

How to setup BIM360 Docs as a compliant ISO19650 Common Data Environment

Juan Tena Florez

Regional Digital Design Manager. KEO International Consultants



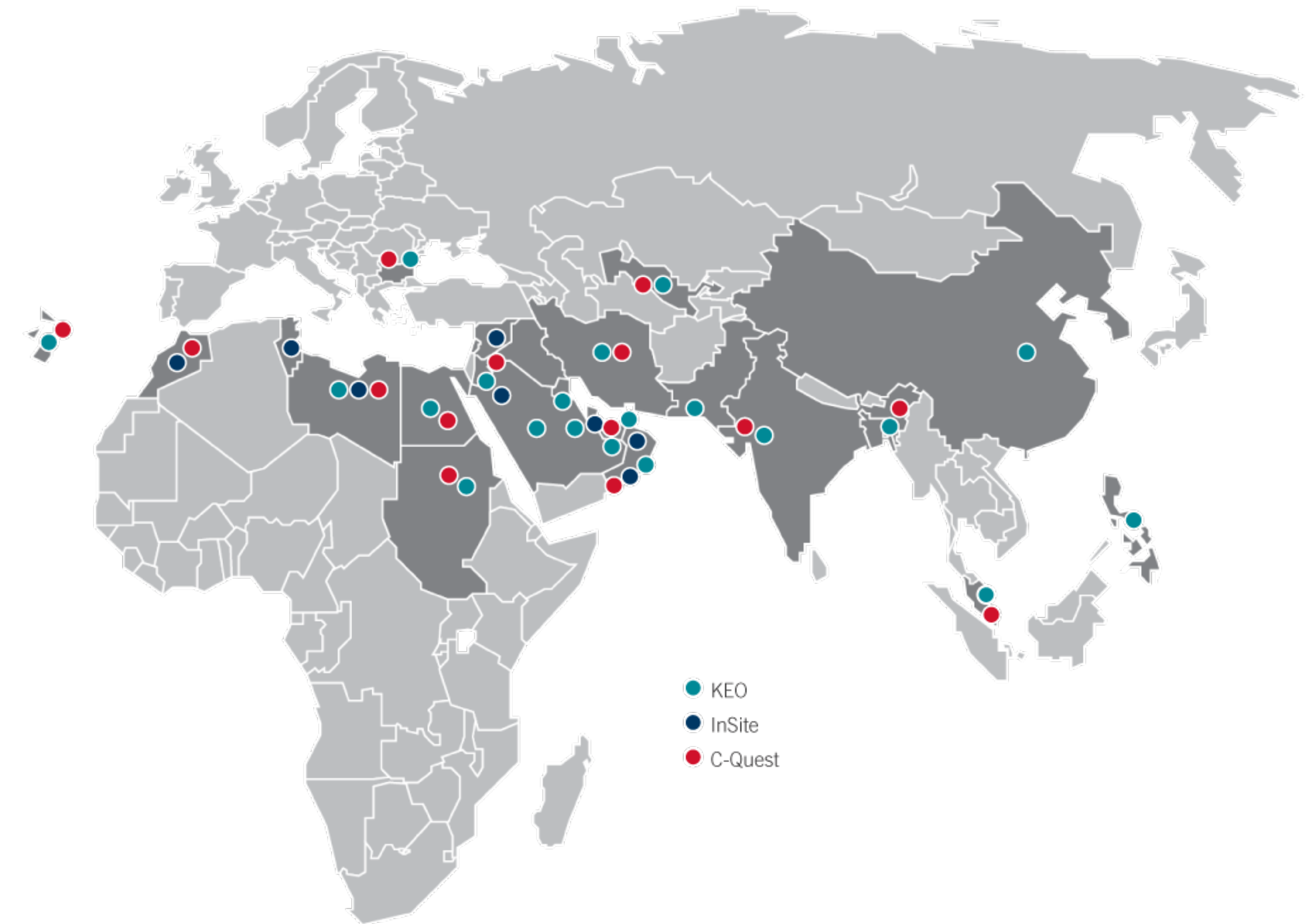
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AWARD CEREMONY: ISO 19650 CERTIFICATE HANDOVER





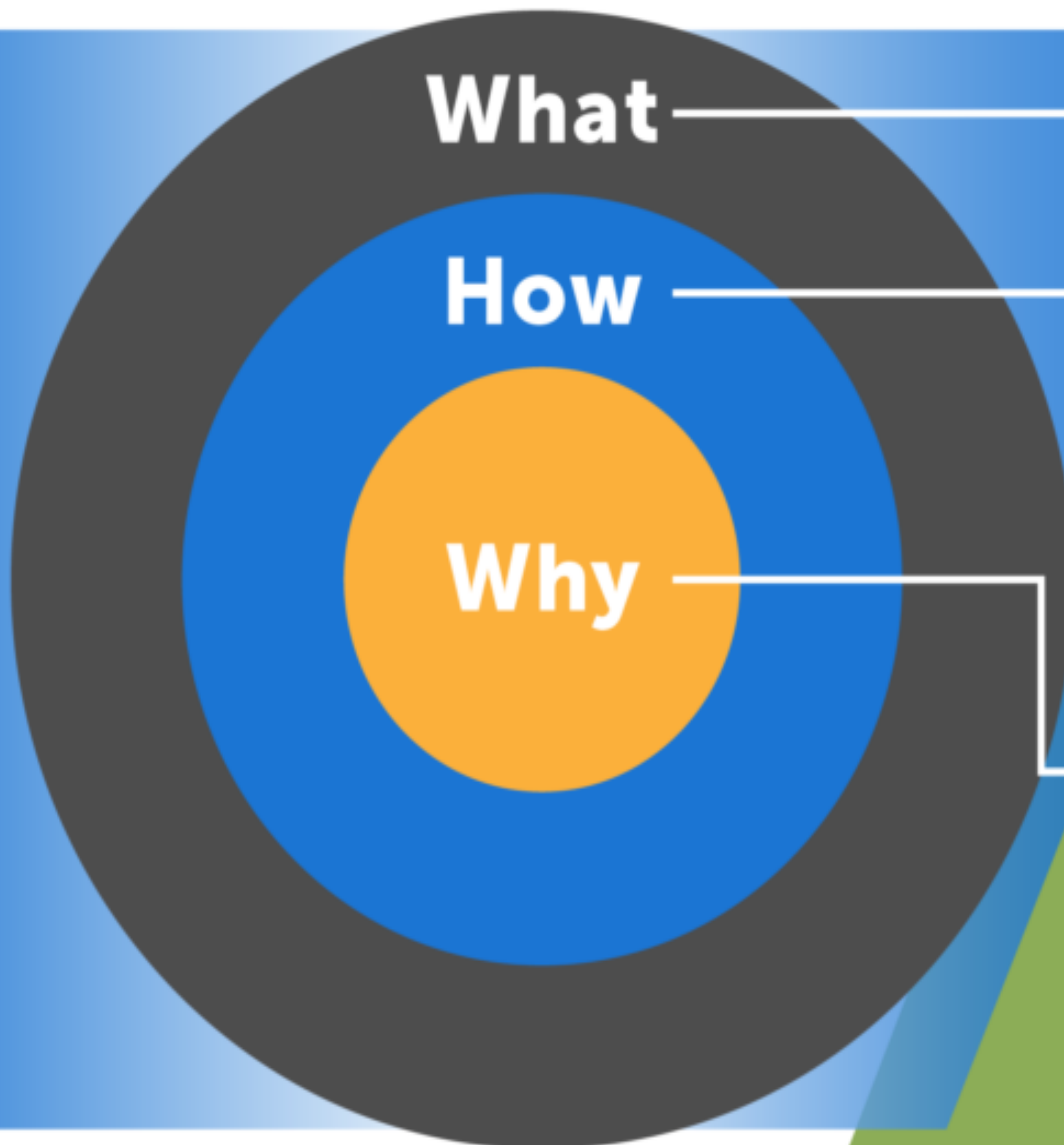
About the speaker

Regional Digital Design Manager

Senior Digital Design Manager (M.Arch) with 14+ years of professional experience (5+ years in Middle East), design specialist in BIM implementation, processes and parametric modeling (Revit, Dynamo, Navisworks, Rhino and 3DS Max).

WHY ISO19650?





What

Every organization on the planet knows what they do. These are products they sell or the services they provide.

How

Some organizations know how they do it. These are the things that make them special or set them apart from their competition.

Why

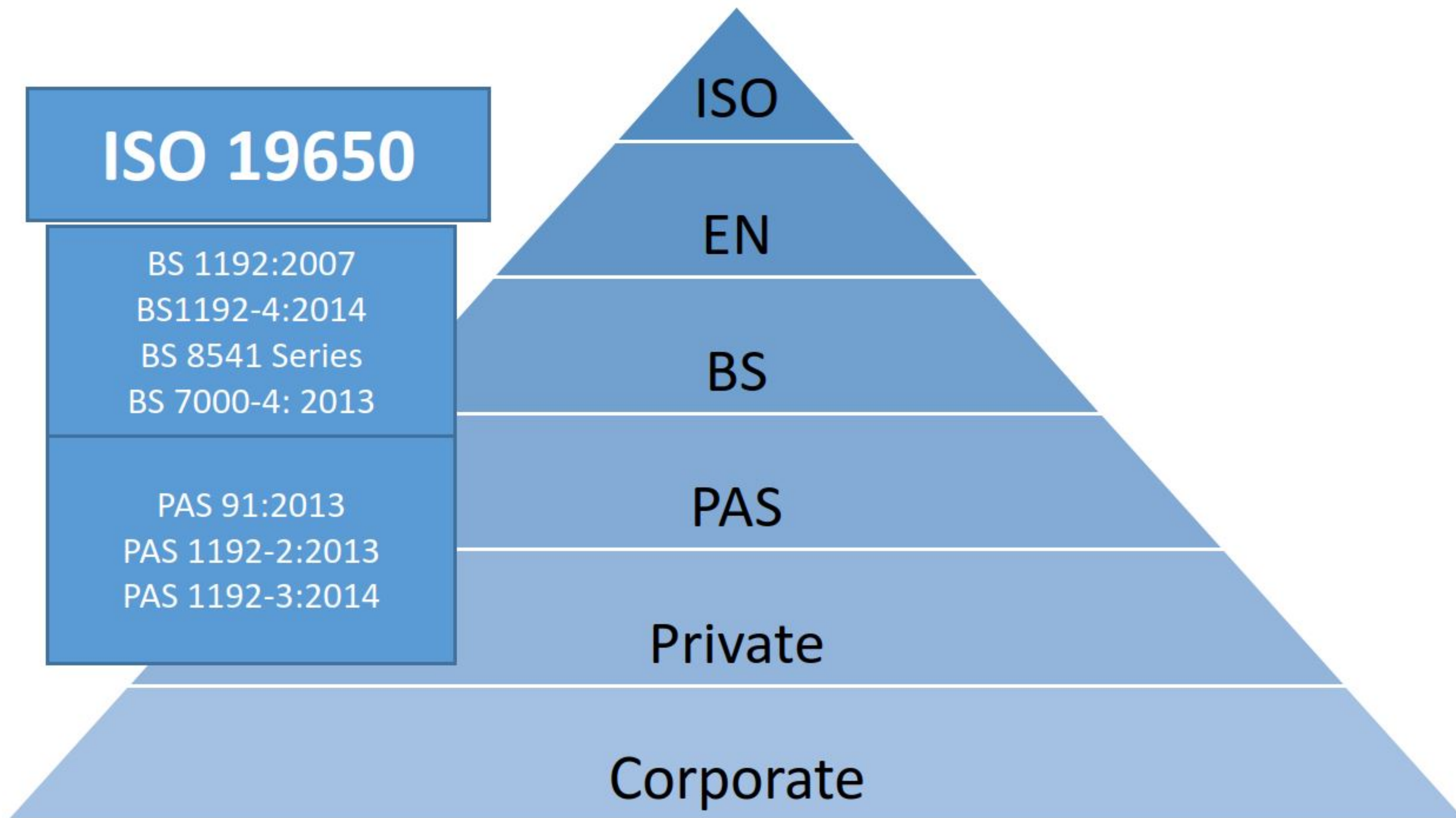
Very few organizations know **why** they do what they do. Why is not about making money. That's a result. Why is a purpose, cause or belief. It's the very reason your organization exists.

