



INTRODUCTION TO THE STANDARD INFORMATION APPROACH METHODOLOGY



1. Objectives of the Standard Information Approach (SIA)

Defining common purposes to which information is put and standardising the information required to serve them is a key enabler for interoperability. The Standard Information Approach (SIA) methodology defines a standard, pragmatic, clear, repeatable methodology for producing information requirements¹ which can be related back to organisational strategic objectives.

The methodology aims to fulfil the following objectives:

- Provide a clear, simple, easy-to-use process for practitioners to follow;
- Support different practitioners in the production of more consistent information requirements;
- Enable information requirements to be identified against the purpose(s) which they are to serve;
- Enable ‘upskilling’ of practitioners new to producing information requirements;
- Provide the potential for development of standardised repositories for storing and sharing information purposes and their requirements; and
- Establish the feasibility of using available standard data schema for storing and exchanging information purposes and their requirements.

¹ Information Requirement: the specification for what, when, how and for whom information is produced: ISO 19650-1 2018 3.3.2. This and subsequent definitions are also included in Appendix Two.

2. What problem does the SIA solve?

Until now, the core process of identifying, agreeing and documenting the purposes for information (hereafter referred to as information purposes)², and what information is required to serve those purposes – as required by the ISO (International Standards Organization) 19650 series – has not been clearly defined.

There is confusion about the different information requirements – OIR (Organisational Information requirements)³, AIR (Asset information requirements)⁴, PIR (Project information requirements)⁵, and EIR (Exchange Information Requirements)⁶, as presented in the ISO 19650 series – and about how they relate to one another.

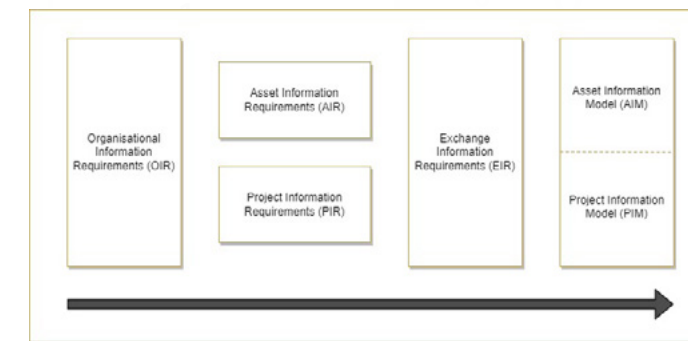


Figure 1 — Simplified illustration of the progression of information requirements

Practitioners typically use their experience and intuition to develop information requirements, but these are often not related to purpose. As a result, information is usually specified in contracts inconsistently, with clients unable to clearly identify what information is needed for any particular task, or what form it should take to fulfil its purpose. Without a standardised approach, there is little consistency across client organisations and their requests for information. This makes it difficult for supply chains to work across different clients, or for information to be shared between clients and their asset portfolios. It also makes it difficult for new practitioners to acquire the relevant skills and knowledge and to achieve consistent outputs.

² Information purposes: the purpose(s) for which data or information is created or for which that data or information exists – the process, activity or task it will help to address.

³ OIR: The information needed by an organisation in order to satisfy its business objectives - GIIG definition based on ISO 19650-1:2018 3.3.3: information requirements in relation to organizational objectives.

⁴ AIR: Information requirements relating to managerial, commercial and technical aspects of asset operation – GIIG definition based on ISO 19650-1:2018 5.3: AIR set out managerial, commercial and technical aspects of producing asset information.

⁵ PIR: Information requirements in relation to the delivery of a defined project – as defined ISO 19650-1:2018 3.3.5.

⁶ EIR: Requirements relating to an appointment, concerning the production of project or asset information – GIIG definition based on ISO 19650-1:2018 3.3.6: information requirements in relation to an appointment.

3. Principles of the SIA

A basic premise of ISO (International Standards Organization) 19650 is that all information being managed should have purpose, and that this purpose should define what information is required.

