

ISO 19650 to Support Digital Engineering Processes

Vladana DARRAS BLATNIK

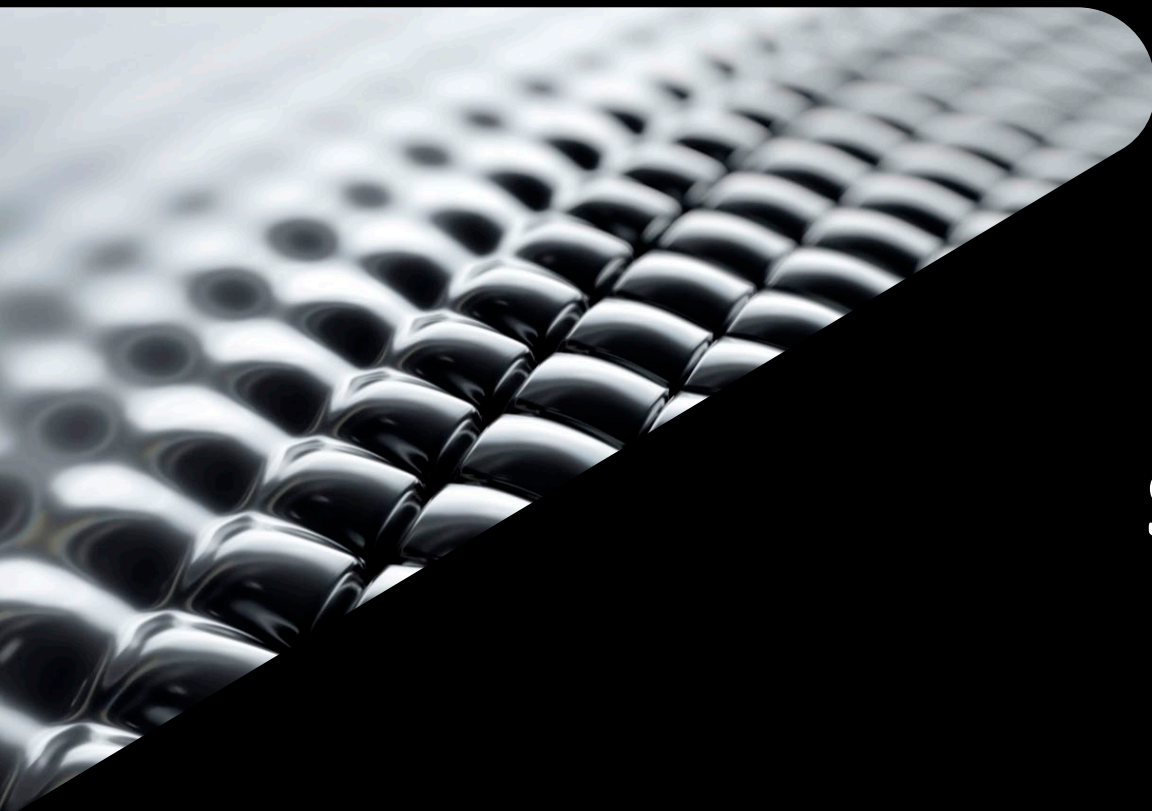
Head of Digital Engineering Services

Senior deployment and digital transformation expert,

Certified : Operam Professional IM & BCA BIM manager





