 

**AS ISO 19650 Aligned**

October 2022

**Asset Information Requirements (AIR) Template**

|  |  |
| --- | --- |
| Project Reference: |  |
| Project name: |  |
| Project address/location: |  |
| Brief project description: |  |
| Appointing party: |  |

|  |  |
| --- | --- |
| Version: |  |
| Date: |  |

**NATSPEC Asset Information Requirements (AIR) Template**

October 2022

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**Document references**

In this document:

* The ‘*AIR Template’* or ‘*Template*’ means the *NATSPEC Asset Information Requirements (AIR) Template*.
* The ‘AIR’means theasset information requirements for the nominated project.
* The ‘*BEP*’ means the *BIM Execution Plan* for the nominated project.
* The ‘*National BIM Guide’* or ‘*Guide*’ means the *NATSPEC National BIM Guide*.

**Acknowledgements**

NATSPEC thanks the numerous individuals and organisations who contributed to the development of this document through material they provided and/or comments they made on drafts.

**Comments**

NATSPEC welcomes comments or suggestions for improvements to this document and encourages readers to notify us immediately of any apparent inaccuracies or ambiguities. NATSPEC also encourages users to share their experiences of applying it on projects with us.

Contact us via email at [bim@natspec.com.au](mailto:bim@natspec.com.au).

**Asset information requirements (AIR)**

**Document control**

This table is for listing the contacts who worked on the development of the AIR, and who can be contacted to answer queries about them. Indicate responsibilities for the development of the AIR in the ‘RACI’ column.

| Title/Role | Name | Company/  Organisation | Email | Tel. No. | RACI |
| --- | --- | --- | --- | --- | --- |
| Author |  |  |  |  |  |
| Owner |  |  |  |  |  |
| Appointing party representative |  |  |  |  |  |
| Information Manager |  |  |  |  |  |

**Key to responsibilities for developing AIR**

R Responsible for undertaking activity

A Accountable for activity completion

C Consulted during activity

I Informed following activity completion

Add or amend roles in the table as required. Those shown are examples only – customise to suit the project.

Role responsible for maintaining and updating AIR:

Enter the role or individual/s responsible. Refer to required procedures for consultation, notification, review, approval, etc in **Technical**, **Project information production methods and procedures directory**.

**Version history**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Version | Date | Amended by | Approved by | Comments |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

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**Asset information requirements (AIR)**

AIR are prepared by the appointing party. AIR are the pieces of information required by them to support their decision making during the operational phase of assets. If an organisation has existing organisational AIR, e.g. for a portfolio of assets, the AIR described in this document should reference and align with them.

The information provided by the delivery team led by the lead appointed party in response to the AIR constitutes the asset information model (AIM).

AIR should be expressed in a way that enables them to be readily incorporated into the exchange information requirements (EIR) for asset management appointments, e.g. grouped by discipline and/or trade.

Refer to AS ISO 19650.1, Section 5. and AS ISO 19650.3, Clause 5.1.3.

**Using this Template**

While project information requirements (PIR) can share similar requirements as AIR, this AIR Template is designed specifically for developing AIR, so is recommended for this purpose.

This Template includes prompts for eliciting AIR and provides a structure for organising them effectively.

See *Appendix D – Defining information requirements* for an explanation of its structure and instructions for its use.

# This AIR document

## AS ISO 19650 alignment

This document is aligned with the requirements of the AS ISO 19650 series of standards and uses the terminology from them throughout. Refer to them for details of the requirements and definitions of terms.

Definitions of terms can also be found on the ISO Online Browsing Platform (OBP): <https://www.iso.org/obp/ui>

A basic understanding of the concepts, principles and terminology found in AS ISO 19650 is crucial for making effective use of this template. See the *NATSPEC National BIM Guide* for an introduction to the subject.

## Purpose

Thisdocument defines the asset information requirements (AIR) for the project.

Make sure the project to which this document applies is clearly identified, e.g. in the document title, on the cover.

