UK BIM FRAMEWORK

ISO 19650 Guidance A: The information management function and resources

[UK BIM FRAMEWORK HOME]

Editions (Guidance A)

Edition	Date of release	Description
Edition 1	September 2020	First release.
Edition 2	February 2021	Major rewrite and extension of subjects covered.
Edition 3	November 2021	Update to the ISO 19650 resources content and resources map to accommodate ISO 19650-3 and ISO 19650-5
Edition 4	November 2022	Removed the word ‘Part’ from the title of the document to remove possible confusion with parts of ISO 19650.

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Abbreviations and acronyms

Refer to Abbreviations and acronyms.

About this guidance

The guidance framework supports the UK implementation of the ISO 19650 series.

This guidance document (guidance A) sits within an overall guidance framework as shown in Figure 1.

Guidance A is written to support the implementation of each published ISO 19650 standard.

Who is this guidance written for?

This guidance is for parties, teams and individuals accountable and/or responsible for undertaking the information management function.

Who is this guidance of particular interest to and why?

This guidance considers the information management function and resources needed for successful information management. It is relevant to parties, teams and individuals involved in implementing the ISO 19650 series across a project, within an appointment or within an organization.

Key takeaways

- Information management is the management and execution of tasks relating to the definition of information requirements, information production, and delivery and checking.
- The appointing party has overall accountability for assigning responsibility of information management functions to their appointed parties.
- Every party within the project team has information management functions they will need to fulfil
- The guidance refers to resources and not documents because they do not need to exist in documents and do not need to be standalone.
- Adopting the same information structures throughout industry generates consistency, repetition and predictability, and enables achieving better project outcomes.
- Resources and content created for successful information management should not be created in isolation of other project functions and should be authored with the right level of consideration to how the content cascades through the delivery team

As with all guidance supporting the UK BIM Framework, we invite comment and feedback on this guidance A at guidancefeedback@ukbimframework.org.

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Figure 1: ISO 19650 guidance framework

1.0 About the information management function

1.1 Information management and why it is needed

Information management at its simplest is the management and execution of tasks relating to the definition of information requirements as well as information production, checking and delivery.

It is fundamental to understand that information management applies to ALL information, collectively referred to as an “information model”. An information model is a set of structured and/or unstructured information containingany combination of geometrical information, alphanumerical information and documentation

Everyone making up a project team consequently has an involvement and interaction with information management in varying degrees. It is not a new concept and has existed in some shape or form ever since information production was carried out by hand.

In recent years, the importance of good information management with documented responsibility and accountability for the activities and tasks involved has become vital. A proper focus on information management can help to achieve better project outcomes through, for example:

- Improved coordination and communication
- Better quality information production
- Timely information delivery
- Mitigated rework, unnecessary waste and cost
- Effectively informed decision making
- More accurate audit trails/record

These enablers demand collaborative working and are reliant on the effective management of information across the whole life of assets to help improve our built environment.

The necessity for good information management is heightened further with the move to digital ways of working. In order to unlock efficiencies and effective use and reuse of information we need to specify, produce, check, approve and exchange information in a consistent and structured manner. While the use of technology brings many benefits, it relies on these consistent and structured approaches. The risks generated by poor procurement and management of information delivered digitally could be considered greater than its analogue predecessor via, for example, inappropriate access or distribution of information and security breaches.

It is essential that the industry focuses on “information as an asset” as much as the physical asset itself. At both a business and project level, outcomes are determined by decisions, and decisions are based on information. We therefore need to make sure that information management is embedded and treated with the same importance as design, project, and asset management.

1.2 The information management function

The information management function encompasses the collective responsibility and authority for the information management process set out in ISO 19650-2.

Clause 5.1.1 specifically covers the appointing party’s (client’s) project wide assignment of the information management function, with clause 5.3.1 covering the appointment level equivalent across lead appointed party (tier 1) delivery teams. Every clause (activity) from ISO 19650-2 will therefore need to be assigned across the project team appropriately with individuals nominated to fulfil activities and tasks as the project progresses.

The very first step by any party should be to understand the context, purpose and scope of their information management function, and then assign the various responsibilities and accountabilities for the required activities appropriately.

For an appointing party, it is critical that the information management function is clearly assigned prior to engaging any lead appointed parties such as the project manager, cost consultant or design consultants.

The clause activities for the information management process are summarized in ISO 19650-2 Figure 3, and it is important to understand that **most of these activities** are undertaken at an **appointment level**.

Figure 2 below (which is based on ISO 19650-2 Figure 3) shows the clause numbers (activities) making up the information management process, and which of these activities are applicable to each party when performing their information management function. The background colour indicates the predominant party for the clause as a whole (i.e. **clause 5.3 = lead appointed party**). The sub-clause reference colour indicates the party primarily responsibility for the sub-clause activity (i.e. **5.1.1 = appointing party**). We can see that every party has at least one activity to carry out in each of the information procurement, information planning and information production stages of the process.

