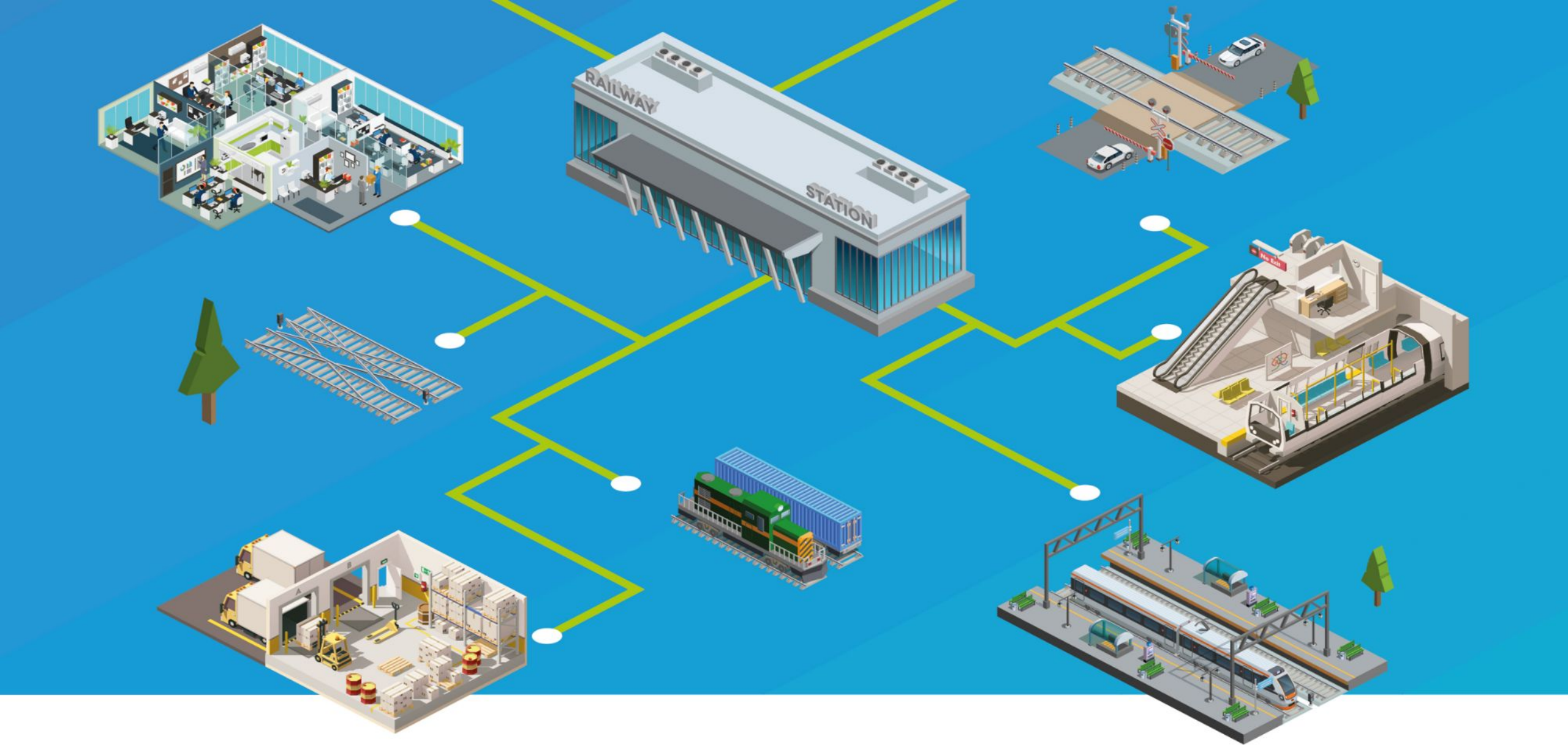
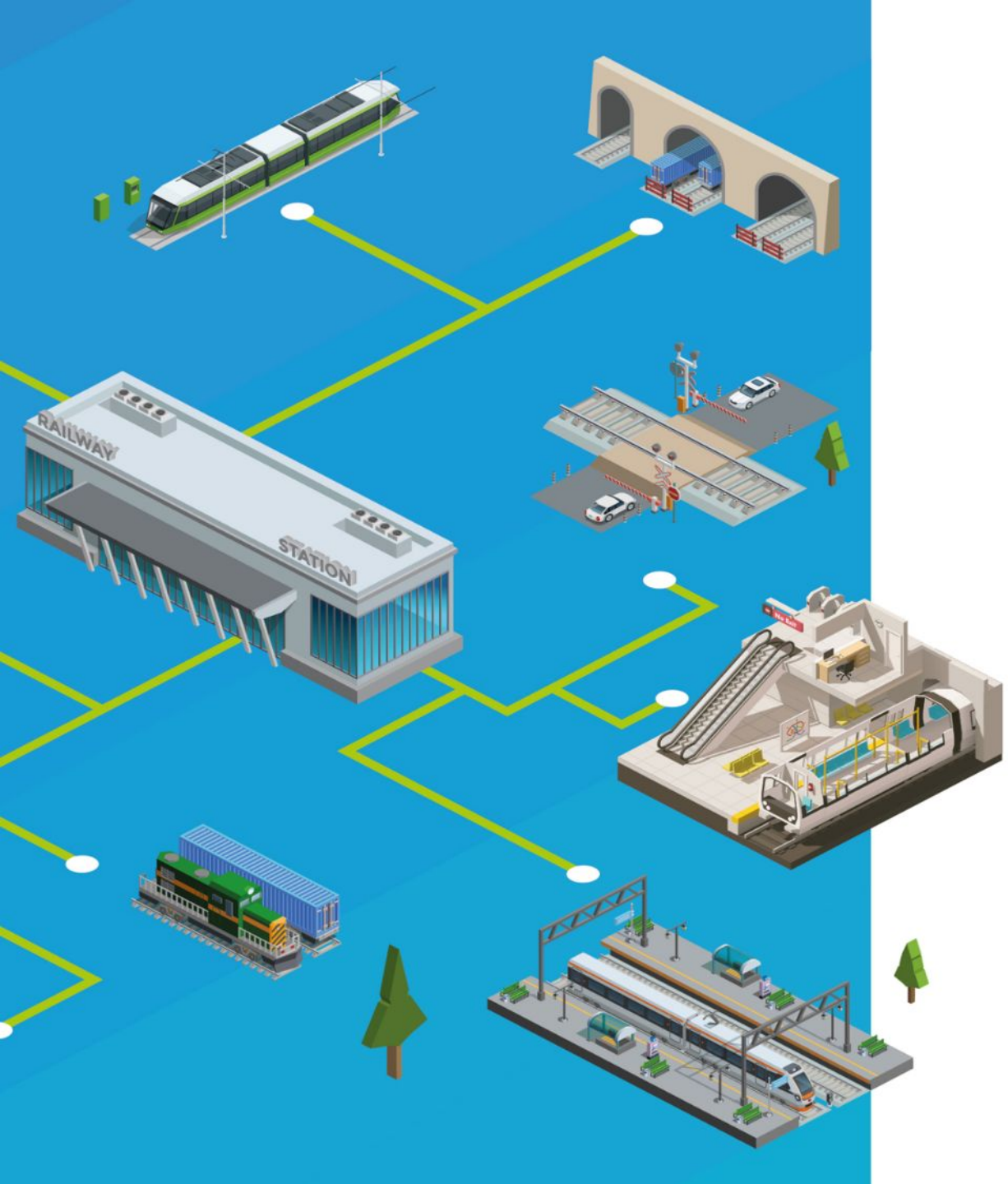


Rail Asset Management Summit 2018



Rail Asset Management Summit

2018

Julian Schwarzenbach

Director

Data and Process Advantage Ltd

Don’t reinvent the wheel…
How standards support asset management and BIM in rail

Introductions

- 25+ years asset data management experience
- Data evangelist
- Led development of the IAM Asset Information SSG document and the Demand Analysis SSG
- Chair of BCS Data Management Specialist Group
- Standards development

The IAM

Vision

- To be recognised as the leading, international, professional body for asset management.