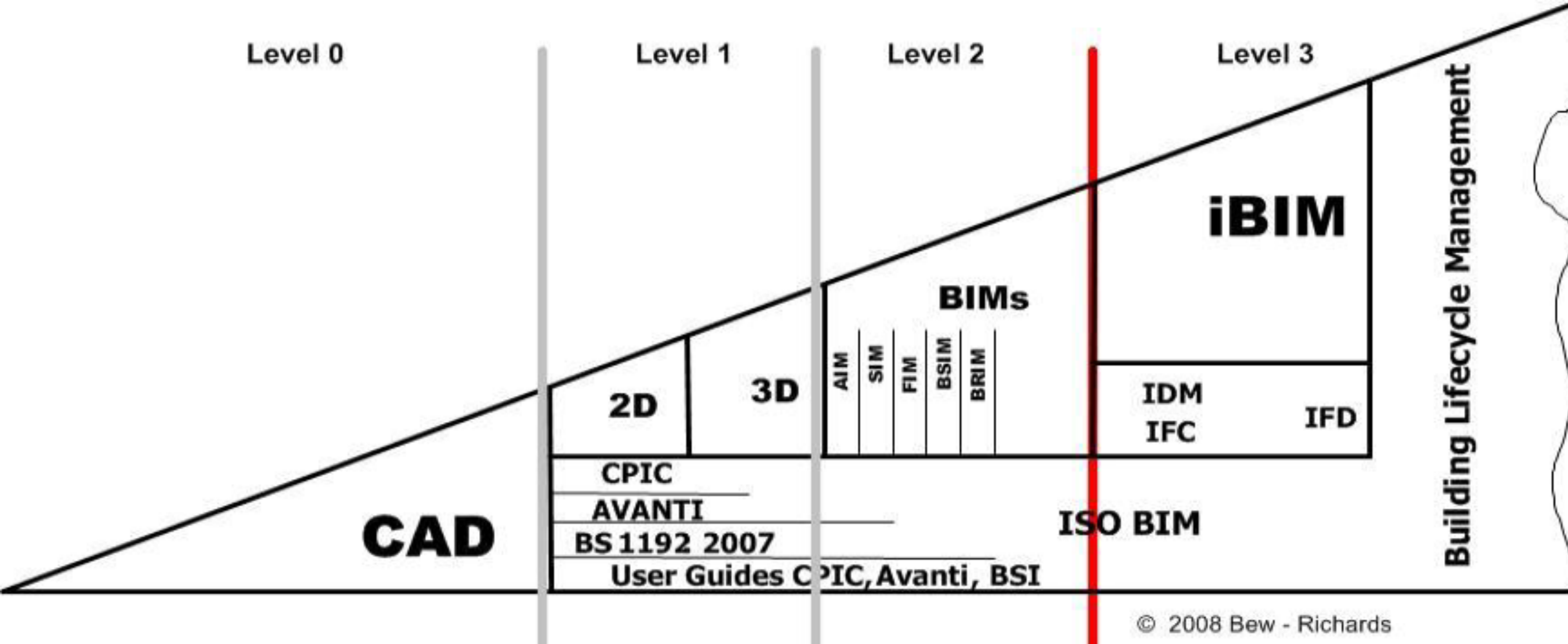
Identity³ | Corbae Creative

COMMON DATA ENVIRONMENT (CDE)

ALIGNED WITH ISO 19650 BIM STANDARDS
AND UK NATIONAL ANNEX



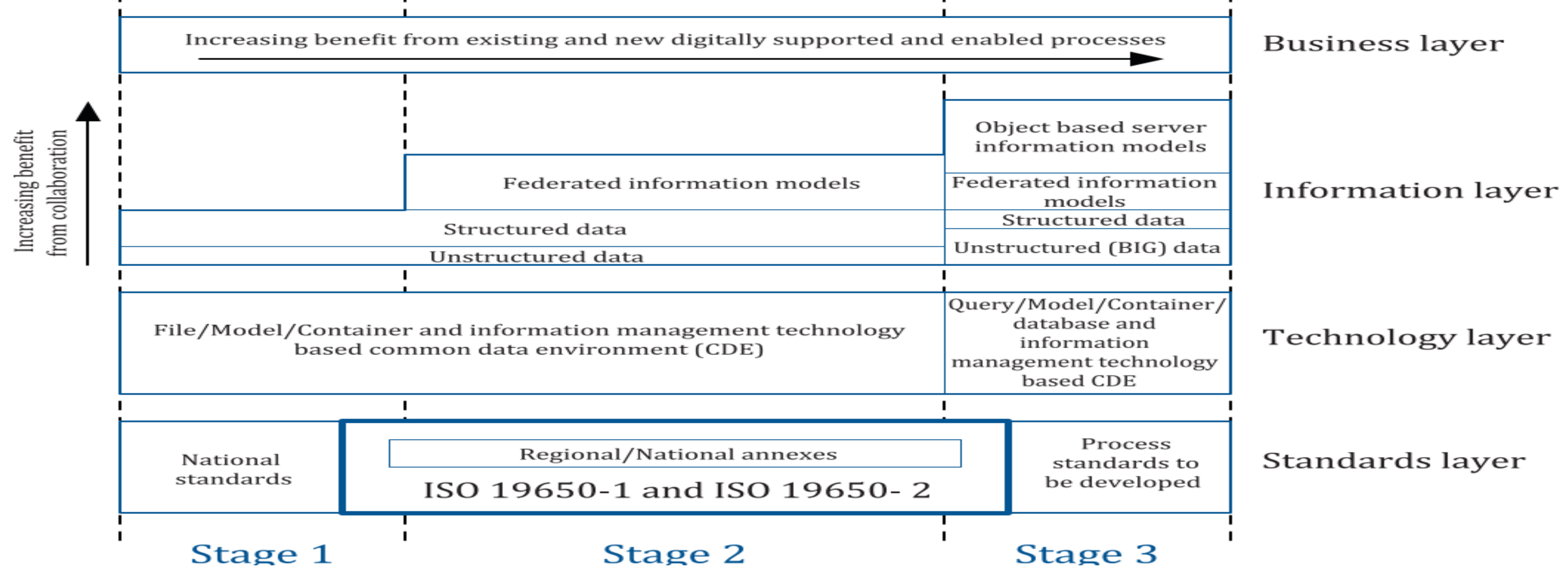




PAS 1192-2:2013 BIM MATURITY LEVELS

UK STANDARDS. BIM LEVEL 2 EXPLAINED

- A BIM PROCESS SEES THE CREATION, COLLATION AND EXCHANGE OF SHARED 3D MODELS, AND A RANGE OF STRUCTURED DATA, WITH THE AIM TO IMPROVE PRODUCTIVITY AND REDUCE WASTE.
 - DEFINED INFORMATION REQUIREMENTS
 - COLLABORATIVE WORKING PRACTICES
 - DATA EXCHANGE AND VALIDATION
 - SECURITY MINDED DIGITAL WORKING
 - BETTER OUTCOMES & END USER VALUE



Information management according to the ISO 19650 series

A perspective on stages of maturity of analogue and digital information management

This Figure shows that development of standards, advances in technology and more sophisticated forms of information management all combine to deliver increasing business benefit. The ISO 19650 series has application mainly at Stage 2 maturity, but also can be partly applied at Stages 1 and 3.

Stage 2 maturity is also identified as “BIM according to the ISO 19650 series”. This is where a mixture of manual and automated information management processes are used to generate a federated information model. The information model includes all information containers delivered by task teams in relation to an asset or a project.

BIM LEVEL 2 EXPLAINED

WHAT:

2D REVIEWABLE DESIGN DELIVERABLES EXTRACTED
FROM THE MODELS
INDIVIDUAL 3D DOMAIN MODELS IN NATIVE FILE FORMATS
COBie DATA

WHY:

BIM IS ABOUT COLLABORATIVE TEAMWORK

HOW:

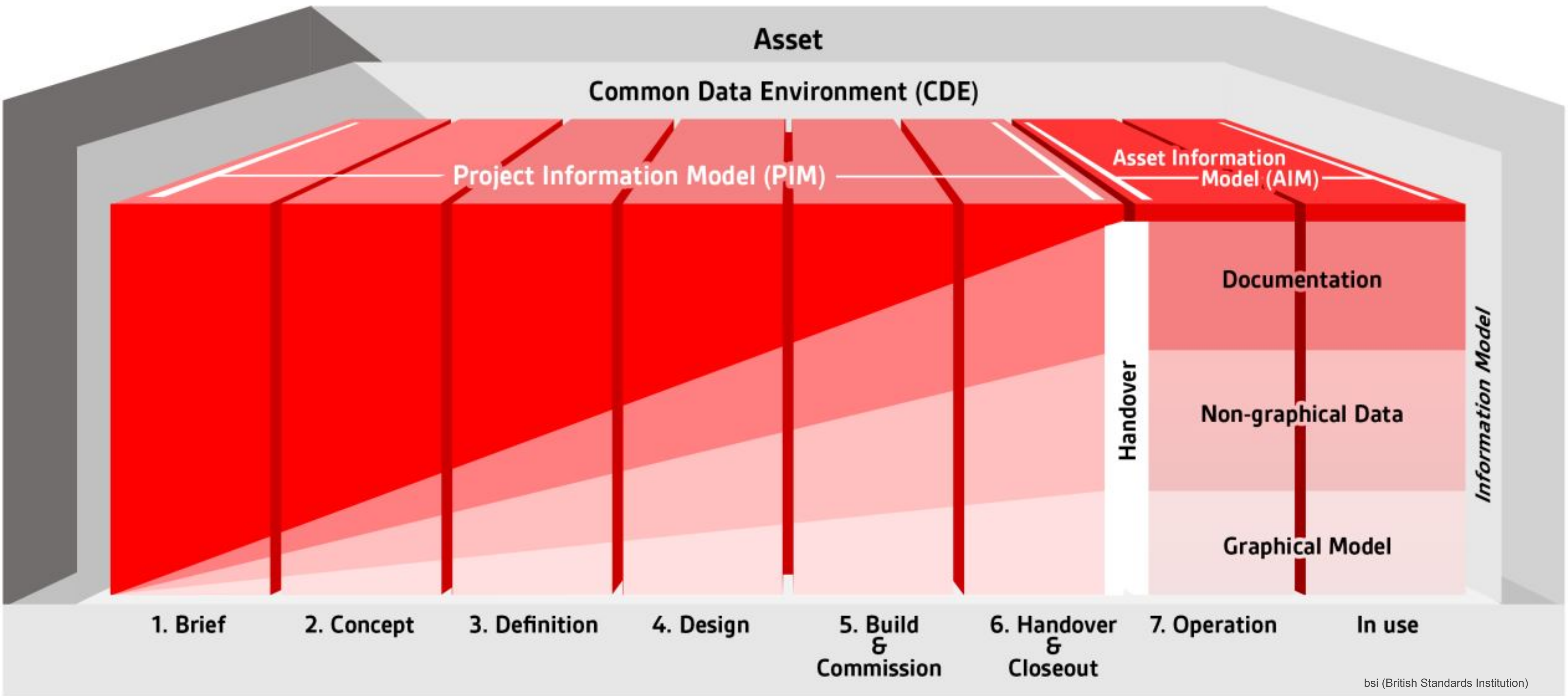
ASSET INFORMATION REQUIREMENTS (AIR)
BIM EXECUTION PLAN (BEP)
COMMON DATA ENVIRONMENT (CDE)
EMPLOYERS INFORMATION REQUIREMENTS (EIR)
MASTER INFORMATION DELIVERY PLAN (MIDP)
ORGANIZATIONAL INFORMATION REQUIREMENTS (OIR)
PLAIN LANGUAGE QUESTIONS (PLQs)
STANDARD, METHODS AND PROCEDURES (SMP)