Table 1 — Information management perspectives

Perspective	Purpose	Example deliverables
Asset owner's perspective	To establish and maintain the purpose of the asset or project. To make the strategic business decisions.	Business plan Strategic asset portfolio review Life cycle cost analysis
Asset user's perspective	To identify the true requirements of the user and make sure the asset solution has the right qualities and capacities.	Project brief AIM PIM Product documentation
Project delivery or asset management perspective	To plan and organize the work, mobilize the right resources, coordinate and control development.	Plans, for example BIM Execution Plans Organizational charts Function definitions
Society's perspective	To make sure the community's interest is taken care of during the asset life cycle (planning, delivery and operation).	Political decisions Area plans Building permits, concessions

NOTE The example deliverables are relevant to the point of view of each perspective and do not indicate ownership of the deliverables or who does the work to produce the deliverables.

Table 1 - Basic concept of information purposes (as introduced in ISO 19650:1 Table 1)

What form that information then takes to serve its purpose is defined by the level of information need⁷; how it is delivered is defined by the information exchange mechanism. An information set should correspond to each purpose defined⁸. Underpinning each of these principles is the concept of interoperability. Whilst there is considerable work being done around the level of information need and information exchange, what was lacking – and is currently poorly defined in the ISO 19650 series – is a standard interoperable approach to defining information purposes and their associated information sets, through the cascade of organisational, asset, project, and exchange information requirements.

The SIA methodology has been developed to address this gap, to facilitate links with the work around level of information need and the information exchange mechanisms. The Information Management Platform (IMP)⁹, which has also been developed by the GIIG, supports and enables this methodology.

⁷ Level of information need: Framework which defines the extent and granularity of information - As defined in ISO 19650-1:2018 3.3.16. Note: One purpose of defining the level of information need is to prevent delivery of too much information.

⁸ Note that information may serve multiple purposes – but the level of information need may vary depending on the purpose it needs to serve.

⁹ The IMP is a process and technology suite that enables the secure specification, procurement, assurance, storage, presentation and exploitation of information, whether data or information is obtained internally or from third parties, to maximise value in the creation, maintenance, use and disposal of a client's assets. Refer to "GIIG IMP Guidance Document".



4. SIA Methodology

The Standard Information Approach (SIA) enables an organisation to define its information purposes and specific information requirements to be defined and shared between organisations. Developing these in a consistent way, and storing them using common data structures, is a key enabler for sharing them between organisations.

The SIA relates information requirements to an organisation's overall strategic objectives. These are typically more granular than the organisation's high-level vision or mission but should relate to, and support, the goals or outcomes the organisation aims to achieve.¹⁰ Commonly, organisations' strategic objectives will include social, economic and environmental goals, and for asset owner-operators (client organisations), they may include specific objectives relating to their asset portfolio (to 'operate and maintain a compliant estate', for example). At this level, therefore, many organisations may have similar objectives that might be achieved through the development of similar information requirements.

For example, responding to new legislative requirements could be achieved more effectively and consistently if a single set of information requirements was consistently used across relevant organisations. It would save the duplicated effort typically expended by each organisation developing their own version of information requirements for a particular legislative requirement (compliance with building fire safety regulations, for example).

The main steps of the SIA methodology are presented in the flow diagram (figure 2) below.

In the first instance, the methodology may be followed to determine a set of information purposes which serve just one strategic objective. The methodology can then be followed to determine the information requirements for a single information purpose. Over time, a library of information purposes and their information requirements can be progressively developed, with the information requirements specified using the standards and procedures set by the organisation.

The methodology can be employed at project level, at asset level and/or at organisational level. Knowledge will be needed of both the relevant business areas and of management of the relevant information and its supporting data. Therefore, at least two types of participants will be required to achieve the best outcome:

- Subject matter expert(s)¹¹ relevant to the particular strategic objective. During the initial steps, subject matter experts with sufficient knowledge of the organisation's strategic objectives will be required to answer questions about how they are defined, measured, and understood. Then, as the methodology progresses through to Steps 4 and 5, other subject matter experts will be required who understand the relevant activities, tasks and processes and the likely reasons for needing information; and
- Information management expert(s) who provide(s) knowledge of information management and facilitate(s) the consistent process of defining information requirements to serve the information purposes identified, ensuring the correct structure is followed within the tool being used.

The methodology can be run as a desktop exercise, or as a series of workshops. It might be used to focus on one small aspect or theme, or to look at an organisation's information needs overall. It could also be used to explore an industry-wide need, such as a regulatory requirement.