## Application

This AIRdocument contributes to the development of the project information requirements (PIR) and exchange information requirements (EIR). The EIR forms part of the invitation to tender documentation.

Applicable project phases:

Examples of options – adjust wording to suit project:

* This AIR document applies to the design phases only of the project, up to and including the handover of the AIM from the Design team to the Construction team.
* This AIR document applies to the construction phases only of the project, from the handover of the AIM from the Design team to the Construction team and up to and including the handover of models from the Construction team to the operators of the completed built asset.
* This AIR document applies to the design and construction phases of the project, up to and including the handover of the AIM from the Design and Construction teams to the operators of the completed built asset.

The last option offers the most opportunities to realise the potential benefits of BIM.

# Project details

## Project description

Outline description:

Insert a brief description of the project including its purpose and/or refer to documents that describe it in more detail.

## Project goals

The appointing party’s goals for the project are shown in the **Project goals table**.

**Project goals table**

|  |  |  |
| --- | --- | --- |
| Priority | Goal description | Measures of success |
|  |  |  |
|  |  |  |
|  |  |  |

**Priority:** e.g. High, Medium, Low, 1, 2, 3, etc. Define numerical designations to make it clear what is meant by each.

**Goal description:** A brief description, e.g. Increase cost certainty. These can be expanded on as necessary in the relevant sections of the EIR.

**Measures of success:** Quantifiable, if possible, e.g. reduced number of requests for information.

If goals are documented elsewhere, you may prefer to delete the table and reference the relevant document instead.

Alternatively, this table could be renamed ‘Asset management goals table’ and used to document asset management goals only, e.g. improve asset management maturity, improve asset data collection for lifecycle planning purposes. The clause title and text would have to be amended accordingly.

# Commercial

## Procurement strategy

The project procurement strategy is shown in the **Project procurement strategy table**.

**Project procurement strategy table**

|  |  |
| --- | --- |
| Project procurement strategy: |  |
| Contractor engagement: indicative date: |  |

**Project procurement strategy**: e.g. Design Bid Build, Design and Construct, Integrated Project Delivery*.* If not yet decided, write ‘To be confirmed’.

The procurement strategy will determine if a single or multiple BIM Execution Plans (BEP) are required and when/how responsibilities are handed over. If the designer’s engagement is included with the contractor’s, the Design BEP and Construction BEP can be combined in one document.

If procurement details are documented elsewhere, you may prefer to delete the table and reference the relevant document instead.

Appointing party’s asset management approach:

Outline the appointing party’s approach to asset management to provide context for the items described in this document.

This can include details such as:

* The priority given to asset information.
* In-house personnel currently responsible for asset management, and their roles.
* Current asset management systems in place including software used for this purpose.
* Where no system exists, the proposed approach to asset management including how it will be resourced, e.g. staff, software, infrastructure.
* Extent of outsourcing of asset management responsibilities and the scope of associated contracts.
* Proposed approach to transitioning from an existing asset management system to a new one including data migration.

If the asset management approach has been described in the organisational information requirements (OIR), copy it to this location. If the organisation has a formal Strategic Asset Management Plan (SAMP) or policy document, include it in the **Annex** and reference it here.

## Project team members

The contact details for key stakeholders who contributed to the development of the AIR are shown in the **Project team members table**.

**Project team members table**

| Role | Discipline | Name | Company/  Organisation | Email |
| --- | --- | --- | --- | --- |
| Appointing party representative |  |  |  |  |
| Information Manager |  |  |  |  |
| Project Manager |  |  |  |  |

Add or amend roles in the table as required. Those shown are examples only – customise them to suit the project.

Confine contacts to those who need to be kept informed of changes in AIR or can answer queries about them.

If the details are extensive, you may prefer to include them in the **Annex** and reference it here.

## Common Data Environment

Provision of Common Data Environment (CDE):

A project CDE should have been established by the appointing party in conformance with AS ISO 19650.2, Clause 5.1.7. If this is the case, enter ‘By the appointing party’ at the prompt.

