

**PD 19650-0:2019**



## BSI Standards Publication

### Transition guidance to BS EN ISO 19650

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## Summary of pages

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# Foreword

## Publishing information

This Published Document is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 31 January 2019. It was prepared by Technical Committee B/555, *Construction design, modelling and data exchange*. A list of organizations represented on this committee can be obtained on request to its secretary.

## Use of this document

As a guide, this Published Document takes the form of guidance and recommendations. It should not be quoted as if it were a specification or a code of practice.

## Presentational conventions

The guidance in this Published Document is presented in roman (i.e. upright) type. Any recommendations are expressed in sentences in which the principal auxiliary verb is “should”.

*Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.*

Where words have alternative spellings, the preferred spelling of the Shorter Oxford English Dictionary is used (e.g. “organization” rather than “organisation”).

## Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

**Compliance with a British Standard cannot confer immunity from legal obligations.**

## Executive summary

The publication of BS EN ISO 19650-1 and BS EN ISO 19650-2 represents a significant step forward in standardizing information management requirements on projects using BIM (building information modelling) within an internationally agreed set of concepts and principles.

These principles and requirements are clearly recognizable from the UK's existing standards BS 1192:2007+A2:2016 and [PAS 1192-2:2013](#), especially when one looks past the necessary changes in terminology and language that were necessary to turn UK documents into international documents.

This transition guidance has been prepared specifically to help the existing users of BS 1192 and [PAS 1192-2](#) understand any changes made between the UK's existing standards, and the ISO documents which are to replace them. More comprehensive guidance is being prepared to facilitate understanding of how to implement BS EN ISO 19650 as a whole rather than simply highlighting the changes. This transition guidance should therefore be regarded as a stepping stone and, in the meantime, existing users of BIM Level 2 will still find it useful to refer to previous guidance for BS 1192:2007+A2:2016 and [PAS 1192-2:2013](#).

The key highlights in transitioning from BS 1192 and [PAS 1192-2](#) to BS EN ISO 19650-1 and BS EN ISO 19650-2 are as listed below. These are not in any particular order.

- a) The presentation of a holistic set of information management concepts and principles in BS EN ISO 19650-1, to cover both project delivery and asset operation parts of an asset lifecycle. These concepts and principles are supported by detailed requirements for project delivery in BS EN ISO 19650-2, which itself includes further recommendations in the UK National Annex.
- b) The introduction of clearer information management processes and workflows, including how information is created by delivery teams across the full spectrum of project scale and complexity.
- c) Changes in how parties are referenced (i.e. from "employer" and "supplier" to "appointing party" and "appointed party"). This allows for a more flexible implementation across both project delivery and asset operation scenarios. The client-side information requirements have been adjusted and are now referred to as exchange information requirements (EIR) and project information requirements (PIR) instead of plain language questions (PLQ).
- d) The documents to be developed by lead appointed parties and appointed parties (suppliers) are broken down into more detail in BS EN ISO 19650-2. This is to support clearer scalability to different types of project and appointment.
- e) Reference to common data environment (CDE) states instead of CDE areas, and to information container status instead of suitability. Also, a more developed concept around the archiving of information.
- f) The requirement to consider risks associated with the timely delivery of information.
- g) Greater clarification around the two types of responsibility matrix – one to assign information management activities, the other to allocate responsibility for information delivery. Collectively these provide for a much clearer information delivery planning process.
- h) The connected concepts of a federation strategy and a container breakdown structure instead of a volume strategy.
- i) The broad concept of the level of information need. This can be defined in terms of any metrics that are appropriate to the project, including level of model definition which was referenced in [PAS 1192-2](#) and further broken down into level of model information and level of model detail.

- j) The identification of information containers (naming convention) in the UK National Annex to BS EN ISO 19650-2 has been adjusted in response to industry feedback since the publication of BS 1192 and [PAS 1192-2](#).
- k) BIM maturity is described in BS EN ISO 19650-1 in terms of “stages” rather than “levels”, as were used in [PAS 1192-2](#).

# Introduction

This Published Document has been produced to help all those who have been using BS 1192:2007+A2:2016 and [PAS 1192-2:2013](#), as part of their implementation of BIM Level 2, to transition to the new ISO standards BS EN ISO 19650-1 and BS EN ISO 19650-2. As a result of the publication of these new ISO standards, BS 1192 and [PAS 1192-2](#) have been withdrawn. Any ongoing projects that contractually reference BS 1192:2007+A2:2016 or [PAS 1192-2:2013](#) should continue as such until completion. There might be circumstances where retrofit of BS EN ISO 19650-1 and -2 to an ongoing project is appropriate. This would, however, need careful consideration.

The concepts and principles that underpin the information management aspects of BIM Level 2 and the specific requirements for managing information during a project have been captured in the new ISO standards. However, during the process of reaching international consensus, the way that these concepts, principles and requirements have been expressed and explained has moved away from the language and layout of the pre-existing UK standards.

The purpose of this transition guidance is to help the readers and users of the UK standards familiarize themselves with the ISO standards as quickly and as easily as possible, and to move away from the UK standards that have now been superseded. As such, this transition guidance is not aimed at those who are brand new to these standards of information management

The main body of this Published Document uses BS EN ISO 19650-1 and BS EN ISO 19650-2 terminology wherever possible with existing BS 1192:2007+A2:2016 and [PAS 1192-2:2013](#) terms in parentheses where appropriate. This is to help readers become accustomed to the new terms.

A more comprehensive guidance framework is being developed to provide more breadth and, where necessary, more specific guidance for particular readers. At the time of writing it is hoped that this will be published in late Spring 2019.

The principal sections of this Published Document are structured as follows:

- a) [Clause 4](#) gives an overview of BS EN ISO 19650-1 and -2, including their status in the UK and the relationship between the parts now published and those in development;
- b) [Clause 5](#) explains how the suite of standards defining BIM Level 2 is now evolving to include BS EN ISO 19650-1 and -2, and future additions to BS EN ISO 19650;
- c) [Clause 6](#) refers to two clause-by-clause mappings from the UK standards BS 1192:2007+A2:2016 and [PAS 1192-2:2013](#) to BS EN ISO 19650-1 and -2 (the mapping tables are in [Annex A](#));
- d) [Clause 7](#) focuses on the important changes in terminology that have been introduced in BS EN ISO 19650-1 and -2;
- e) [Clause 8](#) provides specific transition guidance relating to BS 1192:2007+A2:2016; and
- f) [Clause 9](#) provides specific transition guidance relating to [PAS 1192-2:2013](#).

## 1 Scope

This guide is to help those familiar with and implementing the UK standards BS 1192:2007+A2:2016 and [PAS 1192-2:2013](#) to transition to the new international standards BS EN ISO 19650-1 and BS EN ISO 19650-2.

It is aimed at all organizations and individuals responsible for the procurement, design, construction, delivery, operation and maintenance of buildings and infrastructure assets.

It is applicable to all scales of building and infrastructure projects and all forms of project management and project procurement.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes provisions 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.

BS EN ISO 19650-1:2019, *Organization and digitization of information about buildings and civil engineering works, including building information modelling(BIM) — Information management using building information modelling — Part 1: Concepts and principles*

BS EN ISO 19650-2:2019, *Organization and digitization of information about buildings and civil engineering works, including building information modelling(BIM) — Information management using building information modelling — Part 2: Delivery phase of the assets*

## 3 Terms and definitions

For the purposes of this Published Document, the terms and definitions given in BS EN ISO 19650-1 and in BS EN ISO 19650-2 apply.

## 4 The role, structure, value proposition and status of BS EN ISO 19650-1 and -2

### 4.1 General

The role and value proposition of BS EN ISO 19650-1 and BS EN ISO 19650-2 is, in broad terms, the same as it was for BS 1192:2007+A2:2016 and [PAS 1192-2:2013](#). The status of BS EN ISO 19650-1 and BS EN ISO 19650-2 is that these documents supersede national standards within CEN member states and the versions published by ISO are available for adoption by all other ISO member states.

### 4.2 Role of BS EN ISO 19650-1 and -2

The role of BS EN ISO 19650-1 is to set out the concepts and principles that need to be implemented to achieve a standard of information management that aligns with what we in the UK have come to know as BIM Level 2. BS EN ISO 19650-1 is written as a set of recommendations, using "should" as the verb form similar to BS 1192:2007+A2:2016. However, it has been deliberately written to cover both the project and asset management parts of the overall life-cycle.

BS EN ISO 19650-2 is written as a set of requirements for managing information, using "shall" as the verb form similar to [PAS 1192-2:2013](#). It applies to the delivery phase of assets (capital works projects).

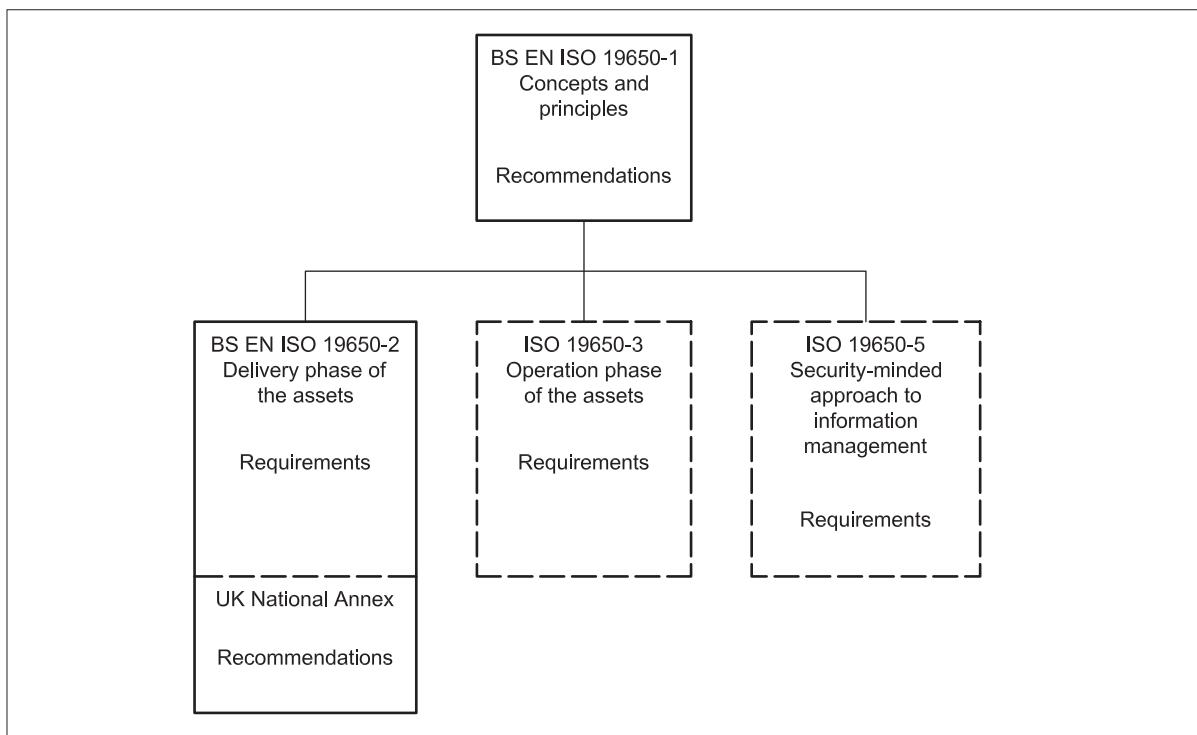
*NOTE From a contractual liability perspective, there can be a difference in obligations between a recommendation ("should") and a requirement ("shall"). No comments or representations are made regarding this.*

One very important principle is that BS EN ISO 19650-1 and -2 are to be implemented in a manner that is consistent with the scale and complexity of the project or asset management activities to which they are being applied. This is repeated many times throughout the text of Part 1. The proportionate approach is also contained in Part 2 where many clauses support a primary requirement, such as to establish the project's information standard in **5.1.4**, with a list of items that the party in question "shall consider". The extent to which these items are considered depends on the circumstances of the project, any organizational policies on information management, and the capabilities of the individuals involved.

### 4.3 Structure of BS EN ISO 19650-1 and -2

The relationship between BS EN ISO 19650-1 and -2 is illustrated in [Figure 1](#). This also shows two further parts of ISO 19650 that are under development at the time of writing.

**Figure 1 — Structure of ISO 19650**



The core content of BS EN ISO 19650-2 has been supplemented by a UK National Annex. This is published as part of BS EN ISO 19650-2 and it provides additional recommendations, not requirements, relevant to the UK. Wherever reference to BS EN ISO 19650-2 is given in this guidance, this means the core content plus the UK National Annex. Much of the UK National Annex incorporates the naming convention defined in BS 1192:2007+A2:2016 into BS EN ISO 19650-2. Other countries can have their own National Annexes for any part of ISO 19650.

ISO 19650, Parts 3 and 5 are currently under development, and these are planned to be equivalent to [PAS 1192-3](#) and [PAS 1192-5](#) respectively. These UK PAS documents are also expected to be withdrawn when the relevant parts of ISO 19650 are published.

### 4.4 The value proposition

The value proposition of adopting “BIM according to ISO 19650” is the same as the proposition for BIM Level 2. Namely that a more systematic and standardized and, where appropriate, security-minded approach to managing project and asset information can deliver time and cost savings to the overall delivery of a project and to the whole-life management of an asset. The additional value proposition for ISO 19650 is that there is now an internationally accepted approach to this management of information that should increase the value to be derived on international projects or projects involving multi-national teams. This should allow UK businesses to compete for and work on these projects more effectively.