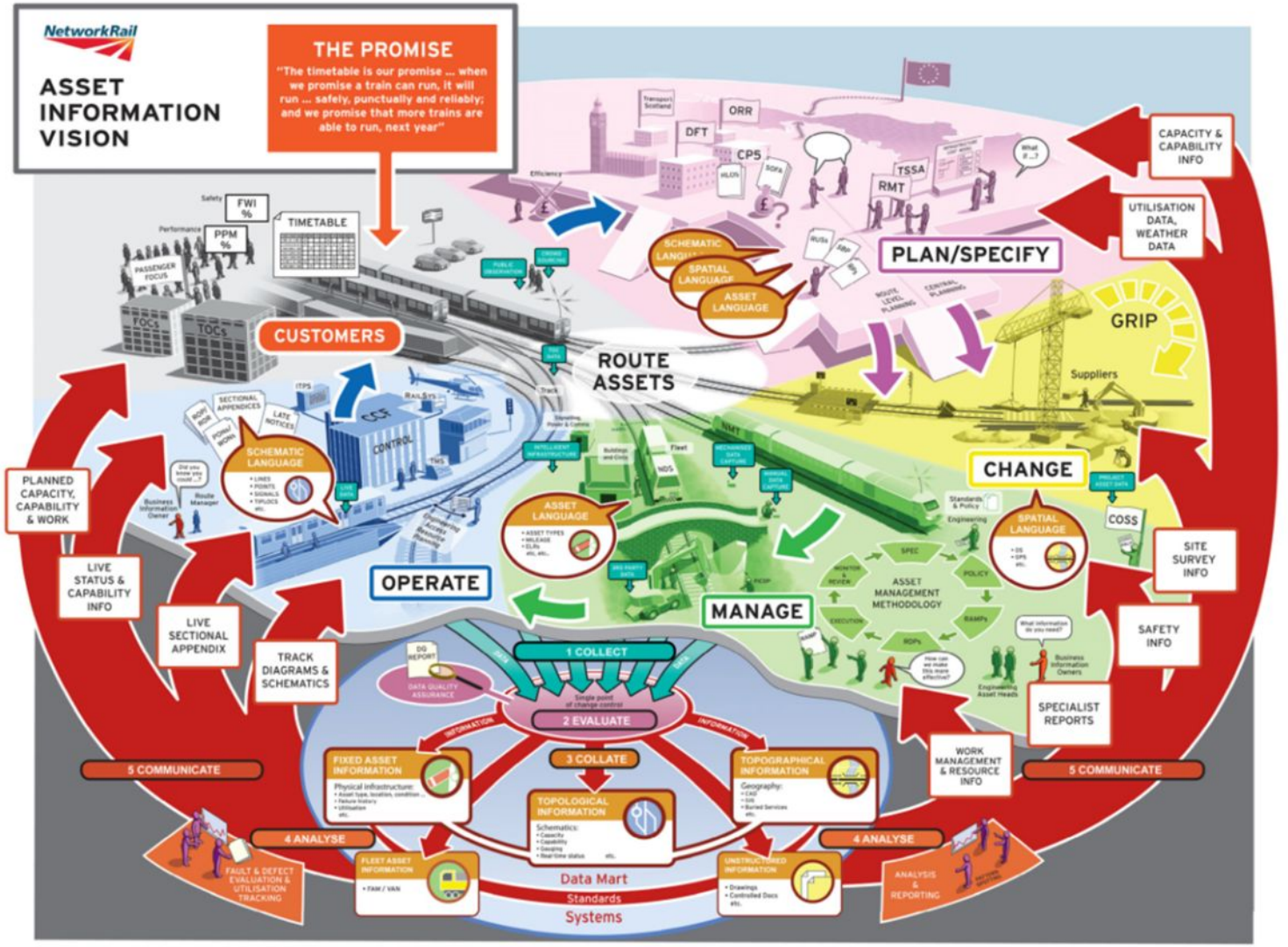
Values

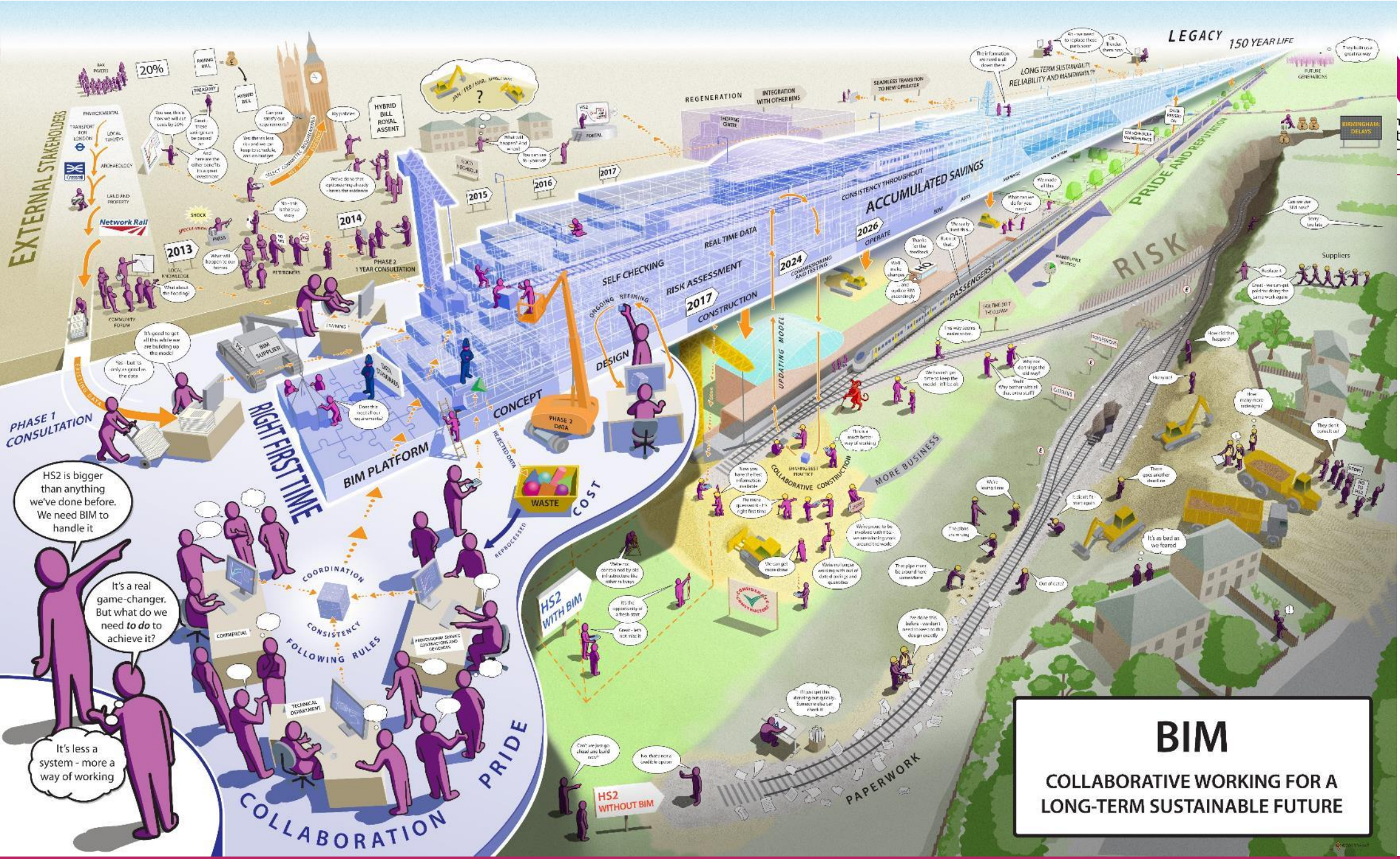
- Independence, Inclusiveness, Collaboration, Transparency, Integrity, Respect.

Enduring Objectives

- Collect/ collate /disseminate existing knowledge and good practice
- Generate and extend knowledge and good practice
- Influence public policy and stakeholder expectations
- Promote capability and excellence in asset owning organisations or their suppliers and structured schemes for recognising these achievements
- Promote knowledge and competence of individuals and objective schemes for recognising these achievements
- Deliver member publications, engagement and networking opportunities and other valuable member services
- Raise profile and respect for the IAM and the profession
- Collaborate and support other bodies having similar objectives
- Develop and maintain an appropriate and sustainable organisation

The ideal railway?