If the appointing party has not established a CDE, specify the technical implementation requirements, management expectations and commercial arrangements regarding ownership and responsibilities during and after project delivery.

Establishing a CDE prior to invitations to tender has the advantage of providing a single secure location for standards and project reference information that form part of the tender documentation. This is more effective and reliable than sending them individually to each prospective appointed party.

CDE access:

Provide a link to the CDE.

Instructions for using the CDE:

Provide a link to the CDE location for instructions.

## Asset information delivery milestones

If specifying delivery milestones is not within the scope of this AIR, e.g. if the requirements are not project-specific, delete this clause and table.

The dates required by the appointing party for the delivery of asset information are shown in the **Asset information delivery milestones table**.

Information delivery dates should be based on the timing of key decision points for the project. Allow sufficient lead time for appointing party decision making processes between the two.

Providing a project program to prospective appointed parties – if one is available – will place milestones in context.

Make sure dates do not conflict with program requirements documented elsewhere.

See Guidance below the **Asset information purposes table** for sources of plain language questions (PLQ) that can help define the asset information required for key decision points.

**Asset information delivery milestones** **table**

| Delivery milestone | Weeks before\* | Key decision point | Weeks before\*\* | End of project phase |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

\* Weeks before the key decision point \*\* Weeks before end of project phase

* Edit the table as required, e.g. add or delete delivery milestones, key decision points and/or project phases.
* Enter phase names or descriptions agreed for the project, e.g. Schematic design, Contract documentation.
* Enter descriptions of delivery milestones, key decision points. Number or designate as required.
* Enter lead times between delivery milestones, key decision points and the end of project phases in the ‘Weeks before’ columns.

See *Appendix D – Defining information requirements* for an example of a completed table.

Dates can be substituted for lead times if they have been determined.

Asset information handover procedure:

Describe the procedure for handing over the AIM to the appointing party and/or the built asset’s operators including post-occupancy evaluations to ensure that specified performance levels have been achieved. Reference relevant standards such as *The Soft Landings Framework Australia and New Zealand* (CIBSE) as required.

Asset information acceptance criteria: Conformance with the information requirements specified in this AIR document and the standards cited for each AIM element in **TECHNICAL**, **Standards and project reference information**.

## Existing conditions information

Available existing conditions information:

Describe the existing conditions information that will be made available for prospective appointed parties, e.g. surveys, geotechnical reports, models, asset registers. Include it in the CDE (or tender resources) and reference it in the **Project reference information directory**. If none is available, enter ‘None’ at the prompt.

Additional existing conditions modelling requirements:

Specify any modelling of existing conditions required in addition to that provided by the appointing party. Refer to *Appendix C – BIM use & enabler descriptions* **2.1 Existing conditions modelling** for guidance on defining the scope of information required.

## Asset information purposes

Information purposes: The purposes of the asset information required by the appointing party are shown in the **Asset information purposes table**.

**Purpose of this table**

This table is used to record the purposes of the asset information required by the appointing party. The purposes reflect the underlying reasons for information requirements (the ‘why’). They can provide context and assist understanding by those responding to them. Information requirements inform which properties or metadata such as classification need to be included in model objects.

Information purposes can be used to group sets of related information requirements together.

AS ISO 19650.1 clause 5.1 summarises some of the purposes for which asset information might be required. AS ISO 19650.1 clause 5.3 also advises that a set of AIR should be prepared in response to each trigger event during asset operation, e.g. corrective maintenance in response to failure.

**Asset information purposes table**

| **Information purpose** | Asset information requirements |
| --- | --- |
| **Asset management** |  |
|  |  |
|  |  |
|  |  |

* Add or delete rows as required to include the information purposes selected for the project.
* Enter the details of the information required for each purpose in the ‘Asset information requirements’ column. Additional rows can be added for each individual requirement under each purpose if preferred.