Reduction in whole-life cost of asset delivery and operation is still a key objective of the UK’s industrial strategy. The use of standardized information management principles and processes is a major contributor to achieving that objective.

#### 4.5 Status of ISO 19650

The status of BS EN ISO 19650-1 and BS EN ISO 19650-2 is that they have been written under the auspices of a sub-committee of an ISO Technical Committee (TC 59/SC 13) and with the direct involvement of an ISO Working Group (TC 59/SC 13/WG 13) that included representatives of 16 countries. This involved multiple rounds of consultation across those countries, in addition to wider public consultation. Each comment received by the Working Group from these consultations was discussed and resolved by majority agreement.

BS EN ISO 19650-1 and BS EN ISO 19650-2 were subject to parallel processing with CEN, the European standards organization. This was done under the terms of the Vienna Agreement between ISO and CEN, and the draft standard was voted on by both ISO and CEN members. CEN formally approved ISO 19650-1 and ISO 19650-2 on 24 August 2018. This adoption by CEN means that BSI is obliged to adopt them in the UK and withdraw its own standards in this area, i.e. BS 1192:2007+A2:2016 and [PAS 1192-2:2013](#). See [Table 1](#) in [5.2](#).

Like all standards, BS EN ISO 19650-1 and BS EN ISO 19650-2 will be reviewed on a regular basis.

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## 5 BIM Level 2 and the ISO 19650 presentation of information management maturity

#### 5.1 UK and ISO diagrams

BIM Level 2 in the UK has been characterized through the BIM maturity model, colloquially known as “the wedge”. This was shown in [PAS 1192-2:2013](#), Figure 1 where applicable standards were also indicated. Despite the wedge being very widely recognized outside the UK, it was too UK specific to be agreed for use in the ISO 19650 standards and a new representation of the idea of information management maturity had to be devised. This is the diagram that appears as Figure 1 in BS EN ISO 19650-1:2019. Both diagrams are shown below in [Figure 2](#).

The UK maturity model shown in [Figure 2](#) is the version published in [PAS 1192-2:2013](#), even though this diagram has been updated in subsequent BSI publications.

The UK and ISO diagrams in [Figure 2](#) have some significant similarities:

- increasing complexity and sophistication of information moving from left to right;
- recognition of differences in standards at different stages or levels of maturity; and
- increasing levels of collaboration with increasing maturity.

There are also some differences:

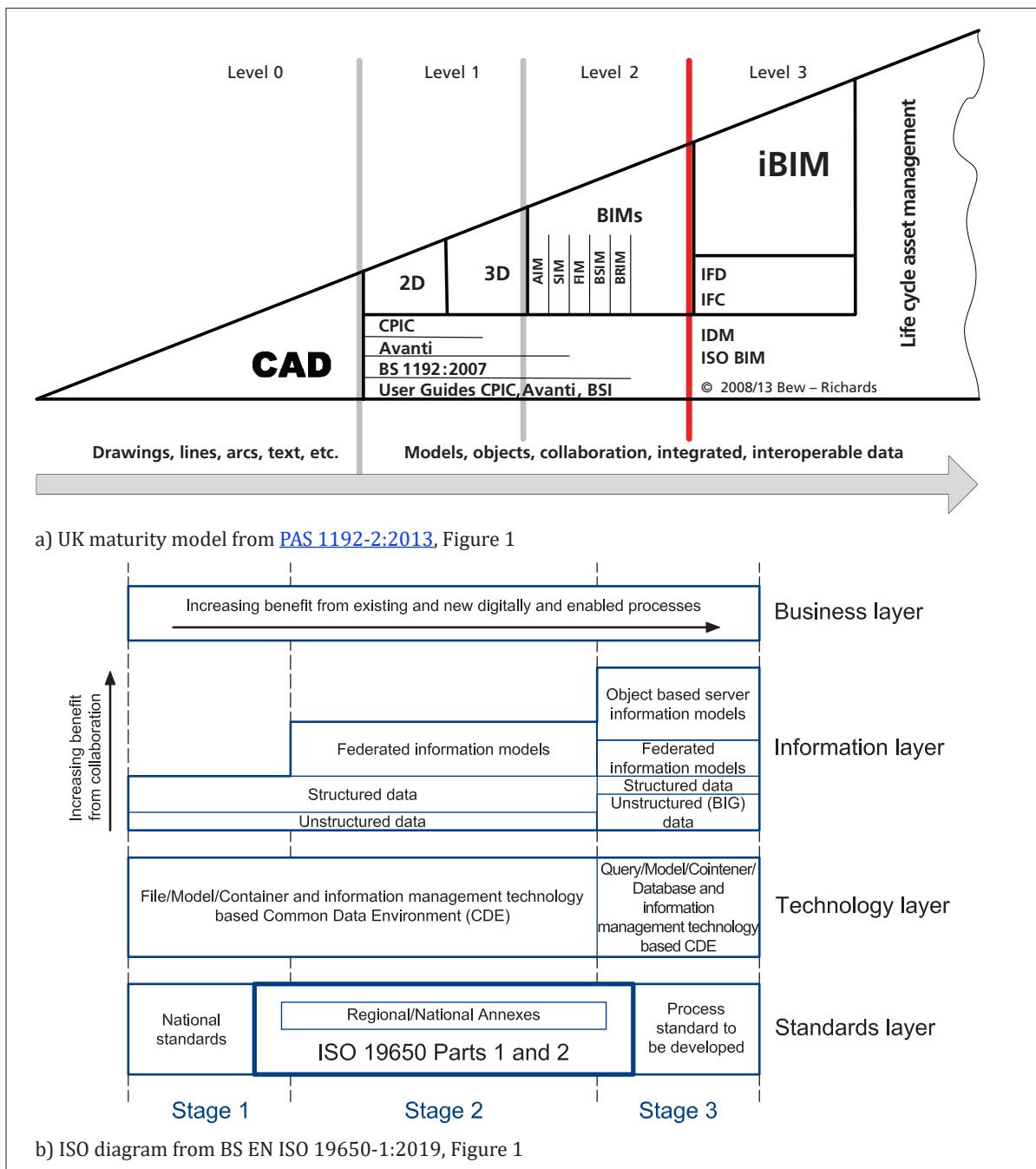
- four clear layers to the ISO 19650-1 diagram, including a business layer which is not explicit in the UK maturity model;
- no equivalent to UK BIM Level 0 in the ISO 19650-1 diagram; and
- clearer subdivision of the information layer in the ISO 19650-1 diagram than is shown in the UK maturity model.

The ISO 19650-1 diagram defines the extent of maturity for which BS EN ISO 19650-1 and BS EN ISO 19650-2 are designed to apply – predominantly across ISO maturity stage 2, but with some applicability in both stages 1 and 3. This scope of application is termed “BIM according to the ISO 19650 series”. It covers what has been referred to in the UK as BIM Level 2, plus some aspects of what has been referred to as BIM Level 1 and BIM Level 3. This is important as it means that the ISO 19650 suite remains relevant as BIM implementation continues to develop.

In addition to the diagrams shown in [Figure 2](#), the “fundamental principles for Level 2 information modelling” listed in [PAS 1192-2:2013](#), Introduction have been carried across to

BS EN ISO 19650-1:2019, Clause 9. Some principles have been combined while others have been simplified, especially [PAS 1192-2:2013](#), principle g) which gives alternative technology solutions for Level 2 which is simplified to BS EN ISO 19650-1:2019, Clause 9, item e).

**Figure 2 — UK BIM maturity wedge and ISO information management maturity diagram**



b) ISO diagram from BS EN ISO 19650-1:2019, Figure 1

In the ISO 19650-1 diagram, “federated information models” means composite information models that include information models from separate sources. Each information model might, as per the definition in BS EN ISO 19650-1, include a combination of geometrical (graphical) and non-geometrical (non-graphical) content.

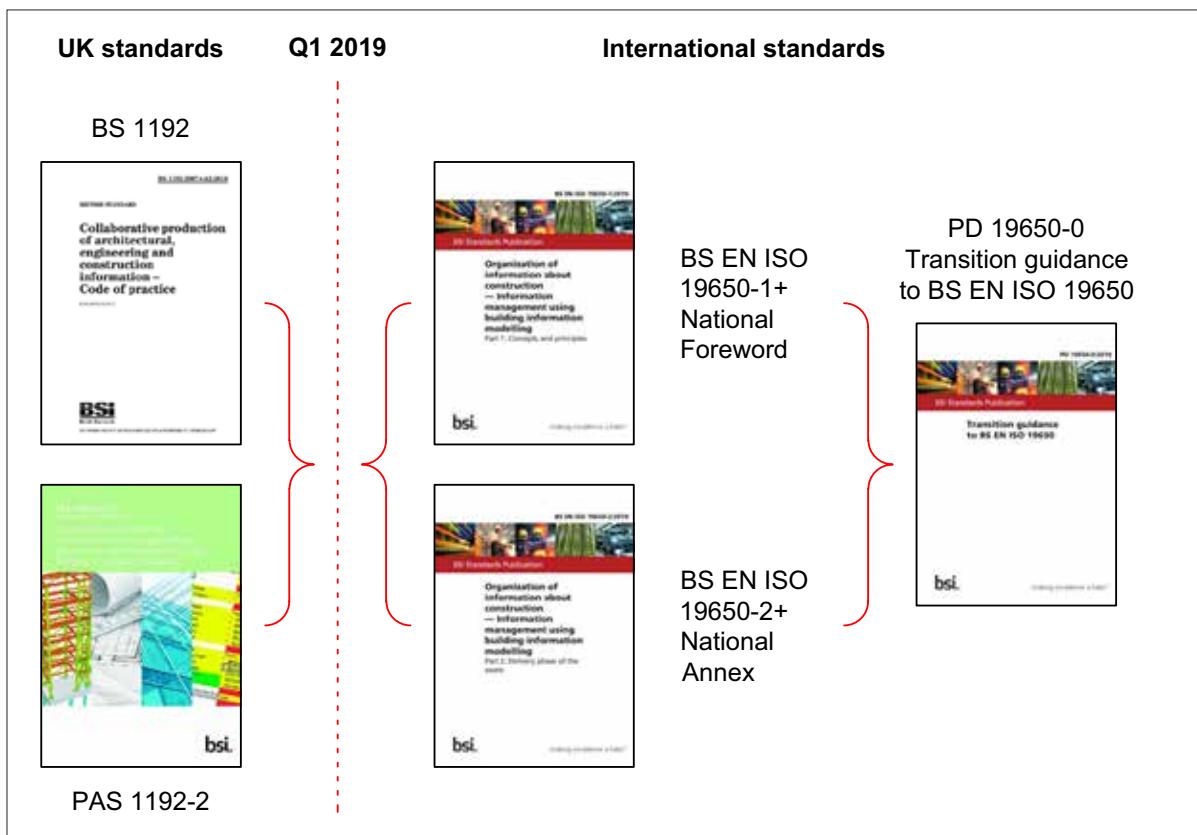
## 5.2 UK and ISO suites of standards

[Table 1](#) shows the suite of UK BIM Level 2 standards as at October 2018, alongside the current and expected international standards as at 2019 Q1. [Table 1](#) is also supported by [Figure 3](#).

[PAS 1192-2:2013](#) and [PAS 1192-3:2014](#) were under revision up until summer 2018. This work was discontinued in favour of preparation for adoption of the ISO 19650 documents. However, although the PAS revisions were not published, relevant parts of this development work have been incorporated into this guidance, and is intended to be taken forward to the future guidance framework, as appropriate.

**Table 1 — BIM suites of standards**

BSI B/555 suite of BIM Level 2 standards (as at Oct 2018)	Current and forthcoming standards (as at 2019 Q1)
<b>Required standards/core standards</b>	
BS 1192:2007+A2:2016	BS EN ISO 19650-1:2019
<a href="#">PAS 1192-2:2013</a>	BS EN ISO 19650-2:2019  These documents supersede BS 1192 and <a href="#">PAS 1192-2</a> but there is not a 1:1 relationship between BS EN ISO 19650-1 and BS 1192, or between BS EN ISO 19650-2 and <a href="#">PAS 1192-2</a> . See <a href="#">Figure 3</a> .
<a href="#">PAS 1192-3:2014</a>	ISO 19650-3 has been under development since mid-2018 to supersede <a href="#">PAS 1192-3</a> .
<a href="#">PAS 1192-5:2015</a>	ISO 19650-5 has been under development since early 2018 to supersede <a href="#">PAS 1192-5</a> .
BS 8536-1:2015 and/or <a href="#">BS 8536-2:2016</a>	No work item has been agreed to develop an equivalent ISO standard.
<a href="#">BS 1192-4:2014</a>	No work item has been yet agreed to develop an equivalent ISO standard. It is acknowledged that alternative data exchange standards are available. It is essential that every project has an agreed data exchange standard.
<b>As required standards/Client discretion</b>	
<a href="#">PAS 1192-6:2018</a>	No work item has been agreed to develop an equivalent ISO standard.
<a href="#">BS 7000-4:2013</a>	No work item has been agreed to develop an equivalent ISO standard.
BS 8541 series	ISO 22014 and ISO 22057 are under development to supersede <a href="#">BS 8541</a> , parts 1-6.

