3	Model elements related to DataElement.....	33
5.3.1	CollectionOfDataElements (CDEL).....	33
5.3.2	DataElement.....	34
5.4	Model elements related to libraries	35
5.4.1	Library	35
5.4.2	LibraryEntry.....	35
5.5	Model elements related to DigitalFactory	43
5.5.1	DigitalFactory	43
5.5.2	DFasset.....	43
5.5.3	DFassetLink	46
5.5.4	DFassetLinkEndPoint	47
5.5.5	DFassetAssignment.....	47
Annex A	(normative) Data type specification	48
Annex B	(normative) Naming correspondence between IEC 62832-1 and IEC 62832-2.....	49
Annex C	(informative) Mapping of DF model elements onto different data standards	51
C.1	Mapping onto IEC 61360 (all parts) and ISO 13584-42.....	51
C.1.1	General	51
C.1.2	Detailed mapping for ConceptDictionary	52
C.1.3	Detailed mapping for DFassetClassDefinition	53
C.1.4	Detailed mapping for CDELdefinition	53
C.1.5	Detailed mapping for DET.....	54
C.2	Mapping onto ISO 22745 (all parts).....	55
C.2.1	General	55
C.2.2	Detailed mapping for ConceptDictionary	56
C.2.3	Detailed mapping for DFassetClassDefinition	56
C.2.4	Detailed mapping for CDELdefinition	57
C.2.5	Detailed mapping for DET.....	57
C.2.6	Detailed mapping for Library.....	58
C.2.7	Detailed mapping for DFassetClass	58
C.2.8	Detailed mapping for DataElement.....	59
Annex D	(informative) UML model.....	60
D.1	ConceptDictionary.....	60
D.2	Model elements related to DataElements	61
D.3	Library	62
D.4	Digital Factory	64
Annex E	(informative) UML notation.....	69
E.1	General.....	69
E.2	Class diagram.....	69
E.3	Object diagram	72
Bibliography	74

Figure A.1 – Data types overview	48
Figure D.1 – ConceptDictionary and related class definitions and type.....	60
Figure D.2 – Permissible values.....	61
Figure D.3 – Model elements related to DataElements	61
Figure D.4 – Library	62
Figure D.5 – DFassetClass	62
Figure D.6 – DFassetClass showing origin of definitions	63
Figure D.7 – DFassetClass for basic types of PS asset.....	63
Figure D.8 – Composite DFassetClass.....	64
Figure D.9 – A DigitalFactory is a specific type of DFasset	64
Figure D.10 – DFasset structure	65
Figure D.11 – Digital Factory example	66
Figure D.12 – Relationship between DFassets	66
Figure D.13 – Example: DigitalFactory with composite DFasset	67
Figure D.14 – Example: DFassetLink and DER	68
Figure D.15 – Example: DFassetAssignment	68
Figure E.1 – Note.....	69
Figure E.2 – Class	69
Figure E.3 – Association	70
Figure E.4 – Composition.....	70
Figure E.5 – Alternative representation of composition	70
Figure E.6 – Aggregation	70
Figure E.7 – Containment	70
Figure E.8 – Dependency.....	71
Figure E.9 – Abstract class, generalization and interface	71
Figure E.10 – Multiplicity.....	72
Figure E.11 – Association class	72
Figure E.12 – Class	72
Figure E.13 – Link.....	73
Figure E.14 – Link instantiated from composition	73
Figure E.15 – Link instantiated from aggregation	73
Table 1 – Template for representing the definition of specific DataElementTypes	11
Table 2 – Template for representing the definition of model elements	12
Table 3 – Definition of ConceptIdentifier	14
Table 4 – Definition of DataValue.....	14
Table 5 – Definition of DateAndTimeOfRelease	14
Table 6 – Definition of Description	15
Table 7 – Definition of DETcategory.....	15
Table 8 – Definition of DFMdataType	15
Table 9 – Definition of DictionarySupplierID	16
Table 10 – Definition of ElementIdentifier.....	16
Table 11 – Definition of ItemCode	16

Table 12 – Definition of LetterSymbol	17
Table 13 – Definition of ParentModelElement.....	17
Table 14 – Definition of PhysicalUnit.....	17
Table 15 – Definition of PreferredName	18
Table 16 – Definition of PSassetIdentifier	18
Table 17 – Definition of ReferenceToCDEL.....	18
Table 18 – Definition of ReferenceToCDELdefinition.....	19
Table 19 – Definition of ReferenceToDataElement.....	19
Table 20 – Definition of ReferenceToDET	19
Table 21 – Definition of ReferenceToDFasset	20
Table 22 – Definition of ReferenceToDFassetClass	20
Table 23 – Definition of ReferenceToDFassetClassAssociation.....	20
Table 24 – Definition of ReferenceToDFassetClassDefinition.....	21
Table 25 – Definition of ReferenceToGenericAssociation	21
Table 26 – Definition of RoleBasedEquipmentIdentifier	21
Table 27 – Definition of RuleOfRelationship.....	22
Table 28 – Definition of SearchSpace	22
Table 29 – Definition of SupplierName	22
Table 30 – Definition of SynonymousName	23
Table 31 – Definition of TechnicalDiscipline.....	24
Table 32 – Definition of TimeCreated.....	25
Table 33 – Definition of TimeStamp	25
Table 34 – Definition of ValueQuality	25
Table 35 – Definition of VersionIdentifier	26
Table 36 – Definition of VersionNumber	26
Table 37 – Definition of ConceptDictionary	27
Table 38 – Definition of DFdictionary	27
Table 39 – Definition of ConceptDictionaryEntry	28
Table 40 – Definition of DFassetClassDefinition.....	29
Table 41 – Definition of CDELdefinition.....	29
Table 42 – Definition of DataElementType	30
Table 43 – Definition of RangeOfPermissibleValues	30
Table 44 – Definition of ListOfPermissibleValues	31
Table 45 – Definition of MaximumPermissibleValue	31
Table 46 – Definition of MinimumPermissibleValue	32
Table 47 – Definition of PermissibleValue	32
Table 48 – Definition of CollectionOfDataElements	33
Table 49 – Definition of DataElement.....	34
Table 50 – Definition of Library	35
Table 51 – Definition of LibraryEntry	36
Table 52 – Definition of LibraryEntryHeader.....	36
Table 53 – Definition of DFassetClass	37
Table 54 – Definition of DFassetClassHeader	37