The following resources can assist the definition of information requirements:

* *ABAB Asset Information Requirements Guide*, Appendix A includes a list of plain language questions (PLQ) that can be asked to prompt answers about the information required.
* *Victorian Digital Asset Strategy (VDAS) Guidance Appendix 3: Sample key decision points* provides examples of PLQ that can be asked at each stage of a project.
* *BS 8536-1* and *BS 8536-2 Briefing for design and construction* also include briefing checklists and PLQ useful for this purpose in Annexes A and G.

## Asset information model (AIM)

Requirement: Deliver the elements of the asset information model (AIM) described in the following clauses.

The delivery of the AIM may involve several different appointments at different stages of the project. Clearly defining AIR based on the appointing party’s asset information purposes will assist coordination and integration of AIM content.

### AIM integration strategy

Requirement: Coordinate information included in each element of the AIM to minimise duplication and eliminate omissions and contradictions. Implement measures to integrate information to enable it to be used effectively for the purposes documented in the **Asset information purposes table**.

Duplication of information in multiple locations makes its management more difficult and prone to error. Adopting the ‘single’ source of truth’ principle reduces these risks. Applying metadata to digital information for attributes such as identity and classification enables it to be stored in one location and referenced from other locations (rather than duplicated) as required.

Asset information classification: Incorporate classification data in AIM information containers/files and model objects to enable the effective integration and management of information.

Classification data can be embedded in an information container/file naming convention or in metadata.

A container can be a model, a spreadsheet file, a database, an application, etc.

AIM integration measures:

Specify required measures for integrating information in each element of the AIM, i.e. models, drawings, documents and data. These can include:

* Consistent identification or tagging of objects or elements across models, drawings and documents.
* Inclusion of properties or metadata such as classification in model objects or elements.
* Adoption of data exchange standards such as IFC and COBie.

Give preference to industry standards for these items, e.g. IFC, COBie, Virtual Buildings Information System (VBIS). See <https://vbis.com.au/>

Describe the methodology for implementing the measures.

If the appointing party does not have any specific requirements for achieving integration of the AIM, delete the prompt and request proposals from the prospective appointed parties.

## AIM deliverables

Requirement: Provide the deliverables shown in the **AIM deliverables table**.

Timing: Provide the deliverables at the delivery milestones shown in the **Asset information delivery milestones table**.

If specifying delivery milestones is not within the scope of this AIR, e.g. if the requirements are not project-specific, delete the ‘Timing’ clause.

**Purpose of this table**

This table is used to specify the deliverables required, **based on the asset information purposes** described in the **Asset information purposes table**.

A process for deriving them is described in *Appendix D – Defining information requirements*.

**AIM deliverables table**

| AIM element |
| --- |
| **Models** |
|  |
|  |
|  |
| **Drawings** |
|  |
|  |
|  |
| **Documents** |
|  |
|  |
|  |
| **Data (object-based)** |
| See **Asset object property table** |

* Add or delete rows under each AIM element for each item required and edit the descriptions to suit the project.
* Group deliverables by discipline or trade to simplify the task of incorporating them in project-related appointments.

### AIM deliverables formats

Requirement: Provide deliverables shown in the **AIM deliverables table** in the formats shown in the **AIM deliverables format table**.

**Purpose of this table**

This table is used to specify the file or physical format of deliverables shown in the **AIM deliverables table**. The deliverable types listed in the table are examples only – the table must be customised to suit the project.

See *Appendix D – Defining information requirements* for an example of a completed table.

If the formats of individual deliverable types vary significantly, the table can be combined with the **AIM deliverables table** to show the details for each.

**AIM deliverables format table**

| Deliverable | File type | Physical format | No. of copies \* |
| --- | --- | --- | --- |
| Models |  |  |  |
| Drawings |  |  |  |
| Documents |  |  |  |
| Photographic images |  |  |  |
| Videos, animations |  |  |  |
| Data |  |  |  |

\* Number of hard copies at handover to the operational phase of the asset.

If required, the number of hard copies for other information delivery milestones can be documented in the EIR.