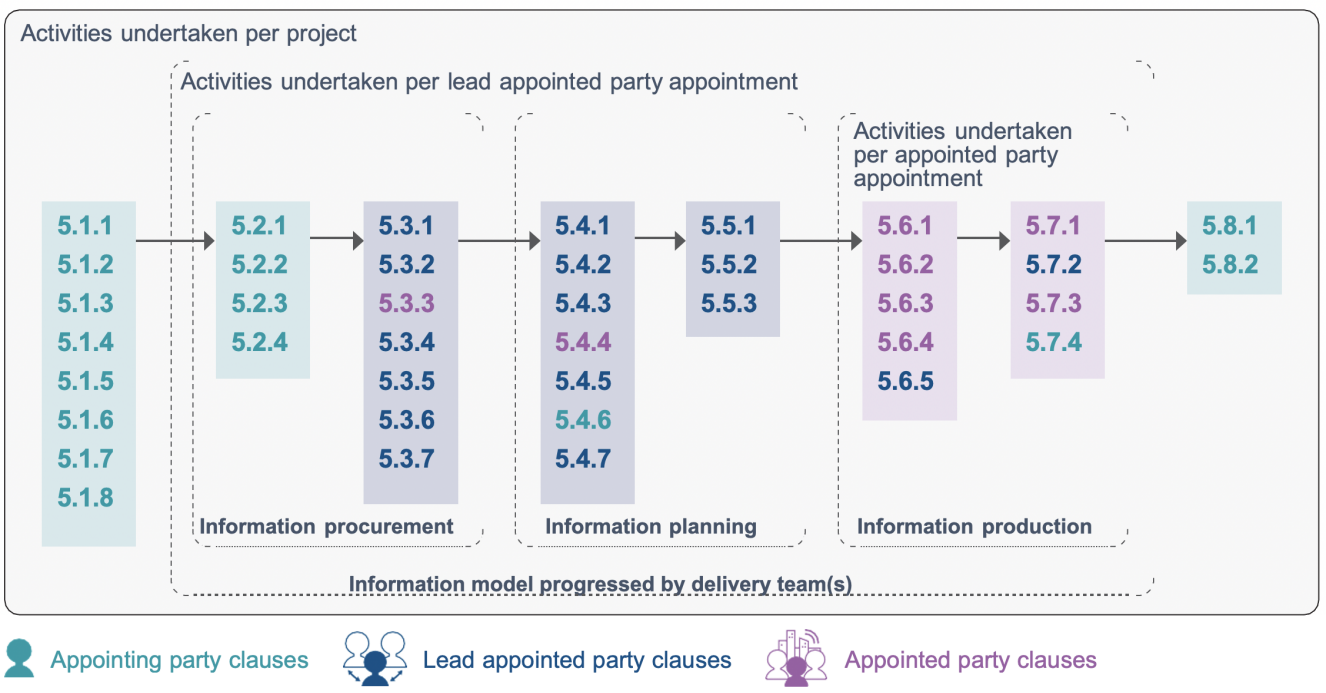

Figure 2: Information management process responsibilities and activities

Every party within the project team has information management functions they will need to fulfil by assigning the associated activities to appropriate individuals within their organization. See section 1.4 in this guidance.

Wherever possible it is recommended that individuals within organizations are upskilled for self-delivery and continuous improvement.

However, a third party can be appointed under an agreed scope of services to carry out all or some of these information management activities.

Readers familiar with superseded PAS 1192-2:2013 will recall information management responsibilities defined under specific roles assumed by members of the project team (project information manager, task team manager, task information manager etc.). The ISO 19650 series moves away from this approach and intends that the information management function is embedded into existing roles.

Key points to note

- The appointing party (client) has overall accountability for assigning responsibility of information management functions to their lead appointed parties and should be vigilant to these being carried out as required.
- Lead appointed parties could be asked to support and input to appointing party resources (for the purposes of information management) where the client needs assistance but is not willing to formally appoint a third party.
- Individuals in existing roles that are assigned information management activities may consider these secondary in importance to their usual role when particularly busy or under This risk needs to be recognized and managed.

1.3 The information management function in the context of multiple lead appointed parties

A lead appointed party (tier 1) is any organization that has a direct appointment with the appointing party (client). Therefore, at any one stage in a project there will often be more than one lead appointed party. Even on small projects the client will appoint separate consultants and advisers during the design stage, each will therefore be a lead appointed party. Some lead appointed parties (e.g. client appointed design consultants, main contractor) will appoint other organizations or internal teams, as task teams, to form their delivery teams. Other lead appointed parties (e.g. client's project manager, cost consultant) will be the only organizations in their delivery teams, therefore their information management functions will be proportionally simpler.

Lead appointed party information management functions are at an appointment level and on behalf of their delivery team, so each lead appointed party must prepare the resources required as part of their tender response, and if successful the resources required during their appointment, as shown in Table 2.

Table 2: Resources to be prepared by a lead appointed party

Aa Resource name	ISO 19650 clause
(Pre-appointment) BIM execution plan	Tender response phase (5.3)
Capability and capacity summary	Tender response phase (5.3)
Mobilization plan	Tender response phase (5.3)
Risk register	Tender response phase (5.3)
BIM execution plan	Appointment phase (5.4)
Detailed responsibility matrix	Appointment phase (5.4)
Lead appointed party's exchange information requirements	Appointment phase (5.4)
Master information delivery plan	Appointment phase (5.4)

