

STN	Formát na výmenu technických údajov pri projektovaní priemyselných riadiacich systémov. Automatizácia značkovacieho jazyka (AML). Časť 2: Knižnice tried funkcií.	STN EN 62714-2 18 4022
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Engineering data exchange format for use in industrial automation systems engineering - Automation markup language - Part 2: Role class libraries

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 09/15

Obsahuje: EN 62714-2:2015, IEC 62714-2:2015

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EUROPEAN STANDARD

EN 62714-2

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English Version

Engineering data exchange format for use in industrial
automation systems engineering - Automation markup
language - Part 2: Role class libraries
(IEC 62714-2:2015)

Format d'échange de données techniques pour une
utilisation dans l'ingénierie des systèmes d'automatisation
industrielle - Automation markup language - Partie 2:
Bibliothèques de classes de rôles
(IEC 62714-2:2015)

Datenaustauschformat für Planungsdaten industrieller
Automatisierungssysteme - Automation markup language -
Teil 2: Rollenbibliotheken
(IEC 62714-2:2015)

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Foreword

The text of document 65E/300/CDV, future edition 1 of IEC 62714-2, prepared by SC 65E "Devices and integration in enterprise systems", of IEC/TC 65 "Industrial-process measurement, control and automation" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62714-2:2015.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2016-02-04
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IEC 61512-1	NOTE	Harmonized as EN 61512-1.
IEC 62264-1:2013	NOTE	Harmonized as EN 62264-1:2013 (not modified).

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61360-4	-	Standard data element types with associated classification scheme for electric components - Part 4: IEC reference collection of standard data element types and component classes	EN 61360-4	-
IEC 62424	2008	Representation of process control engineering - Requests in P&I diagrams and data exchange between P&ID tools and PCE-CAE tools	EN 62424	2009
IEC 62714-1	2014	Engineering data exchange format for use in industrial automation systems engineering - Automation markup language - Part 1: Architecture and general requirements	EN 62714-1	2014



INTERNATIONAL STANDARD

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**Engineering data exchange format for use in industrial automation systems
engineering – Automation markup language –
Part 2: Role class libraries**

**Format d'échange de données techniques pour une utilisation dans l'ingénierie
des systèmes d'automatisation industrielle – Automation markup language –
Partie 2: Bibliothèques de classes de rôles**





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**Engineering data exchange format for use in industrial automation systems
engineering – Automation markup language –
Part 2: Role class libraries**

**Format d'échange de données techniques pour une utilisation dans l'ingénierie
des systèmes d'automatisation industrielle – Automation markup language –
Partie 2: Bibliothèques de classes de rôles**

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CONTENTS

FOREWORD.....	7
INTRODUCTION.....	9
1 Scope.....	11
2 Normative references	11
3 Terms, definitions and abbreviations	11
3.1 Terms and definitions.....	11
3.2 Abbreviations	12
4 Conformity.....	12
5 AML role classes	13
5.1 Structure and references.....	13
5.2 AML role class library for discrete manufacturing industry – AutomationMLDMIRoleClassLib	14
5.2.1 General	14
5.2.2 RoleClass DiscManufacturingEquipment.....	15
5.2.3 RoleClass Transport	16
5.2.4 RoleClass Storage	16
5.2.5 RoleClass Fixture	16
5.2.6 RoleClass Gate	16
5.2.7 RoleClass Robot.....	17
5.2.8 RoleClass Tool	17
5.2.9 RoleClass Carrier	17
5.2.10 RoleClass Machine	17
5.2.11 RoleClass StaticObject	18
5.3 AML role class library for continuous manufacturing industry – AutomationMLCMIRoleClassLib	18
5.3.1 General	18
5.3.2 RoleClass ContManufacturingEquipment	19
5.4 AML role class library for batch manufacturing industry – AutomationMLBMIRoleClassLib	19
5.4.1 General	19
5.4.2 RoleClass BatchManufacturingEquipment.....	20
5.5 AML role class library for control systems – AutomationMLCSRoleClassLib	20
5.5.1 General	20
5.5.2 RoleClass ControlEquipment	21
5.5.3 RoleClass Communication	22
5.5.4 RoleClass ControlHardware	22
5.5.5 RoleClass PC	22
5.5.6 RoleClass IPC	22
5.5.7 RoleClass Handheld	22
5.5.8 RoleClass EmbeddedDevice	23
5.5.9 RoleClass Sensor	23
5.5.10 RoleClass Actuator	23
5.5.11 RoleClass Controller	23
5.5.12 RoleClass PLC	24
5.5.13 RoleClass NC	24
5.5.14 RoleClass RC	24

