National Annex NA
(informative)

National Annex to BS EN ISO 19650-2:2018

NA.1 General

The role of a National Annex to a standard is to clarify its implementation within a country, but it should not preclude international cooperation and agreement.

A National Annex should clarify any regional, language or country-specific usage. For international collaborative projects, an international or a specific National Annex may be selected.

This National Annex will assist the user in understanding the UK implementation of this standard by translating the key terms and expanding on the requirements. The topics of information container identification, information container metadata, classification and information model exchange covered in this National Annex should be defined or referenced in the project's information standard.

NA.2 Information container identification (ID)

NA.2.1 Clarification

ISO 19650-2:2018 (5.1.7.a) states: 'The project's common data environment shall enable each information container to have a unique ID, based upon an agreed and documented convention [comprising] fields separated by a delimiter'.

NA.2.2 Info tion containers

In the UK, the unique ID for project file information containers within a common data environment (CDE) should be defined using all the fields shown in Figure NA.1 in the order shown, coded according to NA.3, separated by a delimiter and used in its entirety as a single unique string.

Field codes within the file information container ID should be formed using only alphanumeric characters (capital and lower-case letters A–Z and digits 0–9).

The convention for naming CAD layers is documented in BS EN ISO 13567-2.

Figure NA.1 — Identification of file information containers within a common data environment

NOTE 1 The project's information standard should document the extent to which metadata are to be added, as additional fields, to an information container ID when it is removed or exported from the CDE solution. In relation to this, the project's information standard should identify the order of any additional fields. The delimiter between fields should be that given in NA.2.3.

NOTE 2 The information container ID deliberately does not contain a description field in order to maintain alignment with BS EN 82045-2, where 'identification' (defined in Clause NA.2) is separate from 'description'.

NA.2.3 Delimiters

In the UK, the following delimiter is to be used:

Hyphen-Minus Unicode Reference U+002D

NA.3 Field codification

NA.3.1 Clarification

ISO 19650-2:2018 (5.1.7.b) states: 'The project's common data environment shall enable each field to be assigned a value from an agreed and documented codification standard'.

File information container ID field descriptions are summarized in Table NA.1. In the UK, the codification for each field should follow the codifications defined in NA.3.2 to NA.3.8. There are no recommendations for field length and overall string length in the National Annex, but each field and the overall string should be kept as short as possible. Specific requirements should be documented by the appointing party in the project's information standard and agreed with each lead appointed party during the appointment process. Field codes should be used consistently across the project team.

Where standard codes provided in the National Annex are to be expanded, then the following hierarchy of source documents for new codes should be used:

1. ppropriate tables from Uniclass 2015 (the UK implementation of ISO 12006-2);
2. recognized sector-wide codes published by a representative body; or
3. codes developed by the appointing party.

The standard delimiter (see NA.2.3) should be used between fields to ensure correct interpretation of the information container ID by software applications.

Table NA.1 — Descriptions of fields within the file information container ID

Field	Summary
Project	What project does this information container relate to?
Originator	Which party is responsible for producing this information container (as defined in the detailed responsibility matrix)?
Functional Break down	Which functional aspect of the project does this information container relate to – for example system, work package, design topic?
Spatial Breakdown	Which spatial aspect of the project does this information container relate to – for ex ple region, location, floor level?
Form	What is the nature of this information container?
Discipline	Which (technical) branch of the industry is responsible for producing this information container?
Number	Sequential/grouped number to make the ID unique when all other fields are taken into account

NA.3.2 Proj t

A single common project identifier should be defined at the initiation of the project in the project's information standard. It should be independent and recognizably distinct from any lead appointed party's or appointed party's internal job number.

NOTE 1 There are no standard codes for the project field. It is for the appointing party to define how the project field is to be used, including its relationship to any asset identification procedures defined as part of an asset management system.

NOTE 2 A project can be divided into sub-projects within the project identifier. This use of the project field should be defined by the appointing party within the project's information standard.

NOTE 3 Subdivision of the Project field can be used to implement the federation strategy and the information container breakdown structure, either on its own or in combination with the Functional Breakdown field and/or the Spatial Breakdown field.

NOTE 4 Where a project involves several parts, each part can be assigned a different project identifier.

NOTE 5 Wh re possible, it is helpful if project codes are unique within an organization's portfolio of projects.

NOTE 6 Links between the project identifier and the workspace within the project CDE solution should be defined in the project's information standard.

NA.3.3 Originator

A unique identifier should be defined for each organization on joining the project, to identify the organization responsible for producing the information within the information container. This unique identifier should be fixed within the project's information standard.

NOTE 1 This field identifies the organization of the information author as noted in 5.4.4.

NOTE 2 Organizations that are prospective lead appointed parties can have their own preferred identifier and propose this in their tender response, but this would need to be agreed by the appointing party.