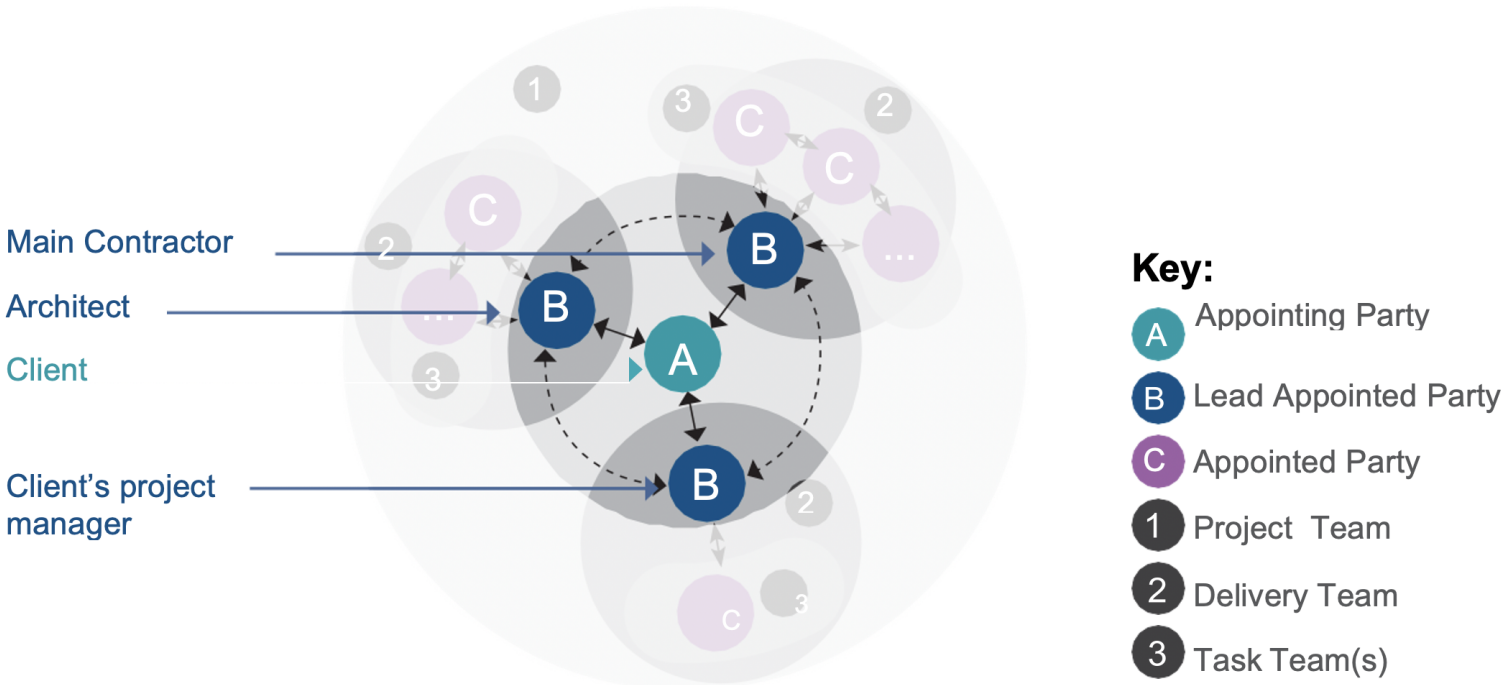

Figure 3: Interfaces between parties and teams

The project wide information resources (specifically the project's information standard and the project's information production methods and procedures) along with each exchange information requirements (EIR) received by each lead appointed party, should drive consistency when preparing their required resources (see Table 2). This should enable collaborative working practices with commonality across the lead appointed parties and their delivery teams. If lead appointed parties are required to work in very close collaboration (such as client appointed design consultants), it would be considered good practice for the authors of the required resources from each organization to communicate during the information planning stage (especially when developing each delivery team's BIM execution plan). This will drive out potential inconsistencies when finalizing their own resources. This should be done via the project's common data environment.

For example, consider a scenario where there are three lead appointed parties at a particular work stage on a project, as indicated in Figure 3.

In this **example** the client has appointed an architect and has also engaged a main contractor to provide engineering design and build services. The client has appointed a project manager to ensure the delivery teams and project align to the required delivery outcomes. As lead appointed parties, they are each required to produce the resources as per Table 2 for their tender response and appointment phases.

An example of the high-level scope and structure for these lead appointed parties along with any considerations in terms of the resources required is discussed below:

Architect

This organization has in-house expertise for the required scope of services covering architecture, interior design and landscape architecture. The organization is a lead appointed party with internal task teams, forming a delivery team.

All information resources (see Table 2) will be required for the tender response and appointment stage for this lead appointed party.

Main contractor

This organization is a management contractor that will appoint a supply chain to deliver the design and build scope of services required. The organization is a lead appointed party with external task teams, forming a delivery team.

All information resources (see Table 2) will be required for the tender response and appointment phase for this lead appointed party.

Client's project manager

This organization is delivering a project management service on behalf of the client. The project manager will typically manage the tender process, be responsible for creating and monitoring the strategic programme of works, maintaining progress trackers, producing stage reports, meeting agendas/minutes etc. In this example, this organization is a lead appointed party with no other appointed parties, and therefore is in itself the delivery team made up of internal task team(s). All information resources (see Table 2) will be required for the tender response and appointment phase, with the exception of the lead appointed party's exchange information requirements (as there is no requirement for any appointed parties).

Note: Even as the client's project manager, this organization is still producing information deliverables in response to information requirements. Therefore, it is correct that a BIM execution plan (essentially a method statement for information delivery) is required as well as a master information delivery plan (essentially a task information delivery plan (TIDP) in this case as the only party in the delivery team). It is acknowledged that the content of these resources is likely to be less detailed compared with the other lead appointed parties who have more extensive exchange information requirements

Key points to note

- An appointing party with multiple lead appointed parties will need to review multiple BIM execution plans and master information delivery plans (MIDPs). These may be delivered in different structures and formats.
- An appointing party could produce templates as shared resources to drive consistency of structure and format. This could be disruptive for lead appointed parties who have established company-wide templates already approved in their quality management systems.
- If there are any errors contained in shared resources produced by an appointing party intended for use by other parties within the project team, this would introduce an element of risk for These shared resources should be tested during mobilization where appropriate.
- When there are lead appointed parties with significantly different scopes of work and information deliverables, appointing party template(s) may be inappropriate.

1.4 Developing ISO 19650-2 information management activities into a detailed matrix of tasks

ISO 19650-2 includes an information management assignment matrix in Annex A, as noted in clause 5.1.1. This is a useful resource for an appointing party to use to help form a scope of services when appointing a lead appointed party or third party to carry out all or part of the information management function. It provides a summary of the clause activities involved in the information management process in the form of a RACI (responsible, accountable, consulted, informed) matrix.

Some clause activities from ISO 19650-2 may cover one task, for example preparing exchange information requirements. Other activities may involve many tasks, for example the activity of generating information could include tasks such as producing models, drawings, schedules, clash detection procedures, programme simulations and COBie.