5.5.15	RoleClass PAC	24
Annex A (informative)	AML extended role class library	25
A.1	General	25
A.2	RoleClass PLCFacet	26
A.3	RoleClass HMIFacet	27
A.4	RoleClass Enterprise	27
A.5	RoleClass Site	28
A.6	RoleClass Area	28
A.7	RoleClass ProductionLine	29
A.8	RoleClass WorkCell	29
A.9	RoleClass ProcessCell	29
A.10	RoleClass Unit	30
A.11	RoleClass ProductionUnit	30
A.12	RoleClass StorageZone	30
A.13	RoleClass StorageUnit	31
A.14	RoleClass Turntable	31
A.15	RoleClass Conveyor	31
A.16	RoleClass BeltConveyor	32
A.17	RoleClass RollConveyor	32
A.18	RoleClass ChainConveyor	32
A.19	RoleClass PalletConveyor	32
A.20	RoleClass OverheadConveyor	33
A.21	RoleClass LiftingTable	33
A.22	RoleClass AGV	33
A.23	RoleClass Transposer	33
A.24	RoleClass CarrierHandlingSystem	34
A.25	RoleClass BodyStore	34
A.26	RoleClass Lift	34
A.27	RoleClass Rollerbed	34
A.28	RoleClass StationaryTool	35
A.29	RoleClass MovableTool	35
A.30	RoleClass ControlCabinet	35
A.31	RoleClass IODevice	35
A.32	RoleClass HMI	36
A.33	RoleClass WarningEquipment	36
A.34	RoleClass ActuatingDrive	36
A.35	RoleClass MotionController	36
A.36	RoleClass Panel	37
A.37	RoleClass MeasuringEquipment	37
A.38	RoleClass Clamp	37
A.39	RoleClass ProcessController	37
A.40	RoleClass Loader	38
A.41	RoleClass Unloader	38
Annex B (informative)	Examples of usage of RoleClasses	39
B.1	General	39
B.2	Example plant unit	39
Annex C (informative)	User-defined RoleClass libraries	44
C.1	General	44
C.2	External semantics of attributes	45

Annex D (informative) XML representation of AML libraries	46
D.1 AutomationMLDMIRoleClassLib	46
D.2 AutomationMLCMIRoleClassLib	46
D.3 AutomationMLBMIRoleClassLib	47
D.4 AutomationMLCSRoleClassLib	47
D.5 AutomationMLExtendedRoleClassLib	48
Bibliography	51
Figure 1 – Overview of the engineering data exchange format (AML)	9
Figure 2 – AutomationMLBaseRoleClassLib defined in IEC 62714-1:2014	13
Figure 3 – AutomationMLDMIRoleClassLib	15
Figure 4 – XML grid of the AutomationMLDMIRoleClassLib	15
Figure 5 – XML text of the AutomationMLDMIRoleClassLib	15
Figure 6 – AutomationMLCMIRoleClassLib	18
Figure 7 – XML grid of the AutomationMLCMIRoleClassLib	18
Figure 8 – XML text of the AutomationMLCMIRoleClassLib	19
Figure 9 – AutomationMLBMIRoleClassLib	19
Figure 10 – XML grid of the AutomationMLBMIRoleClassLib	19
Figure 11 – XML text of the AutomationMLBMIRoleClassLib	19
Figure 12 – AutomationMLCSRoleClassLib	20
Figure 13 – XML grid of the AutomationMLCSRoleClassLib	21
Figure 14 – XML text of the AutomationMLCSRoleClassLib	21
Figure A.1 – AutomationMLExtendedRoleClassLib	26
Figure A.2 – Resource structure [SOURCE: IEC 62264-1:2013]	28
Figure B.1 – Usage of roles in the mapping process	39
Figure B.2 – Example for usage of roles	40
Figure B.3 – Example AML model	40
Figure B.4 – Example InstanceHierarchy for usage of roles	41
Figure B.5 – XML grid of the example InstanceHierarchy for usage of roles	41
Figure B.6 – XML text of the example InstanceHierarchy for usage of roles	41
Figure B.7 – External RoleClassLib reference	42
Figure B.8 – Usage of external role class in example	42
Figure B.9 – Example SystemUnitClass library for usage of roles	43
Figure B.10 – XML grid of the example SystemUnitClass library for usage of roles	43
Figure B.11 – XML text of the example SystemUnitClass library for usage of roles	43
Figure C.1 – AML user-defined RoleClassLib FoodAndBeverage	44
Figure C.2 – Example for external attribute semantics	45
Table 1 – Abbreviations	12
Table 2 – Structure of AML role class libraries	13
Table 3 – RoleClass DiscManufacturingEquipment	16
Table 4 – RoleClass Transport	16
Table 5 – RoleClass Storage	16
Table 6 – RoleClass Fixture	16