**Figure 3 — UK and international standards before and after 2019 Q1**

Although this Published Document relates to BS 1192:2007+A2:2016 and [PAS 1192-2:2013](#), the broader application of BIM Level 2 involves many other UK documents which are still current. Thus, while most aspects of BIM can be achieved on a project by reference to BS EN ISO 19650-1 and BS EN ISO 19650-2, taking a security-minded approach still requires use of [PAS 1192-5:2015](#), until the publication of its equivalent part under ISO 19650, and applying COBie (construction operations building information exchange) still requires use of [BS 1192-4:2014](#). Applying BIM according to ISO 19650 during asset operation will continue to require [PAS 1192-3:2014](#), again until publication of its equivalent part under ISO 19650.

It therefore remains important that appointing parties (project clients) fully understand their own requirements for information management, including the standards to be implemented, and communicate that clearly to their consultants and contractors.

### 5.3 Legal issues of BIM

It is recognized that the legal and contractual matters of BIM are in a state of flux and development, as reported in the Winfield Rock Report [1] and other publications. It is pertinent to emphasize that the standards are not intended to provide prescriptive direction on the composition of BIM contract documents (whether consisting of a Protocol and/or other documents) and are subject to the contractual terms agreed between parties, on which parties should obtain specialist legal advice. Finally, on a further topic of much debate, as with the 1192 suite, the ISO 19650 standards are not intended to, and do not, provide a definitive, exhaustive definition of "BIM Level 2".

*NOTE It is intended that further information on the legal and contractual issues of BIM will be included in the guidance framework under development (see the Introduction).*

## 6 Mapping the ISO 19650 standards against BS 1192 and PAS 1192-2

[Annex A](#) presents two document mapping tables of ISO 19650-1 and -2 from the perspective of the UK standards BS 1192:2007+A2:2016 and [PAS 1192-2:2013](#). These can be used as a quick reference to see “where UK content has gone”. In [Table A.1](#) and [Table A.2](#), columns 1 and 2 contain the clause numbers and topics from BS 1192:2007+A2:2016 and [PAS 1192-2:2013](#). Columns 3 and 4 state where this topic is covered in ISO 19650-1 and/or in ISO 19650-2.

Some topics have been given specific guidance in this Published Document, and column 5 indicates where to find this. The existence of these references indicates where change has taken place.

## 7 Explanation of ISO 19650 language

The process of taking a UK standard to ISO means that the words used in the UK document are scrutinized by a wide group of international readers, for many of whom English is not their first language. This means that UK-specific terms and English idioms are challenged and often need to be changed, to use words that everyone can accept and translate to their own languages.

[Table 2](#) is a mapping of the most significant changes that had to be made during the development of BS EN ISO 19650-1 and BS EN ISO 19650-2. It is important to use the ISO 19650 terminology wherever possible.

**Table 2 — UK versus ISO documents**

1192 term	19650 term	Comments
[New]	Risk register	The reference to the risk register is now explicit in BS EN ISO 19650-1
BIM execution plan	Information delivery plan (in BS EN ISO 19650-1)	BS EN ISO 19650-1 uses information delivery plan as the generic term for any plan in support of information delivery.
	BIM execution plan (in BS EN ISO 19650-2)	
Capital/delivery phase	Delivery phase	Delivery phase is a simplification of capital/delivery phase without making any assumption about how the project funding is being treated in financial accounting
<CDE> area/section	<CDE> state	Area and section imply moving information from one place to another. This is not necessary in a CDE. It is the state of the information container that is important, not where it is stored.
CDE gate	Transition	Transition is used to denote change (in the state of the information container)
Container / file / document	Information container	ISO 19650 standardizes on the term Information container
Contract	Appointment	The more generic term appointment has been used in ISO 19650 instead of contract. This means one term can be used for both external contracts and internal work instructions
Employer	Appointing party / lead appointed party / appointed party	ISO 19650 term depends on where in the hierarchy the employer is located. Lead appointed party is not the same as design lead or construction lead in <a href="#">PAS 1192-2</a> . See <a href="#">9.5.4</a> .

**Table 2 (continued)**

<b>1192 term</b>	<b>19650 term</b>	<b>Comments</b>
Employer's information requirements (EIR)	Exchange information requirements (EIR)	These are synonymous.
Graphical / non-graphical	Geometrical / non-geometrical	Geometrical is more appropriate to describe spatial positioning and relationships
Level of model definition / level of detail (LOD) / level of information (LOI)	Level of information need (no acronym)	Level of information need is a more generic term than any of the existing "Level of ..." terms used in 1192. It is not supposed to be shortened to an acronym.
Model / information model	Information model	ISO 19650 focuses specifically on the concept of the information model containing multiple types of information (geometrical and/or non-geometrical). This concept was in <a href="#">PAS 1192-2</a> but was not spelt out as consistently as it could have been.
Plain language questions (PLQ)	Project information requirements (PIR)	PLQ and PIR are both expressions of the high-level information needed by the client and/or their stakeholders to make key decisions concerning the project. The PIR, like the PLQ, are used to develop the detailed and contractual EIR. However, PIR can also include non-technical requirements and therefore can be broader than PLQ.
Project delivery team	Delivery team	In <a href="#">PAS 1192-2</a> , there was only one project delivery team and its composition and leadership changes as required during the course of the project. In ISO 19650, delivery teams are the first-level breakdown of a project team and are led by a lead appointed party. Within a delivery team (both 1192 and 19650) there are one or more task teams who have their own appointments. In 19650 these are from the lead appointed party
Responsibility matrix	Responsibility matrix / Assignment matrix	In ISO 19650 there is a principle to develop responsibility matrices to cover information management activities and information delivery. The former is illustrated as the assignment matrix in BS EN ISO 19650-2:2019, Annex A.
Roles	Function	Information management roles are not included within BS EN ISO 19650-2. Instead, all activities within the information management process are to be undertaken by a single "information management function". BS EN ISO 19650-2:2019, Annex A provides a template for an information management function assignment matrix, which can be used by the appointing party to assign each activity (requirement) to themselves, to an appointed party or a third-party. Once an activity has been assigned, it is for the relevant party to identify the role that is responsible for the activity.

**Table 2** (*continued*)

<b>1192 term</b>	<b>19650 term</b>	<b>Comments</b>
Standard method and procedure (SMP)	Combination of information standard and information production method and procedure	The 1192 term has been broken down into an information standard and an information production method and procedure. The content of the SMP is covered by these two separate elements
Suitability	Status	The terms are equivalent, as both define the permitted uses of information. BS 1192 also uses the term "status" to mean the combination of suitability and revision. There is no ISO 19650 equivalent for this BS 1192 use of "status"
Supplier	Lead appointed party (tier 1) / appointed party (tier 2 and below)	ISO 19650 term depends on where in the hierarchy the supplier is located. See <a href="#">9.5.4</a> .
Task team	Task team	There is no change in meaning, but compare with Project delivery team
Volume strategy	Federation strategy	The concept of volumes for sub-division of an information model is now described in terms of the reasons for which separate information models might need to be federated. This was an easier concept for non-UK countries to understand.

## 8 Transition guidance for BS 1192:2007+A2:2016

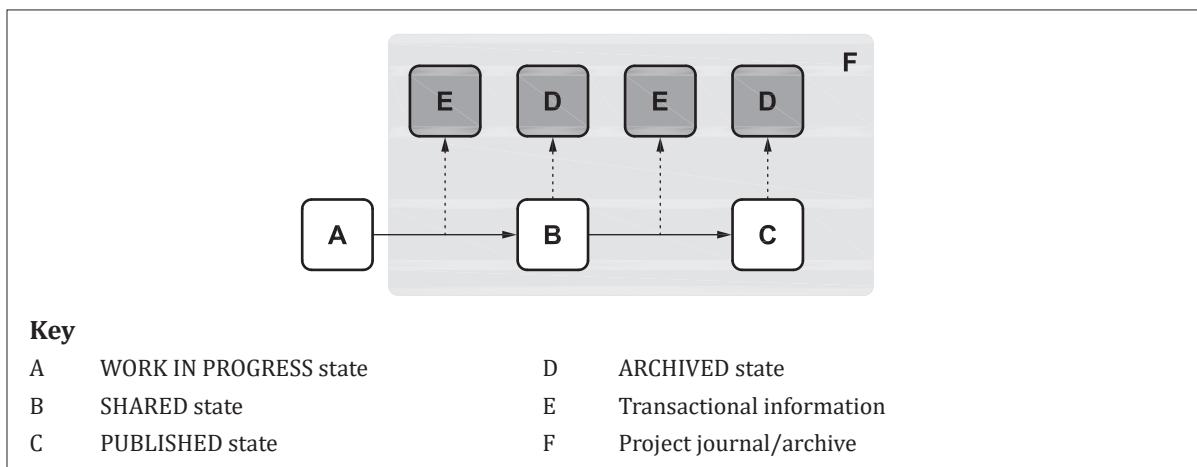
### 8.1 Guidance on CDE states (previously areas of the CDE)

ISO 19650 replaces some of the BS 1192 terms as referenced in [Table 2](#).

The WIP (work in progress), SHARED and PUBLISHED states (areas) of the CDE are unchanged from BS 1192:2007+A2:2016. The status (suitability) codes that should be used are provided in the National Annex of BS EN ISO 19650-2. It should be noted that BS EN ISO 19650-1 identifies the CLIENT SHARED state (area) as a supplementary information state but does not explain the instances of its use as fully as in BS 1192:2007+A2:2016 and [PAS 1192-2:2013](#).

Industry thinking in relation to the ARCHIVED state (area) has developed since publication of [PAS 1192-2](#) in 2013. The ARCHIVED state is used to record all transitions (gates) from one state to another and all changes of status (suitability) or revision that take place during the CDE workflow (process).

BS EN ISO 19650-2:2019, **5.8.1** states that "Upon acceptance of the completed project information model, the appointing party shall archive the information containers within the project's common data environment in accordance with the project's information production methods and procedures". In the UK, this project archive includes all information containers with SHARED, PUBLISHED, ARCHIVED states and all details of all information transactions. This is illustrated in [Figure 4](#).

**Figure 4 — Project archive in relation to CDE states and transactional information**

## 8.2 Information container identification (naming) — use cases and recommended lengths of field codes

### 8.2.1 Information container identification (naming) use cases

BS 1192:2007+A2:2016 included naming conventions for three different types of information containers:

- directories and folders;
- files; and
- information containers within files including layers.

BS EN ISO 19650-2 includes the identification convention (naming convention) for file containers, but does not contain the conventions for directories/folders or for information containers within files, which has also been used for naming layers.

Layer naming is specified in BS EN ISO 13567-2 and this remains current. BS 1192:2007+A2:2016 adapted this convention to suit its processes and Uniclass 1.4, creating a potential grey area. By not including the BS 1192:2007+A2:2016 layer naming convention in BS EN ISO 19650-2, this grey area has been removed. However, the UK-specific clarifications on [ISO 13567-2](#) are being updated through a revised National Foreword which is intended to clarify codification of fields in layer names in terms of the UK National Annex to BS EN ISO 19650-2. It also intends to extend the scope of BS EN ISO 13567-2 in the UK to other information containers within files.

The identification convention (naming convention) for files in BS EN ISO 19650-2 no longer includes the previously optional Classification field. This is now expected to be recorded through metadata – see 9.7.3 of this Published Document.

Although it would be possible to record all information container identification in metadata, these information containers are still generated as files from software and as such require file names. Therefore, the identification convention for files is still useful to those involved in project delivery.

### 8.2.2 Information container identification recommended field lengths

BS EN ISO 19650-2 provides some updated recommendations on the lengths of some identification fields. [Table 3](#) contrasts the recommendations from BS 1192:2007+A2:2016 with those from BS EN ISO 19650-2.

**Table 3 — BS 1192:2007+A2:2016 vs BS EN ISO 19650-2 identification field lengths**

Field	BS 1192:2007+A2:2016	BS EN ISO 19650-2
Project	2 to 6 characters	As BS 1192:2007+A2:2016
Originator	3 to 6 characters	As BS 1192:2007+A2:2016
Volume/system	1 or 2 characters	2 characters. Standard codes expanded to include XX – No volume/system applicable
Level/location	2 characters	Length as BS 1192:2007+A2:2016. Standard codes reduced to omit GF – Ground floor
Type	2 characters	Length and standard codes as BS 1192:2007+A2:2016
Role	1 character	1-2 characters (second character to supplement the standard codes). Standard codes as BS 1192:2007+A2:2016 except that H is now deprecated.
Number	4 digits with leading zeros	4 to 6 digits with leading zeros

### 8.3 Guidance on spatial referencing for information models

Spatial coordinates used in all information models should be defined in terms of a common project origin and orientation, using a conventional Cartesian axis and common unit of length. The details should be provided in the project's information standard using a statement or a diagram.

SI units (see the BS EN ISO 80000 series) should be used for distance. The basic unit of length should be metres for infrastructure projects or millimetres for building projects, and geometrical information should be created at a scale of 1:1.

The origin should be related to both the project grid and to the site context and is best located within or close to the project or site extent. The orientation should be related to a specific geospatial north.

The accuracy achievable using the chosen units and origins might need to be checked.