WHEN:

INFORMATION IS CREATED AT THE VERY START OF A
PROJECT AND CONTINUES TO EVOLVE THROUGHOUT THE
LIFE OF THE BUILT ASSET THROUGH A NUMBER OF
DISTINCT STAGES

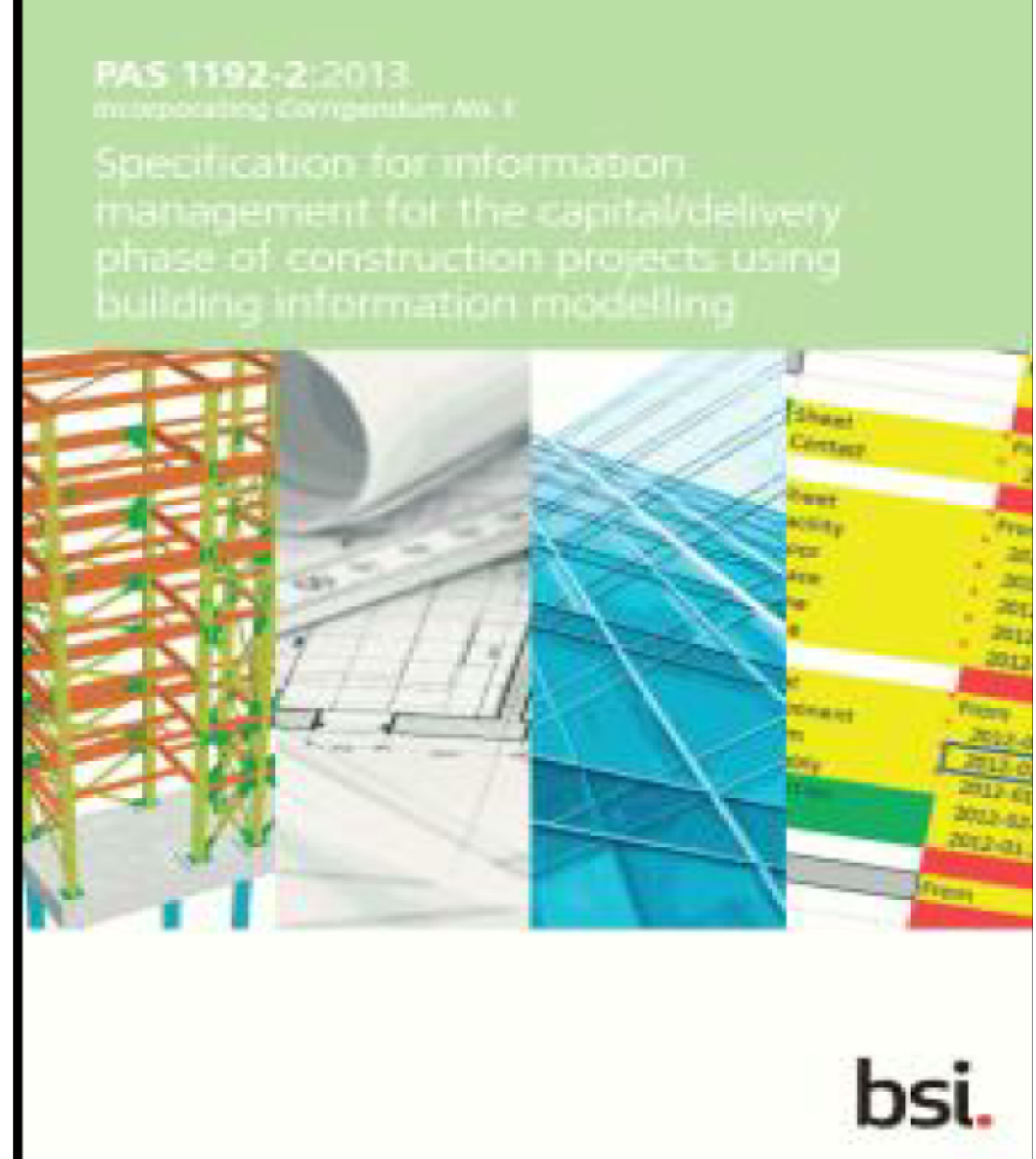
BIM LEVEL 2 EXPLAINED

INFORMATION DELIVERY CYCLE (PAS1192-2:2013) - DIGITAL PLAN OF WORKS (NBS)



CDE definitions





DEFINITION (PAS 1192-2:2013)

SINGLE SOURCE OF INFORMATION FOR ANY GIVEN PROJECT, USED TO COLLECT, MANAGE AND DISSEMINATE ALL RELEVANT APPROVED PROJECT DOCUMENTS FOR MULTI-DISCIPLINARY TEAMS IN A MANAGED PROCESS

INFORMATION UPLOADED TO THE CDE SHOULD BE CHECKED, REVIEWED AND APPROVED TO INSURE IT IS CORRECT

- NAMING CONVENTIONS
- FILE CONTAINER CLASSIFICATION
- SUITABILITY CODES
- REVISION CODES
- FOLDER STRUCTURE

DEFINITION (ISO 19650)

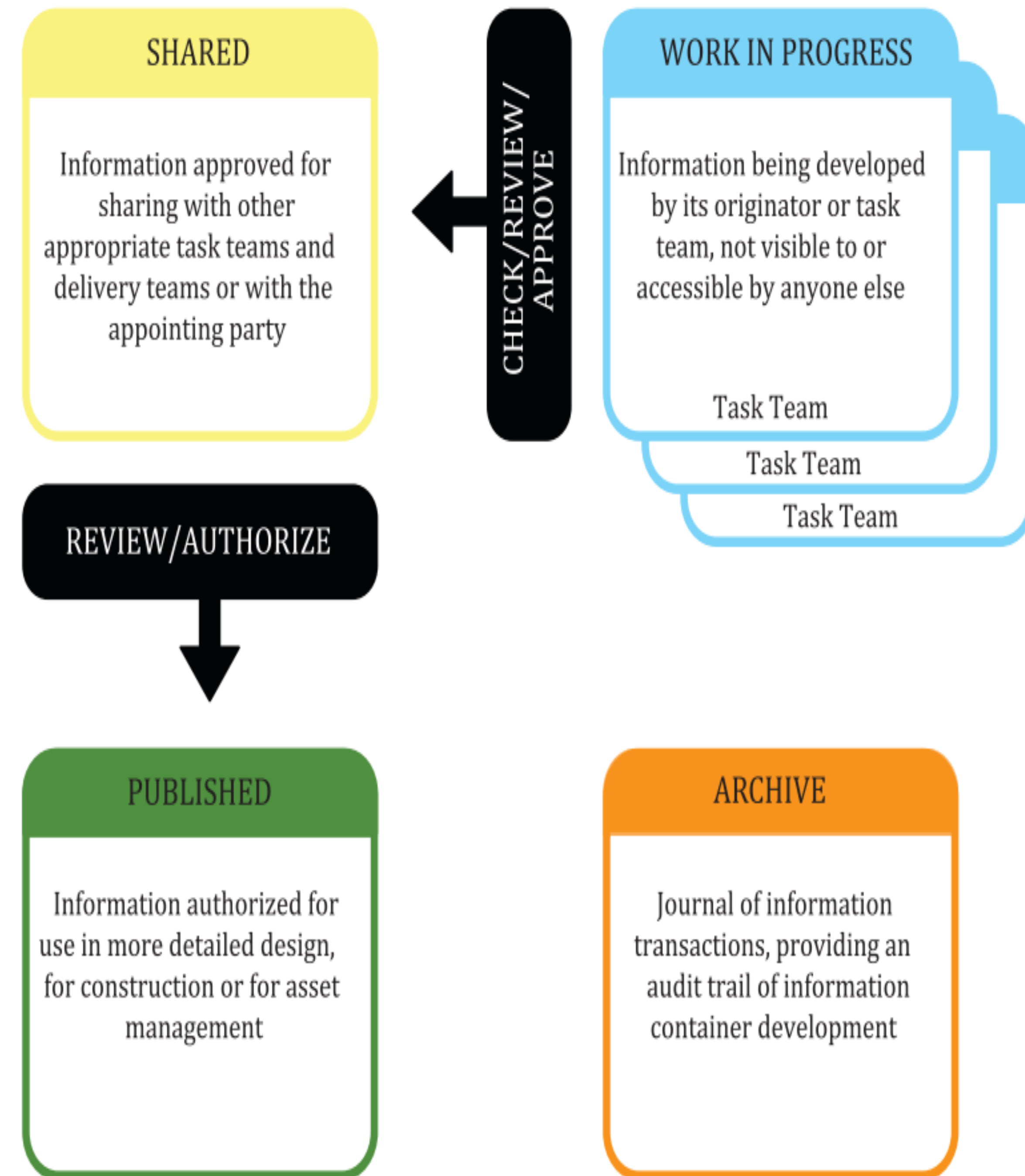
AGREED SOURCE OF INFORMATION FOR ANY GIVEN PROJECT OR ASSET, FOR COLLECTING, MANAGING AND DISSEMINATING EACH INFORMATION CONTAINER THROUGH A MANAGED PROCESS

A CDE WORKFLOW DESCRIBES THE PROCESSES TO BE USED AND A CDE SOLUTION CAN PROVIDE THE TECHNOLOGY TO SUPPORT THOSE PROCESSES.

FILE CONTAINER CLASSIFICATIONS

DOCUMENT AND DATA MANAGEMENT REPOSITORY

- WORK IN PROGRESS (WIP)
- SHARED
- PUBLISHED
- ARCHIVE



	FILE IDENTIFIER											FILE IDENTIFIER METADATA						
	PROJECT	-	ORIGINATOR	-	VOLUME /SYSTEM	-	LEVEL/LOCATION	-	TYPE	-	ROLE	-	CLASSIFICATION	-	NUMBER	SUITABILITY	-	REVISION
	01234	-	KEO	-	XX	-	XX	-	XX	-	A	-	MASTERFORMAT UNICLASS 2015	-	XXXXX	S0	-	P0 or C0
Arch BIM Model	01234	-	KEO	-	ST	-	ZZ	-	M3	-	A	-		-	00001	Does not form part of file identifier, when using project management extranet portal (required for BIM Level 2). This information is then only contained on sheets, in file / document data & on the portal		
Electrical Report	01234	-	KEO	-	ZZ	-	ZZ	-	RP	-	E	-		-	00001			
Level 2 Zone 1 Structural	01234	-	KEO	-	ST	-	02	-	DR	-	S	-		-	40100			

NAMING CONVENTION (BS-1192:2007)

PROJECT: CODE PROVIDED TO THE PROJECT AGREED WITH TEAMS

ORIGINATOR: COMPANY WHO CREATES THE FILE

VOLUME/SYSTEM: SUBZONES WITHIN THE BUILDING(S)