Table 7 – RoleClass Gate	17
Table 8 – RoleClass Robot	17
Table 9 – RoleClass Tool	17
Table 10 – RoleClass Carrier	17
Table 11 – RoleClass Machine	18
Table 12 – RoleClass StaticObject	18
Table 13 – RoleClass ContManufacturingEquipment	19
Table 14 – RoleClass BatchManufacturingEquipment	20
Table 15 – RoleClass ControlEquipment	21
Table 16 – RoleClass Communication	22
Table 17 – RoleClass ControlHardware	22
Table 18 – RoleClass PC	22
Table 19 – RoleClass IPC	22
Table 20 – RoleClass Handheld	23
Table 21 – RoleClass EmbeddedDevice	23
Table 22 – RoleClass Sensor	23
Table 23 – RoleClass Actuator	23
Table 24 – RoleClass Controller	23
Table 25 – RoleClass PLC	24
Table 26 – RoleClass NC	24
Table 27 – RoleClass RC	24
Table 28 – RoleClass PAC	24
Table A.1 – RoleClass PLCFacet	27
Table A.2 – RoleClass HMIFacet	27
Table A.3 – RoleClass Enterprise	27
Table A.4 – RoleClass Site	28
Table A.5 – RoleClass Area	29
Table A.6 – RoleClass ProductionLine	29
Table A.7 – RoleClass WorkCell	29
Table A.8 – RoleClass ProcessCell	30
Table A.9 – RoleClass Unit	30
Table A.10 – RoleClass ProductionUnit	30
Table A.11 – RoleClass StorageZone	31
Table A.12 – RoleClass StorageUnit	31
Table A.13 – RoleClass Turntable	31
Table A.14 – RoleClass Conveyor	32
Table A.15 – RoleClass BeltConveyor	32
Table A.16 – RoleClass RollConveyor	32
Table A.17 – RoleClass ChainConveyor	32
Table A.18 – RoleClass PalletConveyor	33
Table A.19 – RoleClass OverheadConveyor	33
Table A.20 – RoleClass LiftingTable	33
Table A.21 – RoleClass AGV	33

Table A.22 – RoleClass Transposer	34
Table A.23 – RoleClass CarrierHandlingSystem.....	34
Table A.24 – RoleClass BodyStore	34
Table A.25 – RoleClass Lift.....	34
Table A.26 – RoleClass Rollerbed	35
Table A.27 – RoleClass StationaryTool	35
Table A.28 – RoleClass MovableTool.....	35
Table A.29 – RoleClass ControlCabinet	35
Table A.30 – RoleClass IODevice	36
Table A.31 – RoleClass HMI	36
Table A.32 – RoleClass WarningEquipment	36
Table A.33 – RoleClass ActuatingDrive.....	36
Table A.34 – RoleClass MotionController.....	37
Table A.35 – RoleClass Panel	37
Table A.36 – RoleClass MeasuringEquipment.....	37
Table A.37 – RoleClass Clamp	37
Table A.38 – RoleClass ProcessController.....	38
Table A.39 – RoleClass Loader.....	38
Table A.40 – RoleClass Unloader	38

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ENGINEERING DATA EXCHANGE FORMAT FOR USE
IN INDUSTRIAL AUTOMATION SYSTEMS ENGINEERING –
AUTOMATION MARKUP LANGUAGE –**
Part 2: Role class libraries**FOREWORD**

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International Standard IEC 62714-2 has been prepared by subcommittee 65E: Devices and integration in enterprise systems, of IEC technical committee 65: Industrial-process measurement, control and automation.

The text of this standard is based on the following documents:

CDV	Report on voting
65E/300/CDV	65E/390/RVC

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

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

A list of all parts in the IEC 62714 series, published under the general title *Engineering data exchange format for use in industrial automation systems engineering – Automation Markup Language*, can be found on the IEC website.

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

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
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INTRODUCTION

The data exchange format defined in IEC 62714 (Automation Markup Language, AML) is an XML schema based data format and has been developed in order to support the data exchange between engineering tools in a heterogeneous engineering tool landscape. IEC 62714-1 gives an overview about the format.

The goal of AML is to interconnect engineering tools from the existing heterogeneous tool landscape in their different disciplines, e.g. mechanical plant engineering, electrical design, process engineering, process control engineering, HMI development, PLC programming, robot programming, etc.

AML stores engineering information following the object oriented paradigm and allows modelling of physical and logical plant components as data objects encapsulating different aspects. An object may consist of other sub-objects and may itself be part of a larger composition or aggregation. Typical objects in plant automation comprise information on topology, geometry, kinematics and logic, whereas logic comprises sequencing, behaviour and control.

AML combines existing industry data formats that are designed for the storage and exchange of different aspects of engineering information. These data formats are used on “as-is” basis within their own specifications and are not branched for AML needs.

The core of AML is the top-level data format CAEX that connects the different data formats. Therefore, AML has an inherent distributed document architecture.

Figure 1 illustrates the basic AML architecture and the distribution of topology, geometry, kinematic and logic information.