A statement or diagram within the project's information standard should relate the project space to a named global geospatial system in three dimensions (decimal degrees latitude, longitude and elevation in metres) and a plan orientation (decimal degrees clockwise rotation from north). It should be noted that a decimal latitude in degrees requires eight decimal places to achieve positioning to within 1 mm.

Alternatively, reference can be made to a standard named projection such as the UK Ordnance Survey grid.

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## 9 Transitional guidance for PAS 1192-2:2013

### 9.1 Transitional guidance on the PAS 1192-2:2013 landmark diagrams

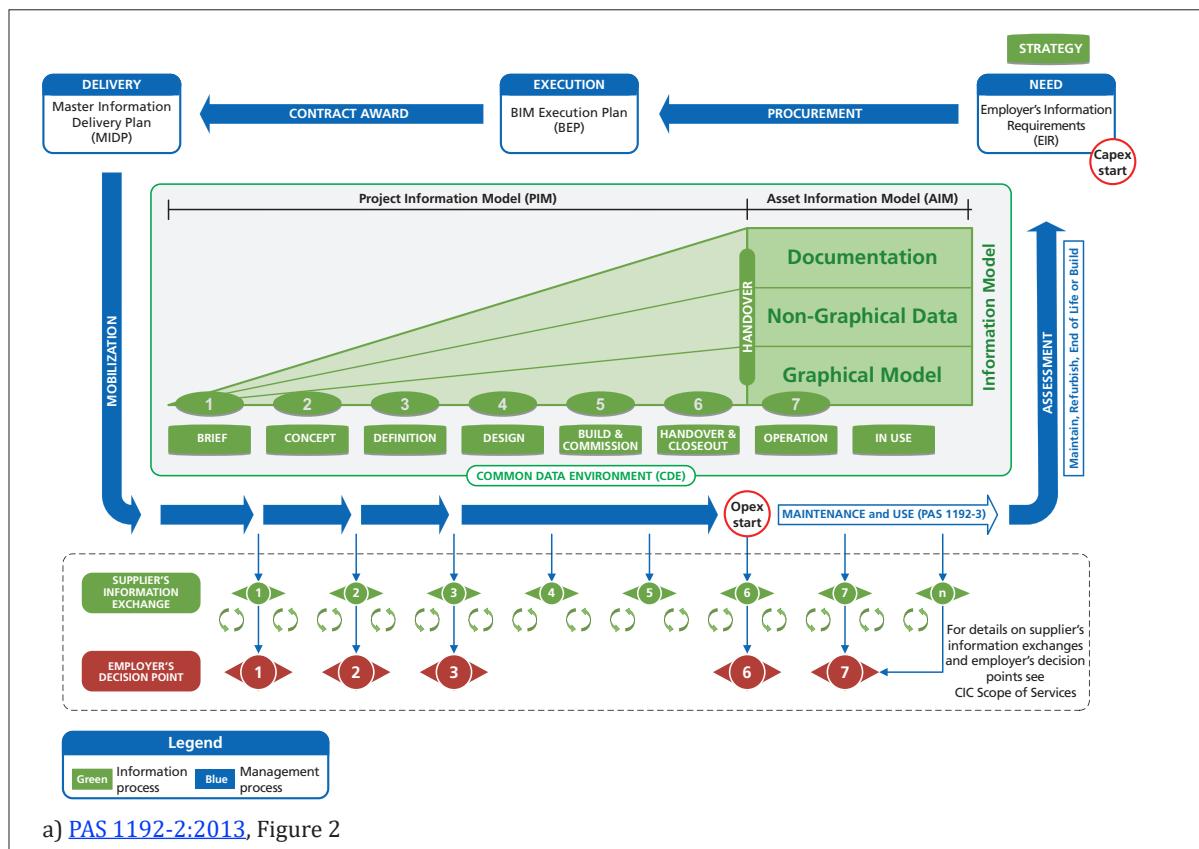
#### 9.1.1 General

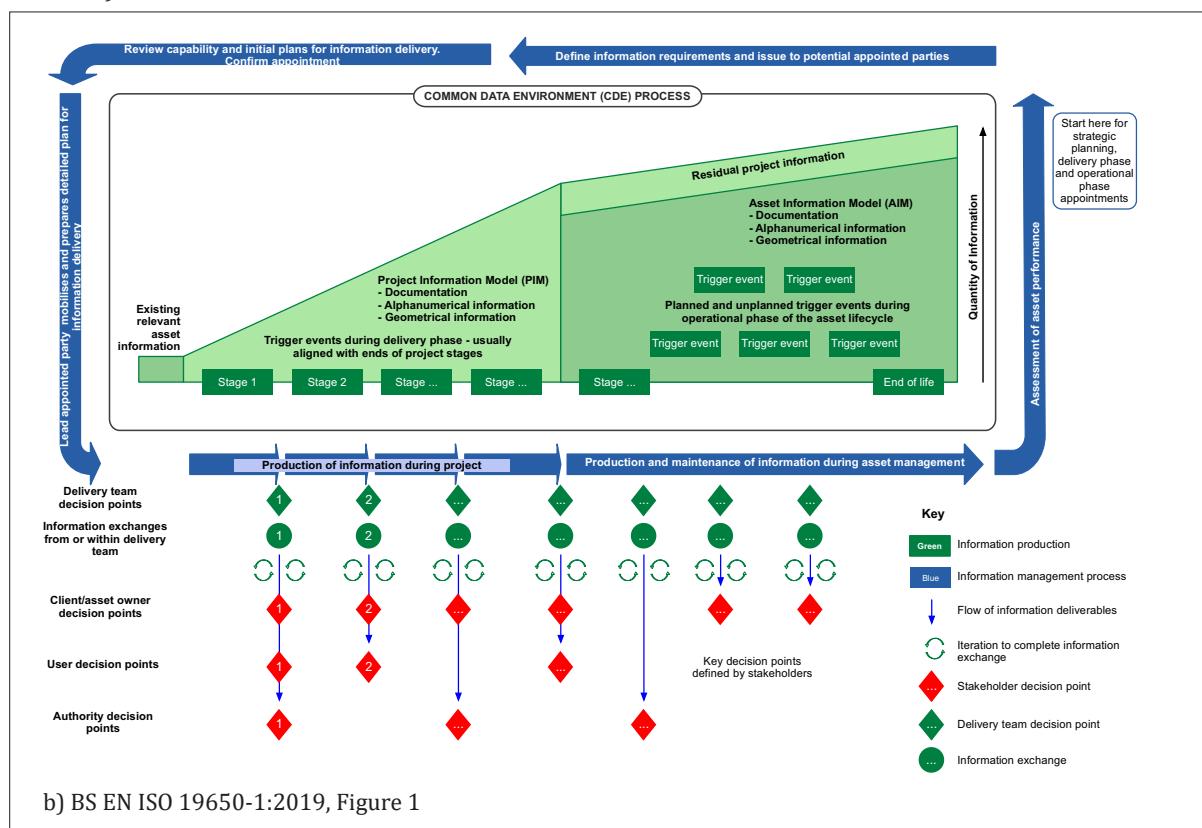
[PAS 1192-2:2013](#) presented a number of diagrams that became widely known and associated with UK BIM Level 2. In particular, [PAS 1192-2:2013](#), Figure 2 showing the information delivery cycle and [Figure 7](#) showing the supply chain contribution. It was a conscious decision to keep recognizably similar diagrams in BS EN ISO 19650-1. In this section, the PAS and ISO diagrams are shown alongside each other, and the differences are explained.

### 9.1.2 Information delivery cycle (aka the racetrack)

The two diagrams shown in [Figure 5](#) are fundamentally the same. However, UK-specific details have been removed in the BS EN ISO 19650-1 version, such as the UK work stage numbers and names, and reference to Capex and Opex. Also, the information process in the ISO 19650-1 version has been illustrated as more evenly balanced across the asset operation and project delivery phases of the lifecycle. A wider range of information stakeholders has been illustrated and the existence of pre-project asset information and project legacy information has been made explicit. The ISO 19650 information delivery cycle specifically recognizes the existence of decision points within delivery teams based on their own production of information.

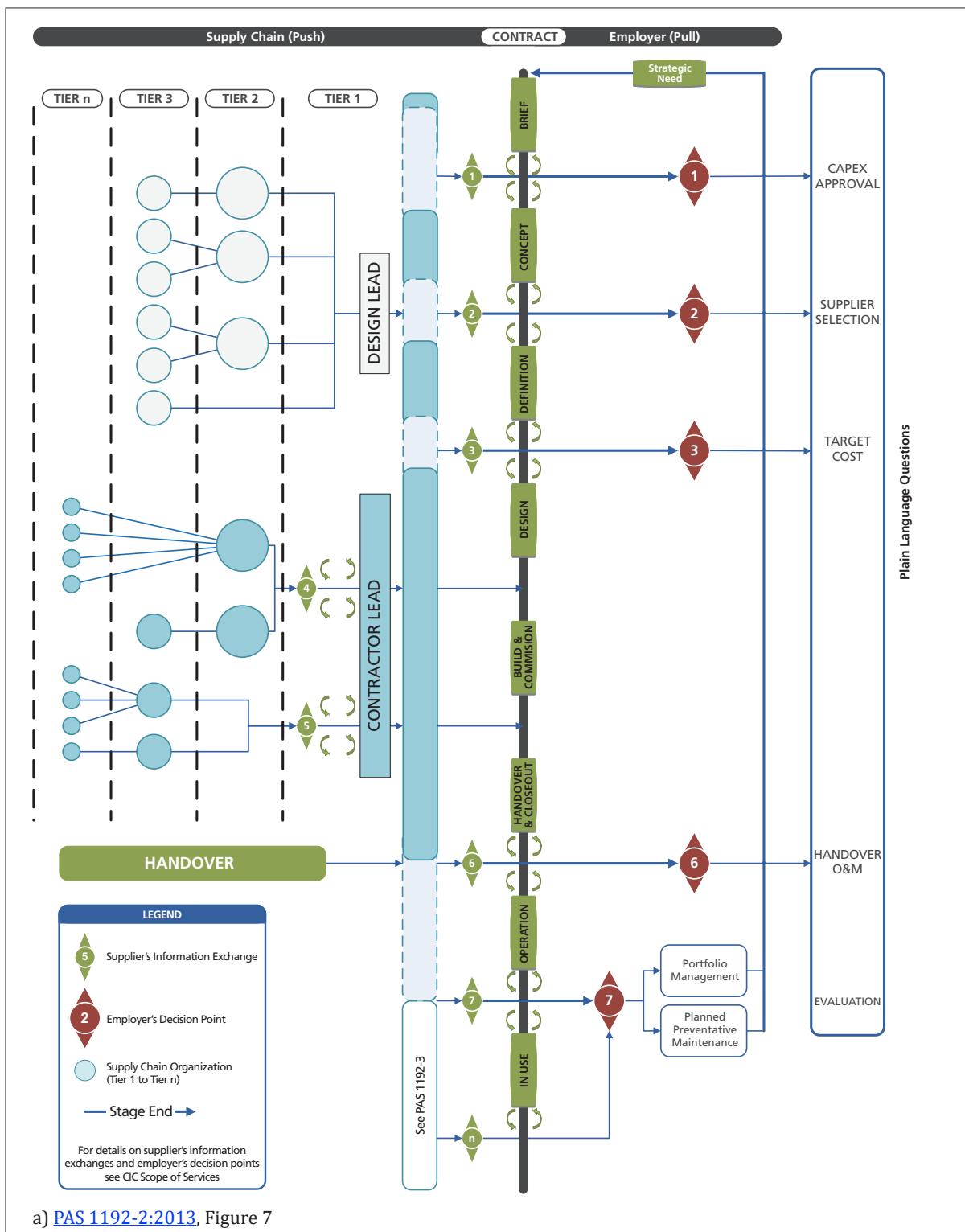
**Figure 5 — PAS 1192-2:2013 and BS EN ISO 19650-1 information delivery cycle diagrams**