nstitute of
t Management

Maintenance vs. Asset Management

IAM Big Picture

The Institute of Asset Management

Asset management

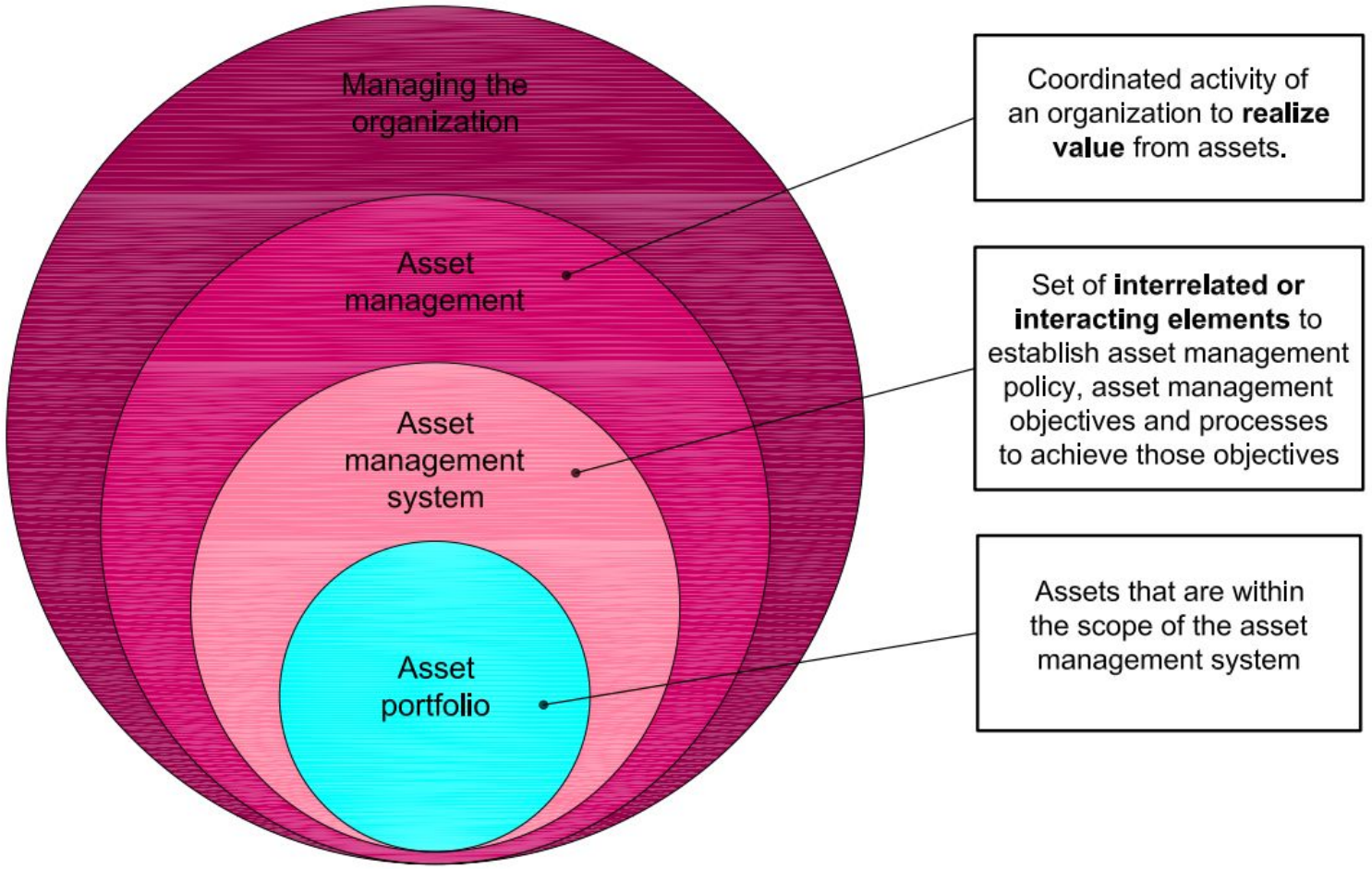
- ISO 55000 definition:

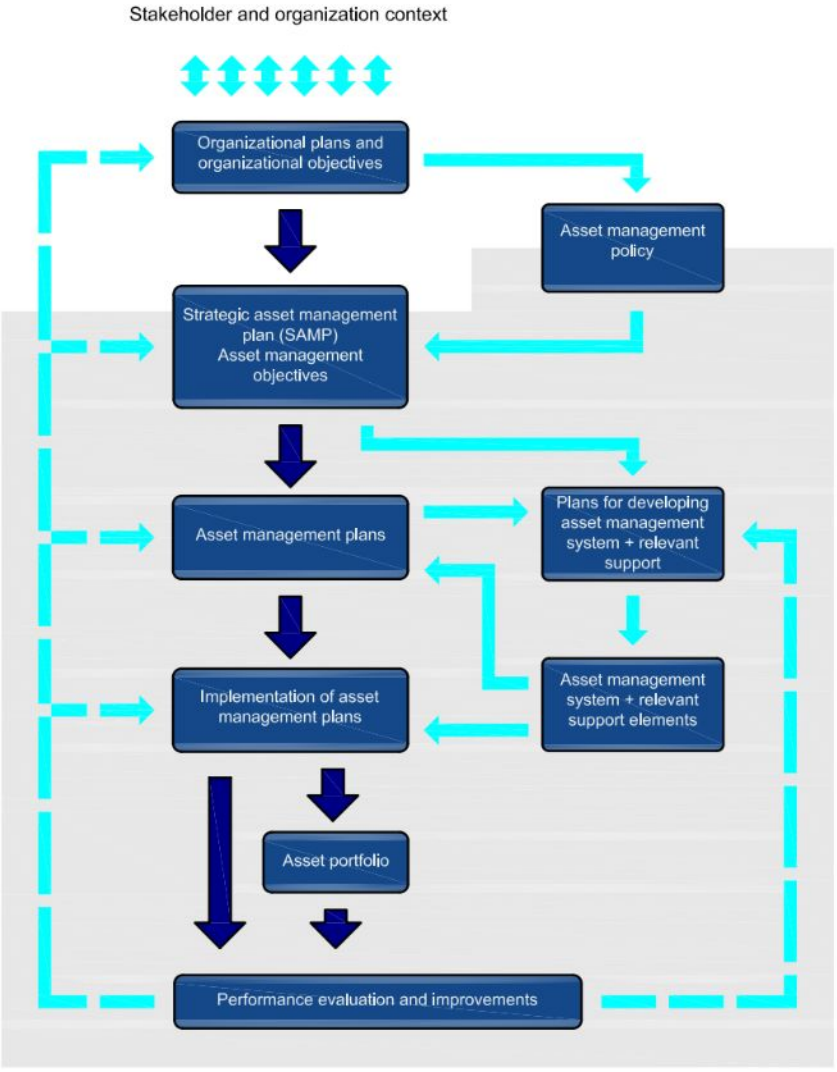
- “Coordinated activity of an organisation to realise value from assets”

- Note: Realisation of value will normally involve balancing of costs, risks, opportunities and performance benefits

- DIY or adoption of standards?

Good practice asset management





Asset information to support asset management

- “Asset management requires accurate asset information, but an asset management system is more than a management information system”

7.5 Information requirements

The organization shall determine its information requirements to support its assets, asset management, asset management system and the achievement of its organizational objectives. In doing this:

a) the organization shall include consideration of:
   - the significance of the identified risks;
   - the roles and responsibilities for asset management;
   - the asset management processes, procedures and activities;
   - the exchange of information with its stakeholders, including service providers;
   - the impact of quality, availability and management of information on organizational decision making;

b) the organization shall determine:
   - the attribute requirements of identified information;
   - the quality requirements of identified information;
   - how and when information is to be collected, analysed and evaluated;

c) the organization shall specify, implement and maintain processes for managing its information;

d) the organization shall determine the requirements for alignment of financial and non-financial terminology relevant to asset management throughout the organization;

e) the organization shall ensure that there is consistency and traceability between the financial and technical data and other relevant non-financial data, to the extent required to meet its legal and regulatory requirements while considering its stakeholders’ requirements and organizational objectives.

7.6 Documented information

7.6.1 General

The organization’s asset management system shall include:

- documented information as required by this International Standard;
- documented information for applicable legal and regulatory requirements;
- documented information determined by the organization as being necessary for the effectiveness of the asset management system, as specified in 7.5.

NOTE The extent of the documented information for an asset management system can differ from one organization to another due to:

- the size of organization and its type of activities, processes, products and services;
- the complexity of processes and their interactions;
- the competence of persons;
- the complexity of the asset(s).

7.6.2 Creating and updating

When creating and updating documented information the organization shall ensure appropriate:

- identification and description (e.g. a title, date, author, or reference number);
- format (e.g. language, software version, graphics) and media (e.g. paper, electronic);
- review and approval for suitability and adequacy.

7.6.3 Control of documented information

Documented information required by the asset management system and by this International Standard shall be controlled to ensure:

a) it is available and suitable for use, where and when it is needed;

b) it is adequately protected (e.g. from loss of confidentiality, improper use, or loss of integrity).