Table 55 – Definition of DFassetClassBody	38
Table 56 – Definition of DFassetClassAssociation	38
Table 57 – Definition of DFassetClassAssociationEndPoint	39
Table 58 – Definition of GenericAssociation.....	39
Table 59 – Definition of GenericAssociationEndPoint.....	40
Table 60 – Definition of DataElementRelationship.....	40
Table 61 – Definition of DERendPoint.....	41
Table 62 – Definition of ViewElement.....	41
Table 63 – Definition of DigitalFactory	43
Table 64 – Definition of DFasset.....	43
Table 65 – Definition of DFassetHeader.....	44
Table 66 – Definition of DFassetBody	45
Table 67 – Definition of DFassetLink.....	46
Table 68 – Definition of DFassetLinkEndPoint	47
Table 69 – Definition of DFassetAssignment.....	47
Table A.1 – Data types used within the DF framework	48
Table B.1 – Cross reference table.....	49
Table C.1 – Mapping of DF model elements onto IEC 61360 (all parts) and ISO 13584-42....	51
Table C.2 – Mapping of datatypes.....	52
Table C.3 – Detailed mapping of ConceptDictionary.....	52
Table C.4 – Detailed mapping of DFassetClassDefinition.....	53
Table C.5 – Detailed mapping of CDELdefinition.....	53
Table C.6 – Detailed mapping of DET	54
Table C.7 – Mapping of DF model elements onto ISO 22745 (all parts).....	55
Table C.8 – Detailed mapping of ConceptDictionary.....	56
Table C.9 – Detailed mapping of DFassetClassDefinition.....	56
Table C.10 – Detailed mapping of CDELdefinition.....	57
Table C.11 – Detailed mapping of DET	57
Table C.12 – Detailed mapping of Library	58
Table C.13 – Detailed mapping of DFassetClass	58
Table C.14 – Detailed mapping of DFassetClassHeader	58
Table C.15 – Detailed mapping of DFassetClassBody.....	59
Table C.16 – Detailed mapping of DataElement	59

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**INDUSTRIAL-PROCESS MEASUREMENT, CONTROL
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Part 2: Model elements**FOREWORD**

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The text of this International Standard is based on the following documents:

FDIS	Report on voting
65/830/FDIS	65/841/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of the IEC 62832 series, published under the general title, *Industrial-process measurement, control and automation – Digital Factory framework*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INTRODUCTION

IEC 62832 provides a framework used for establishing and maintaining the digital representations of production systems, including the representation of the elements of the production systems and of the relationships between these elements. The framework is intended also to support the exchange of information about these elements.

The framework aims at reducing the interoperability barriers for exchange of information for the various activities related to production systems. The main advantages of this method are that all information related to a production system is described in a standardized manner, and it can be used and modified through its entire life cycle. The method defined in IEC 62832 is kept as generic as possible in order to enable its use in several industrial sectors.

While IEC 62832-1 describes the general principles of the DF reference model together with its most important model elements, this part of IEC 62832 provides a technology-independent definition of all model elements of the DF reference model.

The intention of this document is to provide a common base for implementation of the DF framework using different technologies (for example different dictionary technologies and different engineering data formats). Proposals for such implementations are provided in Annex C.

The data type specification provided with this document is intended to allow mapping of the DF framework to different dictionaries.

Two types of templates for representation, namely for specific DataElementTypes and for model elements, are described in 3.3. Based on these templates, definitions of specific DataElementTypes are given in Clause 4, and definitions of model elements, using the DataElementTypes are given in Clause 5.

To allow broad use of the framework, the requirements for these two sets of definitions are kept as minimal as possible.

If the concepts of DF framework are applied to provide model elements for different engineering domains, domain-specific data specifications will be used (for example based on IEC 62656-1).

INDUSTRIAL-PROCESS MEASUREMENT, CONTROL AND AUTOMATION – DIGITAL FACTORY FRAMEWORK –

Part 2: Model elements

1 Scope

This part of IEC 62832 specifies detailed requirements for model elements of the Digital Factory framework. It defines the nature of the information provided by the model elements, but not the format of this information.

NOTE General requirements for the main model elements of the DF reference model are specified in IEC 62832-1.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 62832-1:2020, *Industrial-process measurement, control and automation – Digital Factory framework – Part 1: General principles*

ISO/IEC 6523 (all parts), *Information technology – Structure for the identification of organizations and organization parts*

ISO TS 29002-5:2009, *Industrial automation systems and integration – Exchange of characteristic data – Part 5: Identification scheme*

IETF RFC 3986, *Uniform Resource Identifier (URI): Generic Syntax*, available at <<http://www.ietf.org>> [viewed 2020-07-28]

3 Terms, definitions, symbols, abbreviated terms and conventions

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 62832-1 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.2 Abbreviated terms

For the purposes of this document, the following abbreviated terms apply.

CDEL	Collection of Data Elements
DER	Data Element Relationship
DET	Data Element Type (see IEC 62832-1)
DF	Digital Factory (as qualifier)