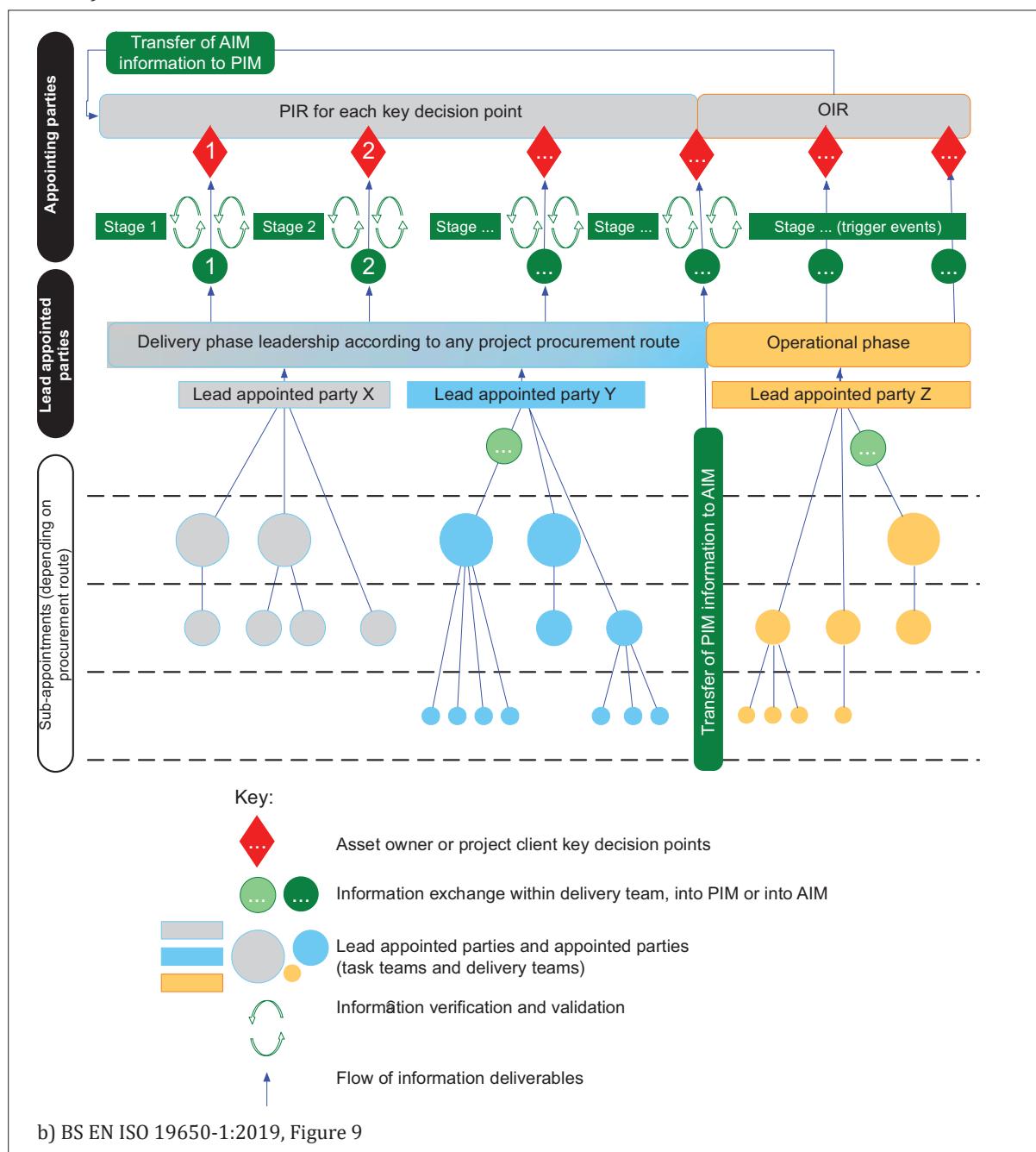


**Figure 5 (continued)**

### 9.1.3 Supply chain diagram

The two diagrams shown in [Figure 6](#) are very similar, except that the ISO 19650 diagram has been turned 90-degrees. This was done so that it is similarly oriented to the information delivery cycle. In addition, the extended delivery teams (supply chains) are similar, the distinction between project and asset operation is made, and the possibility for information exchange just within the delivery team (supply chain) is provided for.

**Figure 6 — PAS 1192-2:2013 and BS EN ISO 19650-1 supply chain diagrams**a) [PAS 1192-2:2013, Figure 7](#)

**Figure 6 (continued)**

## 9.2 Transitional guidance for PAS 1192-2:2013, Clause 4

Clause 4 in [PAS 1192-2:2013](#) had two key tasks. Firstly, to put BIM Level 2 documentation in the context of contractual arrangements, and secondly to illustrate the relationship between the documents used within BIM Level 2 for information management. However, subsequent legal review has indicated that it would have been better for Clause 4 to be interpreted as firstly providing a non-exhaustive context of BIM Level 2 documents within contractual arrangements, and secondly, providing a non-exhaustive illustration of the relationship between the documents used. From a legal perspective, it is felt that this would have avoided the continuing debate as to whether [PAS 1192-2:2013](#) is the definitive description of Level 2.

For the purposes of the UK, the relationships described in [PAS 1192-2:2013](#), Figure 3, given the proviso above, are still helpful. However, this was being revised as part of the planned [PAS 1192-2](#) update (see [5.2](#), paragraph 2) to provide better clarity, and is the basis of [Figure 7a](#).

In BS EN ISO 19650-2, the relationship to project contracts is not described or illustrated in the same level of detail as it was in [PAS 1192-2](#) because of the range of international variations. However, for the purpose of this Published Document, the diagram in [Figure 7b](#)) has been prepared to help illustrate this relationship to a UK audience.

The sequence of BIM Level 2 project documents is also retained in ISO 19650-2, but is not illustrated in the standard. [Figure 8](#) provides a helpful comparison between PAS 1192:2013 and BS EN ISO 19650-2, which can facilitate understanding of the changes which have been incorporated within the BS EN ISO 19650-2 approach.

The concepts are the same in ISO 19650, as for [PAS 1192-2](#) but some document names have changed – such as exchange information requirements instead of employer's information requirements (EIR), and project's information standard and project's information production methods and procedures instead of standard method and procedures. Also, there is no specific naming of the different appointed party (supplier) capability assessments in ISO 19650-2, nor the collective term of project implementation plan. Where there was one document in [PAS 1192-2](#) that has been replaced by multiple documents in BS EN ISO 19650-2 then the [PAS 1192-2](#) document name is repeated in [Figure 8](#).

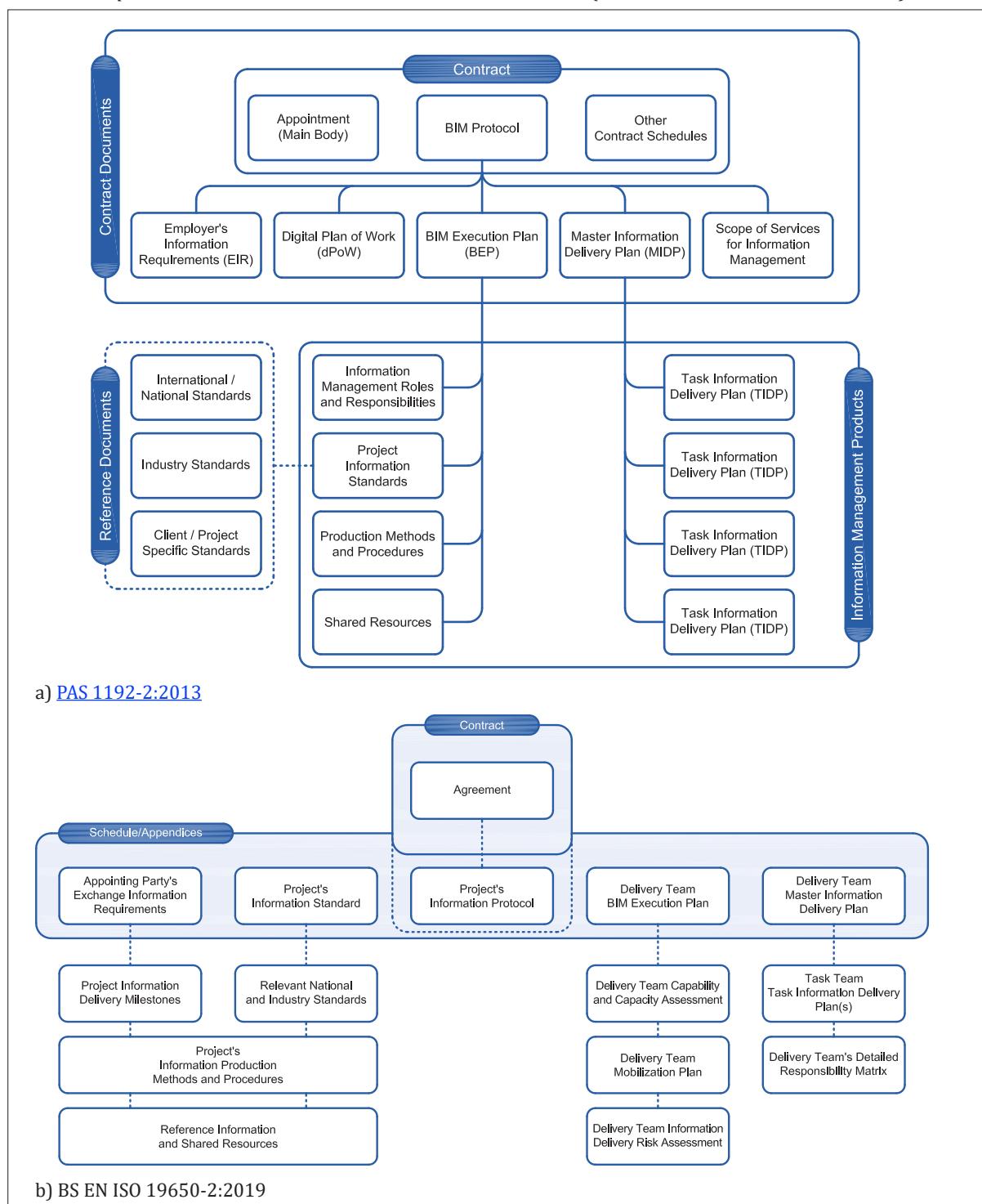
There are some new documents mentioned in BS EN ISO 19650-2 that were not in [PAS 1192-2:2013](#) – the delivery team mobilization plan and the delivery team information delivery risk assessment. To comply with ISO 19650-2, these documents do need to be included but note that none of the documents is required to be standalone and can be part of a larger document.

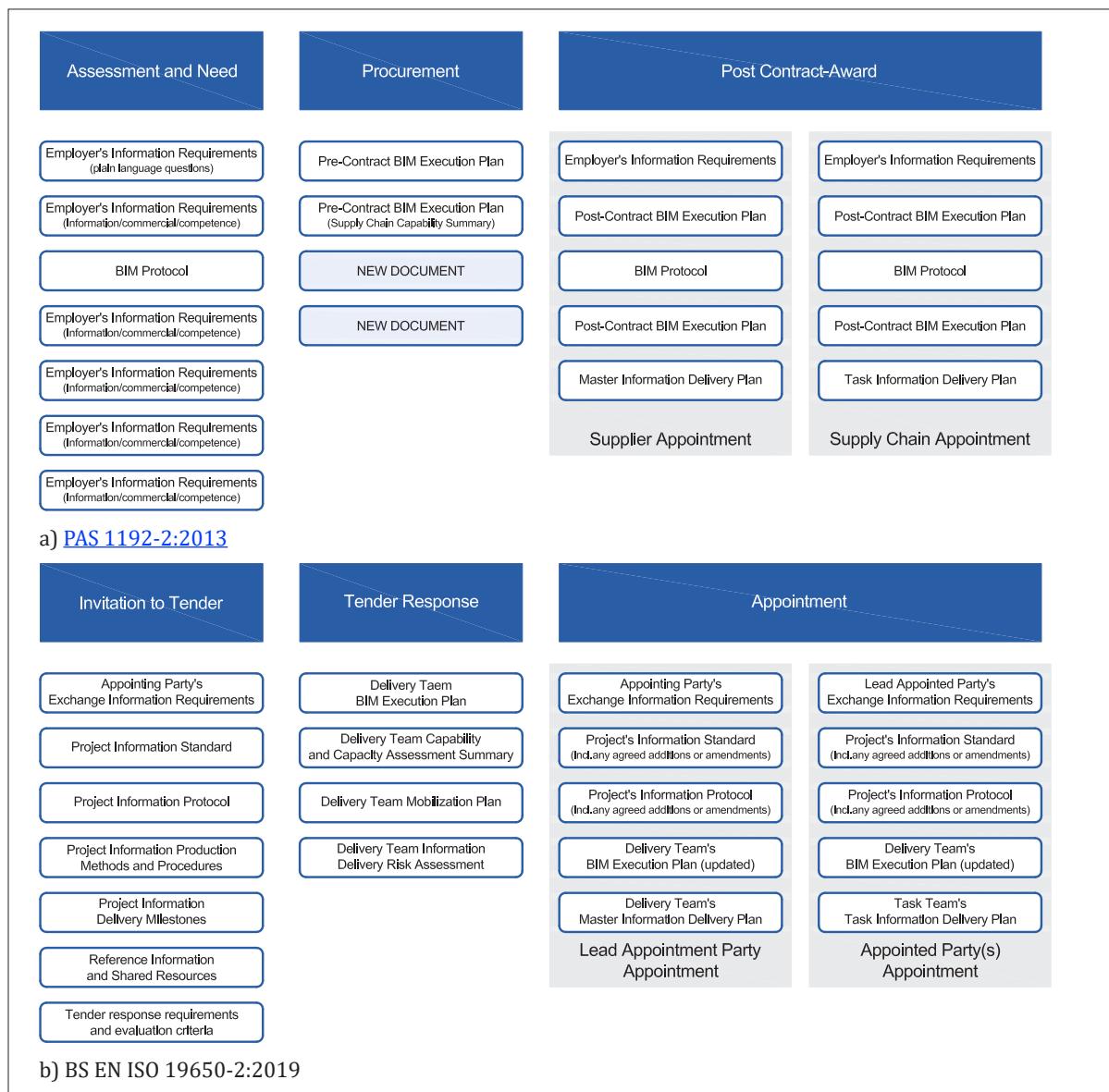
*NOTE 1 [PAS 1192-2:2013](#) did not intend to provide an exhaustive list of contract documents*

The information protocol is a feature of BS EN ISO 19650-2 and like the UK BIM Protocol, this can be the means of capturing requirements into appointments and contracts. In the UK, therefore, the UK BIM Protocol – or equivalent – could fulfil this requirement.