Submission of hard copies:

Specify the procedures for submitting hard copies of deliverables including the status of copies to be provided, e.g. record documentation only, the method of delivery and responsibilities. The details can be entered here or the relevant procedure included in the **TECHNICAL, Project information production methods and procedures directory** and referenced here.

If hard copies are not required under the contract or these requirements are specified elsewhere, delete the prompt.

### As-built models

Scope of as-built models:

An as-built model represents a built asset at the completion of construction and commissioning. It is usually created by federating final design models that have been progressively updated with data from site.

Describe the general scope of what must be included in the as-built models identified in the **AIM deliverables table**.

* For example, if the works involve alterations to an existing building, how much of it is to be included?
* If there are existing in-ground services on site, describe how accurately they need to be located, verified and modelled.
* Does a specialised model need to be derived from the as-built model for asset management purposes? See a**sset management models**.

Specify the categories of items to be included in the as-built model. For example:

* In-ground items.
* Embedded items.
* Built-in items.
* Items in difficult to access areas.
* Complex intersections of elements.
* Emergency or service-critical items.
* Business-crucial items.

Refer to *ABAB Asset Information Requirements Guide*, Clause 6.1.1 for more details.

Methods for recording as-built conditions:

Describe acceptable methods for recording as-built conditions.

Options include:

* Visual confirmation.
* Manual measurement.
* Photographs.
* Photogrammetry.
* Scanning, e.g. laser, LiDAR.

Refer to *ABAB Asset Information Requirements Guide*, Clause 6.3 for more details.

Methods for verifying as-built models:

Describe acceptable methods for verifying as-built models.

Options include:

* Visual checks.
* Documented procedures.

If the latter, describe the procedures including review and reporting processes.

### Asset management models

Requirements:

Specify the requirements for any model/s identified for asset management purposes in the **AIM deliverables table** here.

Asset management models are generally derived from as-built models by removing detailed construction information not generally required for day-to-day asset management / facilities management purposes. More detailed information that may be required for alterations and additions – for example – should be retained in the as-built model. Refer to *ABAB Asset Information Requirements Guide*, Clause 6.6 for more details.

If models are required as reference models within a Computer Aided Facility Management (CAFM) application, describe the system’s requirements for them. Seek a specification from the software vendor.

### Record drawings

Requirements:

Specify the record drawings required in the **AIM deliverables table**. Requirements for the content of record drawings should be included in the project specification. In this instance, enter the following text at the prompt:

* Provide record drawings in conformance with requirements specified in NATSPEC *worksection 0170 General requirements*, SUBMISSIONS and RECORD DRAWINGS. Derive record drawings from the as-built models.

Also describe any additional record documents required.

If requirements for record drawings are not included in the specification, amend the text accordingly and describe the drawings required. Coordinate the requirements with other project documentation to avoid duplications, omissions or contradictions.

### Record documents

Requirement:

Specify the record documents required in the **AIM deliverables table**. Requirements for the content of record documents should be included in the project specification. In this instance, enter the following text at the prompt:

* Provide record documents in conformance with requirements specified in NATSPEC *worksection 0170 General requirements*, SUBMISSIONS and OPERATION AND MAINTENANCE MANUALS.

Also describe any additional record documents required.

If requirements for record documents are not included in the specification, amend the text accordingly and describe the documents required. Coordinate the requirements with other project documentation to avoid duplications, omissions or contradictions.

### Record data

Requirement:

Specify the data required for asset management purposes in the **Spatial object property table** and **Asset object property table**. Identify data that is not required to be included in building information models and describe how it will be linked to it in **AIM integration strategy**. Include any software compatibility requirements, e.g. for CAFM applications, and file formats or data exchange schema required, e.g. COBie.

## Spatial object properties

Requirement: Include the properties shown in the **Spatial object properties table** in spatial objects.

Timing: Include sets of properties at the delivery milestones shown in the **Asset information delivery milestones table**.

If specifying delivery milestones is not within the scope of this AIR, e.g. if the requirements are not project-specific, delete the ‘Timing’ clause.