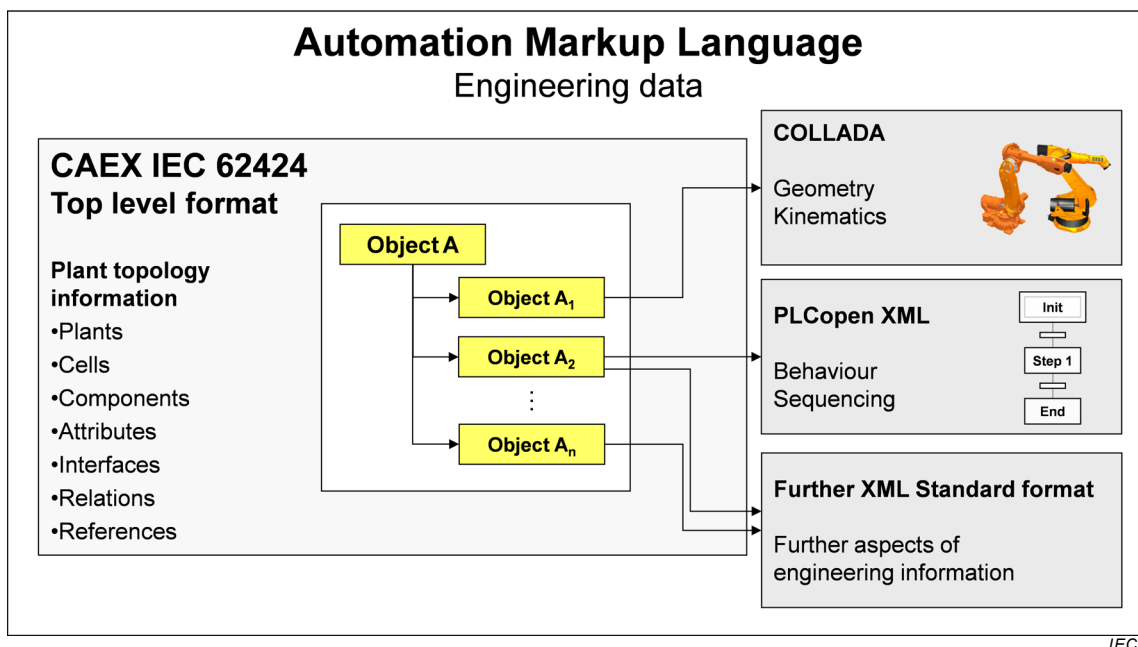


Figure 1 – Overview of the engineering data exchange format (AML)

Due to the different aspects of AML, IEC 62714 consists of different parts focussing on different aspects.

- IEC 62714-1: Architecture and general requirements

This part specifies the general AML architecture, the modelling of engineering data, classes, instances, relations, references, hierarchies, basic AML libraries and extended AML concepts.

- IEC 62714-2: Role class libraries

This part specifies additional AML libraries.

- IEC 62714-3¹: Geometry and kinematics

This forthcoming part is intended to specify the modelling of geometry and kinematics information.

In addition, another part (possibly Part 4) will specify the modelling of logics, sequencing, behaviour and control related information.

Further parts may be added in the future in order to interconnect further data standards to AML.

Clause 5 describes normative role class libraries within AML.

Annex A describes the informative AML extended role class library.

Annex B gives an informative example for the usage of AML role classes.

Annex C shows some user-defined role class libraries of different origins.

Annex D gives an informative XML representation of the libraries defined in this part of IEC 62714.

¹ Under consideration.

ENGINEERING DATA EXCHANGE FORMAT FOR USE IN INDUSTRIAL AUTOMATION SYSTEMS ENGINEERING – AUTOMATION MARKUP LANGUAGE –

Part 2: Role class libraries

1 Scope

The IEC 62714 series specifies an engineering data exchange format for use in industrial automation systems.

This part of IEC 62714 specifies normative as well as informative AML role class libraries for the modelling of engineering information for the exchange between engineering tools in the plant automation area by means of AML. Moreover, it presents additional user defined libraries as an example. Its provisions apply to the export/import applications of related tools.

This part of IEC 62714 does not define details of the data exchange procedure or implementation requirements for the import/export tools.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 62714-1:2014, *Engineering data exchange format for use in industrial automation systems engineering – Automation Markup Language – Part 1: Architecture and general requirements*

IEC 61360-4, *Standard data element types with associated classification scheme for electric components – Part 4: IEC reference collection of standard data element types and component classes* (available at <http://std.iec.ch/iec61360>)

IEC 62424:2008, *Representation of process control engineering – Requests in P&I diagrams and data exchange between P&ID tools and PCE-CAE tools*

Extensible Markup Language (XML) 1.0:2004, *W3C Recommendation* (available at <http://www.w3.org/TR/2004/REC-xml-20040204/>)

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