*NOTE 2 Further guidance on the legal implications of transitioning to ISO 19650 is being prepared.*

While some CPIx document templates were referenced in [PAS 1192-2:2013](#), ISO 19650 gives no equivalent source for document templates. Replacement templates to CPIx were being prepared as part of the update of [PAS 1192-2](#). These are being reviewed for potential inclusion in the future guidance framework.

**Figure 7 — Relationships between the contract and BIM Level 2 documents (PAS 1192 and BS EN ISO 19650-2)**

**Figure 8 — Sequence and compilation of BIM Level 2 documents (PAS 1192 and BS EN ISO 19650-2)**

### 9.3 Transitional guidance for PAS 1192-2:2013, Clause 5

#### 9.3.1 General

Clause 5 of [PAS 1192-2:2013](#) covered the initial work done to establish the EIR, including a required minimum contents list. Some of the details from [PAS 1192-2:2013](#), Clause 5 are covered in BS EN ISO 19650-1, setting out the concepts and principles for information requirements, including the EIR. The requirements for drawing up project-related EIR are in BS EN ISO 19650-2.

It is helpful to refer to Figure 2 of BS EN ISO 19650-1:2019 which sets out the relationship between different types of requirements and between requirements and information models.

Plain language questions (PLQ) do not appear in ISO 19650-1 or -2 but the project information requirements (PIR) are broadly equivalent in their overall role in the information management process.

### 9.3.2 EIR cascading

The concept of EIR cascading throughout a delivery team (supply chain) was introduced in [PAS 1192-2](#) and this is clearly stated in BS EN ISO 19650-1:2019, **5.5** and in BS EN ISO 19650-2:2019, **5.4.3**. Subclause **5.4.5** identifies dependencies of information between task teams.

### 9.3.3 EIR contents

In [PAS 1192-2:2013](#) a minimum contents list for an EIR was provided in **5.3**. Although this was used widely as the template for EIR documents, it was acknowledged to have shortcomings particularly in the description of the required information deliverables, and an alternative approach was being considered for the update.

BS EN ISO 19650-2 deals with the EIR in an entirely different way, as no minimum contents list is specified. Instead, the activities to be completed to establish the EIR for each appointment are listed in BS EN ISO 19650-2:2019, **5.2.1**. This follows the approach which was being considered for the update of [PAS 1192-2:2013](#).

## 9.4 Transitional guidance for PAS 1192-2:2013, Clause 6

[PAS 1192-2:2013](#), Clause **6** described the requirements during appointed party (supplier) procurement. This applies at any tier of the project hierarchy. [PAS 1192-2:2013](#) required the project implementation plan (PIP) to include the supply chain capability summary form which itself incorporated:

- the BIM assessment form;
- the IT assessment form; and
- the resource assessment form.

The general principles of selecting appropriately skilled and resourced appointed parties (suppliers) are covered in BS EN ISO 19650-1:2019, Clause **8**, and the specific requirements for project delivery are covered in BS EN ISO 19650-2:2019, **5.3.3** and **5.3.4**:

- capability and capacity to manage information;
- capability and capacity to produce information; and
- availability of appropriate IT systems and solutions.

## 9.5 Transitional guidance for PAS 1192-2:2013, Clause 7

### 9.5.1 General

BS EN ISO 19650-2 covers the activities which need to occur following appointment of each delivery team and ahead of their mobilization, including for example, the BIM execution plan.

### 9.5.2 Task information delivery plans and master information delivery plan

BS EN ISO 19650-2:2019, **5.4.4** gives a list of contents for the task information delivery plan (TIDP) for each information container. This is more explicit than the requirements of [PAS 1192-2:2013](#), **7.4**. In particular, BS EN ISO 19650-2 requires that the level of information need is identified for each information container.

Although not explicitly stated, TIDPs should still be able to indicate the handover of responsibility from one team member to another.

BS EN ISO 19650-2:2019, **5.4.5** states that the master information delivery plan (MIDP) for each delivery team is the aggregation of all applicable TIDPs. On a given project, there are as many MIDPs as there are delivery teams and lead appointed parties. Where many delivery teams are working in parallel, as might be the case during design, then the implication is that the appointing party either

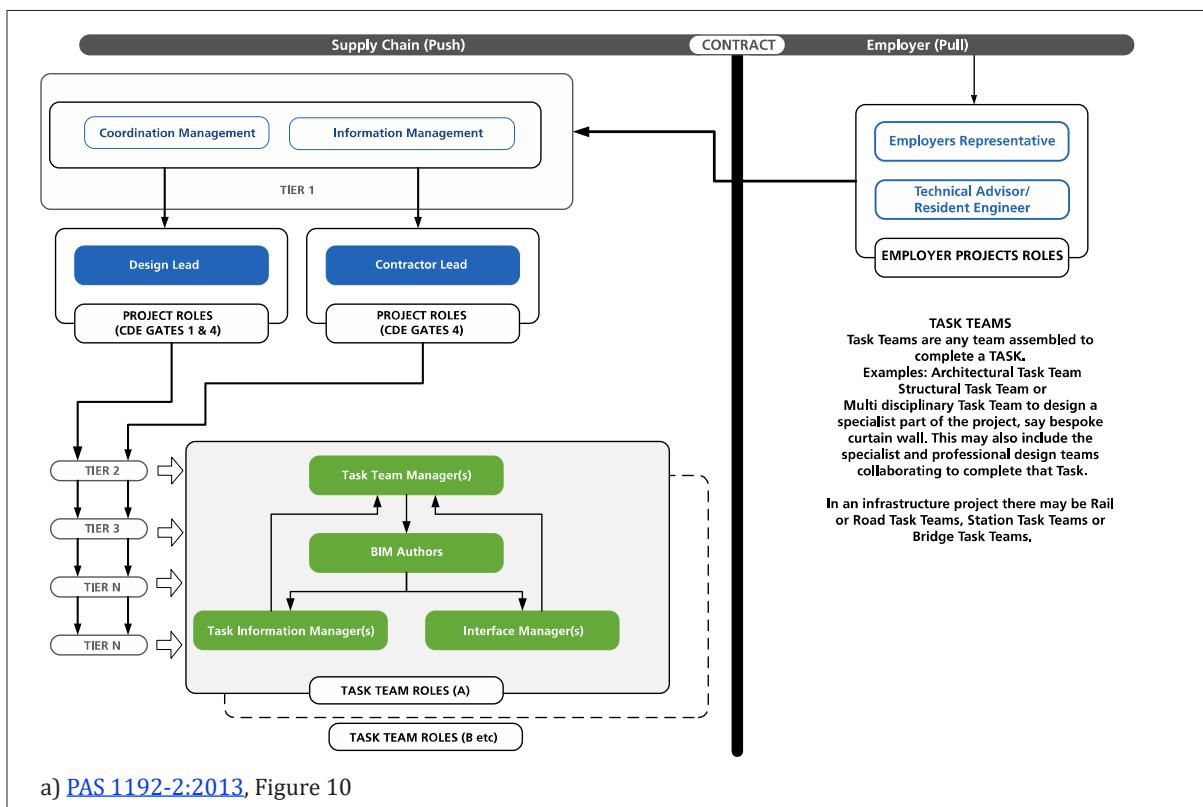
needs to coordinate the MIDPs into a federated master information delivery plan or assign another organization to do this.

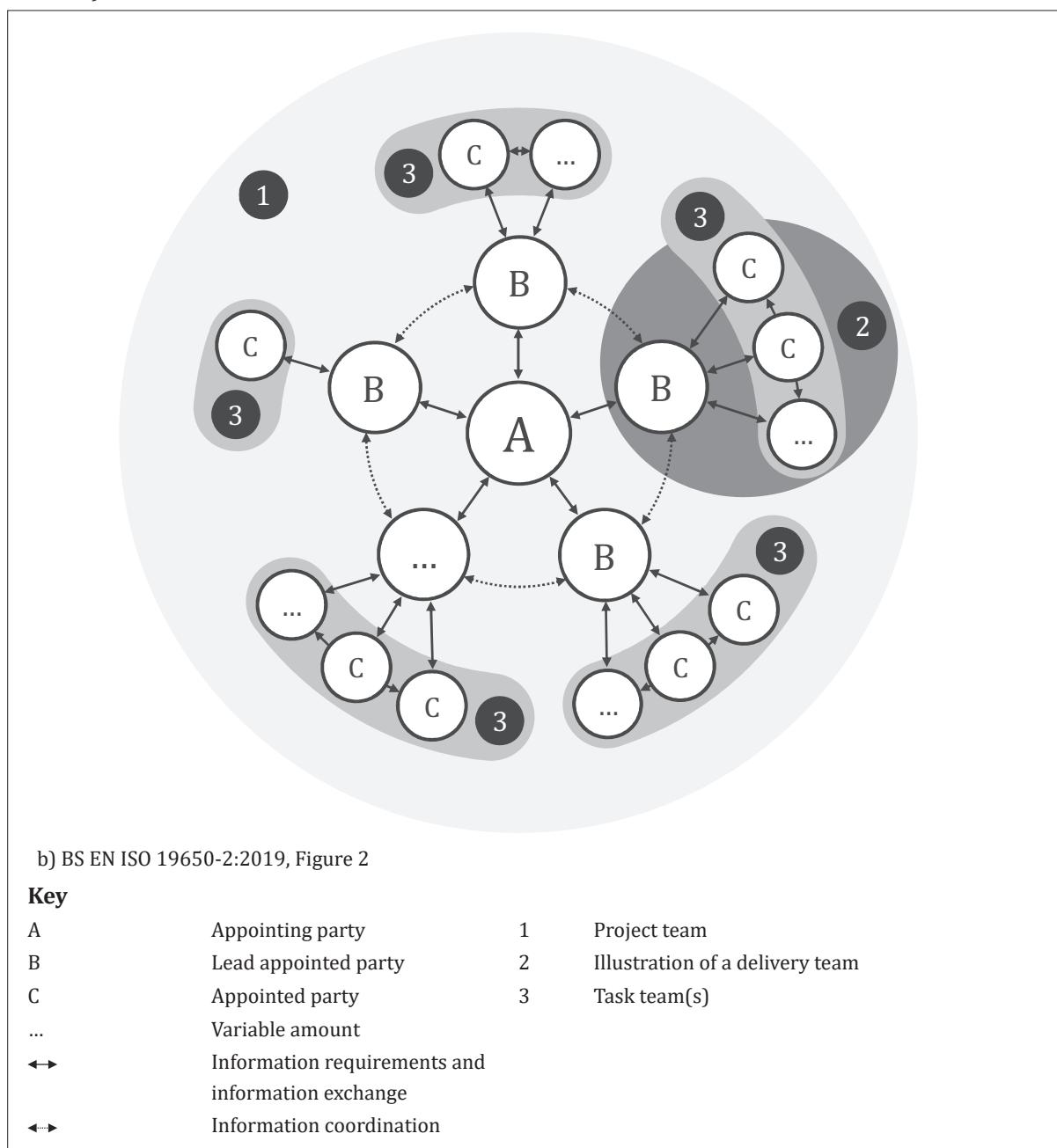
### 9.5.3 Parties and teams in PAS 1192-2:2013 and in BS EN ISO 19650-2

The project structure was explained in [PAS 1192-2:2013](#) in Figure 10, and is explained in BS EN ISO 19650-2:2019 in Figure 2. These are rather different interpretations of the overall concept of team structure and this section provides explanation of these differences. [Figure 9](#) below includes the [PAS 1192-2:2013](#) and BS EN ISO 19650-2:2019 diagrams.

Both [PAS 1192-2:2013](#) and BS EN ISO 19650-2:2019 show a hierarchical arrangement of organizations/individuals in relation to information management.

**Figure 9 — PAS 1192-2 and BS EN ISO 19650-2 team arrangement diagrams**



**Figure 9 (continued)**

In the text below, the parties and teams shown in the BS EN ISO 19650-2 diagram are explained in terms of the [PAS 1192-2](#) concepts. The [PAS 1192-2](#) diagram included information management roles, but BS EN ISO 19650-2 does not take a role-based approach. Instead BS EN ISO 19650-2 refers to the information management function, aspects of which are assigned to whichever persons or organizations are best placed to fulfil them.

The BS EN ISO 19650-2 appointing party (A) is the equivalent of the [PAS 1192-2:2013](#) top-level employer on the right hand side of the contract line. In neither standard does this have to be the client – it could be a separate organization acting on the client's behalf. The appointing party is required to nominate individuals from within its organization or appoint a lead appointed party or third party to undertake the information management function. This is explained much more explicitly in BS EN ISO 19650-2 than it was in [PAS 1192-2:2013](#).

The BS EN ISO 19650-2 lead appointed parties (B) are the equivalent of the [PAS 1192-2:2013](#) Tier 1 lead suppliers. [PAS 1192-2:2013](#) only suggested two Tier 1 lead appointed parties (lead suppliers)

– the design lead and the construction lead. As far as BS EN ISO 19650-2 is concerned there can be any number of Tier 1 lead appointed parties. In the UK, design practices and other consultants are usually appointed separately, so these are also Tier 1 lead appointed parties. This could also apply on a construction management project, where the package contractors appointed directly by the client would be lead appointed parties.