NA.3.4 Functional Breakdown

A unique identifier should be defined for the functional aspects of the information container breakdown structure. This can be based on physical subdivision (such as major design elements or systems) or notional subdivision (such as security classification). The identifiers to be used should be fixed within the project's information standard.

The following standard codes should apply:

ZZ multiple subdivisions apply to this information container

XX no subdivision is applicable to this information container

NOTE 1 This list can be expanded with project-specific codes. If these are chosen carefully, use of ZZ and XX codes can be minimized.

NOTE 2 The Functional Breakdown field can be used to implement the federation strategy and the information container breakdown structure, either on its own or in combination with the Project field and/or the Spatial Breakdown field.

EXAMPLE 1 Functional Breakdown identifiers in a bridge project could include codes for abutments, piers, decks and approach embankments.

EXAMPLE 2 Functional Breakdown identifiers in a building project could include codes for substructure, superstructure, envelope and roof, mechanical systems, electrical systems, public health systems, floor and ceiling systems, interior partitioning and finishes.

NA.3.5 Spatial Breakdown

A unique identifier should be defined for each spatial subdivision and fixed within the project's information standard.

The following standard codes should apply:

ZZ multiple spatial subdivisions are applicable

XX no spatial subdivision is applicable

NOTE 1 This list can be expanded with project-specific codes such as codes representing levels (above and below ground), chainage, grid location or compass point references.

NOTE 2 The Spatial Breakdown field can be used to implement the federation strategy and the information container breakdown structure, either on its own or in combination with the Project field and/or the Functional Breakdown field.

NOTE 3 The project's information standard can define an internal delimiter, different from the delimiter in NA.2.3, if this is needed to encode this field – see examples below.

EXAMPLE 1 The fourth floor of Wing B of a multistorey building with wings off the central structure could be coded as B04 or Bx04.

EXAMPLE 2 A rail project comprising three sections of track linking four stations could code the track sections as T1, T2, T3 and the stations as S1, S2, S3, S4. Locations or spaces at Station 1 could be coded as S1x01, S1x02, etc.

NA.3.6 Form

A unique identifier should be defined for each form of information held within the information containers and be fixed within the project's information standard.

The following standard codes, based on BS ISO 29845, should apply:

D	drawing	Information in the form of a graphical depiction of shape, size, etc., of a physical part or assembly, usually to scale
G	diagram	Information in the form of a graphical/symbolic depiction showing the functions of the objects composing a system and their interrelationships using graphical elements and symbols, or the behaviour of variables using graphs
I	image	Information in the form of a static image or picture and not defining any relationships between objects
L	list	Information in the form of columns and rows, such as tables, spreadsheets and datasets
M	model	Two- or three-dimensional physical or digital description of the ideal shape of object(s) and/or space(s)
T	textual	Information in the form of characters and paragraphs – for example in written instructions and descriptions
V	vi o/audio	Information in the form of moving images, animation or sound

NOTE 1 This list can be expanded with project-specific codes, which can extend the standard codes with additional characters as suffixes.

NOTE 2 For information containers with complex forms, the principal form should be used unless specified otherwise in the project's information standard.

NA.3.7 Dis pline

A unique identifier should be defined for each discipline to which information is related on the project and fixed within the project's information standard.

The following standard codes should apply:

A	architecture
B	building surveying
C	civil engineering
D	demolition/dismantling
E	electrical engineering
F	f cilities/asset management
G	ground engineering
H	highways and transport engineering
L	landscape architecture
M	mechanical engineering
O	other discipline
P	public health engineering
Q	quantity surveying / cost consultancy
R	project management
S	structural engineering
T	town and country planning and building control
W	w ter engineering
X	non-discipline specific or not applicable
Y	topographical surveying
Z	multiple disciplines

NOTE 1 This list can be expanded with two-character project-specific codes.

NOTE 2 If an information container is produced by a team within the appointing party (client), then this field is used to denote the technical specialism of that team and the Originator field is used to denote that it comes from the appointing party.

NA.3.8 Number

When an information container ID is not unique using all the other fields, then this should be achieved using a sequential number, which could be within a series/grouping. Such a grouping should be documented within the project's information standard.

The length of the number field for standard coding should be fixed within the project's information standard. Leading zeros should be used within this fixed length and care should be taken not to embody information that is present in other fields.

NA.4 Infor tion container metadata

NA.4.1 Clarification

ISO 19650-2:2018 (5.1.7.c) states: 'The project's common data environment shall enable each information container to have the following attributes [metadata] assigned: status (suitability); revision; classification (in accordance with the framework defined in ISO 12006-2)'.

In the UK, attributes (metadata) for information containers within a CDE should be defined using (NA.4.2 to NA.4.4).