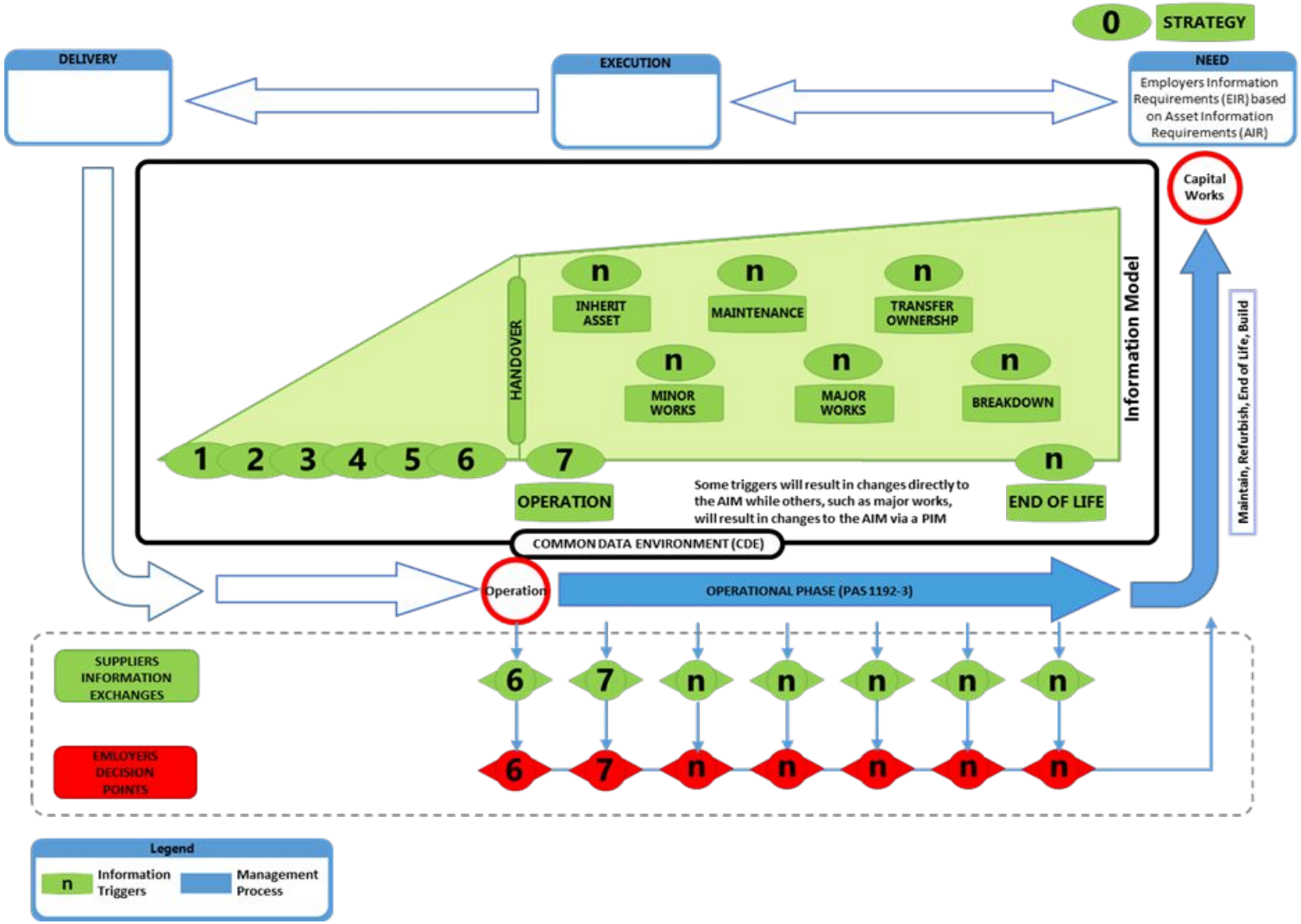
For the control of documented information, the organization shall address the following activities, as applicable:

- distribution, access, retrieval and use;
- storage and preservation, including preservation of legibility;
- control of changes (e.g. version control);
- retention and disposition.

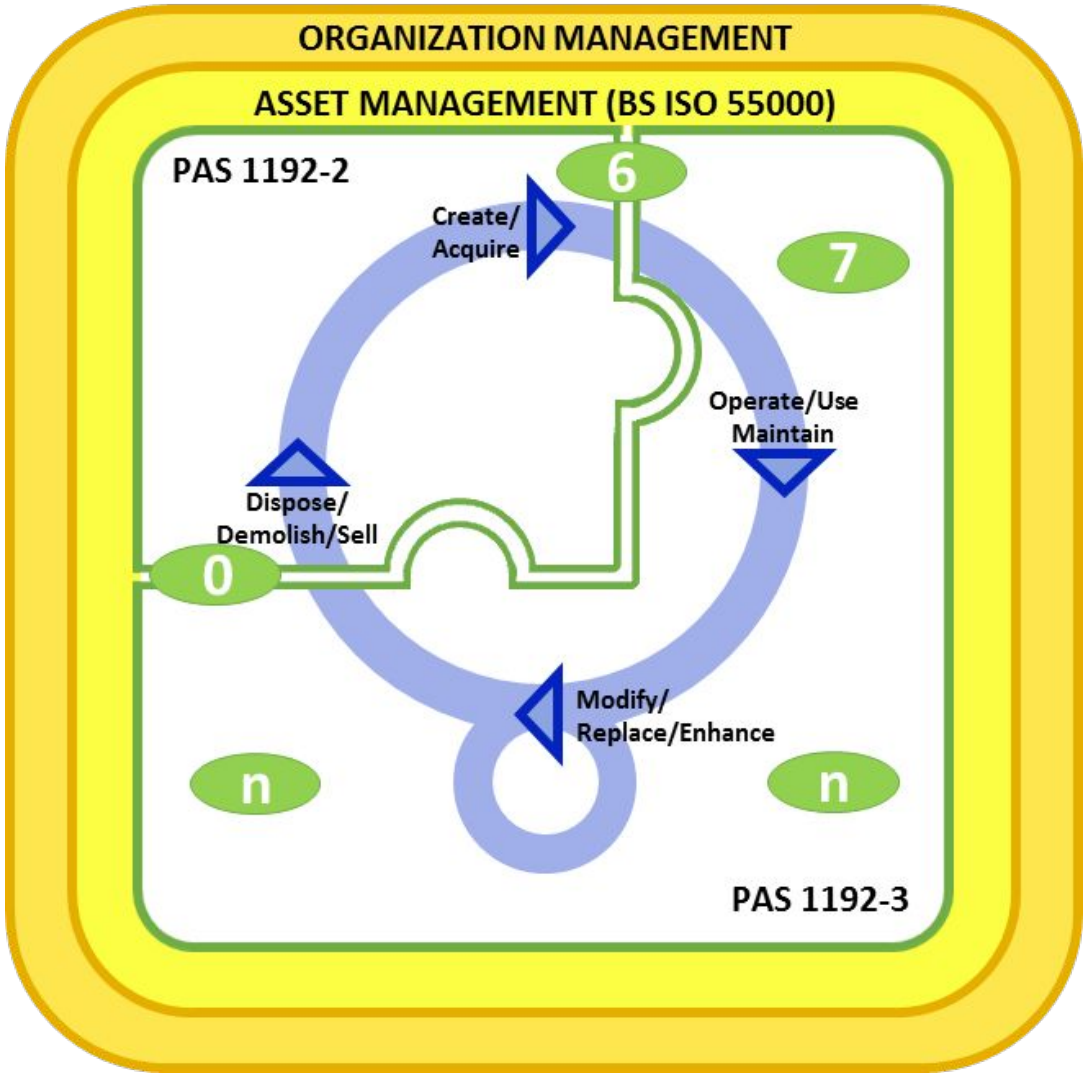
Documented information of external origin determined by the organization to be necessary for the planning and operation of the asset management system shall be identified, as appropriate, and controlled.

NOTE Access implies a decision regarding the permission to view the documented information only, or the permission and authority to view and change the documented information, etc.

