



10.0.02—  
2019/

16739-1:2018

(IFC)

1

(ISO 16739-1:2018,  
Industry Foundation Classes (IFC) for data sharing in the construction and facility  
management industries — Part 1: Data schema, IDT)



2019

1 ( - ) 4 -

2 705 « -

»

3 5 2019 . 278-

4 16739-1:2018 « (IFC) . 1. » (ISO 16739-1:2018 «Industry Foundation Classes (IFC) for data sharing in the construction and facility management industries — Part 1: Data schema». IDT). 4—8 A—F HTML, (CD- ), -

1.5—2012 ( 3.5). -

,

5

29 2015 . N9 162- « 26 ». ( 1 ) « », « ». ( ) « ». ,

(www.gost.ru)

1	.....	1
2	.....	2
3	.....	3
4	(CD- ).....	6
5	(CD- ).....	11
6	(CD- ).....	11
7	(CD- ).....	11
8	(CD- ).....	11
	(        )        (CD- ).....	13
8	(        )        (CD- ).....	14
	(        )        (CD- ).....	15
D	(        )        (CD- ).....	16
	(        )        (CD- ).....	17
F	(        )        (CD- ).....	18
	(        ).....	19
	.....	20

ISO 16739-1:2018

IFC 4

2

1.

16739-1:2018  
buildingSMART International Limited.

EXPRESS

IFC.

(

« »

EXPRESS

«PascalCase»

EXPRESS

«PascalCase»

«Pset\_»

«PascalCase»;

«Qto\_»

«PascalCase».

1.

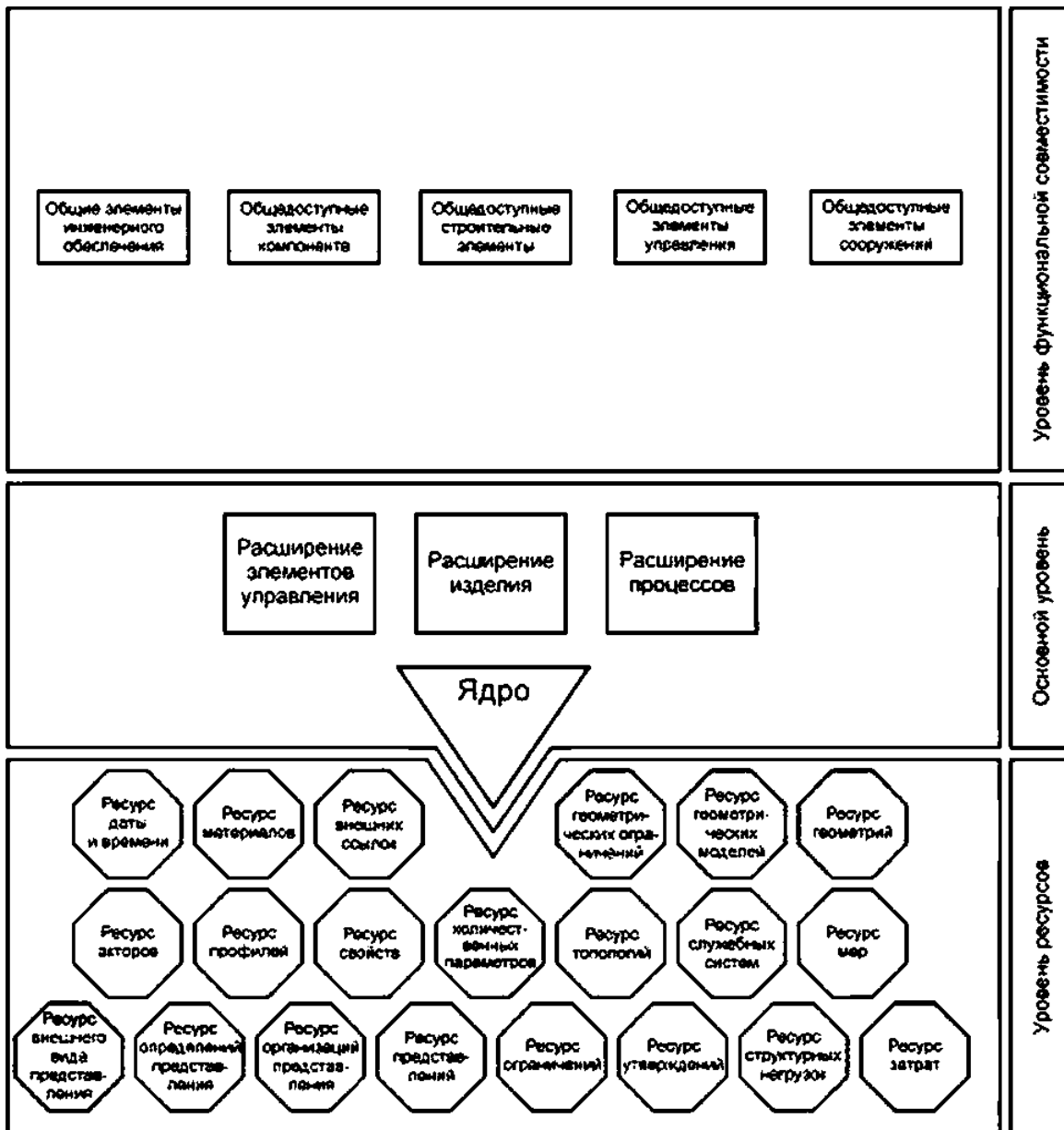
2.