Note: A schedule of spaces/spatial objects has not been included in this template because spaces are usually documented elsewhere. Also, the properties required will usually apply to all spatial objects.

**Purpose of this table**

This table is used to specify the spatial object properties that must be included in spatial objects, based on the asset information purposes described in the **Asset information purposes table**.

A process for deriving them is described in *Appendix D – Defining information requirements*.

If different property sets are required for particular groups or classes of spatial objects, subdivide the table into the groups or classes and specify the properties for each.

**Spatial object properties table**

| **Property category** | **Generic property name** | **IFC4 property name or property set** |
| --- | --- | --- |
| **General ID & description** |  |  |
| **Location** |  |  |
| **Geometrical quantities** |  |  |
| **Function** |  |  |
| **Occupancy** |  |  |
| **Surface finishes** |  |  |
| **Maintenance** |  |  |
| **Condition** |  |  |

* Add or delete rows for properties in each property category and edit the descriptions to suit the project. Using IFC property names and property sets will improve the reliability of information exchanges. The NATSPEC BIM Properties Generator is also an ideal tool for selecting object properties. See <https://bim.natspec.org/tools/properties-generator>

Suggested minimum properties for all spatial objects:

* Space ID/Identification code.
* Room or space name.
* Floor level or storey.

Include the building designation or identifier if there is more than one building. The floor level or location can be embedded in the identification code as an alternative to providing a property or metadata.

Typical additional properties include:

* Geometrical quantities, e.g. floor areas, wall areas, volume (as measured by a nominated method of measurement).
* Function, e.g. office, workshop. A classification system may be used to designate this.
* Occupancy, e.g. maximum number of occupants, design occupancy load.

Refer to *ABAB Asset Information Requirements Guide*, Appendices. See notes on COBie parameters if adopting COBie.

## Physical asset classes included in the AIM

Requirement: The physical asset classes to be included in the AIM are shown in the **AIM physical asset classes table**.

It is usually not necessary or cost-effective to include every asset class or type in the table. Generally, only include asset classes that require regular maintenance, e.g. chillers. Refer to the *ABAB Asset Information Requirements Guide* for guidance on selecting asset classes for inclusion.

Even if COBie has not been specified as the schema for asset information delivery, COBie documentation and guidance provides valuable assistance for prioritising and selecting asset classes and assets for inclusion in the AIM.

**AIM physical asset classes table**

| Asset class ID | Asset class |
| --- | --- |
|  |  |
|  |  |
|  |  |
|  |  |

Enter asset class details into the table as required, e.g. Asset class ID: FCU │ Asset class: Fan coil units. These can be exported from a model or an architectural programming application. Alternatively, append an asset class schedule and amend the reference to the table accordingly.

If there is uncertainty about the impact of information requirements on project costs, a possible approach is to group asset classes by priority – say high, medium, low – and request the estimated cost of each to be itemised in the tender response.

Data source:

Identify the source of data shown in the table or appended document. It should include the model or document’s name, reference number and date of issue so that any subsequent amendments can be tracked.

### Physical asset object properties

Requirement: Include the properties shown in the **Asset object property table** in modelled physical asset objects.

Timing: Include sets of properties at the delivery milestones shown in the **Asset information delivery milestones table**.

If specifying delivery milestones is not within the scope of this AIR, e.g. if the requirements are not project-specific, delete the ‘Timing’ clause.

**Purpose of this table**

This table is used to specify the asset object properties required, based on the asset information purposes described in the **Asset information purposes table**.

Examples of properties that could be selected are included in *Appendix D – Defining information requirements*.

Note: The table shows the properties required for all physical asset objects. Where they differ for individual groups or classes of assets (commonly the case), create a separate table for each or subdivide the table into classes.

**Selecting properties**

The properties required will be suggested by the purposes described in the **Asset information purposes table**.

The number of properties that could be included in each asset object type is virtually unlimited. Including large numbers of properties is rarely necessary or cost-effective. Use a structured process to select the ones required.