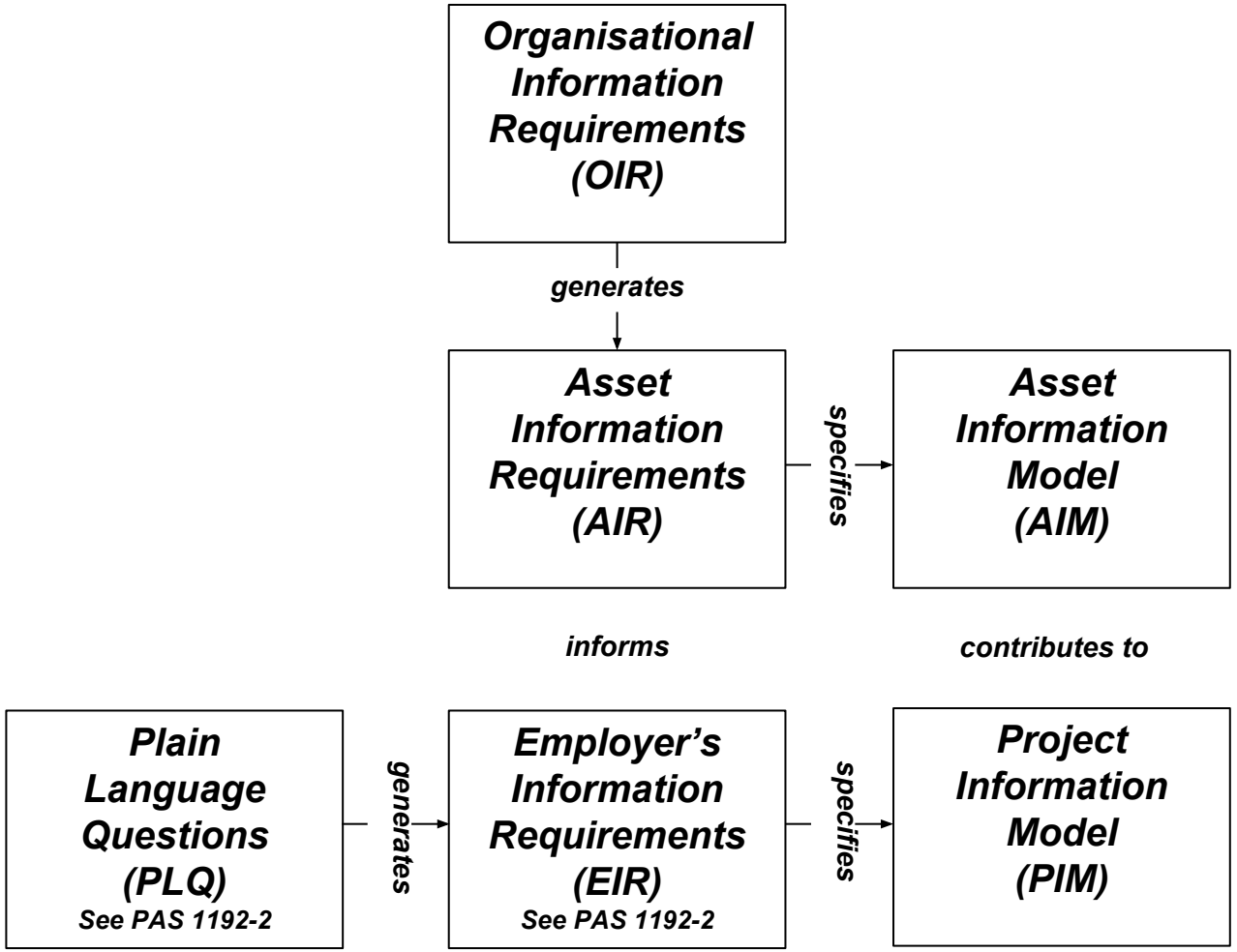
BIM


0
STRATEGY
NEED
Employers Information Requirements (EIR) based on Asset Information Requirements (AIR)
DELIVERY
EXECUTION
Capital Works
Information Model
HANDOVER
n
INHERIT ASSET
n
MAINTENANCE
n
TRANSFER OWNERSHP
n
MINOR WORKS
n
MAJOR WORKS
n
BREAKDOWN
1 2 3 4 5 6
7
OPERATION
n
END OF LIFE
Some triggers will result in changes directly to the AIM while others, such as major works, will result in changes to the AIM via a PIM
Maintain, Refurbish, End of Life, Build
COMMON DATA ENVIRONMENT (CDE)
Operation
OPERATIONAL PHASE (PAS 1192-3)
SUPPLIERS INFORMATION EXCHANGES
EMLOYERS DECISION POINTS
6 7 n n n n n
6 7 n n n n n
Legend
n Information Triggers
Management Process

ISO 55000 and PAS 1192



1192-3 key concepts



Relationship between asset management and BIM

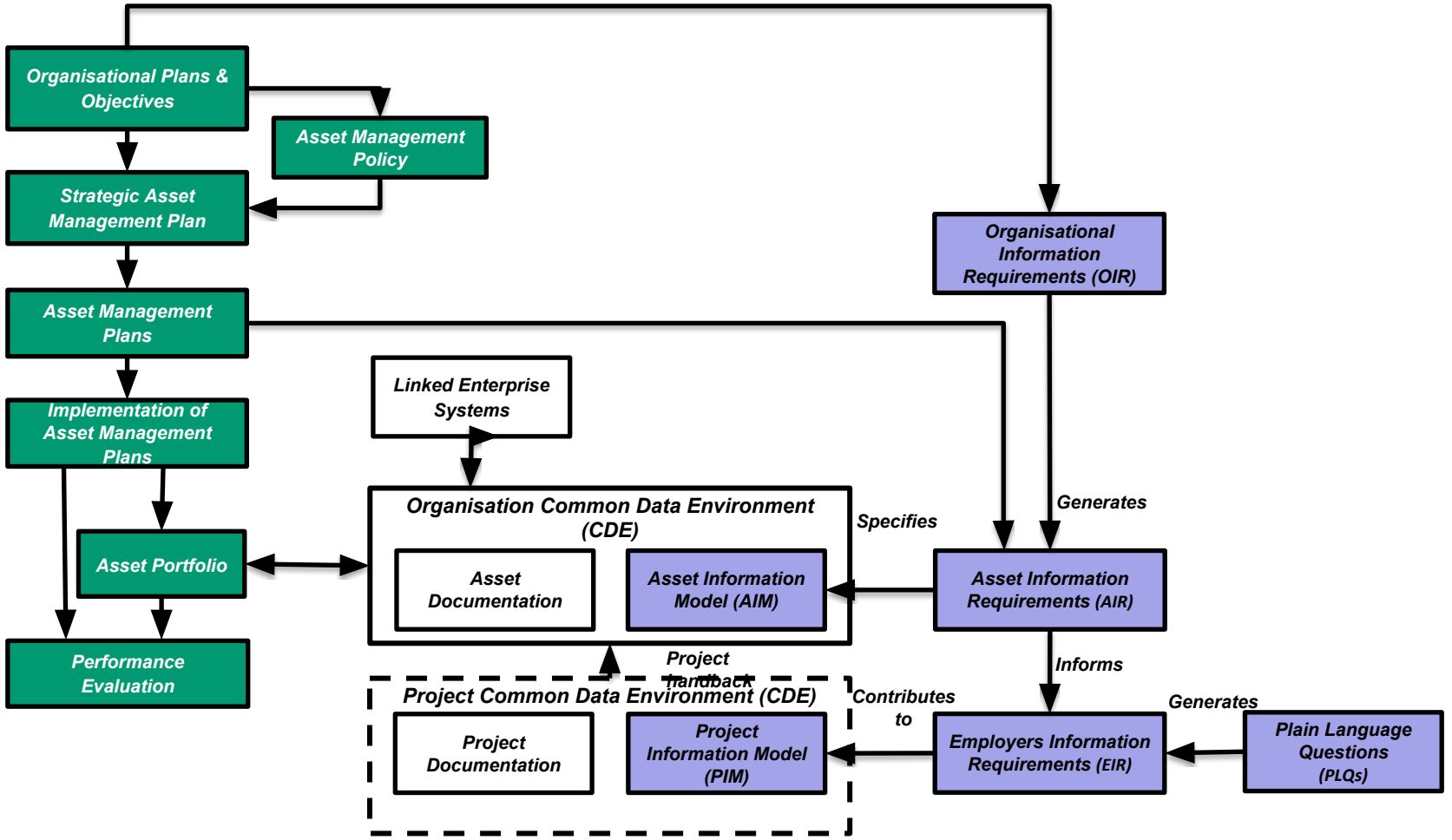
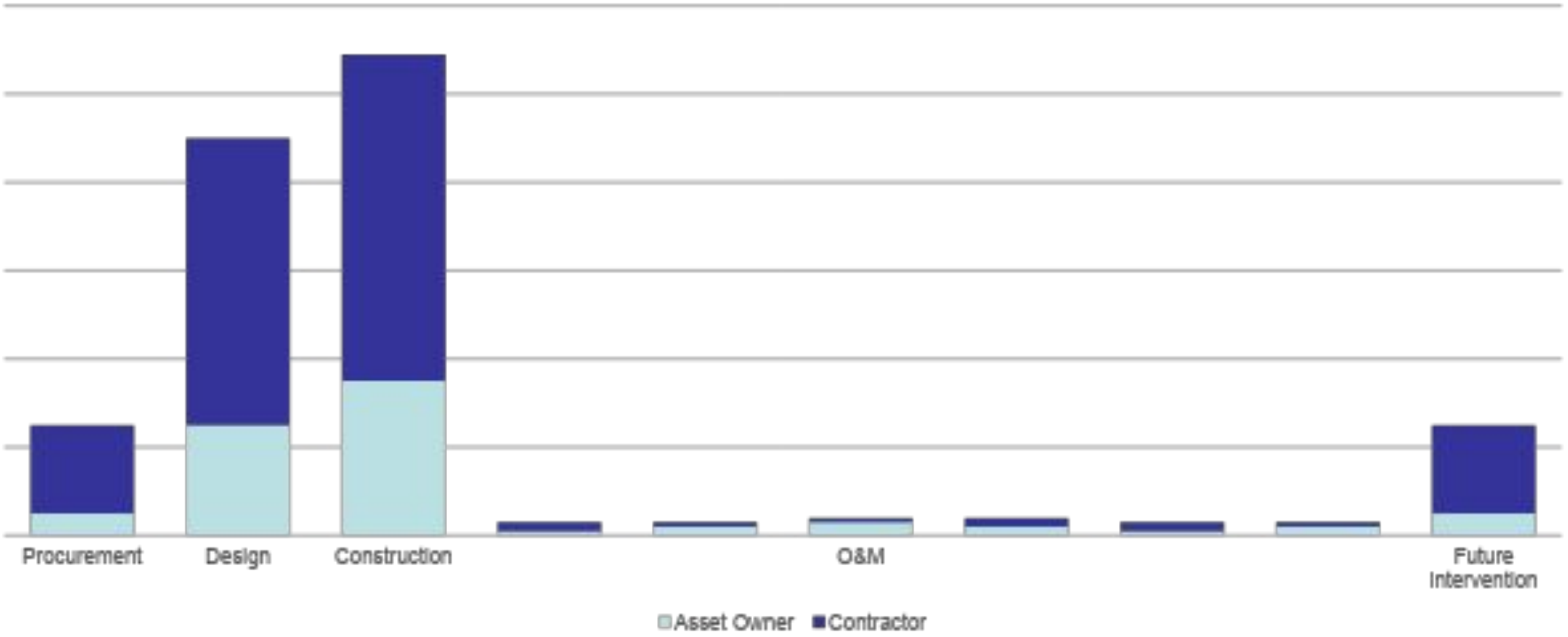