BS EN ISO 19650-2 identifies each lead appointed party and their appointed parties as a delivery team (2). As far as the appointing party is concerned, each delivery team so defined is a self-contained unit of information management – and the appointing party only deals with the lead appointed party. By implication, therefore, the arrangement of appropriate design/construction lead coordination management and information management is carried out at the delivery team level – and needs to be coordinated overall at appointing party and project level. Within BS EN ISO 19650-2 it is stated that the appointing party needs to plan for this – although this function can be the subject of a separate and specific appointment to do that.

The BS EN ISO 19650-2 task teams (3) comprise a variable number of appointed parties (C) from each lead appointed party (B), and are equivalent to the [PAS 1192-2](#) task teams. The BS EN ISO 19650-2 diagram does not show multiple tiers of appointments for simplicity, but this is possible. Within a delivery team, the same organization can be both a lead appointed party (B) and an appointed party (C).

#### **9.5.4 “Employer”, “supplier”, “appointing party” and “appointed party”**

In the UK, the terms employer and supplier are typically used to refer to the two parties on either side of a contract. These terms are used wherever contracts are in place, so a supplier can also be the employer of a sub-contractor. The client is the highest level employer on a project. The language in ISO 19650 is very different.

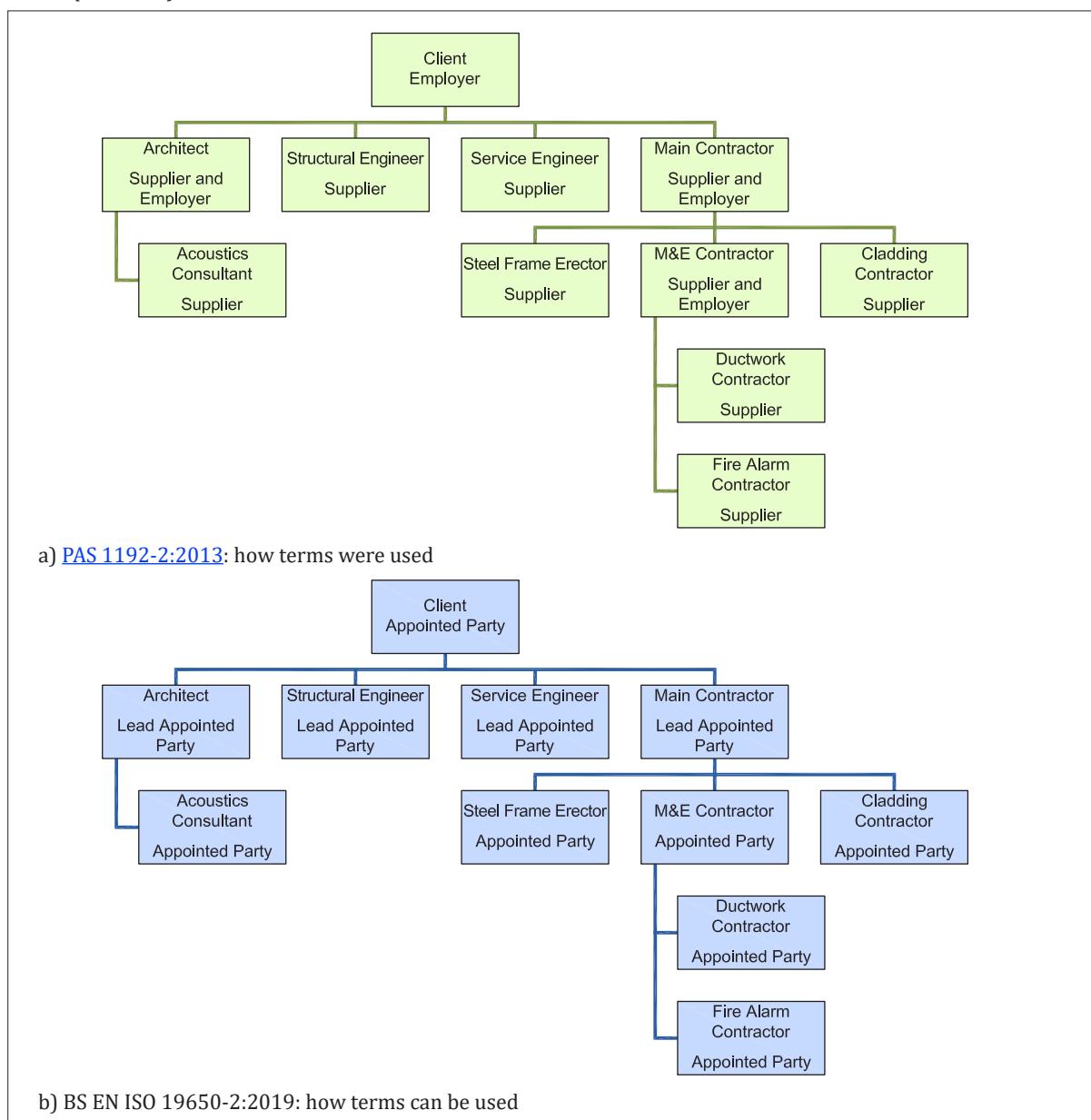
The first challenge within the ISO Working Group was that the word “employer” is not usually translated in the contractual sense, only in the HR sense. In many other countries, “employer” is only used as the term for a person or organization who employs someone as an employee.

The second challenge within the ISO Working Group was the need to avoid all references to the word “contract” and its derivatives, to avoid conflict in countries where this is governed by legislation.

The third challenge was to make sure the terms would still be compatible with asset and facilities management, where there is a mixture of formal contracts and less formal arrangements, for example with in-house works teams or direct labour.

To overcome these challenges, the most acceptable phraseology found was to use the word “appointment” instead of “contract”, and the accompanying terms “appointing party” and “appointed party”. Appointed parties are those parties providing information concerning the works, goods and services involved in project delivery or asset management. There is a special case of “lead appointed party” which is an appointed party directly appointed by the appointing party.

The UK and ISO terms are not interchangeable – see [Figure 10](#) for a comparison. The distinction between lead appointed party (tier 1) and appointed party (all lower tiers) is clear. [PAS 1192-2:2013](#) used “design lead” and “construction lead” to denote the organizations in charge of design and construction aspects of project delivery, but these are not the only lead appointed parties in ISO 19650 terms.

**Figure 10 — Comparison of hierarchical terms in PAS 1192-2 and BS EN ISO 19650**

### 9.5.5 Roles and function

The ISO 19650 language around "function" is intended to emphasize that information management is what all project team members do, rather than the preserve of particular named individuals or organizations.

In BS EN ISO 19650-1 or BS EN ISO 19650-2 there are no named equivalents to the information management roles named in [PAS 1192-2:2013](#). There are requirements within BS EN ISO 19650-2 that would be recognized as project information management, task information management and interface management, but these aspects of the information management function can be allocated to whichever organization is best placed to carry them out. The project information management activities and task information management activities set out in BS EN ISO 19650-2:2019, **5.3 to 5.7** cover the details provided in [PAS 1192-2:2013](#), Figure 10 and Table 2.

BS EN ISO 19650-2:2019, Annex A presents an information management assignment matrix which can be used to assign all the information management activities against the different types of parties.

### 9.5.6 Volumes and federation

The concepts of volumes and federation are intrinsically linked. Volumes describe how information models might be broken down into separate units, for a variety of reasons. In contrast, the federation strategy describes the approach to combining those separate units into a single information model.

The change in language from volumes in [PAS 1192-2:2013](#) to federation strategy in ISO 19650 came about because it was immensely difficult to describe the concept by translating the word "volume". In particular, "volume" was not helpful to describe non-spatial reasons for breaking down an information model.

In BS EN ISO 19650-1, the federation strategy is seen as a high-level description which is then complemented by the container breakdown structure at a more detailed level. Together, these identify how information containers relate to the organizations involved in information management, i.e. the various appointed parties.

The concepts of federation strategy and container breakdown structure are explained in BS EN ISO 19650-1:2019, **10.4** and in [Annex A](#), and this covers all of the general aspects of volumes from [PAS 1192-2:2013](#), **7.6**. The concept of federation is most easily understood in the context of a 3D model, but federation refers to any information no matter what form it takes.

In terms of information container identification (naming), the UK field Volume/System is still used to designate an agreed breakdown of the information model and/or the information containers.

## 9.6 Transitional guidance for PAS 1192-2:2013, Clause 9

### 9.6.1 CDE process

The information formats that are expected to be delivered at information exchange are not specified in BS EN ISO 19650-2, but are explained in **NA.4** of the National Annex to that standard.

Specific steps in the CDE process are broadly the same, but there are two instances where it is less obvious, and so are defined here.

Firstly, the Verified Gate referred to in [PAS 1192-2:2013](#), **9.2.2.8** represents verification of as-constructed information, changing from PUBLISHED state to ARCHIVED state. The Verified Gate is not used in BS EN ISO 19650-1 but the same result is achieved when information authorized for work stage 5, Construction, is used during work stage 6, Handover, to confirm that the information model delivered at stage 6 represents the as-constructed asset.

Secondly, the Accepted Gate referred to in [PAS 1192-2:2013](#), **9.2.2.12** indicates transfer of information containers into an asset information model for use during the operational phase of the life cycle. This requirement is not covered explicitly in BS EN ISO 19650-2, but the general acceptance process is covered in BS EN ISO 19650-1:2019, **5.7.4**. Transfer of information into and from an asset information model is being included in ISO 19650-3.

### 9.6.2 Work stages and levels of model definition

The generic work stages for projects in the UK were debated and agreed as a unified Plan of Work by the Construction Industry Council, and then were subsequently adopted and published in the RIBA Plan of Work 2013 [2]. For BIM Level 2, these work stages are explained in more detail in BS 8536-1 and [BS 8536-2](#) and can therefore be applied in the same manner when using BS EN ISO 19650-2.

BS EN ISO 19650-1 explains the principle of level of information need. This is a broader concept than level of model definition, level of model detail or level of model information, which can be considered as specific examples of level of information need. BS EN ISO 19650-2:2019, **5.1.4c**) requires that the appointing party considers the method of assigning level of information need when developing the project's information standard. For each appointment, BS EN ISO 19650-2:2019, **5.2.1b**) requires

that the appointing party establish the level of information need for each of the exchange information requirements. This is then reflected in the task information delivery plans (see [9.5.2](#)).

### 9.6.3 Classification

BS EN ISO 19650-1 states that classification should be to a system in accordance with BS EN ISO 12006-2. The UK National Annex confirms that in the UK this system is Uniclass 2015. However, the expectation in BS EN ISO 19650-2 is that classification is recorded through metadata and is not part of the file naming convention.

## 9.7 Transitional guidance for PAS 1192-2:2013, Clause 10

[PAS 1192-2:2013](#), Clause 10 set out the requirements at handover between project delivery and asset operation – Capex to Opex. References to COBie-UK-2012 in [PAS 1192-2:2013](#) have been superseded by [BS 1192-4:2014](#). In BS EN ISO 19650-2:2019, handover to the asset information model is not identified as a separate information management activity – instead, [5.7](#) of that standard on information model delivery would apply (see also [9.6.1](#)).

## Annex A

### Document mapping

Two document mapping tables of BS EN ISO 19650, parts 1 and 2 are presented below from the perspective of the UK standards BS 1192:2007+A2:2016 and [PAS 1192-2:2013](#). In [Table A.1](#) and [Table A.2](#), columns 1 and 2 contain the clause numbers and topics from BS 1192:2007+A2:2016 and [PAS 1192-2:2013](#). Columns 3 and 4 state where this topic is covered in BS EN ISO 19650-1 and/or in BS EN ISO 19650-2.

Some topics have been given specific guidance in this Published Document, and column 5 indicates where to find this. The existence of these references indicates where change has taken place.