Any party may choose to develop a more detailed information management function assignment matrix based on Annex A (although this is not a requirement of ISO 19650 specifically). This may help identify and assign the specific tasks making up activities that are relevant to them. This expanded approach can be used by the organization to allocate or identify responsibility, accountability, consulted, informed (RACI) to individuals within their internal team, and to indicate RACI for other organizations engaged in the project team.

Any activities associated with clause 5.6.2 ‘Generate information’ should be dealt with through the responsibility matrices and information delivery plans. Refer to ISO 19650 guidance F Information delivery planning.

An example of how a lead appointed party such as a main contractor might approach a more detailed information management function assignment matrix is shown in Figure 4. This example shows how a list of tasks might be developed under the activity clause 5.4 from ISO 19650-2.

An example of how an appointed party such as a building services sub-contractor might approach a more detailed information management function assignment matrix is shown in Figure 5. This example shows how a list of tasks might be developed under ISO 19650-2 activity clauses 5.3, 5.4, 5.6 and 5.7 2. Clause 5.6.2 (generate information) is not included as assigning tasks associated with this clause should be via the responsibility matrices and the TIDPs and MIDP.

Information management assignment matrix **Main contractor example** **Key:** R Responsible for undertaking activity/task A Accountable for activity/task completion C Consulted during activity/task I Informed following activity/task completion			Appointing party		Lead appointed party										Appointed party
ID	Activity/task	Source	Client	Client's third party	Bid manager	Design manager	Project manager	Site engineer	Quantity surveyor	Planner	SHE advisor	Quality manager	Document controller	BIM specialist	Consultant and subcontractor task teams
4.6	**Update shared resources**	**n/a**													
4.6.1	Update the project's information standard with agreed additions or amendments proposed by lead appointed parties within their pre-appointment BIM execution plans and subsequently throughout their appointment (including any updates required by the security management plan)	n/a	A/R			I	I						I	I	I
4.6.2	Update the project's information production methods and procedures with agreed additions or amendments proposed by lead appointed parties within their pre-appointment BIM execution plans and subsequently throughout their appointment (including any updates required by the security management plan)	n/a	A/R			I	I						I	I	I
4.7	**Complete lead appointed party's appointment documents**	**ISO 19650-2; 5.4.6**													
4.7.1	Complete lead appointed party's appointment documents	ISO 19650-2; 5.4.6	A/R			I			I					I	
4.7.2	Ensure the appointing party's exchange information requirements are included in the appointment	ISO 19650-2; 5.4.6	A/R			I			I					I	
4.7.3	Ensure the project's information standard is included in the appointment with any agreed additions or amendments	ISO 19650-2; 5.4.6	A/R			I			I					I	
4.7.4	Ensure the project's information production methods and procedures is included in the appointment with any agreed additions or amendments	ISO 19650-2; 5.4.6	A/R			I			I					I	
4.7.5	Ensure the delivery team's BIM execution plan is included in the appointment	ISO 19650-2; 5.4.6	A/R			I			I					I	
4.7.6	Ensure the delivery team's master information delivery plan (MIDP) is included in the appointment	ISO 19650-2; 5.4.6	A/R			I			I					I	
4.7.7	Ensure the project's information protocol is included within the appointment	n/a	A/R			I			I					I	
4.7.8	Manage change control process associated to lead appointed party(s) appointment documentation	n/a	A/R			I			I					I	
4.8	**Complete appointed party's appointment documents**	**ISO 19650-2; 5.4.7**													
4.8.1	Complete appointed party's appointment documents for agreement with each appointed party	ISO 19650-2; 5.4.7				R			A/R					C	I
4.8.2	Ensure the lead appointed party's exchange information requirements are included in the appointment	ISO 19650-2; 5.4.7				R			A/R					C	I
4.8.3	Ensure the project's information standard is included in the appointment with any agreed additions or amendments	ISO 19650-2; 5.4.7				R			A/R					C	I
4.8.4	Ensure the project's information production methods and procedures is included in the appointment with any agreed additions or amendments	ISO 19650-2; 5.4.7				R			A/R					C	I
4.8.5	Ensure the delivery team's BIM execution plan is included in the appointment	ISO 19650-2; 5.4.7				R			A/R					C	I
4.8.6	Ensure the agreed task information delivery plan (TIDP) is included in the appointment	ISO 19650-2; 5.4.7				R			A/R					C	I
4.8.7	Ensure the project's information protocol is included within the appointment	n/a				R			A/R					C	I
4.8.8	Manage change control process associated to appointed party(s) appointment documentation	n/a				R			A/R					C	I