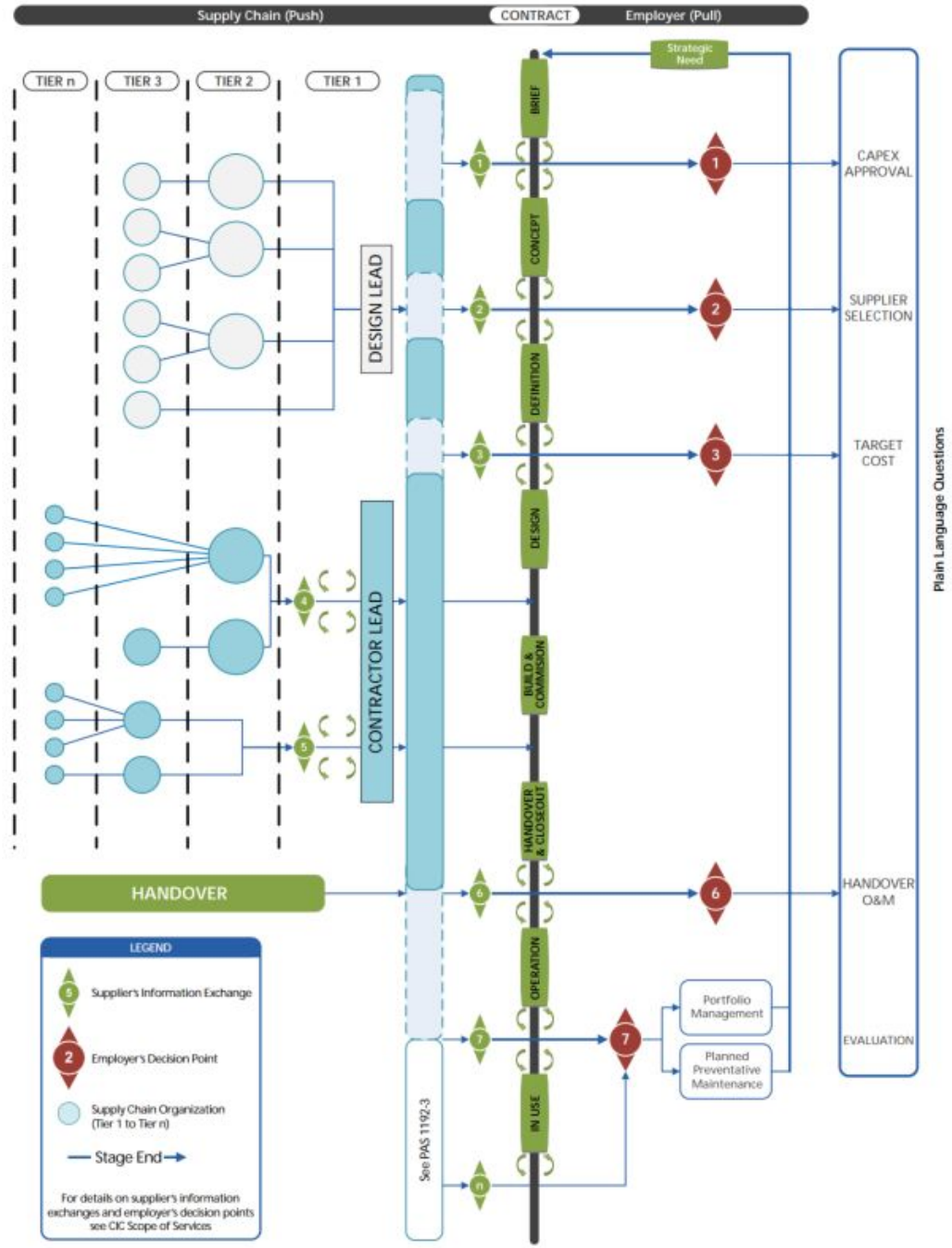
Illustration of BIM benefits over the asset lifecycle



Project trigger

Project world....

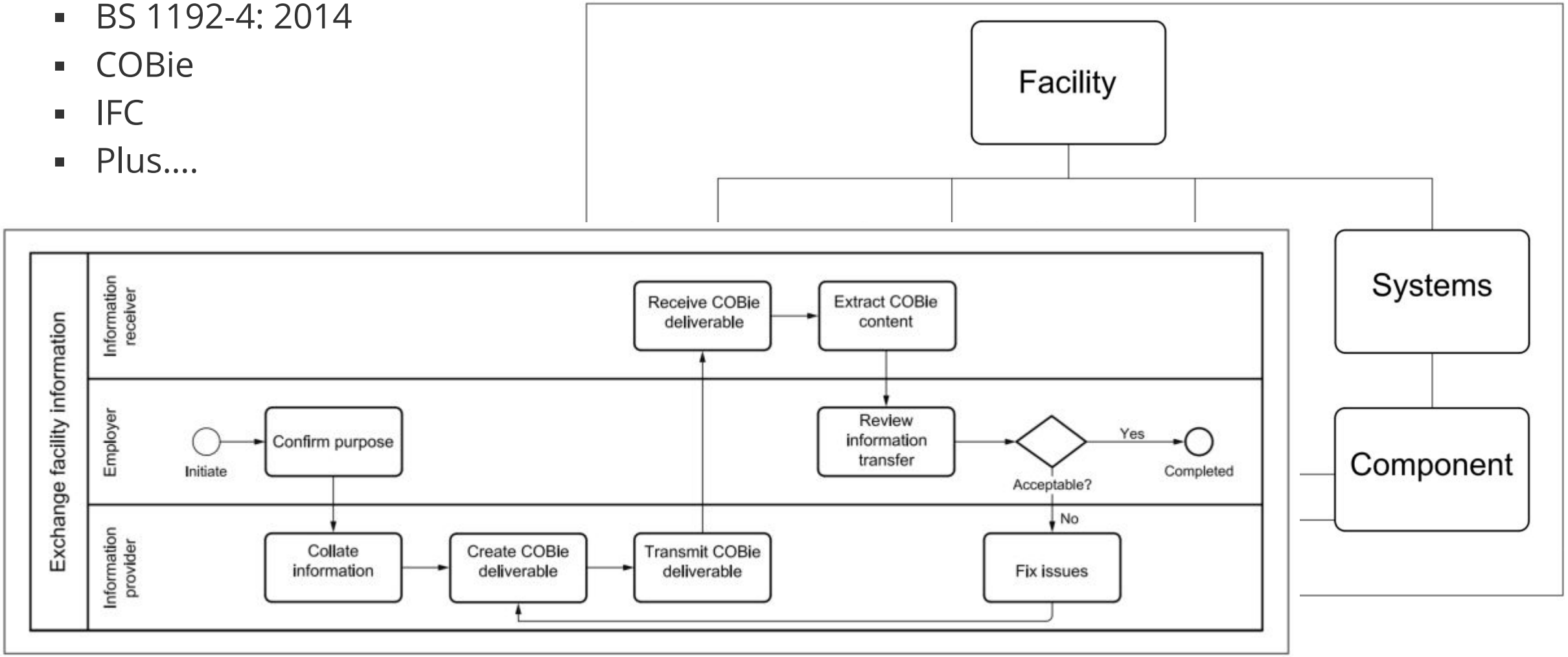
- BS 1192
- PAS 1192-2
- EIR
- BEP
- BIM Protocol
- PLQs