LEVEL/LOCATION:BUILDING STOREY SEPARATION

TYPE: TYPE OF INFORMATION

ROLE: DISCIPLINES OR SUBDISCIPLINES

CLASSIFICATION (OPTIONAL): MASTERFORMAT OR UNICLASS 2015

NUMBER: SEQUENTIAL NUMBER OF SERIES

SUITABILITY: APPROVED STATUS FOR USE OF CONTAINED INFORMATION

REVISION: ISSUE SEQUENCE OF THE CONTAINED INFORMATION

	FILE IDENTIFIER												FILE IDENTIFIER METADATA					
	PROJECT	-	ORIGINATOR	-	VOLUME /SYSTEM	-	LEVEL/LOCATION	-	TYPE	-	ROLE	-	NUMBER	-	CLASSIFICATION	SUITABILITY	-	REVISION
	01234	-	KEO	-	XX	-	XX	-	XX	-	A	-	XXXXX	-	ISO 12006-2	S0	-	P0 or C0
Arch BIM Model	01234	-	KEO	-	ST	-	ZZ	-	M3	-	A	-	00001	-	Does not form part of file identifier. This information is then only contained in file / document data on the portal			
Electrical Report	01234	-	KEO	-	ZZ	-	ZZ	-	RP	-	E	-	00001	-				
Level 2 Zone 1 Structural Part Plan	01234	-	KEO	-	ST	-	02	-	DR	-	S	-	40100	-				

NAMING CONVENTION (ISO 19650 UK NATIONAL ANNEX)

PROJECT: CODE PROVIDED TO THE PROJECT AGREED WITH TEAMS

ORIGINATOR: COMPANY WHO CREATES THE FILE

VOLUME/SYSTEM: SUBZONES WITHIN THE BUILDING(S)

LEVEL/LOCATION:BUILDING STOREY SEPARATION

TYPE: TYPE OF INFORMATION

ROLE: DISCIPLINES OR SUBDISCIPLINES

NUMBER: SEQUENTIAL NUMBER OF SERIES

CLASSIFICATION: IN ACCORDANCE WITH FRAMEWORK IN ISO 12006-2

SUITABILITY: APPROVED STATUS FOR USE OF CONTAINED INFORMATION

REVISION: ISSUE SEQUENCE OF THE CONTAINED INFORMATION

Code	Description	Revision
Work in progress (WIP)		
S0	Initial status	Preliminary revision and version
Shared (non-contractual)		
S1	Suitable for coordination	Preliminary revision
S2	Suitable for information	Preliminary revision
S3	Suitable for review and comment	Preliminary revision
S4	Suitable for stage approval	Preliminary revision
S5	Withdrawn*	N/A
S6	Suitable for PIM authorization	Preliminary revision
S7	Suitable for AIM authorization	Preliminary revision
Published (contractual)		
A1, An, etc.	Authorized and accepted	Contractual revision
B1, Bn, etc.	Partial sign-off (with comments)	Preliminary revision
Published (for AIM acceptance)		
CR	As constructed record document	Contractual revision

* Status code S5 is no longer used and has been withdrawn

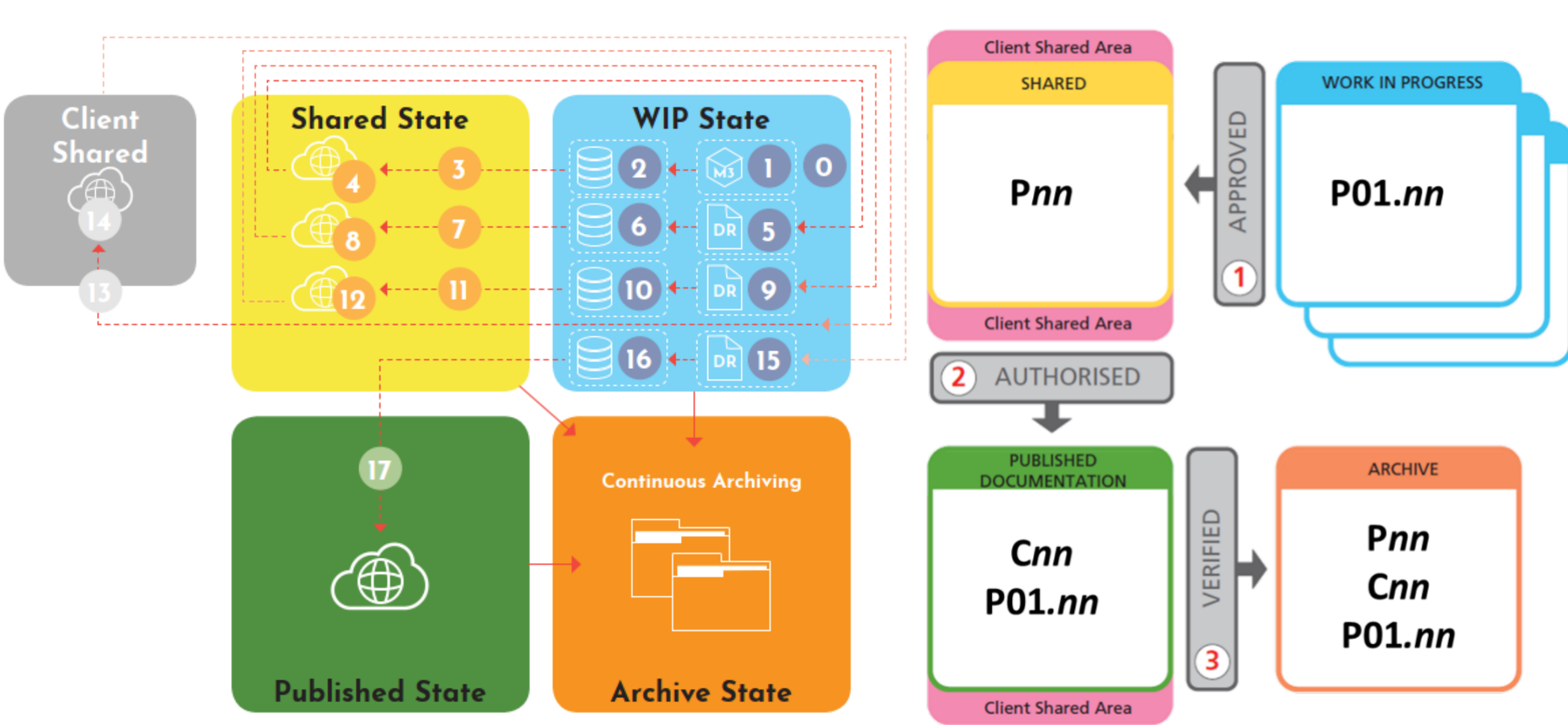


Illustration of an information container transitioning between states

SUITABILITY CODES

The ISO 19650-2 National Annex provides standardized status codes for metadata assignment.

Each code in above Table has a corresponding description to inform others.

REVISION CODES

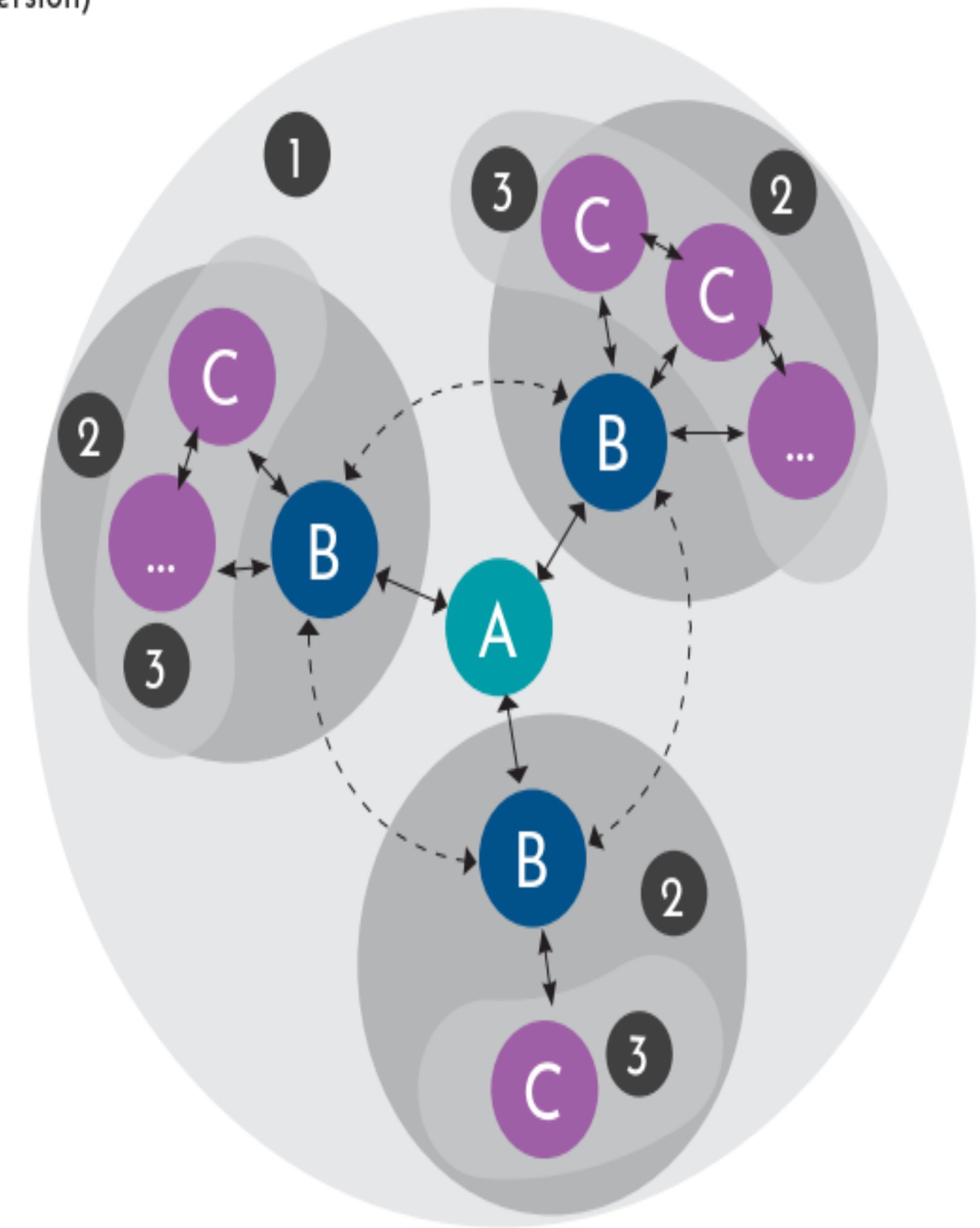
Area	Revision
WIP	P01.01, P01.02...P01. <i>nn</i>
Shared	P01, P02...P <i>nn</i>
Publish	C01, C02...C <i>nn</i>

Understanding your role and the team context

- Appointing Party
- Lead Appointed Party
- Appointed Party
- Project Team
- Delivery Team
- Task Team

Interfaces between parties and teams

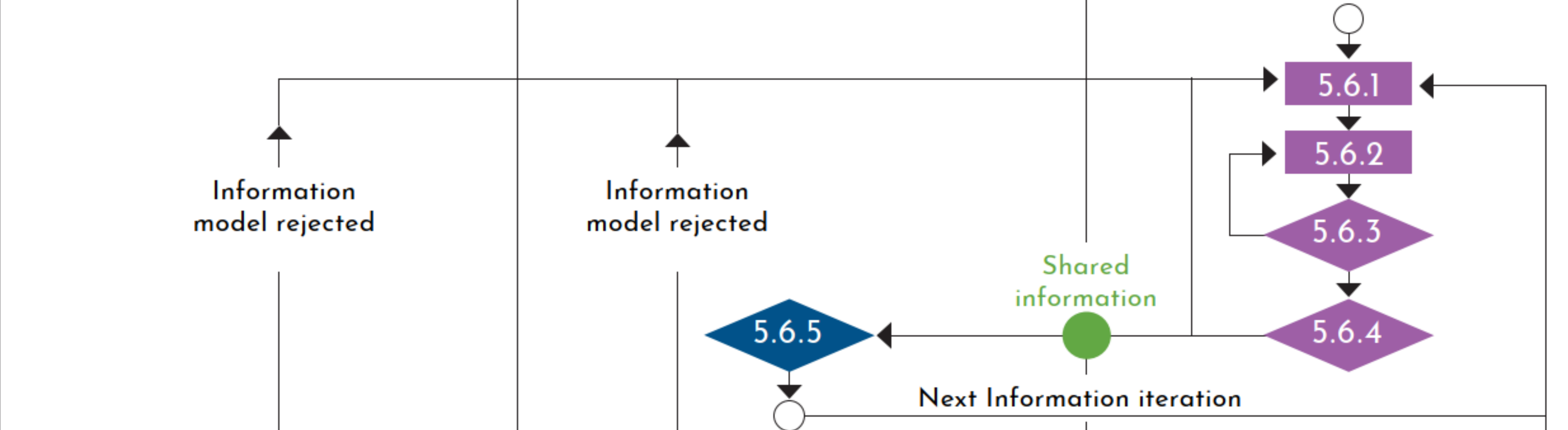
(simplified version)