3.

4.



Уровень функциональных областей



Уровень функциональной совместимости

Основной уровень

Уровень ресурсов



(IFC)

1

System of standards on information modeling of buildings and structures. Industry Foundation Classes (IFC) for data sharing in the construction and facility management industries. Part 1. Data schema

— 2019—09—01

1

IFC

( I ).

-

-

-

EXPRESS

EXPRESS,  
XML (XSD).  
EXPRESS

10303-11.  
W3C XML.

XML

10303-28.

-

-

-

«

(XML).

10303-21;  
XML W3C.

:

IFC

EXPRESS

XML.

(MVD).

MVD.

.

-

-

1.1

IFC:

-

BIM.

:

-

,

:





3

3.1

3.1.1

(actor): , ( , . ). \*

3.1.2

(attribute): ,

— : , .

3.1.3

(direct attribute): ,

(Set) ( ), (List) ( )  
 (Array) ( ), 10303\*11.

— « »

3.1.4

(inverse attribute): ,

— « » - .

3.1.5

(derived attribute): , \*

3.1.6

(constraints on attributes): , -

1 — : . -

2 — , , , -

3.1.7

(classification): -

3.1.8

(constraint): , .

— « ».

3.1.9

(control): , ,

— .

3.1.10

(dictionary): , , .

3.1.11

(element): , -

— .

3.1.12

(element occurrence):

3.1.13

(entity): , -

10303-11.

— « » ,  
 ( ) .

3.1.14

(external reference): , -

3.1.15

(feature): , ,

3.1.16

(group): , .

— .

3.1.17	(identification):	,	-
3.1.18	(instance):	.	-
3.1.19	(library):	,	-
3.1.20	(model):	,	-
	1 —		
	2 —	IFC.	-
3.1.21	(model view):	,	-
	(		-
3.1.22	(concept):	,	-
3.1.23	(concept template):	,	-
3.1.24	(concept root):	,	-
3.1.25	(object):	,	-
3.1.26	(object occurrence):	,	-
	« », « », « »		
3.1.27	(object type):	,	-
	« », « », « »		
3.1.28	(process):	,	-
3.1.29	(product):	,	-

3.1.30	(project):	,	,	*
—				-
3.1.31	(property):	,		
—	«	»	«	» 8
3.1.32	(property occurrence):	,		
3.1.33	(property template):	,		
—	«	»	8	
3.1.34	(property set occurrence):	,		
3.1.35	(property set template):	,		-
—	«	»		
3.1.36	(proxy):	,	-	
—				
3.1.37	(quantity):	,	:	
3.1.36	(relationship):	,		
3.1.39	(representation):	,		-
3.1.40	(resource):	,	,	-
1 —				
2 —	«	»		
3.1.41	(schema):	,		-
—				
EXPRESS XML-				
3.1.42	(space):	,		
—	«	»		
3.1.43	(type):	,		
—	«typedet»	«value type»		-
3.1.44	(select):	,		-
1 —	«Select»	10303-11.		
2 —	«	»		

3.1.45

(enumeration):

- 1 — «enumeration» 10303-11.
- 2 — « »

3.2

AEC-FM —

8IM —

GUID —

IFC —

IFD —

MVD —

SPF —

STEP —

URI —

UUID —

XML —

step;

4

ePorts»

«Ports»,

nswimtuihia.uiffrretibi

	X
	X
	X
	X
	X
	X
	X











5

IFC. -

IfcRoot

- 5.1 IfcKernel
- 5.2 IfcControlExtension
- 5.3 IfcProcessExtension
- 5.4 IfcProductExtension

6

- 6.1 IfcSharedBldgEtements
- 6.2 IfcSharedBldgServiceEtements
- 6.3 IfcSharedComponentElements
- 6.4 IfcSharedFaciilitiesElements
- 6.5 IfcSharedMgmtElements

7

- 7.1 IfcArchitectureDomain
- 7.2 IfcBuildingControisDomain
- 7.3 IfcConstructionMgmtDomain
- 7.4 IfcElectiicalDomain
- 7.5 IfcHvacDomain
- 7.6 IfcPlumbingFireProtectionDomain
- 7.7 IfcStructuralAnalysisDomain
- 7.8 IfcStructuralElementsDomain

8

IfcRoot.