Further, to deploy this approach within an organisation, a central repository of information purposes and requirements is needed. The Information Management Platform (IMP) provides the key means to develop a repository, and then to manage and govern its ongoing use.

¹⁰ A vision statement succinctly describes the overall aspiration or ambition of the organisation. A mission statement translates the vision statement into something that is practically actionable by the organisation and is usually defined in relation to strategic goals or outcomes the organisation aims to achieve. In the TIP Roadmap to 2030, for example, outcomes for UK Government clients include the achievement of relevant United Nations Sustainable Development Goals.

¹¹ Someone with the capability to ensure the facts and details in an area of expertise are valid.



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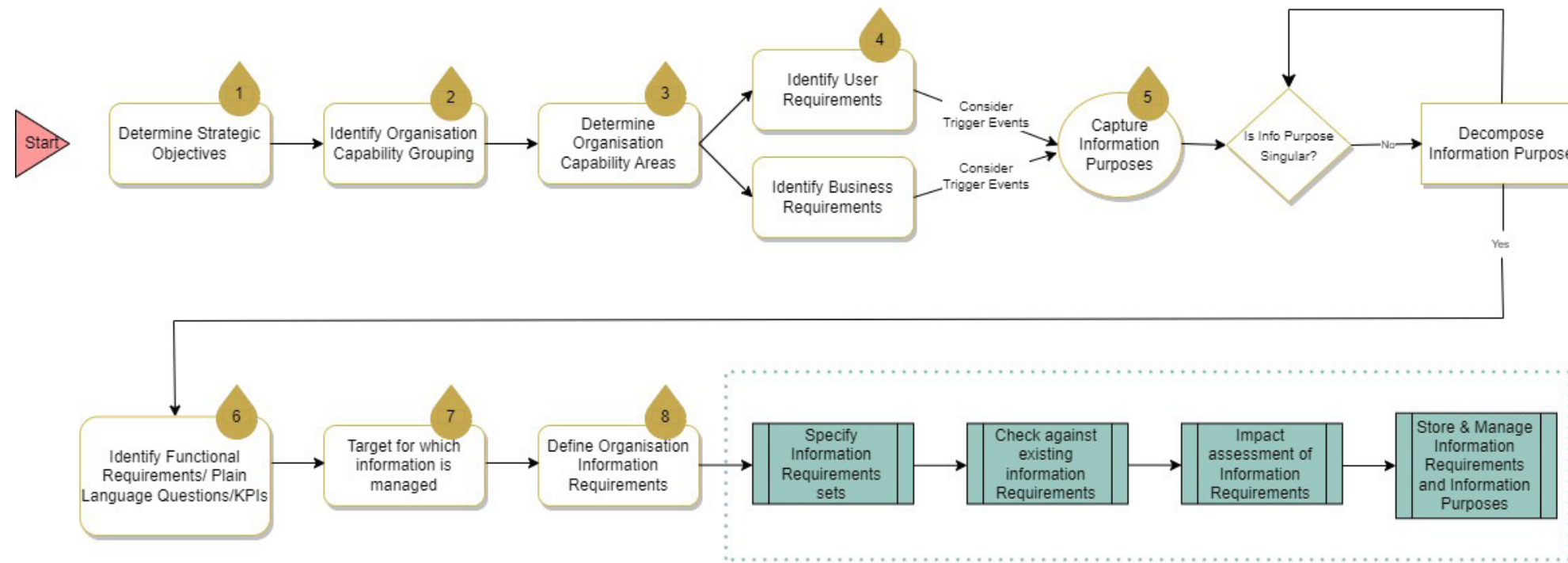


Figure 2 - Flow Diagram of the Overall Standard Information Approach Methodology

The SIA methodology is intended both to inform new practitioners of the required steps, and to encourage more experienced practitioners to follow a standardised process which complements their own approach. The methodology is not intended to be slavishly followed by all practitioners in all circumstances but is intended as guidance to increase awareness and competence. However, it has been identified that existing detailed processes defined within best practice and/or standards are available to facilitate some of the steps.

Focus has been given to the first part of the methodology (Steps 1 to 8), where the most ambiguity currently exists – that of defining information purposes and identifying the information needed to support them.

A demonstrator has also been developed, showing the application of the approach to fire safety.