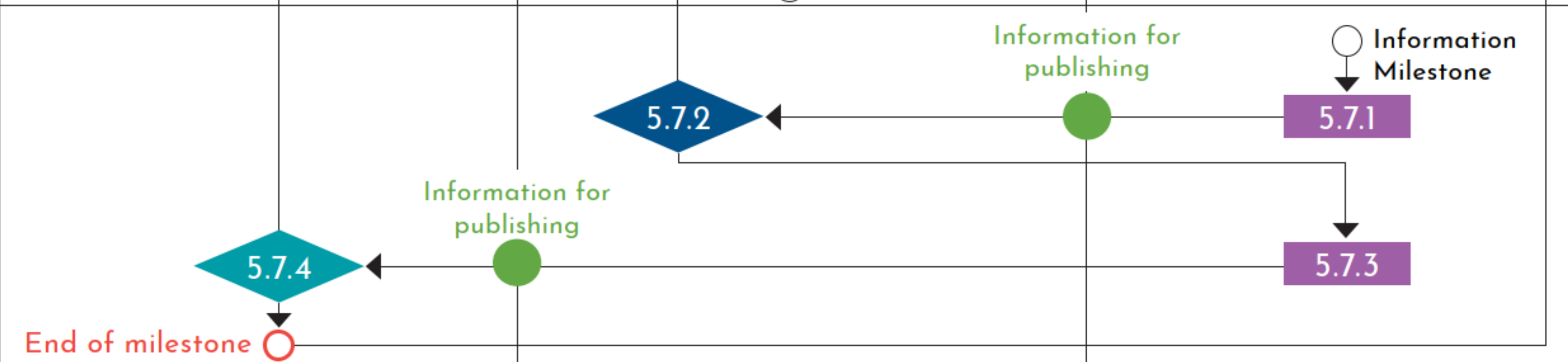
Key:

- | | |
|-------------------------------|------------------------|
| A Appointing Party | 1 Project Team |
| B Lead Appointed Party | 2 Delivery Team |
| C Appointed Party | 3 Task Team |

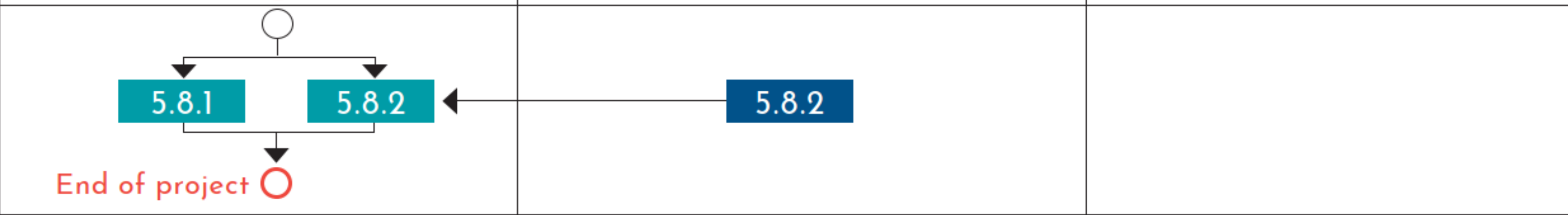
Collaborative Production of Information
(19650-2 clause 5.6)
(Work in progress and shared information)



Information Model Delivery
(19650-2 clause 5.7)
(Checking of information for publishing at an information milestone)

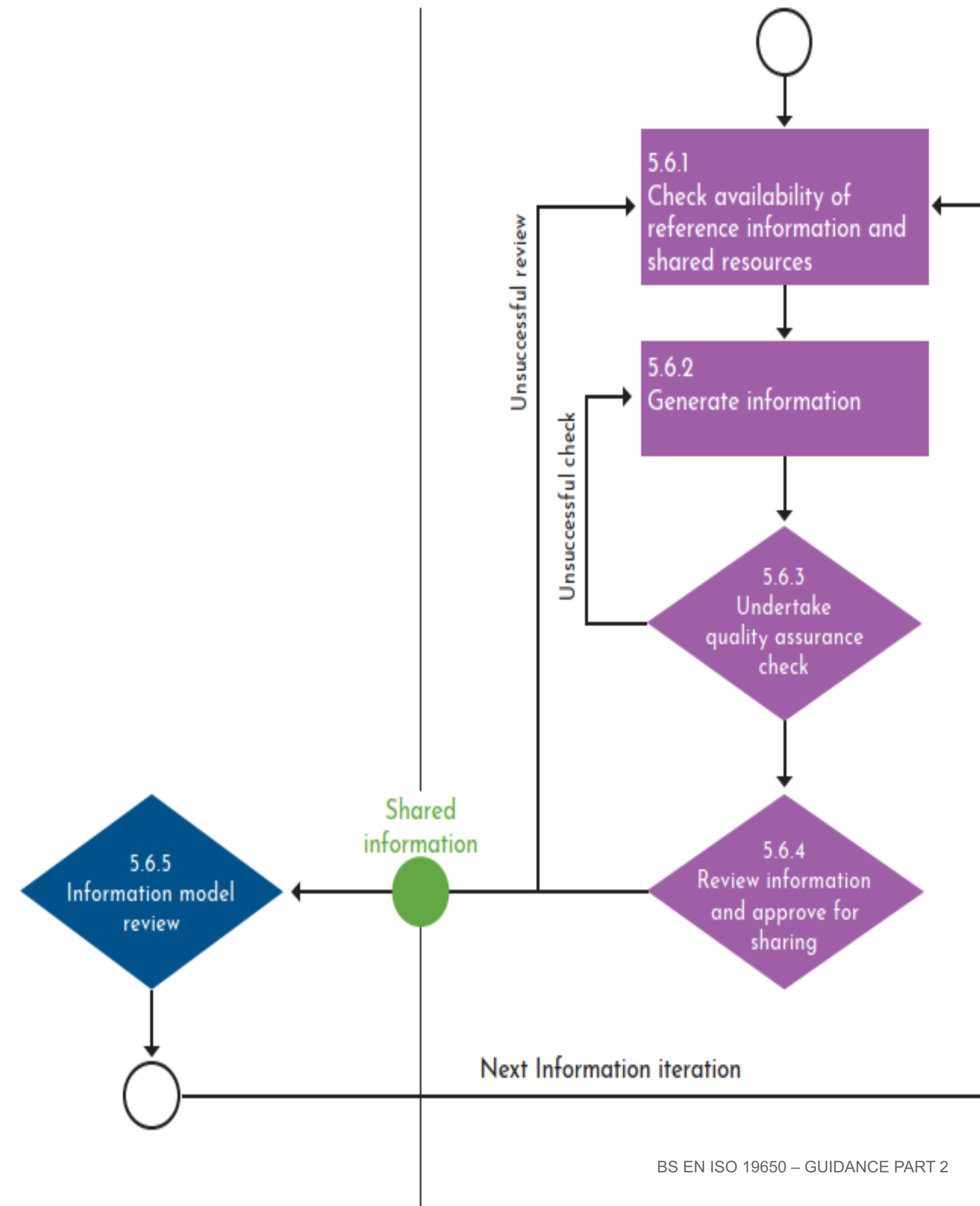


Project Close-Out
(19650-2 clause 5.8)
(End of project)



Collaborative Production of Information

- 19650-2 clause 5.6
- Work in progress and shared information
- 5.6.1 Check availability of the reference information and shared resources
- 5.6.2 Generate Information
- 5.6.3 Undertake quality assurance check
- 5.6.4 Review information and approve for sharing
- 5.6.5 Information model review

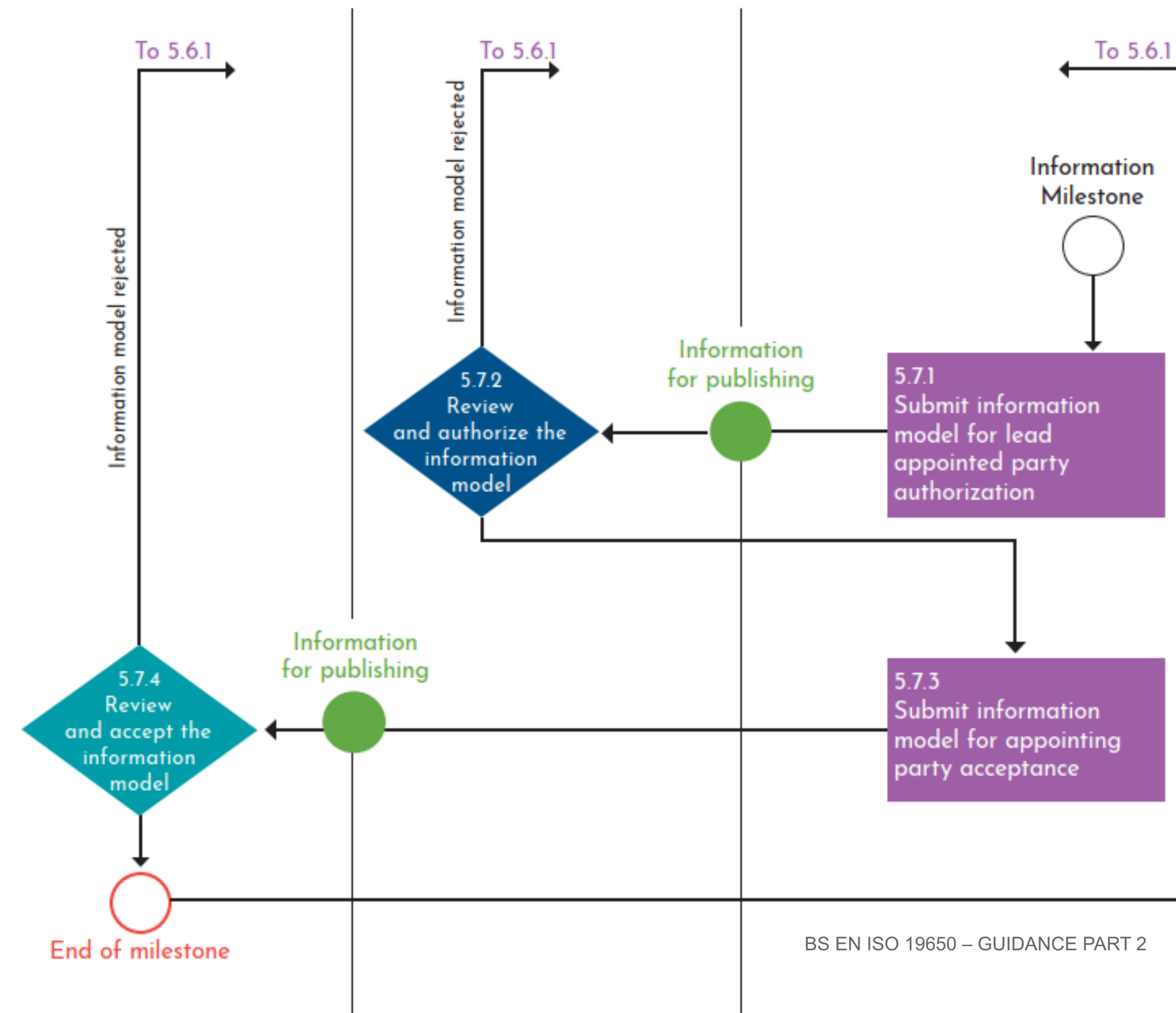


Information Model Delivery

- 19650-2 clause 5.7
- Checking of information for publishing at an information milestone
- 5.7.1 Submit information model for lead appointed party authorization
- 5.7.2 Review and authorize the information model
- 5.7.3 Submit information model for appointing party acceptance
- 5.7.4 Review and accept the information model
- End of milestone