Information management assignment matrix: **Building services sub-contractor example** **Key:** R Responsible for undertaking activity/task A Accountable for activity/task completion C Consulted during activity/task I Informed following activity/task completion			Appointing party		Lead appointed party	Subcontractor appointed party								Appointed party
ID	Activity/task	Source	Client	Client's third party	Main Contractor	Design manager	Project manager	Mechanical engineer	Electrical engineer	Quantity surveyor	Document controller	CAD technician(s)	BIM specialist	Supply chain task teams
6	Information management process - Collaborative production of information	ISO 19650-2; 5.6												
6.1	Check availability of reference information and shared resources	ISO 19650-2; 5.6.1												
6.1.1	Check that relevant reference information and shared resources is available within the project's common data environment	ISO 19650-2; 5.6.1				I	I				R	C	A/R	I
6.1.2	Inform the lead appointed party and assess the potential impact of not having access to reference information and shared resources could have on the task information delivery plan (TIDP)	ISO 19650-2; 5.6.1			I	R	A/R					C	R	
6.2	Generate information	BS EN ISO 19650-2:2018; 5.6.2												
6.2.1	Generate information in accordance with respective task information delivery plan (TIDP)	ISO 19650-2; 5.6.2 a)			I	A/R	R	R	R	R	C	R	R	R
6.2.2	Coordinate and cross-reference all information with information shared within the project's common data environment, in accordance with the project's information production methods and procedures	ISO 19650-2; 5.6.2 c)			I	R	I	R	R	I	A/R	R	C	R
6.2.3	Spatially coordinate geometrical models with other geometrical models shared with the appropriate suitability, residing within the project's common data environment	ISO 19650-2; 5.6.2 d)			I	I		I	I		I	A/R	C	R
6.3	Undertake quality assurance check	ISO 19650-2; 5.6.3												
6.3.1	Undertake a quality assurance check of each information container, in accordance with the project's information production methods and procedures, prior to undertaking a review of the information within it	ISO 19650-2; 5.6.3			I	C	I				A/R	R	C	R
6.4	Review information and approve for sharing	ISO 19650-2; 5.6.4												
6.4.1	Undertake a review of the information within each information container, in accordance with the project's information production methods and procedures, prior to sharing within the project's common data environment	ISO 19650-2; 5.6.4			I	A/R	I	R	R	I	I	C	C	C
6.5	Information model review	ISO 19650-2; 5.6.5												
6.5.1	Undertake a review of the information model, in accordance with the project's information production methods and procedures, to facilitate the continuous coordination of information across each element of the information model	ISO 19650-2; 5.6.5			I	R	I	I	I		I	I	A/R	I
7	Information management process - Information model delivery	ISO 19650-2; 5.7												
7.1	Submit information model for lead appointed party authorization	ISO 19650-2; 5.7.1												
7.1.1	Submit information to the lead appointed party for authorization within the project's common data environment	ISO 19650-2; 5.7.1			I	R	R	C	C	I	A/R	C	R	I
7.2	Review and authorize the information model	ISO 19650-2; 5.7.2												
7.2.1	Review the information model in accordance with the project's information production methods and procedures	ISO 19650-2; 5.7.2			A/R	I	I						I	

Figure 4: Example approach for a main contractor - expanded information management function assignment matrix

Information management assignment matrix: **Building services sub-contractor example** **Key:** R Responsible for undertaking activity/task A Accountable for activity/task completion C Consulted during activity/task I Informed following activity/task completion			Appointing party		Lead appointed party	Subcontractor appointed party								Appointed party
ID	Activity/task	Source	Client	Client's third party	Main Contractor	Design manager	Project manager	Mechanical engineer	Electrical engineer	Quantity surveyor	Document controller	CAD technician(s)	BIM specialist	Supply chain task teams
7.3	Submit information model for appointing party acceptance	ISO 19650-2; 5.7.3												
7.3.1	Submit information for appointing party review and acceptance within the project's common data environment	ISO 19650-2; 5.7.3	I			R	R	C	C	I	A/R	C	R	
7.4	Review and accept the information model	ISO 19650-2; 5.7.4												
7.4.1	Review the information model in accordance with the project's information production methods and procedures	ISO 19650-2; 5.7.4	A/R										A/R	
7.4.2	Produce report at each information exchange of the information model review carried out	n/a	A/R		I		I						I	I
8	Information management process - Project close-out	ISO 19650-2; 5.8												
8.1	Archive the project information model	ISO 19650-2; 5.8.1												
8.1.1	Archive the information containers within the project's common data environment in accordance with the project's information production methods and procedures	ISO 19650-2; 5.8.1	A/R											
8.2	Capture lessons learned for future projects	ISO 19650-2; 5.8.2												
8.2.1	Arrange and chair a lessons learned workshop (or include lessons learned within other agreed workshops) in accordance with workshops identified on the project programme	n/a	A/R				I						I	I
8.2.2	Capture lessons learned (using the lessons learned template) during the project. The lessons learned should be maintained throughout the project and uploaded to the project's common data environment or other agreed central knowledge store	ISO 19650-2; 5.8.2	A/R				I						I	I

Figure 5: Example approach for a building services sub-contractor - expanded information management function assignment matrix

Some tasks may be required that are not explicitly covered by the clause activities within the ISO 19650-2 information management process. For example, the review of tender responses is not specifically covered but this is a necessary activity to move from the tender response stage to the appointment stage.

Key points to note

- Time and effort may be required to schedule out tasks and agree responsibility and However, this should pay-off by helping individuals to clearly understand their required input into to their organization's information management function.
- Assigning activities and tasks across the delivery team should reduce dependence on the BIM/digital specialist and help to embed and upskill information management capabilities to existing job roles appropriately.

1.5 What are the competencies that need considering?

It is important to ensure that individuals have the necessary skills and behaviours to fulfil the activities and tasks they have been allocated as part of the information management function. Competencies of individuals across a task team should be considered to ensure the most appropriate individual(s) is selected when allocating specific activities and tasks.

The following competencies may be required to support the activities and tasks as part of the information management function:

Technical

- Project delivery experience of projects of a similar scale and complexity including understanding of typical roles and responsibilities and understanding of contracts
- Understanding and application of appropriate national and international standards related to information management and BIM
- Software skills (appropriate to the information management activities and tasks).

Non-technical

- Resilience (to engage with and encourage behavioural change)
- Planning and organization
- Research and investigating
- Analysis and problem solving
- Initiative/independence
- Results driven/quality orientation.

It is vital that individuals possess good communication skills and understand the importance of teamwork to improve collaborative working.

1.6 Delegating the information management function

1.6.1 Delegation of authority in ISO 19650-2 clauses 5.1.1 and 5.3.1

Under clause 5.1.1 the appointing party can delegate the responsibility for all or part of the information management function to the prospective lead appointed party or a third party. Similarly, clause 5.3.1 allows a prospective lead appointed party to delegate their responsibility to a prospective appointed party or third party. Responsibility can be delegated, **but accountability remains with the party identified in each clause from ISO 19650-2** (refer to guidance Figure 2).