NOTE The attributes (metadata) codified from NA.4.2 to NA.4.4 are consistent with BS EN 82045-2, which should also be used, wherever possible, as the basis for any additional metadata defined in the project's information standard.

NA.4.2 Status

Status codes for information containers should be applied according to Table NA.2.

Table NA.2 — tatus codes for information containers within a common data environment

Code	Which information containers should the code be used for?	Revision (see NA.4.3)
Work in progress (WIP)		
S0	Information container being developed within a task team	Preliminary revision and version
Shared (non-contractual)		
S1	Information containers that are suitable for geometrical and/or non-geometrical coordination within a delivery team (5.6.5)	Preliminary revision
S2	Information containers that are suitable for information/reference by other task teams within a delivery team (5.6.5)	Preliminary revision
S3	Information containers that are suitable for review and comment within a delivery team (5.6.5)	Preliminary revision
S4	Information containers that are suitable for review and authorization by a lead appointed party (5.7.1)	Preliminary revision
S5	Information containers suitable for review and acceptance by an appointing party (5.7.3)	Preliminary revision
Published (contractual)		
A1, A*n*, etc.	Information containers where there are no comments from the party being invited to either: • authorize them (if they are in response to a lead appointed party exchange information requirement); or • accept them (if they are in response to an appointing party exchange information requirement)	Contractual revision
B1, B*n*, etc. [DEPRECATED]	Information containers that are partially signed off where there are comments from the party being invited to authorize or accept them	Preliminary revision

NOTE 1 '*n*' relates to the work stages defined within BS 8536-1:2015 and BS 8536-2:2016, unless an alternative approach has been documented in the project's information standard.

NOTE 2 A shared status code indicates what an information container may be used for, and Codes S1 to S5 summarize the reason it is being shared. A published status code indicates sign off by either the lead appointed party or the appointing party but does not explain why the information container has been issued. The reasons for issue associated with different A*n* status codes should be defined in the project's information standard.

NOTE 3 This list can be expanded with (but not replaced by) project-specific codes and fixed within the project's information standard.

NA.4.3 Revisi

Preliminary revisions of information containers should be two integers, prefixed with the letter 'P' – for example P01.

Preliminary revisions of information containers in a 'work in progress' state should also have a two-integer suffix to identify the version of the preliminary revision – for example P02.05. It is important to keep track of 'work in progress' versions of information containers that are shared by a task team with the rest of their delivery team by using this methodology.

The initial revision of information containers should be P01.01.

Contractual revisions of information containers should be two integers, prefixed with the letter 'C' – for example C01.

NA.4.4 Classification

Classification for information containers should be in accordance with Uniclass 2015, using the PM table where possible.

NA.5 Information model exchange

NA.5.1 Clarification

ISO 19650-2 (5.2.1) states: 'The appointing party shall establish their exchange information requirements to be met by the prospective lead appointed party during the appointment.'

In the UK, information models exchanged with the appointing party, unless specified to the contrary within the project's information standard, should include:

- geometrical information in proprietary formats or open data formats; and/or
- a phanumerical information in open data formats, structured in accordance with BS 1192-4:2014 (COBie); and/or
- documentation in open data formats.

NOTE 1 Open data formats recommended for information containers containing geometrical information include ISO 16739-1 (Industry Foundation Classes (IFC)) schema files in ISO 10303-21 and ISO 10303-28.

NOTE 2 Open data formats recommended for information containers containing alphanumerical information include ISO/IEC 29500-1 (xlsx) and ISO 16739-1 (IFC) schema files in ISO 10303-21 or ISO 10303-28.

NOTE 3 Open data formats recommended for information containers containing documentation include those in ISO 32000-1 and ISO 32000-2 (PDF).

NA.5.2 Classification within information containers

Classification within information containers should be in accordance with Uniclass 2015 tables.

NA.6 Project's information requirements

NA.6.1 Clarification

ISO 19650-2:2018 (5.1.2) states: 'The appointing party shall establish the project's information requirements, as described in ISO 19650-1:2018 (5.3) to address the questions to which the appointing party needs answer(s) at each of the key decision points throughout the project.'

In the UK, in establishing the project's information requirements, the appointing party should define the information delivery milestones (in relation to key decision points) within each of the principal work stages as set out in BS 8536-1:2015 or BS 8563-2:2016.