(GUID),

(IfcPolyline),

(IfcCartesianPoint).

0.0,0).

( )

( IfcResource).

- 8.1 IfcActorResource
- 8.2 IfcApprovalResource
- 8.3 IfcConstraintResource
- 8.4 IfcCostResource
- 8.5 IfcDateTimeResource
- 8.6 IfcExternalReferenceResource
- 8.7 IfcGeometricConstraintResource
- 8.8 IfcGeometricModelResource
- 8.9 IfcGeometryResource
- 8.10 IfcMaterialResource
- 8.11 IfcMeasureResource
- 8.12 IfcPresentationAppearanceResource
- 8.13 IfcPresentationDefinitionResource
- 8.14 IfcPresentationOrganizationResource
- 8.15 IfcProfileResource
- 8.16 IfcPropertyResource
- 8.17 IfcQuantityResource
- 8.18 IfcRepresentationResource
- 8.19 IfcStructuralLoadResource
- 8.20 IfcTopologyResource
- 8.21 IfcUtilityResource

( )

5. 6. 7

8.

.1

	ASCII	HTML
IFC XSD	IFC4_ADD2.xsd	IFC4_ADD2.xsd.htm
IFC EXPRESS	IFC4_ADD2.exp	IFC4_ADD2.exp.htm

8

	ASCII	HTML
IFC-SPF	IFC4_ADD2.rfc	

( )

,

( )

,

.

( D )

( )

( F  
 )



( )

ISO 10303-11:2004	IDT	10303-11—2009 « 11. EXPRESS»
ISO 10303-21:2002	IDT	10303-21—2002 « 21. »
ISO 10303-28:2007	—	•
* — : - IDT —		

- [1] CSS-1. Cascading Style Sheets, level 1 — W3C Recommendation
- 12] ISO 10303-1. Industrial automation systems and integration — Product data representation and exchange — Part 1: Overview and fundamental principles
- [3] ISO 10303-41. Product data representation and exchange — integrated generic resource — Fundamentals of product description and support
- HI ISO 10303-42. Product data representation and exchange — Integrated generic resource — Geometric and topological representation
- 15] ISO 10303-43. Product data representation and exchange — integrated generic resource — Representation structures
- [6] ISO 10303-46. Product data representation and exchange — Integrated generic resource — Visual presentation
- [ ISO 10303-514. Product data representation and exchange — Application interpreted construct — Advanced boundary representation
- [8] ISO 12006-3. Building construction — Organization of information about construction works — Part 3: Framework for object-oriented information
- 19] ISO 639-1. Codes for the representation of names of languages — Part 1: Alpha-2 code
- [10] ISO 639-2. Codes for the representation of names of languages — Part 2: Alpha-3 code
- [ ] ISO 639-3. Codes for the representation of names of languages — Part 3: Alpha-3 code for comprehensive coverage of languages
- 112] ISO 6707-1. Building and civil engineering — Vocabulary — Part 1: General terms
- [13] ISO 8601. Data elements and interchange formats — Information Exchange — Representation of dates and times
- [14] ISO/IEC 14772-1. Information technology — Computer graphics and image processing — The Virtual Reality Modeling Language — Part 1: Functional specification and UTF-8 encoding
- [15] ISO/IEC 19775-1. Information technology — Computer graphics and image processing — Extensible 3D (X3D) — Part 1: Architecture and base components
- [16] ISO/IEC 81346-12. Industrial systems, installations and equipment and industrial products — Structuring principles and reference designations — Part 12: Buildings and building services
- [17] ISO/IEC 8824-1. Information technology—Abstract Syntax Notation One (ASN.1)— Part 1: Specification of basic notation
- 118] RFC 3986. Uniform Resource Identifier (URI): Genenc Syntax — Network Working Group NWG Standard
- [19] RFC 5646. Tags for Identifying Languages — Internet Engineering Task Force IETF Best Current Practice 47
- 120] XML Schema Part 1. XML Schema Part 1: Structures Second Edition — W3C Recommendation
- 121] XML Schema Part 2. XML Schema Part 2: Datatypes Second Edition — W3C Recommendation

004.9:006.354

91.010.01  
35.240.67  
35.240.01

: . IFC. , , , , , , , ,

6—2019/10

• •  
• •  
• •  
• •

06.06.2019.

16.06.2019.

60\*84'g.

. . . 3.26. . . . 2.60.

« .<17418 . » - . . 31. . 2.  
www.goslinto.ru info@gostinfo.ru