An ***accountable*** organization is the organization who is ultimately answerable for the activity. This includes “yes” or “no” authority and veto power. Only one accountable organization can be assigned to an activity.

The ***responsible*** organization is the organization who completes the activity or task. The responsible organization is responsible for action/ implementation of activities and tasks that have been delegated to them.

The authority will typically be delegated where the appointing party or lead appointed party do not have sufficient capability or capacity to carry out specific tasks.

1.6.2 Probity arrangements

Probity is “*the quality of having strong moral principles; honesty and decency*” [1].

Probity arrangements are specifically noted under ISO 19650-2 clause 5.3.1 (lead appointed party information management function) but not under clause 5.1.1 (appointing party). However, probity arrangements may be applicable to either the appointing party or lead appointed party.

In practical terms, probity arrangements mean ensuring that any potential conflicts of interest are identified and managed.

For example, on project X the review and acceptance of the information model is carried out on behalf of the appointing party by a lead appointed party who is the architect on the project. This means that the architect is responsible for both producing information and for reporting to the appointing party on compliance with the prescribed information requirements. To avoid any potential conflict, it may be necessary to identify different individuals within the architect’s organization to carry out the required functions. Individuals within the same organization would always therefore need to maintain honesty and decency to avoid any potential conflicts of interest.

Where the appointing party or lead appointed party requires a third party to carry out all or part of the information management function on their behalf they might require the prospective third party to demonstrate how they will deal with any possible conflicts of interest as part of their tender response. This could be, for example, by confirming membership of a professional body that includes the need to maintain honesty and decency. Or the third party may be asked to provide a statement, organization structure or plan on how conflicts will be managed within their organization.

[1] Oxford English Dictionary

1.7 Engaging a third party to undertake the information management function

1.7.1 Principles

Where an organization requires assistance with all or part of their information management function, they may choose to engage a third party to assist. In this situation, the third party will be **responsible** for completing agreed tasks on behalf of the appointing organization. However, as noted earlier the organization appointing the third party still retains the **accountability** to satisfy the information management functions identified by ISO 19650.

Where a third party is engaged, they are effectively a lead appointed party under the ISO 19650 series. However, they would not be expected to submit a tender response containing the same information resources that other lead appointed parties would provide (i.e. they would not need to provide the resources identified in Table 2). This is because they are carrying out activities on behalf of the appointing party and are not an information provider in the same context as a delivery team lead appointed party.

1.7.2 Information to be provided to the third party

In order to appoint a third party, it is important to provide sufficient information about the project at the invitation to tender stage to enable a comprehensive proposal to be returned by the prospective third party. This should include general project information along with an anticipated project duration and the procurement methodology (if known).

In terms of delivery of the information management activities, it is also important to share details of any other parties involved in the project and their capabilities (if known), any existing processes and any specific technology being used or intending to be used. This is so that the third party fulfilling the information management activities and tasks can consider the delivery strategy as part of their own appointment.

Where a third party is being appointed by a lead appointed party, the lead appointed party will need to include all relevant information management resources including the appointing party's exchange information requirements, the project's information standard and so on.

It is important to identify what activities and tasks will be performed by all parties across a project when establishing a proposed scope of services for a third party. This will help ensure that there are no gaps in the information management function across the project team (refer to examples of the detailed RACI matrices provided earlier).

1.7.3 A proposed structure for an invitation to tender when appointing a third party

Clause 5.1.1 of ISO 19650-2 requires the appointing party to establish a scope of services where they wish to appoint a lead appointed party or third party to undertake all or part of the information management function. Likewise, clause 5.3.1 requires a prospective lead appointed party to establish a scope of services where they wish to appoint a prospective appointed party or third party to undertake all or part of the information management function.

The following structure could be used to form the basis for an invitation to tender to appoint a third party to carry out all or part the information management function for either an appointing party or prospective lead appointed party:

A. Record of issue / document control

B. Introduction

C. Project details *(to communicate sufficient understanding of the project for the third party to be able to submit a tender response*)

a. Key project information (including project name, project description, project value and procurement route (if known))

b. Programme (if known)

c. Team (if known)

d. Relevant technology solutions (if known)

D. Supporting information

E. Tasks *

F. Terms and conditions

G. Authority

H. Required competency

I. Probity requirements (if applicable)

J. Tender response requirements

a. Fee proposal (against tasks)

b. Fee drawdown (against programme)

c. Charge out rates (i.e. day rate(s)) and costs (including travel/expenses))

d. Capability and competency

i. Demonstration of capability (i.e. case studies including references)

ii. Demonstration of competency (i.e. CVs)

e. Proposed delivery methodology

f. Assumptions

g. Exclusions

h. Probity arrangements (if applicable)

i. Observations on supporting information provided (if applicable)

j. Other supporting information relevant to the commission

K. Tender return procedures (including return date, person(s) to return tender to)

L. Tender evaluation criteria

M. Appointment (proposed date for confirmation of successful/unsuccessful tenderer and feedback to unsuccessful tendering organizations).

* Including required tasks and allowing the third party to add any additional services or costs (such as technology costs) that may be required to manage the information activities and tasks effectively.

1.8 Information management assignment matrix

The UK BIM Framework has developed an information management assignment matrix tool based on the RACI matrix in ISO 19650-2 Annex A. It provides an expanded list of tasks against each clause activity that should be assigned across the project team to fulfil the information management function. It also includes a task for producing the project's information protocol and the key tasks from ISO 19650-5 that need considering for the appointing party's information management function.

In the first instance the tool should be used by the appointing party to assign out the information management function across the project team (columns have been provided to allow for any third-party information management appointments if required). Accountability 'A' is fixed as per the 'shall' clauses in ISO 19650-2 and shouldn't be changed, however responsibility 'R', consulted 'C' and informed 'I' can be adapted as required.