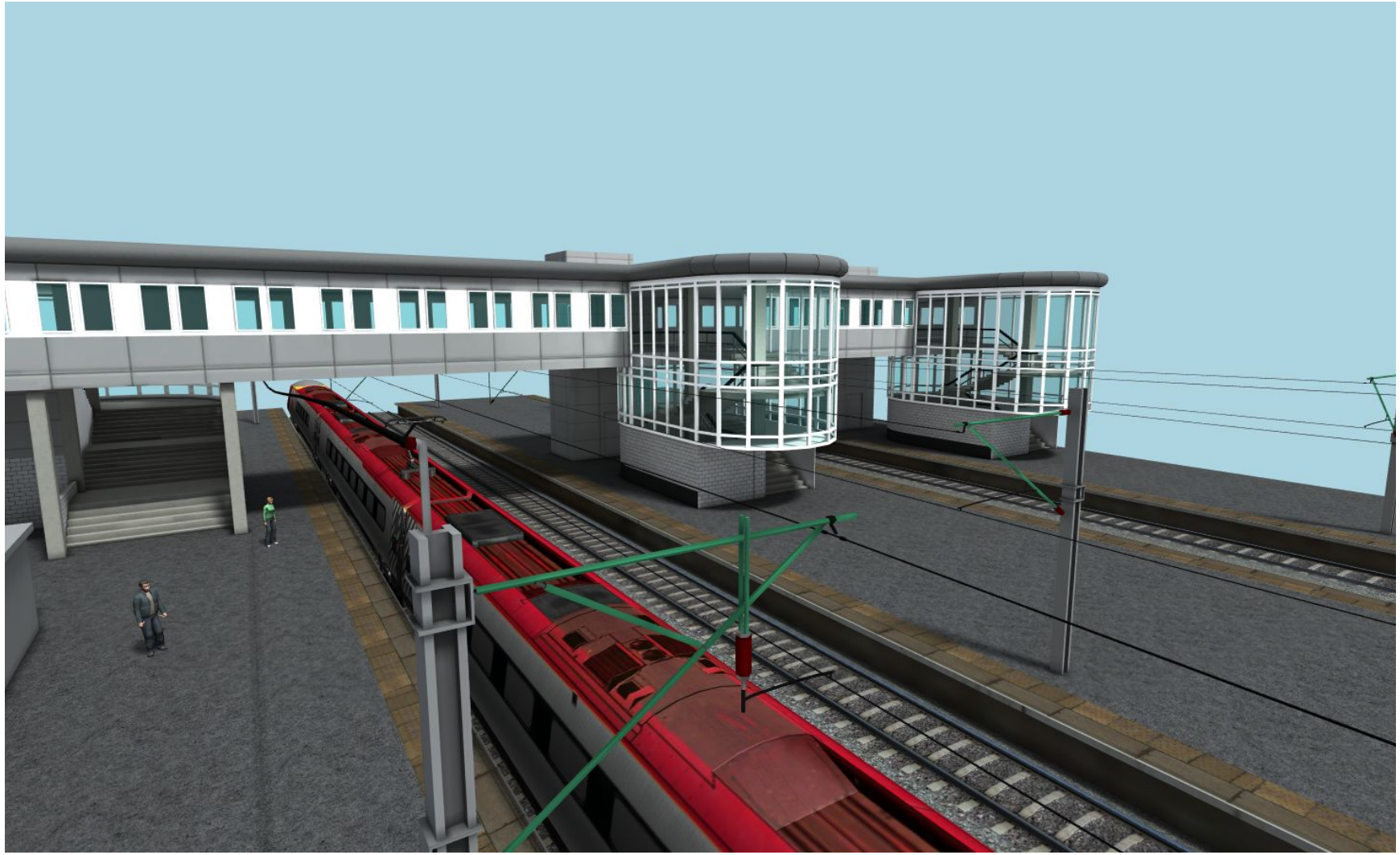
Data transfer

- BS 1192-4: 2014
- COBie
- IFC
- Plus….

Figure 4 **Building view of COBie, using standard terms**

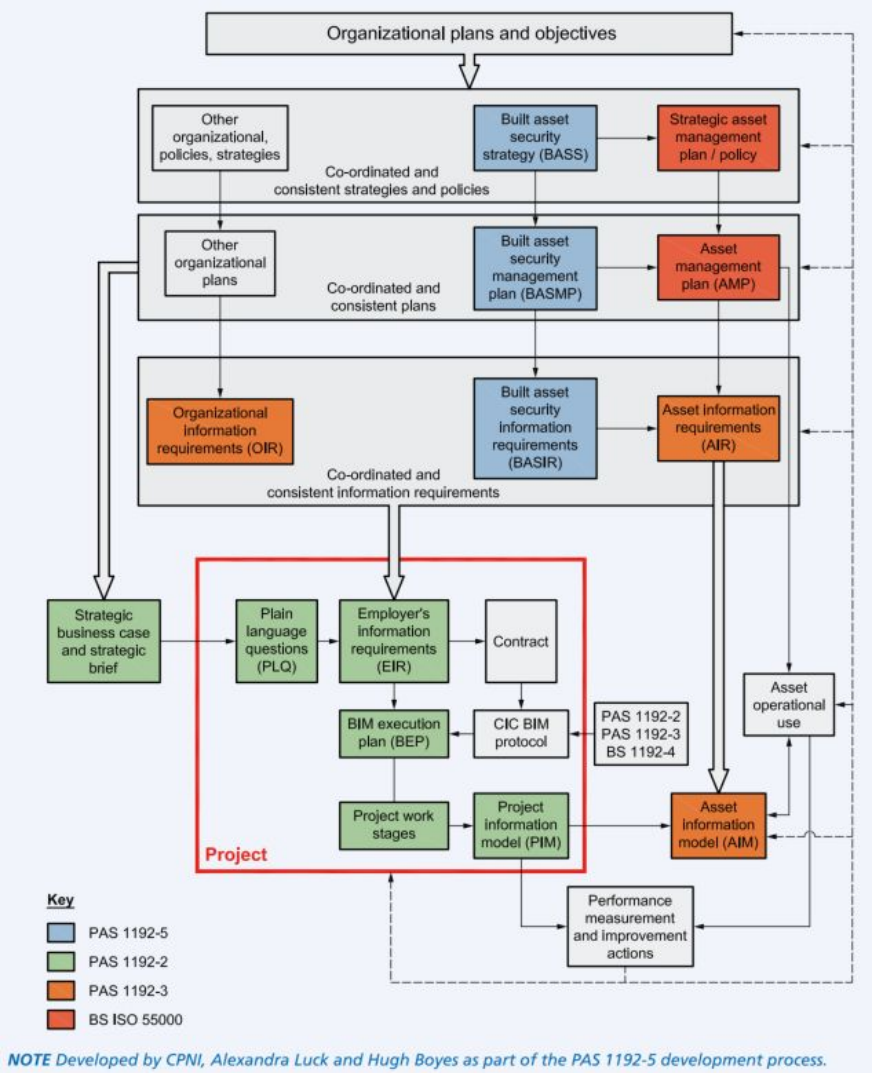


Sharing data is great, but....



PAS 1192-5

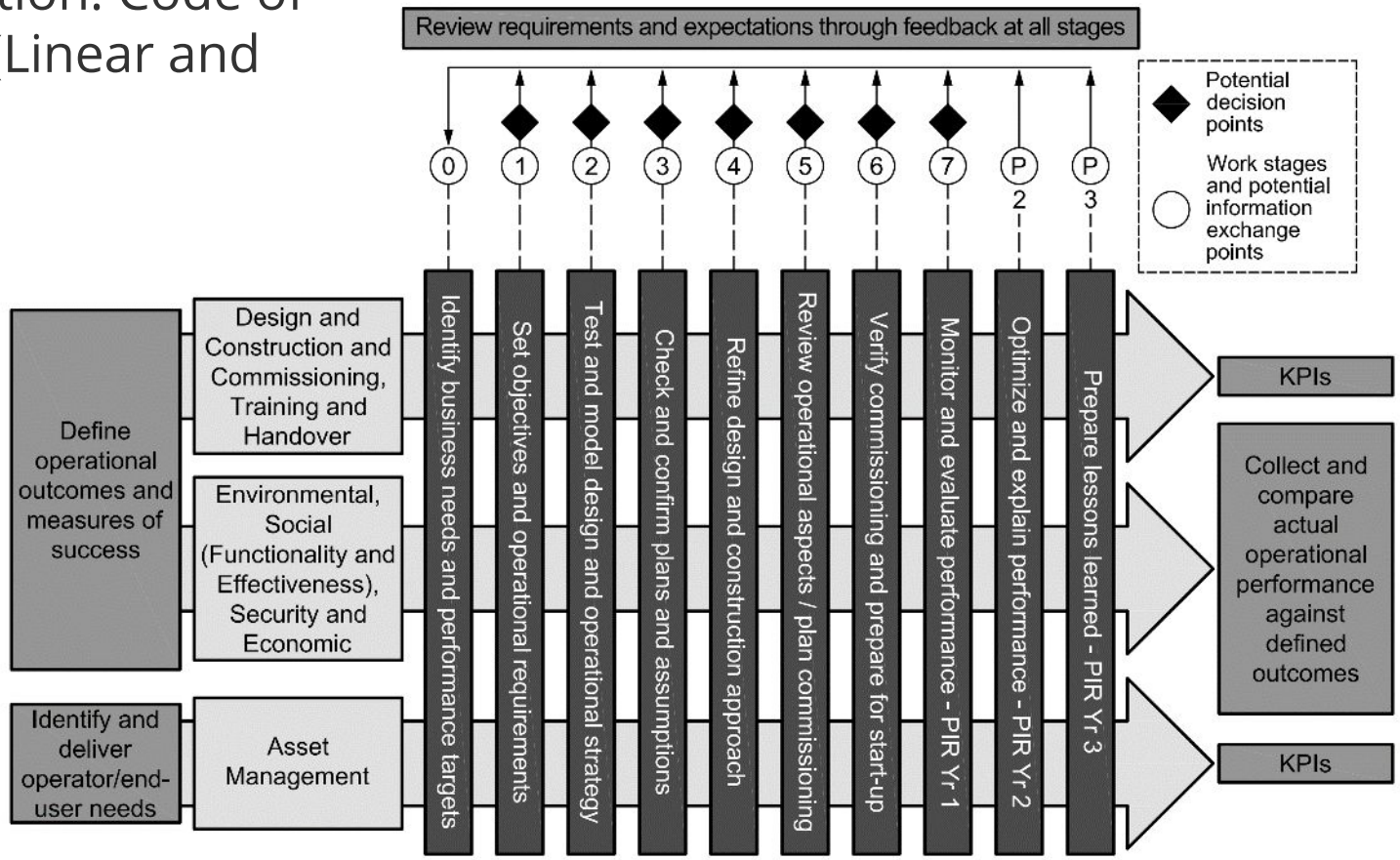
- Hostile reconnaissance
- Malicious acts
- Loss or disclosure of IP
- Loss or disclosure of commercially sensitive information
- Release of personal data
- Aggregation of data