Information Model Delivery (19650-2 clause 5.7)

(Checking of information for publishing at an information milestone)



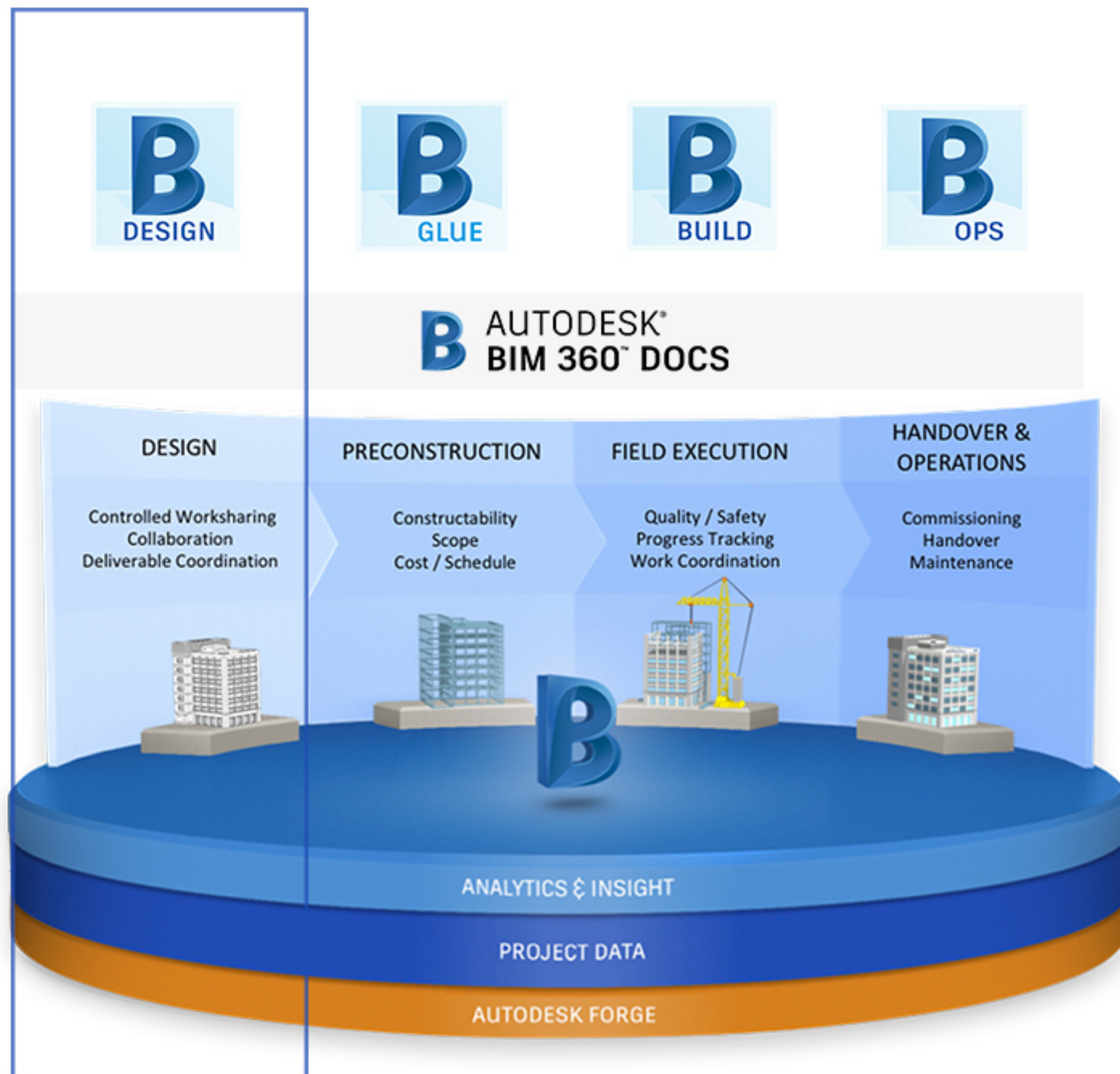


COMMON DATA ENVIRONMENT (CDE)

BIM 360 DOCS and DESIGN

AUTODESK® BIM 360® DESIGN

- + **Revit Cloud Worksharing**
 - + With Next-gen BIM 360 platform
 - + With BIM 360 Team as you have been doing with Collaboration for Revit in Revit 2018.3 and earlier
- + **Design Collaboration**
Next-gen BIM 360 module
- + **Document Management**
Next-gen BIM 360 module
- + **Desktop Connector**
Service connecting cloud to desktop



BIM 360 Design and Docs - Collaboration Workflow

Teams

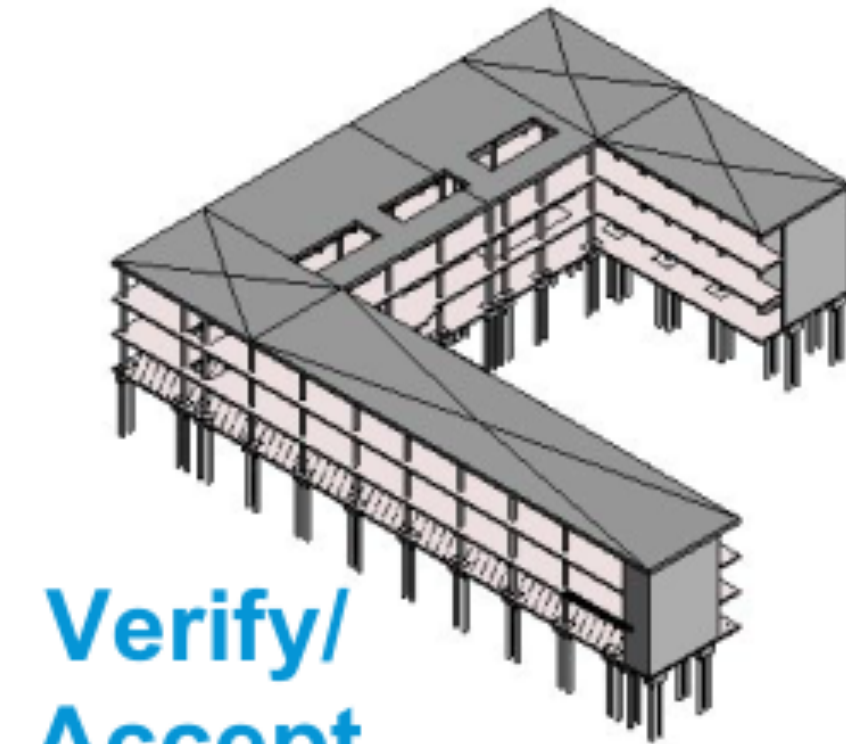
Architect

Struct

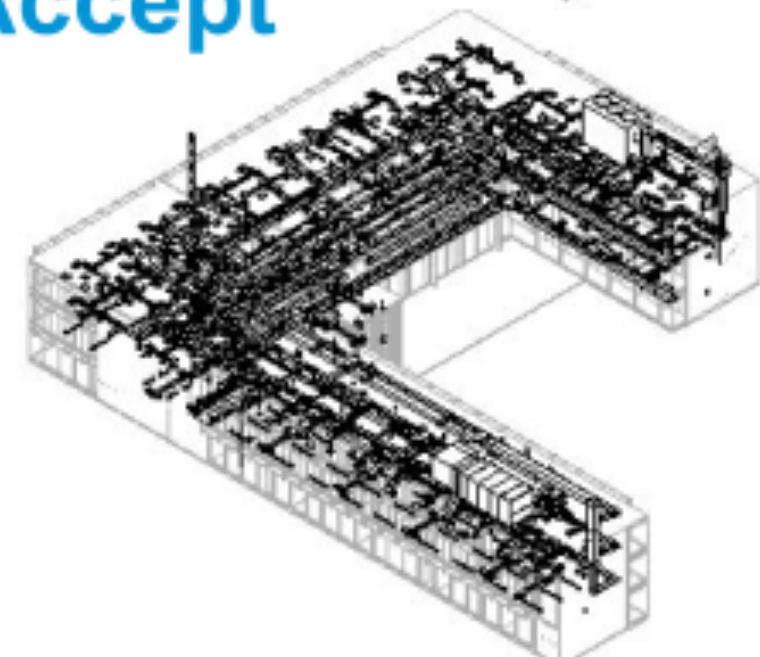
MEP

1. Define teams/permissions
2. Set up RVT cloud worksharing
3. Define RVT publish settings
4. Prepare and share packages
5. Set up folder structure/permissions
6. Agree design review process

Revit Cloud Worksharing



Verify/
Accept



Publish Sets

BIM 360 Design

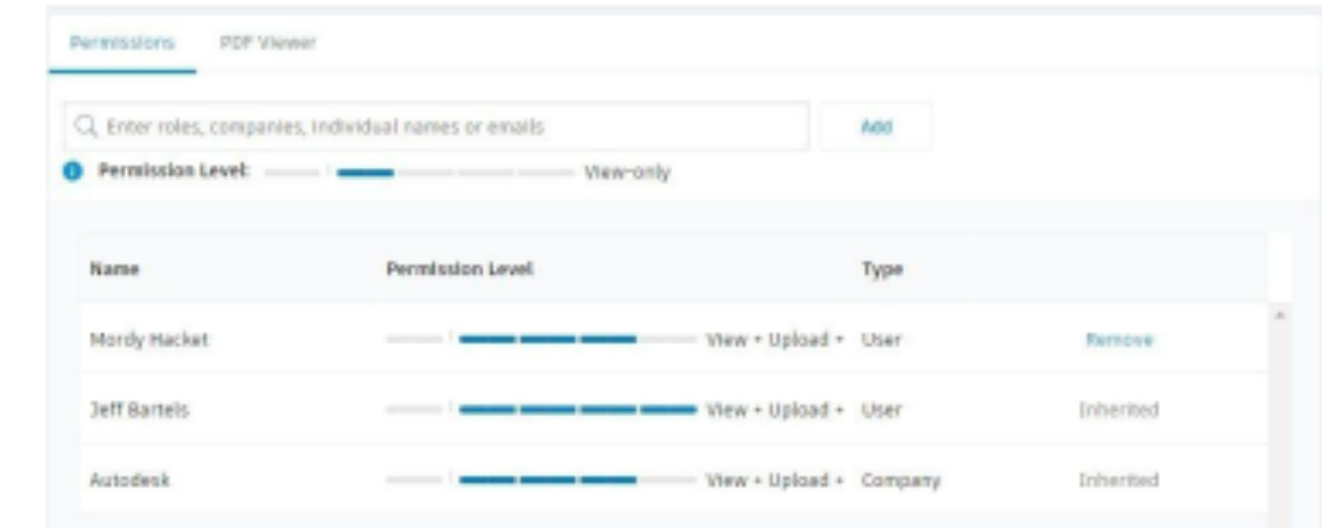


Share
Package



Review/
Consume

BIM 360 Docs



Folder
Permissions



Track Issues

BIM 360 PROJECT TEMPLATE

STAGE 1

PROJECT DATA

Fill in the data relevant to the project template.

STAGE 2

ADD FOLDERS

Add any folders and sub-folders as required to the 3 main folders to be created, which are 01-WIP, 02-SHARED and 03-PUBLISHED.