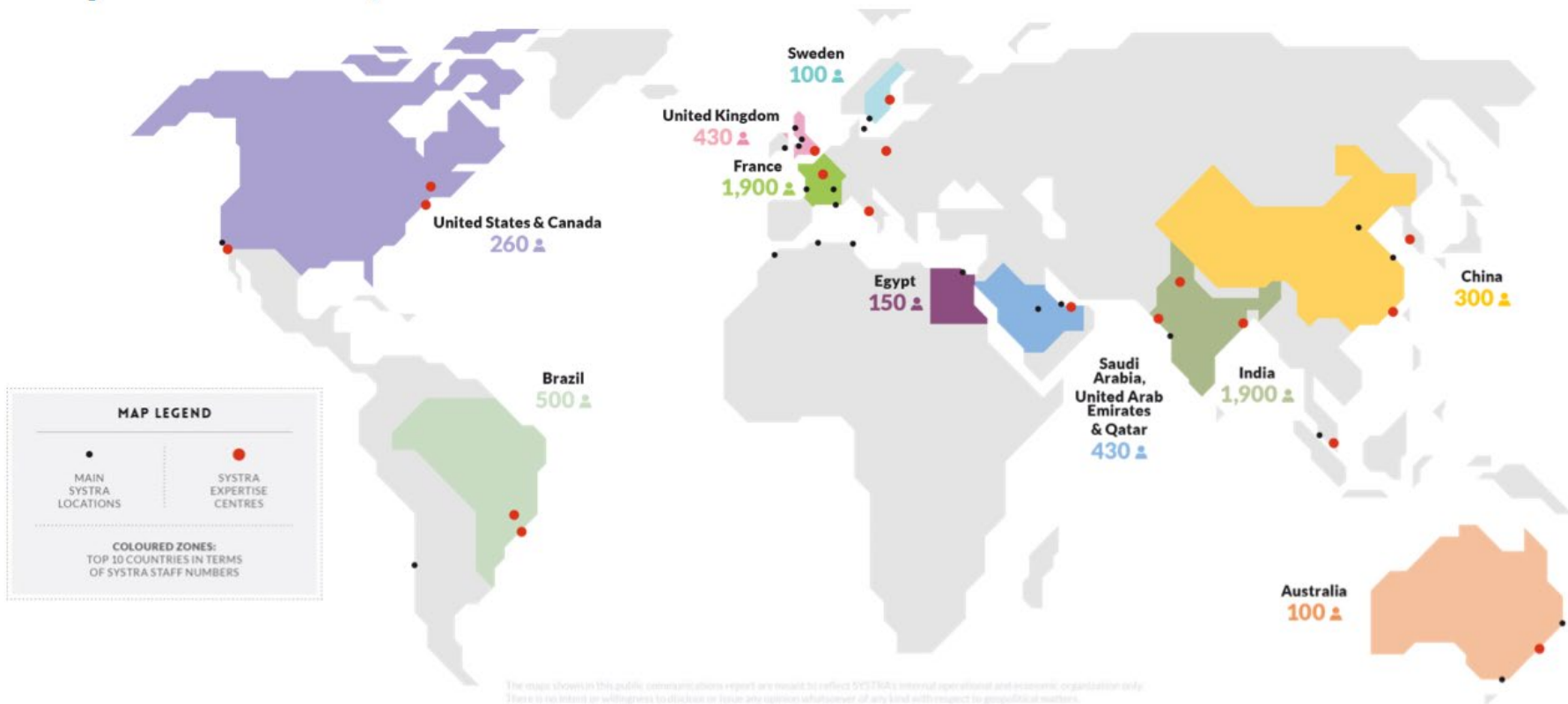


SYSTRA Context

SYSTRA

A global group with French roots

Expertise centres, a decentralised model

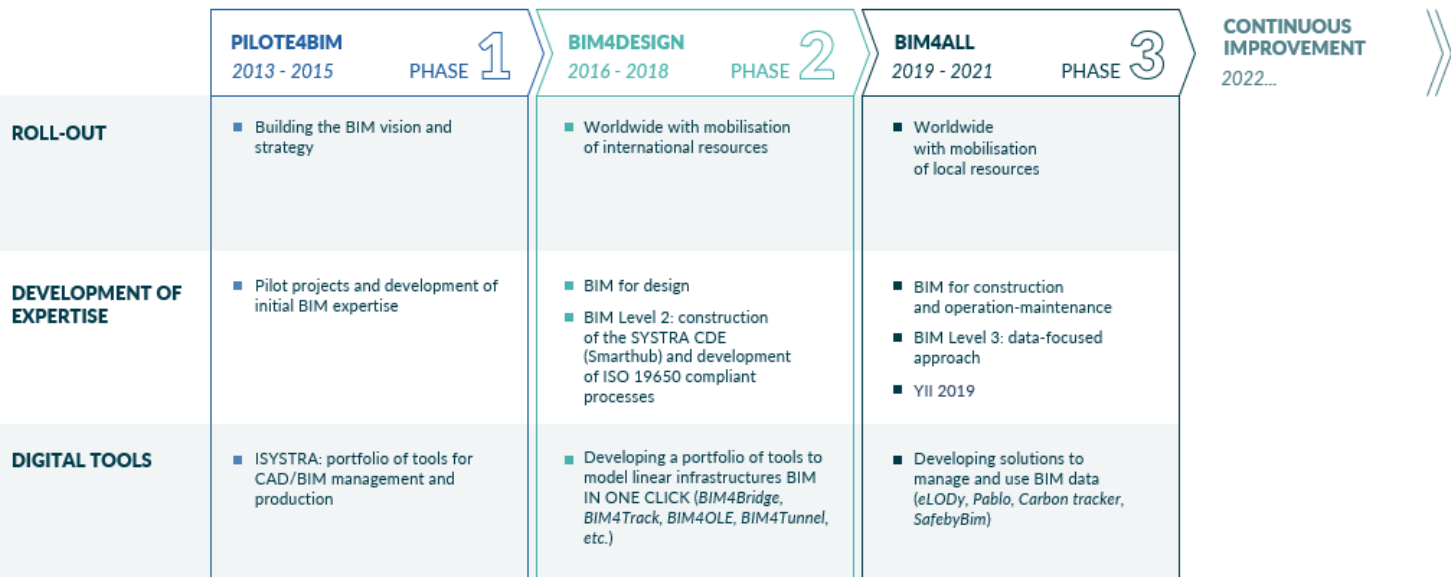


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SYSTRA BIM transformation strategy

WHY SHOULD YOU BE INTERESTED?