**Table A.1 — Map of BS 1192:2007+A2:2016**

BS 1192:2007 +A2:2016 clause	Topic summary (using BS 1192 terms)	BS EN ISO 19650-1 clause	BS EN ISO 19650-2 clause	Reference within this document
<b>4.1.1</b>	Projects follow standard methods and procedures (SMPs)	—	<b>5.6.2</b>	—
<b>4.1.2</b>	Projects need SMPs for: - roles - names - project specific codes - spatial coordination - CDE - Hierarchy	<b>7.1, 7.3, 10.4, 12.1,</b>  — — — — — —	<b>5.1.1, 5.3.1</b>  <b>5.1.7a)</b>  National Annex  <b>5.6.2c)</b>  <b>5.1.7</b>  <b>5.1.4b)</b>	—
<b>4.2.1</b>	CDE outline	<b>12.1</b>	—	<a href="#">8.1</a>
<b>4.2.2</b>	WIP	<b>12.2</b>	—	<a href="#">8.1</a>
<b>4.2.3</b>	SHARED	<b>12.4</b>	—	<a href="#">8.1</a>
<b>4.2.4</b>	PUBLISHED	<b>12.6</b>	—	<a href="#">8.1</a>
<b>4.2.5</b>	ARCHIVE	<b>12.7</b>	—	<a href="#">8.1</a>
<b>5.1</b>	Names are concatenations of fields	—	<b>5.1.7a)</b>	—
<b>5.2</b>	Fields should have assigned codes	—	<b>5.1.7b)</b>	—
<b>5.3.1</b>	Source of codes	—	<b>5.1.7a)</b>	—
<b>5.3.2</b>	Standard codes	—	National Annex	—
<b>5.3.3</b>	Project-specific codes	—	National Annex	—
<b>5.4.1</b>	Pattern of names	—	See <b>5.4.2 – 5.4.4</b>	<a href="#">8.2.1</a>
<b>5.4.2</b>	Naming of directories/folders	—	—	<a href="#">8.2.1</a>
<b>5.4.3</b>	Naming of files	—	National Annex	<a href="#">8.2.1</a>
<b>5.4.4</b>	Naming of containers in files	—	—	<a href="#">8.2.1</a>
<b>5.5</b>	Examples of names	—	Not applicable	—
<b>6-14.1</b>	Principles for each name field	—	National Annex	—
<b>6-14.2</b>	Standard codes for each name field	—	National Annex	<a href="#">8.2.2</a>

**Table A.1** (*continued*)

<b>BS 1192:2007 +A2:2016 clause</b>	<b>Topic summary (using BS 1192 terms)</b>	<b>BS EN ISO 19650-1 clause</b>	<b>BS EN ISO 19650-2 clause</b>	<b>Reference within this document</b>
<b>6-14.3</b>	Project specific codes for each name field	—	National Annex	—
<b>15.1</b>	Add status/revision to file name if no metadata	—	—	—
<b>15.2.1</b>	Container should have suitability	<b>12.1</b>	<b>5.1.7c)</b>	—
<b>15.2.2</b>	Container should have revision	<b>12.1</b>	<b>5.1.7c)</b>	—
<b>15.3.1</b>	Use standard code for status	—	—	—
<b>15.3.2</b>	Use standard code for suitability	—	National Annex	—
<b>A.1</b>	Specify a common origin	—	—	<b>8.3</b>
<b>A.2</b>	Space statement or diagram with the project dictionary	—	—	<b>8.3</b>
<b>A.3</b>	Relate project space to a geospatial system	—	—	<b>8.3</b>
<b>B.1</b>	Quality policy for models	<b>6.2,</b> Figure 3	—	—
<b>B.1</b>	Data quality checking	—	<b>5.6.2, 5.6.3</b>	—
<b>B.2</b>	Agree data exchange process	—	<b>5.3.5</b>	—
<b>C.1</b>	Note on ISO 13567	—	—	<b>8.2.1</b>
<b>C.2</b>	How to manage BS to ISO 13567	—	—	<b>8.2.1</b>

**Table A.2 — Map of PAS 1192-2:2013**

<b>PAS 1192-2: 2013 clause</b>	<b>Topic summary (using PAS 1192-2 terms)</b>	<b>BS EN ISO 19650-1 clause</b>	<b>BS EN ISO 19650-2 clause</b>	<b>Reference within this document</b>
<b>4</b>	CPIC documents for information management	—	Not applicable	<b>9.2</b>
<b>5.1.1</b>	Information delivery cycle goes from CAPEX Start to Handover	—	<b>4.1</b> , Figure 3	—
<b>5.1.2</b>	Information requirements/collaborative working in parallel with other activities	Introduction	—	—
<b>5.1.3</b>	Information requirements to be SMART	—	—	—
<b>5.1.4</b>	EIR incorporated into tender documentation	<b>5.5</b>	<b>5.2.4</b>	<b>9.3.1</b>
<b>5.1.5</b>	Employer's representative is responsible for the EIR	—	<b>5.2.1</b>	—
<b>5.2.1</b>	EIRs part of wider documentation	—	<b>5.2.1</b>	—
<b>5.2.2</b>	All steps in information delivery cycle to be applied to all contracts	—	<b>4.1</b>	—
<b>5.3</b>	Minimum contents of the EIR	—	<b>5.2.1b), 5.2.3, 5.1.5</b>	<b>9.3.2</b>

**Table A.2 (continued)**

<b>PAS 1192-2: 2013 clause</b>	<b>Topic summary (using PAS 1192-2 terms)</b>	<b>BS EN ISO 19650-1 clause</b>	<b>BS EN ISO 19650-2 clause</b>	<b>Reference within this document</b>
<b>6.1.1</b>	EIRs request a BEP	—	<b>5.2.3</b>	—
<b>6.1.2</b>	Pre-award BEP for tender evaluation	—	<b>5.3.2</b>	—
<b>6.1.3</b>	Post award, confirmed BEP	—	<b>5.4.1</b>	—
<b>6.1.4</b>	BEP on behalf of supply chain	<b>6.3.4</b>	—	—
<b>6.1.5</b>	Cascade down the supply chain	<b>6.3.5</b>	—	—
<b>6.2</b>	Contents of the pre-award BEP	—	<b>5.3.2b), 5.3.7</b>	—
<b>6.3.1</b>	Tenderers to provide PIP	—	<b>5.3.4</b> (but not called PIP)	<b>9.4</b>
<b>6.3.2</b>	PIP to contain BIM, IT, resource assessments	—	<b>5.3.4</b> (but not called PIP)	<b>9.4</b>
<b>6.4.1</b>	Supplier BIM assessment	—	<b>5.3.3a), 5.3.3b)</b>	<b>9.4</b>
<b>6.4.2</b>	Contents of the BIM assessment	—	<b>5.3.3a), 5.3.3b)</b>	—
<b>6.5.1</b>	Supplier IT assessment	—	<b>5.3.3c)</b>	9.4
<b>6.5.2</b>	Contents of the IT assessment	—	<b>5.3.3c)</b>	—
<b>6.5.3</b>	Supply chain methods for information sharing as documented in the BEP	—	—	—
<b>6.6</b>	Supplier resource assessment	—	<b>5.3.3a)-c)</b>	<b>9.4</b>
<b>6.7</b>	Use summary capability form for a supply chain	—	<b>5.3.4</b>	—
<b>7.1</b>	Information is delivered to the standard described in the contract and to supply chain at predefined points	—	<b>5.6.3</b>	—
<b>7.2.1</b>	Minimum contents of post-award BEP	—	<b>5.4.1</b>	—
<b>7.3.1</b>	Induction meeting, prepare MIDP	—	<b>5.4.5</b>	—
<b>7.3.2</b>	MIDP used to manage delivery	—	<b>5.6.5</b>	—
<b>7.3.3</b>	MIDP lists information deliverables	—	<b>5.4.4, 5.4.5</b>	<b>9.5.1</b>
<b>7.4.1</b>	Task team compiles TIDP, TIDPs contents definition	—	<b>5.4.4</b>	<b>9.5.1</b>
<b>7.4.2</b>	TIDP against milestones	—	<b>5.4.4</b>	—
<b>7.4.3</b>	TIDP indicates team member	—	<b>5.4.4</b>	—
<b>7.4.4</b>	TIDP indicates sequence of responsibility	—	—	<b>9.5.1</b>
<b>7.4.5</b>	TIDPs take account of sequence of model preparation	—	<b>5.6.1</b>	—
<b>7.5.1.1</b>	Information management roles to be confirmed	<b>7.3, 7.4</b>	<b>5.4.1a)</b>	<b>9.5.2</b>
<b>7.5.1.2</b>	Roles and responsibilities to be defined	—	<b>5.1.1, 5.3.1, 5.4.1a)</b>	—

**Table A.2** (*continued*)

PAS 1192-2: 2013 clause	Topic summary (using PAS 1192-2 terms)	BS EN ISO 19650-1 clause	BS EN ISO 19650-2 clause	Reference within this document
7.5.1.3	Roles not to be confused with job titles	7.1	—	<a href="#">9.5.2</a>
7.5.1.4	Roles assigned and contact details recorded	7.3	5.4.1a	
7.5.1.5	Roles related as per Figure 10	—	0.5 (parties and teams)	<a href="#">9.5.2, 9.5.3, 9.5.4</a>
7.5.1.6	Activities in Table 2 to be done	—	Not applicable	—
Table 2	Activities table	—	Annex A	—
7.6.1	Project to use volumes as needed	—	5.3.2c)	<a href="#">9.5.5</a>
7.6.2	Volumes to be agreed collaboratively	10.4	—	—
7.6.3	COBie file to be issued per volume	—	Not applicable	—
8.1	Communicate BEP to project team	—	5.4.1	—
8.2	Software to be procured and tested	—	5.5.2	—
8.3	Assess training needs of team	—	5.5.1	—
9.1.1	PIM to be progressively developed	6.1, para 2	5.4.2	—
9.1.2	PIM developed according to MIDP		5.6.2	—
9.1.3	PIM contains graphical + non-graphical content	4.1, 5.7	—	—
9.1.4	Data delivery includes some of native files, COBie, pdf	—	National Annex	<a href="#">9.7.1</a>
9.1.5	Follow the CDE process (9.2)	—	See 9.2.2.1 - 9.2.2.2	—
9.1.6	Use a CDE for information consistency	12.1	—	—
9.2.2.1	WIP to hold unapproved information	12.2	—	—
9.2.2.2	WIP to SHARED (approval) to include defined checks		National Annex	—
9.2.2.3	SHARED holds approved information	12.4	—	—
9.2.2.4	CLIENT SHARED is used for authorization	12.4	—	—
9.2.2.5	SHARED to PUBLISHED (authorization) checked against EIR and PLQs	12.5	National Annex	—
9.2.2.6	Once authorized, information to be PUBLISHED	12.6	—	—
9.2.2.7	ARCHIVE used to keep a record	12.7	—	—

**Table A.2 (continued)**

<b>PAS 1192-2: 2013 clause</b>	<b>Topic summary (using PAS 1192-2 terms)</b>	<b>BS EN ISO 19650-1 clause</b>	<b>BS EN ISO 19650-2 clause</b>	<b>Reference within this document</b>
<b>9.2.2.8</b>	As-constructed information checked and verified	—	—	<b>9.7.1</b>
<b>9.2.2.9</b>	Additional WIP for specialist contractors	<b>As 12.2</b>	—	—
<b>9.2.2.10</b>	Change of ownership procedure for switching generic to specific objects	—	—	—
<b>9.2.2.11</b>	Only show objects to be constructed	—	Figure 1 (design intent to virtual construction model)	—
<b>9.2.2.12</b>	PUBLISHED to AIM (acceptance) shall be verified and validated	—	<b>5.7.4, 5.8.1</b>	—
<b>9.2.2.12</b>	Accepted information into AIM CDE	—	—	<b>9.7.1</b>
<b>9.2.3</b>	Status codes in the CDE	<b>12.1</b>	National Annex	—
<b>9.3.1</b>	File/layer naming extended from BS 1192	—	National Annex	—
<b>9.3.2.1</b>	New file types for CR and IE	—	National Annex	—
<b>9.3.2.2</b>	Standard file types on bimtaksgroup.org	—	National Annex	—
<b>9.3.2.3</b>	Additional files types to be listed in EIR and BEP	—	National Annex	—
<b>9.3.2.4</b>	File naming as BS 1192	—	National Annex	—
<b>9.4.2</b>	Task teams to approve before SHARED	—	<b>5.6.3, 5.6.4</b>	—
<b>9.4.3</b>	Supply chain lead to solve clashes before SHARED	<b>11.1</b>	<b>5.6.2</b>	—
<b>9.4.4</b>	SHARED once task team clashes are resolved	—	<b>5.6.2</b>	—
<b>9.4.5</b>	Revisions/versions to be consistent with renditions	<b>12.1</b>	—	—
<b>9.4.6</b>	Check specialists the same way as design team	<b>11.1</b>	—	—
<b>9.4.7</b>	Clash avoidance during design	<b>11.1</b>	<b>5.6.2</b>	—
<b>9.4.8</b>	Clash avoidance during construction	<b>11.1</b>	<b>5.6.2</b>	—
<b>9.4.9</b>	Models updated for construction defects within fixed time	—	—	—
<b>9.4.10</b>	Use clash renditions If separate models are not interoperable	—	—	—
<b>9.5.1</b>	Employer to sign off information	<b>12.4</b>	—	—
<b>9.5.2</b>	Once authorized change status and issue to PUBLISHED	<b>12.5</b>	—	—

**Table A.2** (*continued*)

<b>PAS 1192-2: 2013 clause</b>	<b>Topic summary (using PAS 1192-2 terms)</b>	<b>BS EN ISO 19650-1 clause</b>	<b>BS EN ISO 19650-2 clause</b>	<b>Reference within this document</b>
<b>9.5.3</b>	Information exchanges to be in digital formats	<b>3.3.14</b> (definition of BIM)	—	—
<b>9.5.4</b>	Renditions come from native files	—	—	—
<b>9.6.1</b>	Use placeholders for bespoke products at early stages	<b>11.1</b>	—	—
<b>9.7</b>	<i>This clause contains no normative text</i>	—	—	—
<b>9.8.1</b>	Level of detail to be defined per purpose	<b>11.2</b>	—	<b>9.7.2</b>
<b>9.8.2</b>	LOMD defined in EIR and CIC protocol	<b>11.2</b>	<b>5.2.1b), 5.4.3b)</b>	<b>9.7.2</b>
<b>9.8.3</b>	LOMD covered in BEP	—	—	—
<b>9.8.4</b>	LOMD shall conform to EIR, CIC scope of service, Uniclass	<b>11.2</b>	<b>5.2.1b), 5.4.3b)</b>	—
<b>9.9</b>	Levels of model detail and model information at each work stage	—	Not applicable	—
<b>9.10</b>	Classification	<b>11.3</b>	<b>5.1.7</b>	<b>9.7.3</b>
<b>10.2.1</b>	EIR defines handover requirements	—	<b>5.2.1a)</b>	<b>9.8</b>
Annex A	Additional (informative) terms and definitions	—	Not applicable	—

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