STAGE 3

ADD PERMISSIONS

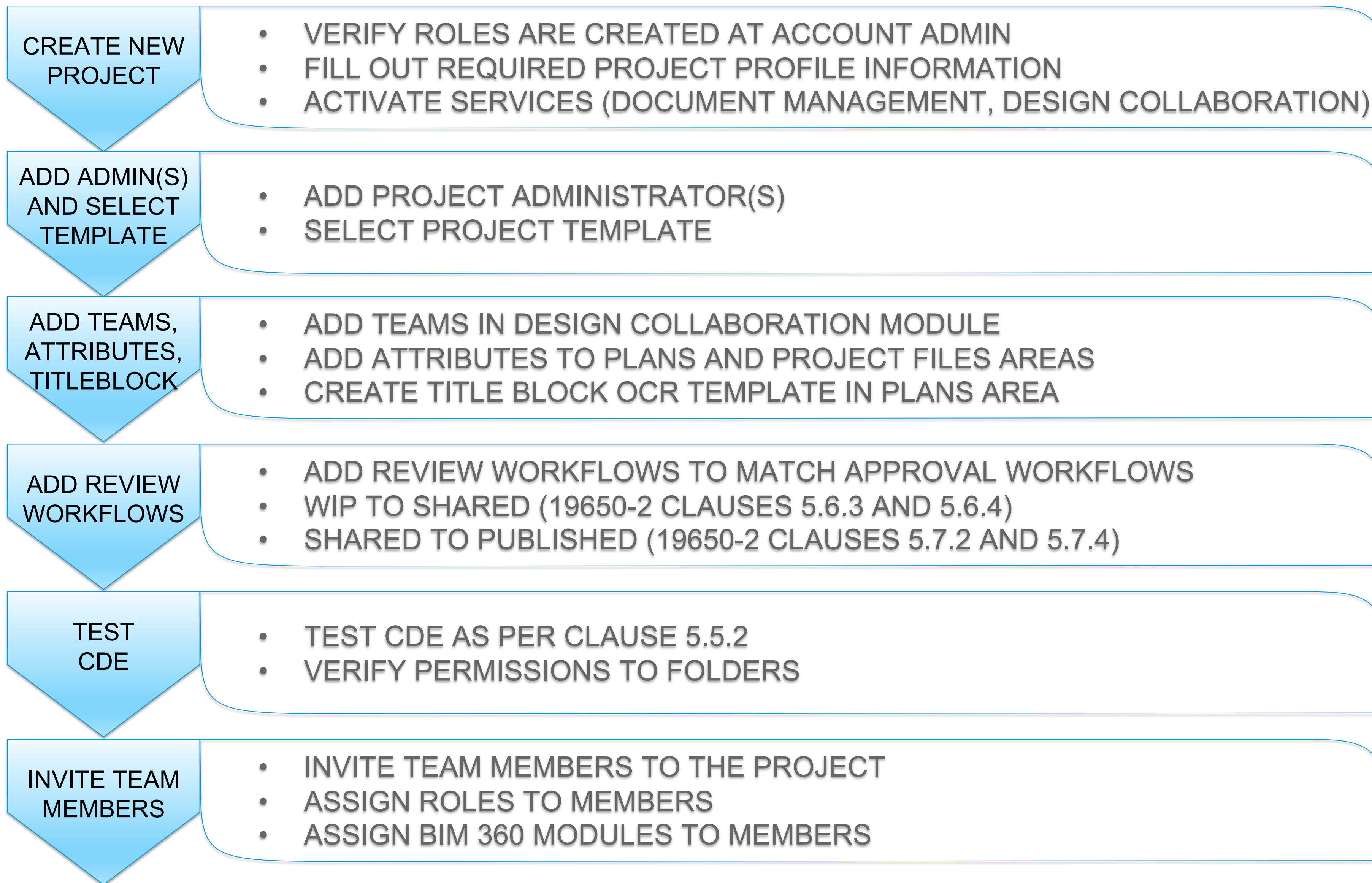
Add permissions to the folders and subfolders created based on roles. Make sure roles are created at account admin in advance. Only role permissions will be copied when using a template.

STAGE 4

ADD ATTRIBUTES

Add the different attributes as required by the standard, depending on the main folder space (Plans or Project files).

Note: Attributes, title blocks, review workflows are not copied from the project template (as of today).



Overview

Issues

Locations

Document Management

Design Collaboration

Teams

Manage Models

Add Team

The default location for newly added teams is /Project Files/01-WIP

<input type="checkbox"/>	Team ^	Path
<input type="checkbox"/>	<div><div></div>ARCHITECTURE</div>	/Project Files/01-WIP/01-ARCH
<input type="checkbox"/>	<div><div></div>MECHANICAL</div>	/Project Files/01-WIP/03-MECH
<input type="checkbox"/>	<div><div></div>STRUCTURE</div>	/Project Files/01-WIP/02-STRU

SELECT THE EXISTING WIP SUBFOLDERS ALREADY CREATED FOR EACH TEAM

(TEAMS NAME WILL BE AS PER FOLDER NAME SELECTED, BUT CAN BE RENAMED)

(A NEW SUBFOLDER (Consumed) IN EACH TEAM WIP FOLDER WILL BE CREATED. DO NOT DELETE IT, EVEN IF NOT USED)

ISSUES

Sets

03-MECH

Showing 4 items

 Search for documents

CLASSIFICATION

— —

—

—

--

NOTE: OTHER SUBFOLDERS IN 02-SHARED TEMPLATE FOLDER TO BE MOVED TO THIS NEW FOLDER

Upload-only allows users to upload files, view documents, and copy and move target folders.

View-only allows users to view and download documents, copy source folders, and view version history.

View + Upload allows users to view and download documents, copy and move target folders, copy the source folders, and view version history.

View + Upload + Edit and **View + Upload + Edit + Control** give users the same file actions as a project admin. These permission levels allow users to have full control over files, such as uploading and downloading files, adding title blocks, viewing and renaming documents, copying and moving source and target folders, deleting and restoring documents, and editing attribute values.

For folder permissions:

Upload-only does not allow users to make any modifications to the folder.

View-only and **View + Upload** allow users to access the title block page, view title blocks, and edit attribute values.

View + Upload + Edit grants the same access as the project admin, except they cannot add, edit, or delete permissions, and they cannot add members.

View + Upload + Edit + Control gives users the same folder actions as a project admin. This permission level allows users to have full control over folders, such as creating and renaming folders and subfolders, adding, editing, and deleting permissions, adding new members, viewing and editing title blocks, and creating, adding, and editing attributes.

Lastly, for collaboration permissions:

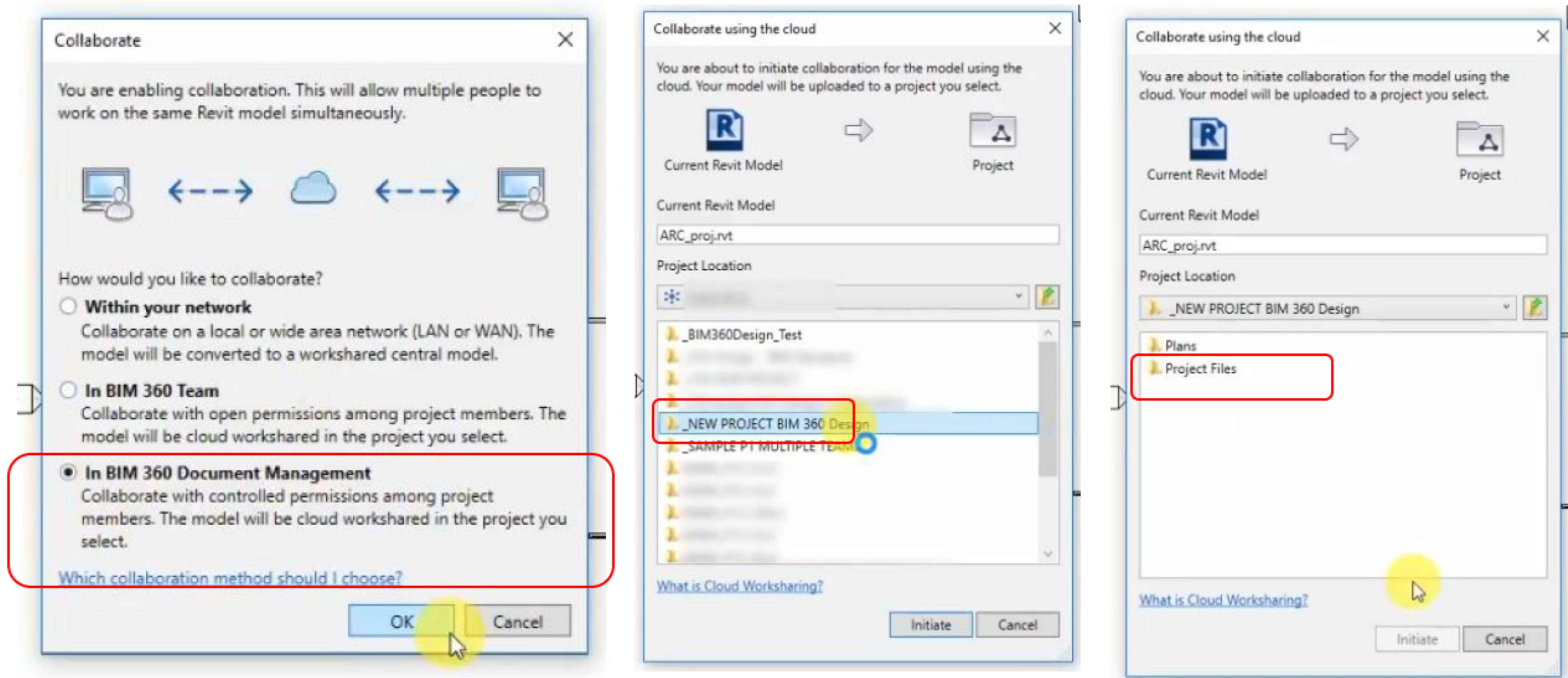
Upload-only does not give users any of the collaboration task permissions.

View-only and **View + Upload** allows users to add, edit, and delete private markups, add and view hyperlinks, view and create issues, and compare drawings.

View + Upload + Edit and **View + Upload + Edit + Control** give users the same access as the project admin, except they cannot edit and delete hyperlinks.