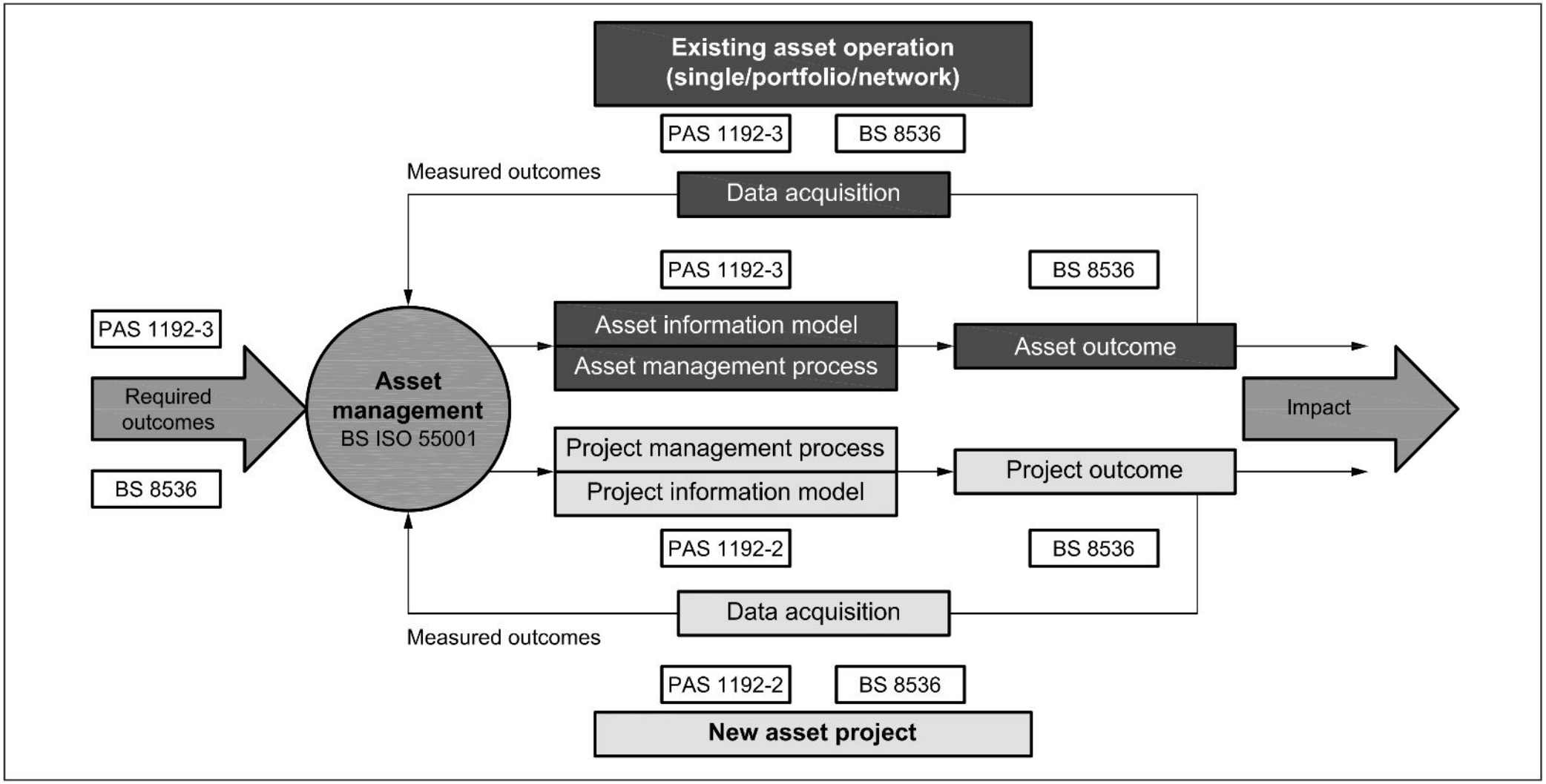


NOTE Developed by CPNI, Alexandra Luck and Hugh Boyes as part of the PAS 1192-5 development process.

BS 8536-2:2016

- Briefing for design and construction. Code of practice for asset management (Linear and geographical infrastructure)




Existing asset operation
(single/portfolio/network)
PAS 1192-3
BS 8536
Measured outcomes
Data acquisition
PAS 1192-3
BS 8536
PAS 1192-3
Asset information model
Asset management process
Asset outcome
Required
outcomes
Asset
management
BS ISO 55001
Impact
BS 8536
Project management process
Project information model
Project outcome
PAS 1192-2
BS 8536
Data acquisition
Measured outcomes
PAS 1192-2
BS 8536
New asset project

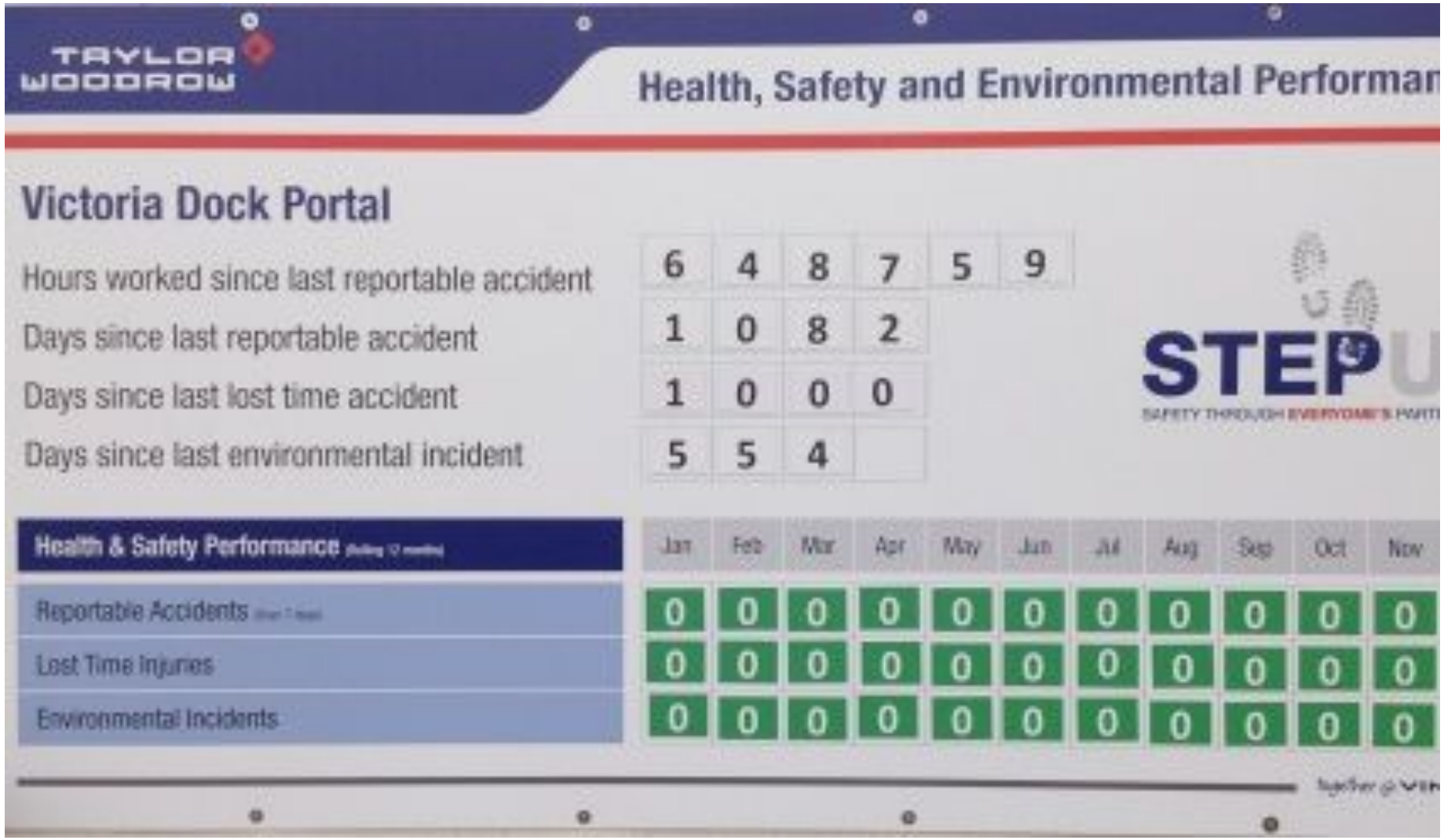
Change is on the way….

PAS 1192-6	A specification for collaborative sharing and use of structured health and safety information using BIM	Published 20/2/18
PAS 1192-2 & PAS 1192-3	Both being updated and aligned	Final comments being resolved
ISO 19650-1 & ISO 19650-2	Organization of information about construction works -- Information management using building information modelling -- Part 1: Concepts and principles, Part 2: Delivery phase of the assets	In development
ISO 19650-5	Security aspects of BIM	Just started

Why BIM?

If someone asked you if you wanted to:

- Improve project efficiency
- Reduce risk
- Increase the quality of outcomes
- Avoid clashes, gaps and rework
- Avoid information loss between parties
- Deliver smooth transition to operations
- Provide enablers for whole life Asset Management

- So, why not BIM?

Data quality supporting other objectives