Bibliography

BS 1192-4:2014, *Collaborative production of information — Fulfilling employer's information exchange requirements using COBie — Code of practice*

BS 8536-1:2015, *Briefing for design and construction — Part 1: Code of practice for facilities management (Buildings infrastructure)*

BS 8536-2:2016 *Briefing for design and construction — Part 2: Code of practice for asset management (Linear and geographical infrastructure)*

ISO 10303-21 *Industrial automation systems and integration — Product data representation and exchange — Part 21: Implementation methods: Clear text encoding of the exchange structure*

ISO 10303-28, *Industrial automation systems and integration — Product data representation and exchange — Part 28: Implementation methods: XML representations of EXPRESS schemas and data, using XML schemas*

ISO 12006-2, *Building construction — Organization of information about construction works — Part 2: Framework for classification*

BS EN ISO 13567-2, *Technical product documentation – Organization and naming of layers for CAD – Part 2: Concepts, format and codes used in construction documentation*

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

ISO/IEC 29500-1, *Information technology — Document description and processing languages — Office Open XML File Formats — Part 1: Fundamentals and Markup Language Reference*

BS ISO 29845 *Technical product documentation — Document types*

ISO 32000-1, *Document management — Portable document format — Part 1: PDF 1.7*

ISO 32000-2, *Document management — Portable document format — PDF 2.0*

BS EN 82045- *Document management – Part 2: Metadata elements and information reference model*

UK BIM Framework Guidance Part 2 (https://ukbimframework.org/standards-guidance)

British Standards Institution (BSI)

BSI is the national body responsible for preparing British Standards and other standards-related publications, information and services.

BSI is incorporated by Royal Charter. British Standards and other standardization products are published by BSI Standards Limited.

About us

We bring together business, industry, government, consumers, innovators and others to shape their combined experience and expertise into standards -based solutions.

The knowledge embodied in our standards has been carefully assembled in a dependable format and refined through our open consultation process. Organizations of all sizes and across all sectors choose standards to help them achieve their goals.

Information on standards

We can provide you with the knowledge that your organization needs to succeed. Find out more about British Standards by visiting our website at bsigroup.com/standards or contacting our Customer Services team or Knowledge Centre.

Buying standards

You can buy and download PDF versions of BSI publications, including British and adopted European and international standards, through our website at bsigroup.com/shop, where hard copies can also be purchased.

If you need international and foreign standards from other Standards Development Organizations, hard copies can be ordered from our Customer Services team.

Copyright in BSI publications

All the content in BSI publications, including British Standards, is the property of and copyrighted by BSI or some person or entity that owns copyright in the information used (such as the international standardization bodies) and has formally licensed such information to BSI for commercial publication and use.

Save for the provisions below, you may not transfer, share or disseminate any portion of the standard to any other person. You may not adapt, distribute, commercially exploit or publicly display the standard or any portion thereof in any manner whatsoever without BSI's prior written consent.

Storing and using standards

Standards purchased in soft copy format:

- A British Standard purchased in soft copy format is licensed to a sole named user for personal or internal company use only.
- The standard may be stored on more than one device provided that it is accessible by the sole named user only and that only one copy is accessed at any one time.
- A single paper copy may be printed for personal or internal company use only.

Standards purchased in hard copy format:

- A British Standard purchased in hard copy format is for personal or internal company use only.
- It may not be further reproduced – in any format – to create an additional copy. This includes scanning of the document.

If you need more than one copy of the document, or if you wish to share the document on an internal network, you can save money by choosing a subscription product (see 'Subscriptions').

Reproducing extracts

For permission to reproduce content from BSI publications contact the BSI Copyright and Licensing team.

Subscriptions

Our range of subscription services are designed to make using standards easier for you. For further information on our subscription products go to bsigroup.com/subscriptions.

With **British Standards Online (BSOL)** you'll have instant access to over 55,000 British and adopted European and international standards from your desktop. It's available 24/7 and is refreshed daily so you'll always be up to date.

You can keep in touch with standards developments and receive substantial discounts on the purchase price of standards, both in single copy and subscription format, by becoming a **BSI Subscribing Member.**

PLUS is an updating service exclusive to BSI Subscribing Members. You will automatically receive the latest hard copy of your standards when they're revised or replaced.

To find out more about becoming a BSI Subscribing Member and the benefits of membership, please visit bsigroup.com/shop.

With a **Multi-User Network Licence (MUNL)** you are able to host standards publications on your intranet. Licences can cover as few or as many users as you wish. With updates supplied as soon as they're available, you can be sure your documentation is current. For further information, email cservices@bsigroup.com.

Revisions

Our British Standards and other publications are updated by amendment or revision.

We continually improve the quality of our products and services to benefit your business. If you find an inaccuracy or ambiguity within a British Standard or other BSI publication please inform the Knowledge Centre.

Useful Contacts

Customer Services
Tel: +44 345 086 9001
Email: cservices@bsigroup.com

Subscriptions
Tel: +44 345 086 9001
Email: subscriptions@bsigroup.com

Knowledge Centre
Tel: +44 20 8996 7004
Email: knowledgecentre@bsigroup.com

Copyright & Licensing
Tel: +44 20 8996 7070
Email: copyright@bsigroup.com

BSI Group Headquarters

389 Chiswick High Road London W4 4AL UK