In the second instance the tool could be useful for those applying ISO 19650-2 on projects to help assign their information management function to individuals specifically within their team. It is envisaged there will be a need to adapt it as required to include any subtasks specific to an organization (while removing other parties' tasks), and a desire expand to capture individuals' names or project roles.

The intention of providing this tool is to encourage a standardized starting point for project specific and organizational adaptation. Examples of how this might be adapted for a specific organization are shown in Figures 4 and 5 in this guidance.

Note: There should be consideration to how any information management assignment matrices could be joined up between parties, and how these are updated throughout the delivery phase of a project.

To be as useful as possible, the tool is provided in multiple formats. Refer to **Guidance Part A Resources** for content. *Note: For those viewing the PDF downloaded version: please visit the UK BIM Framework Guidance page to download this format.*

1.9 Conclusion

Information management is a critical component of successful project delivery and asset operation. The information we produce during the lifecycle of an asset informs decision making throughout; we therefore need to treat information with the same importance as the physical asset(s) it represents.

In terms of the ISO 19650 series, the information management function should be the very first consideration for ANY organization engaged in either project delivery or asset operation. Assigning responsibility and authority for the activities making up the information management process will help individuals to ensure the best possible information outcomes.

Individuals fulfilling information management function activities should have the required competencies. Where there are identified shortfalls of competencies and experience, these should be addressed by upskilling individuals, or by appointing a third-party

specialist. Discharging the responsibility for information management function activities to a prospective lead appointed/appointed party is permitted but probity arrangements should be carefully considered.

2.0 About ISO 19650 resources

2.1 ISO 19650 resources

The ISO 19650 series references resources and content that should be created for successful information management (using building information modelling).

This guidance refers to these as resources and not documents because:

- They do not need to exist as documents – their content could be referenced via a system
- They do not need to stand alone – their content might be combined with other content
- The emphasis is on the existence of content, not how the content is transported.

The ISO 19650 series also refers to “shared resources”. Shared resources can take many forms, such as document templates, 3D object libraries or custom line styles and ISO 19650-2 clause 5.1.6 provides examples. Shared resources are one type of resource that are produced during the information management process.

In terms of the resources referenced in ISO 19650 parts 2 and 3, it is possible for resource content to be combined with other design and construction project content. However, care should be taken to ensure that resources:

- Are not incorrectly promoted as appointment (and therefore contractual) resources and equally are not demoted from being appointment resources
- Are authored at the right level (project or appointment). An appointment level resource should not contain project wide content that is not relevant to the appointment.

Consideration should also be given to how resource content cascades through the delivery team. Combining content could potentially either aid or complicate this.

ISO 19650-5, clause 7.1.3 states that security information requirements should be contained in the security management plan. It is considered that these security information requirements should not be a separate resource, rather that policies and processes for the creation of sensitive information should be set out in the information standard and the information production methods and procedures. The sensitive information to be delivered should be incorporated into exchange information requirements relevant to each appointment.

Note 1: Table 2 and figure 6 list and illustrate all the compulsory resources from ISO 19650 Parts 2 and 3. There could also be further resources depending on the approach taken to the information management function and provision of the common data environment, but these are not identified here.

Table 3: ISO 19650 series resources

Aa Resource/content	Guidance part	Created by	Resource - Level	Resource - Status	ISO 19650-2 clause ref.	ISO 19650-3 clause ref.	ISO 19650-5 clause ref.
Security strategy		Appointing party	Organization	For information			6
Security management plan		Appointing party	Organization	For information			7
Information requirements	Part D	Appointing party	Organization	For information		5.1.2	
Information requirements	Part D	Appointing party	Asset	For information		5.1.4	
Information requirements	Part D	Appointing party	Project	For information	5.1.2		
Information delivery milestones/schedule of planned trigger events	Part D	Appointing party	Project/asset	For information	5.1.3	5.1.5	
Information standard	Part E	Appointing party	Project/asset	Appointment	5.1.4	5.1.6	

Resource/content	Guidance part	Created by	Resource - Level	Resource - Status	ISO 19650-2 clause ref.	ISO 19650-3 clause ref.	ISO 19650-5 clause ref.
Information production methods and procedures		Appointing party	Project/asset	Appointment	5.1.5	5.1.7	
Reference information		Appointing party	Project/asset	Appointment	5.1.6	5.1.8	
Shared resources		Appointing party	Project/asset	Appointment	5.1.6	5.1.8	
Information protocol	Part E	Appointing party	Project/asset	Appointment	5.1.8	5.1.13	
Exchange information requirements	Part D	Appointing party	Appointment	Appointment	5.2.1	5.2.2	
Tender response requirements		Appointing party	Appointment	For information	5.2.3	5.2.4	
Tender evaluation criteria		Appointing party	Appointment	For information	5.2.3	5.2.4	
(Pre-appointment) BIM execution plan	Part E	Lead appointed party	Appointment	For information	5.3.2	5.3.2	
High level responsibility matrix	Part F	Lead appointed party	Appointment	For information	5.3.2		
Proposed information delivery strategy		Lead appointed party	Appointment	For information	5.3.2		
Proposed federation strategy	Part F	Lead appointed party	Appointment	For information	5.3.2		
Proposed schedule of software, hardware and IT infrastructure		Lead appointed party	Appointment	For information	5.3.2		
Assessment of task team capability and capacity		Appointed party	Task team	For information	5.3.3	5.3.3	
Summary of the delivery team's capability and capacity		Lead appointed party	Appointment	For information	5.3.4	5.3.4	
Proposed mobilization plan	Part E	Lead appointed party	Appointment	For information	5.3.5	5.3.5	
Risk register		Lead appointed party	Appointment	For information	5.3.6	5.3.6	
Delivery team's BIM execution plan	Part F	Lead appointed party	Appointment	Appointment	5.4.1	5.4.1	
Detailed responsibility matrix	Part F	Lead appointed party	Appointment	For information	5.4.2	5.4.2	
Information delivery strategy		Lead appointed party	Appointment	Appointment	5.4.1		
Schedule of software, hardware and IT infrastructure		Lead appointed party	Appointment	Appointment	5.4.1		
Lead appointed party's exchange information requirements	Part D	Lead appointed party	Appointed party appointment	Appointment	5.4.3	5.4.3	
Task information delivery plan	Part F	Appointed party	Task team	Appointment	5.4.4	5.4.4	
Master information delivery plan	Part F	Lead appointed party	Appointment	Appointment	5.4.5	5.4.5	
Lessons learned		Appointing party	Appointment	For information	5.8.2	5.8.2	