The *ABAB Asset Information Requirements Guide* provides guidance on this subject.

The NATSPEC BIM Properties Generator is an ideal tool for selecting object properties.

See <https://bim.natspec.org/tools/properties-generator>

**Asset object property table**

| **Property category** | **Generic property name** | **IFC4 property name or property set** |
| --- | --- | --- |
| **General ID & description** |  |  |
| **Location** |  |  |
| **Parent system or assembly** |  |  |
| **Classification or category** |  |  |
| **Manufacture & supply** |  |  |
| **Warranties** |  |  |
| **Life cycle & maintenance** |  |  |
| **Temporal** |  |  |
| **Performance** |  |  |
| **Condition** |  |  |
| **Financial** |  |  |

* Add or delete rows for properties in each property category and edit the descriptions to suit the project. Using IFC property names and property sets will improve the reliability of information exchanges.

Suggested minimum properties for all types of asset objects:

* Asset ID: See **Asset identification**.
* Asset name.
* Classification or category code describing the type of asset, typically from a classification Element, Systems or Products table, e.g. Uniclass 2015, VBIS.
* Location references such as building number, floor level or zone (if not embedded in the ID designation).
* Parent system or assembly code describing ‘part-of’ relationships between assets (e.g. a fan that is part of an exhaust system).

Refer to *ABAB Asset Information Requirements Guide*, Appendices. See notes on COBie parameters if adopting COBie.

# Management

## AIM quality assurance

AIM quality assurance requirements:

Describe the measures required for assuring the quality of asset information. Include measures relating to the Common Data Environment (CDE) under **CDE management**.

If the appointing party does not have existing quality assurance requirements for asset information, they may choose to request proposals from tenderers for consideration. In this instance, delete the following text about quality assurance standards.

Quality assurance standards: Conform to the standards documented in **TECHNICAL, Standards and project reference information**.

## Information security and privacy

Information security requirements:

Describe the measures required for ensuring the security and privacy of asset information including governance protocols and responsibilities. This includes but is not limited to technical measures, authorisation processes for access, levels of access, security classification of information, privacy and IP protection measures and procedures in the event of breaches.

Reference the relevant sections of the appointing party’s existing security policies and strategies, security management plans and security breach/incident management plans if available.

Include measures relating to the Common Data Environment (CDE) under **CDE management**.

AS ISO 19650.5 specifies the principles and requirements for security-minded information management. It addresses the steps required to create security strategies, security management plans, etc (but does not provide them ready-made).

## CDE management

CDE standards and procedures:

Describe the measures required to maintain the security and integrity of the CDE. Include applicable standards and procedures in in the **Project information standards directory** and **Project information production methods and procedures directory**.

Incorporate details of these measures in the instructions for using the Common Data Environment (CDE) at **COMMERCIAL**, **Common Data Environment**.

If the appointing party does not have existing requirements for management of the CDE, they may choose to request proposals from tenderers for consideration.

# Technical

## Asset identification

Requirement: Provide all assets with a unique code for the purpose of identification and to facilitate the cross referencing of information about assets in different information locations and formats within the AIM.

Give preference to international and national standards for asset identification, e.g. VBIS. See <https://vbis.com.au/>

If this requirement is already covered by standards referenced in **Information standards**, you may choose to delete this clause.

## Model object and property naming

Open standards: To facilitate the reliable exchange of information, use buildingSMART Industry Foundation Classes (IFC) naming conventions for model objects and object properties.

Minimum requirements: Include the IFC designations IfcElementType and PredefinedType in all model element objects.

The *Open BIM Object Standard (OBOS)* provides guidance on creating and naming BIM objects and their properties to facilitate the reliable exchange of information between modellers using different applications.

The NATSPEC BIM Properties Generator includes a list of objects with their IFC designations and property sets.

See <https://bim.natspec.org/tools/properties-generator>

If this requirement is already covered by standards referenced in **Information standards**, you may choose to delete this clause.