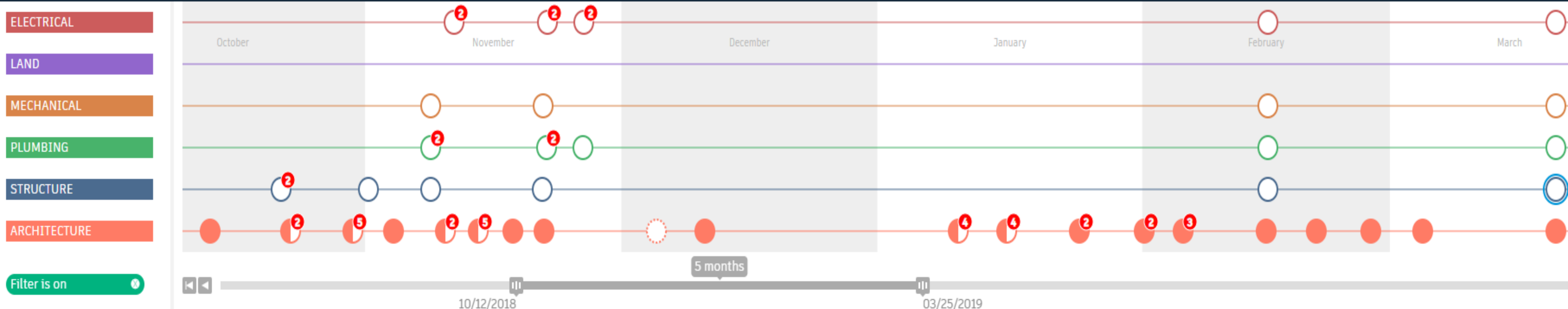
FOLDER PERMISSIONS

Enable BIM 360 Docs Cloud Collaboration in Revit



Design lead chooses BIM 360 Document Management Option, then select correct project in Docs and Project Files/.../Discipline folder path as the destination for WIP designs

Design Collaboration



STRUCTURE (27)

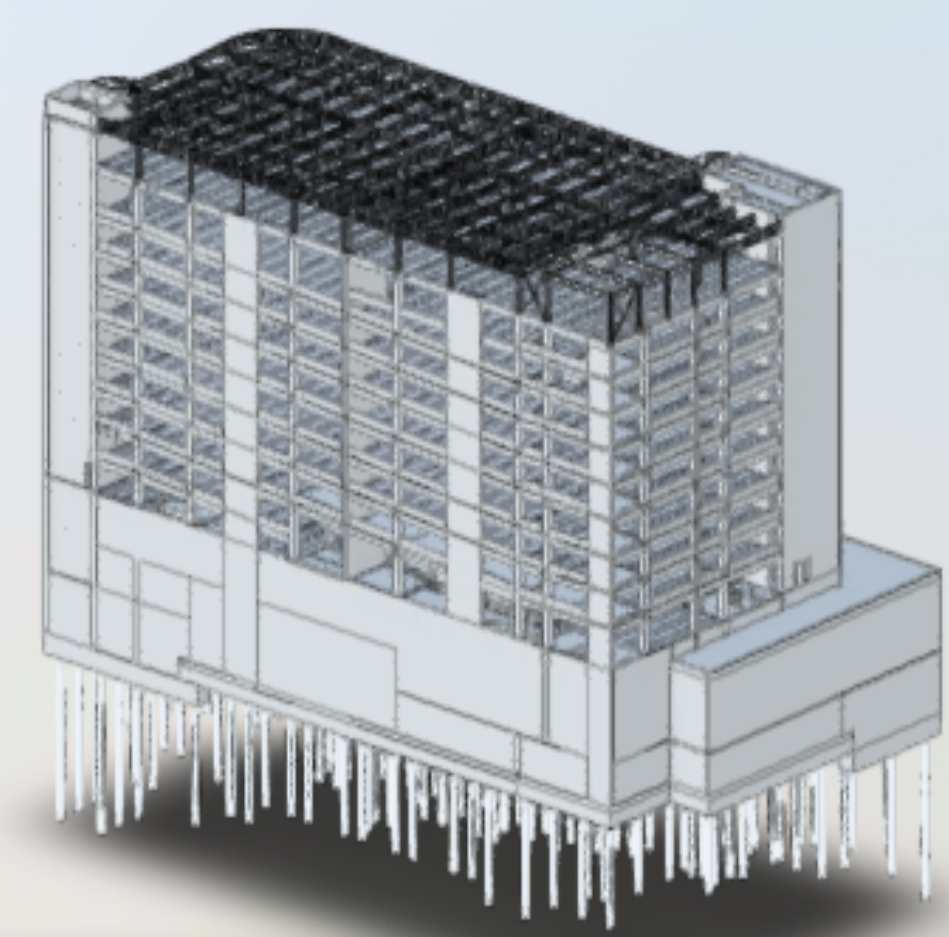
STRUCTURE, Juan Tena Florez
Shared on 03/20/2019

0 Sets 0 Sheets 0 3D views [Project Model](#)

[Show changes](#)

- Levels
- ROOF
- LEVEL L9
- LEVEL L8
- LEVEL P8W
- LEVEL L7
- LEVEL P7W
- LEVEL L6
- LEVEL P6W
- LEVEL L5
- LEVEL P5W

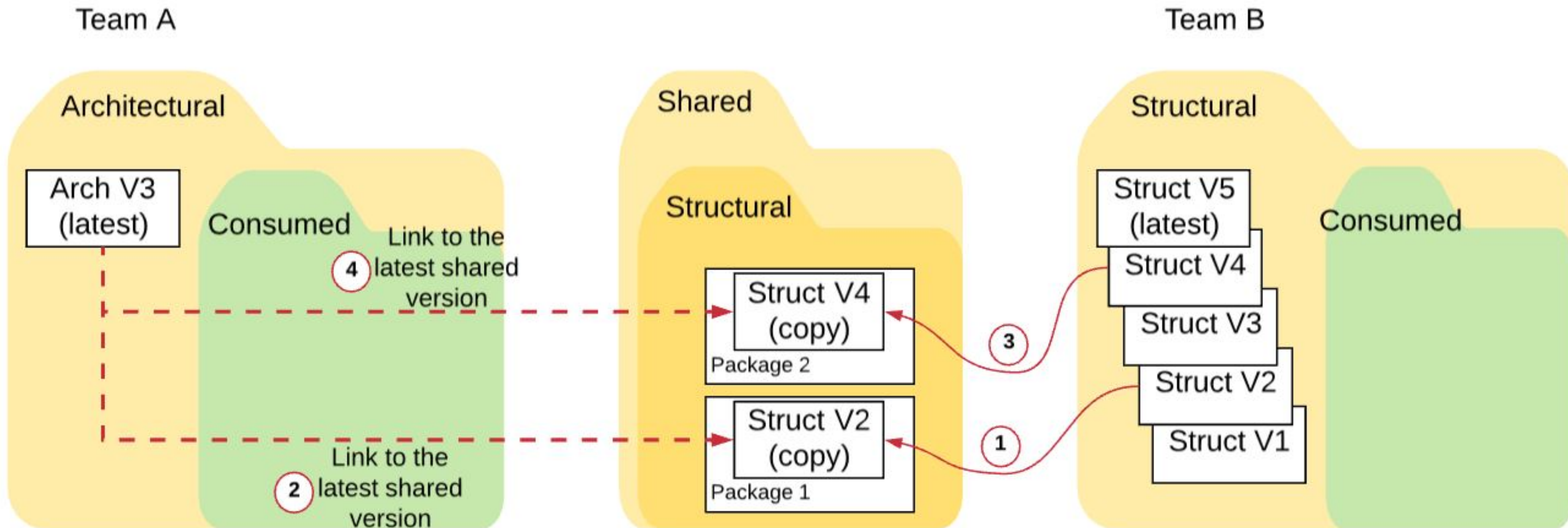
[Back to last view](#)



Linking Cloud Workshared models in BIM 360 Design Collaboration & Document Management

Immediate Shared Linking Example

- This example bypasses the Consume step in the Design Collaboration workflow. The Sharing in Design Collaboration automatically makes the copy in Document Management.
- Traditionally this is known as Low Trust sharing where teams **don't have** access to the other team's work in progress (WIP).
- Team B controls which versions they share.
- Team A sees the latest shared version.



PDF Titleblocks and Attributes

Can be searched, filtered and sorted by

Number	Title	Project Stage	Suitability Code	Site	
0004	Cipro HVAC	FEL 1	S1		

Columns:

- ✓ Last updated
- ✓ Updated by
- ✓ Markup
- ✓ Issue
- ✓ Number
- ✓ Title
- ✓ Project Stage
- ✓ Suitability Code
- ✓ Site
- ✓ Site Code
- ✓ Building
- ✓ Rev
- ✓ Discipline
- ✓ Document Type
- ✓ Sheet Number
- ✓ Type of Facility
- ✓ Industrial Complex
- ✓ Process Plant
- ✓ Plant Section

Add Attribute

60™ Docs TS-FGomes

Back

Folder Settings

Permissions Tit

1 title block

RCP- GR

PROJECT NUMBER
DATE
DRAWN BY
CHECKED BY

A

SCALE

A1 PADRAO

Define Title Block

Define a Title Block to use in your project, so we know where to look for important fields when scanning documents. Learn more about how we use Title Blocks

Select the area of the sheet Number & Title. You may also add additional fields.

Number A202

Title RCP- GROUND FLOOR

Drawn by Author

Checked by Checker

Project Number 056750

Scale 1/8" = 1'-0"

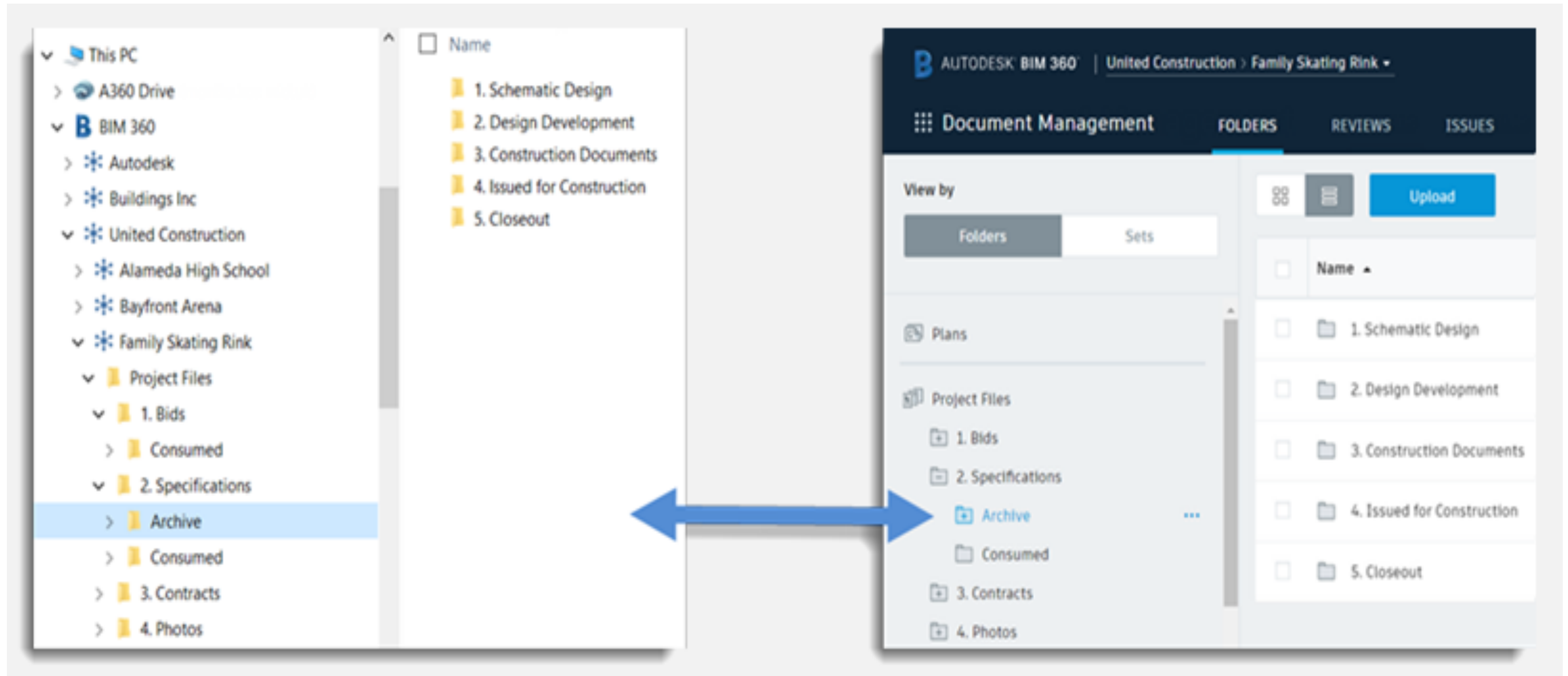
RCP- GROUND FLOOR

PROJECT NUMBER 056750
DATE 10/25/15
DRAWN BY Author
CHECKED BY

A202

SCALE 1/8" = 1'-0"

Cancel Save



Desktop Connector for BIM 360

Provides a connection between your local files and the Document Management module. This makes the Document Management module available in your desktop folder and file structure for easy file management.



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