Figure 6: ISO 19650-2 resources map

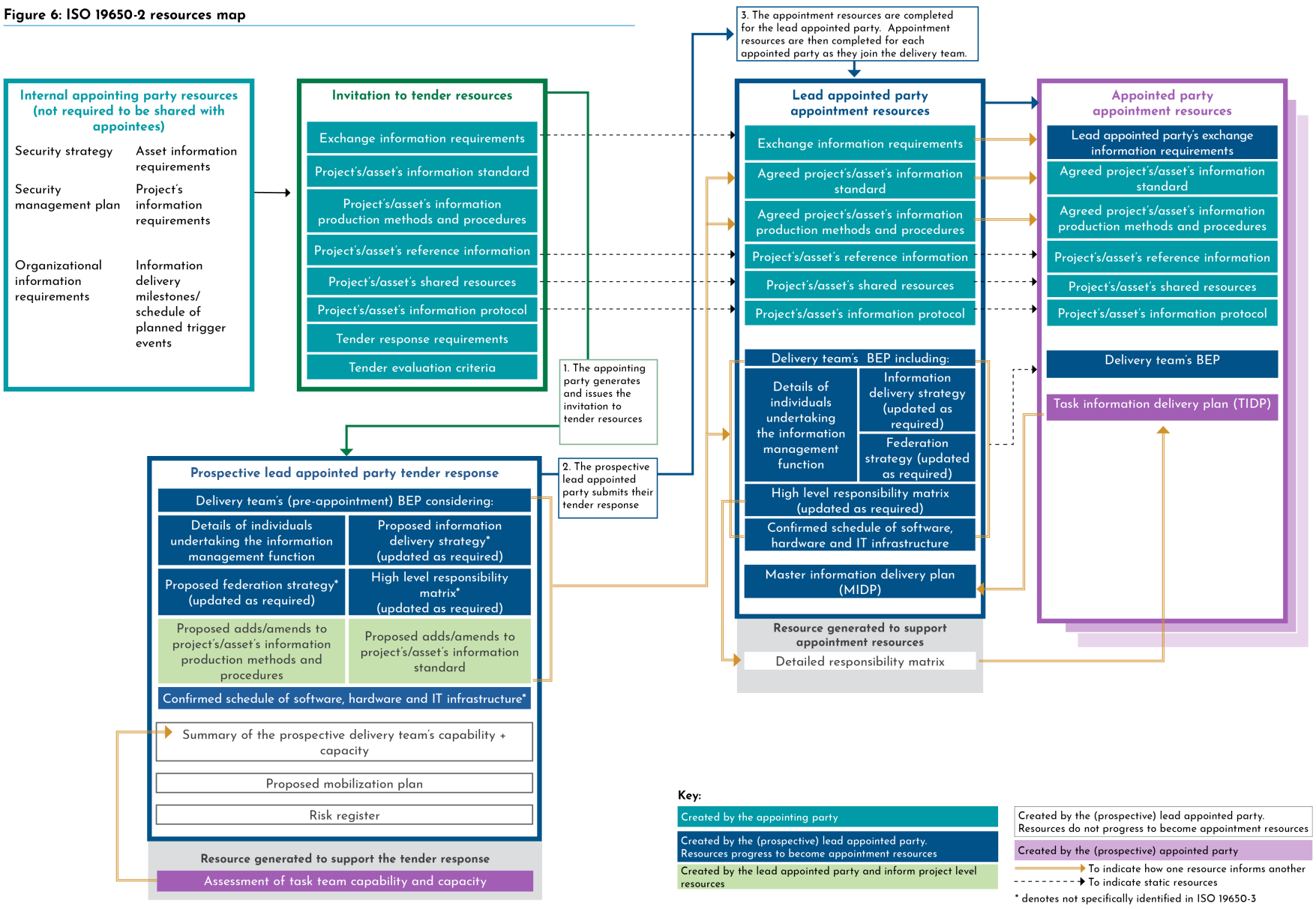

Figure 6: ISO 19650-2 resources map

3.0 Summary

ISO 19650 guidance A has provided further insight into the information management function and information management resources.

It should be referred to by practitioners and those implementing the ISO 19650 series across a project, within an appointment or within an organization.

Please note that the ISO 19650 series is still new, albeit based on former UK standards. As experience of implementing the ISO 19650 series is gained over the coming months and years, this guidance will be updated to reflect both this experience and any comments/feedback received from users.

Please do let us have your feedback by emailing us at guidancefeedback@ukbimframework.org.

Please also remember that standards within the ISO 19650 series are available at www.bsigroup.com.

Visit www.ukbimframework.org to see how the ISO 19650 standards plus other standards within the UK BIM Framework map to the design, build, operate and integrate process.

https://embed.notionlytics.com/wt/ZXlKd1lXZGxTV1FpT2lKalpqRmlaVFl4Wmpsa01qTTBOV1UxT1dGaVpUQTNZVFJrTnpRd1pUYzFNU0lzSW5kdmNtdHpjR0ZqWlZSeVlXTnJaWEpKWkNJNklrTXU1ha0ZXVWtGd04zZE5iemhzTjBoMk1IRXpJbjA9