## Standards and project reference information

Standards and project reference information location:

Include a link to an online repository, CDE or a description of a location. Ideally, a CDE or single secure location for these resources should be established prior to invitations to tender. Refer to AS ISO 19650-2, Clause 5.1.7. This is more effective and reliable compared to sending them individually to each prospective appointed party.

### Information standards

See *Appendix D – Defining information requirements* for examples of standards and project reference information.

Asset Information for the project: Conform to the information standards and information management standards listed in the **Project information standards directory**.

**Project information standards directory**

| Document title | Edition / version | Date |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

Edit to include all specific information standards required for the project by the appointing party’s organisation. Refer to AS ISO 19650.2 clause 5.1.4. Give preference to international, national or industry standards, e.g. AS ISO 19650.

Standards can cover topics such as:

* Requirements associated with information exchanges.
* Schema for structuring and classifying information.
* Methods for assigning level of information need.
* Standards relevant to the use of information during the operational phase of the asset.

The project’s information standards determine the organisation of information containers within the CDE.

### Information production methods and procedures

Information production for the project: Conform to the requirements of the documents listed in the **Project information production methods and procedures directory**.

**Project information production methods and procedures directory**

| Document title | Edition / version | Date |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

Edit to include all specific information production methods and procedures required for the project by the appointing party’s organisation. Refer to AS ISO 19650.2 clause 5.1.

They can cover topics such as:

* The capture of existing asset information.
* The generation, review or approval of new information.
* The security or distribution of information.
* The delivery of information to the appointing party.
* Information acceptance criteria.

### Reference information

Requirement: Take into consideration the information listed in the **Project reference information directory** when producing information for the project.

**Project reference information directory**

| Document title | Edition / version | Date |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

Edit to include all available information useful or relevant to prospective appointed parties when tendering and throughout the project. Its provision avoids potential duplication of effort and excessive contingency cost allowances for risks. Refer to AS ISO 19650.2 clause 5.1.6.

It can include information about:

* The brief.
* Planning and construction approval documentation.
* The site.
* Adjoining assets and utilities.
* Existing assets.
* Guidance material.
* Exemplars of project deliverables, etc.

### Shared resources

Requirement: Take into consideration, or use as directed, the resources listed in the **Project shared resources directory**.

**Project shared resources directory**

| Document title | Edition / version | Date |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

Edit to include information or resources that promote consistency of information and facilitates its exchange.

Refer to AS ISO 19650.2 clause 5.1.6.

It can include:

* Templates for BEP, TIDP, MIDP, etc.
* Templates for documents, drawings and models.
* Style libraries for text, lines, hatch, etc.
* Object libraries including 2D symbols and 3D objects.

## Additional technical requirements

Refer to the project’s exchange information requirements (EIR) for additional technical requirements.

Delete this cross reference if this document is merged with the EIR.

# Annex

## References

Include any documents that you reference in the AIR here.

**REFERENCED DOCUMENTS**

**The following documents are mentioned only in the *Guidance* text:**

ABAB Asset Information Requirements Guide ABAB 2018 https://www.abab.net.au/

AS ISO 19650: Organization of information about construction works — Information management using building information modelling

Part 1: Concepts and principles

Part 2: Delivery phase of the assets

Part 3: Operational phase of the assets

BS 8536: Briefing for design and construction

Part 1: Code of practice for facilities management (Building infrastructure)

Part 2: Code of practice for asset management (Linear and geographical infrastructure)

Open BIM Object Standard (OBOS) NATSPEC & Masterspec NZ 2018

https://bim.natspec.org/documents/open-bim-object-standard.

The Soft Landings Framework Australia and New Zealand CIBSE 2014

<https://www.cibse.org/knowledge-research/knowledge-portal/soft-landings-framework-australia-and-new-zealand>

ISO 19650 Guidance Part D: Developing information requirements UK BIM Framework 2022

<https://ukbimframeworkguidance.notion.site/ukbimframeworkguidance/UK-BIM-Framework-Guidance-20a045d01cfb42fea2fef35a7b988dbc>