A strong ambition to bring about widespread roll-out of BIM across the Group

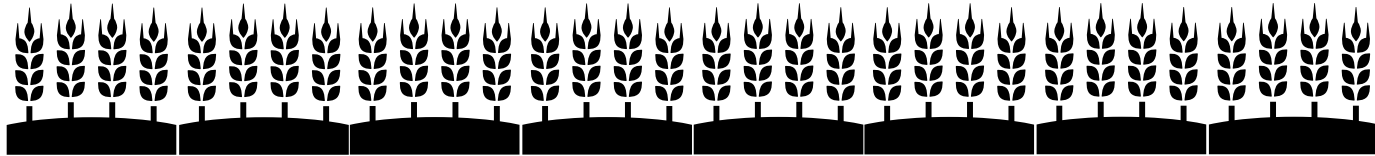
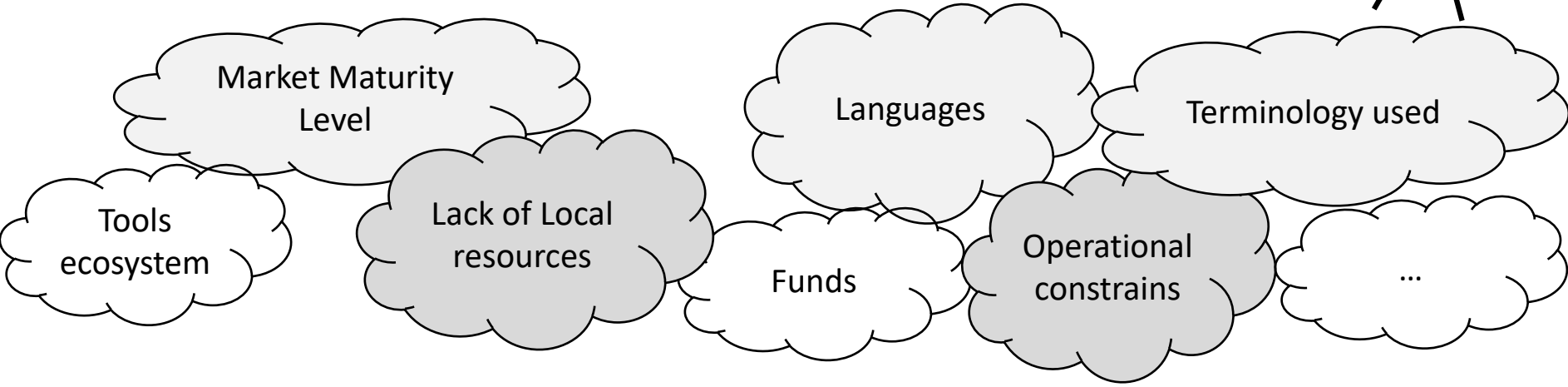
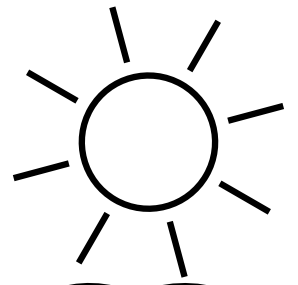


Our Challenge

**How to pursuit global & sustainable
BIM transformation strategy while
organization is growing in
heterogonous way in a constantly
evolving business environment ?**



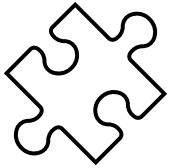
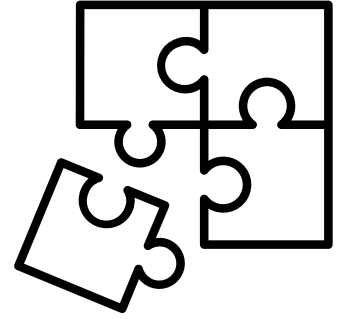
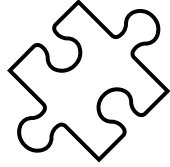
Organization level - Diversity



BIM Standards, Collaboration, Digital Engineering tools,CDE, Methods, procedures

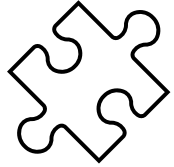
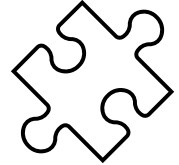
Project Level – Diversity

BIM management vs Project management

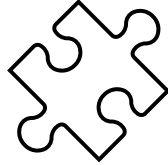


CDE for 3D deliverables

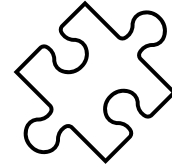
maturity of project members



Information consistency



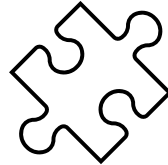
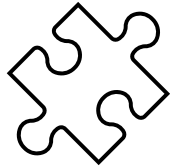
BIM = 3D model



Security



Information duplicated



Wasteful activities ...



ISO

ISO 19650





ISO 19650-1

Organization of information about
construction – Information management
using building information modelling –

Part 1: Concepts and principles



International
Organization for
Standardization

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ISO 19650-2

Organization of information about
construction – Information management
using building information modelling –

Part 2: Delivery phase of assets



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Organization of information about
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using building information modelling –

Part 3: Operational phase of assets



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Organization of information about
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using building information modelling –

Part 4: Information Exchange



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ISO 19650-5

Organization of information about
construction – Information management
using building information modelling –

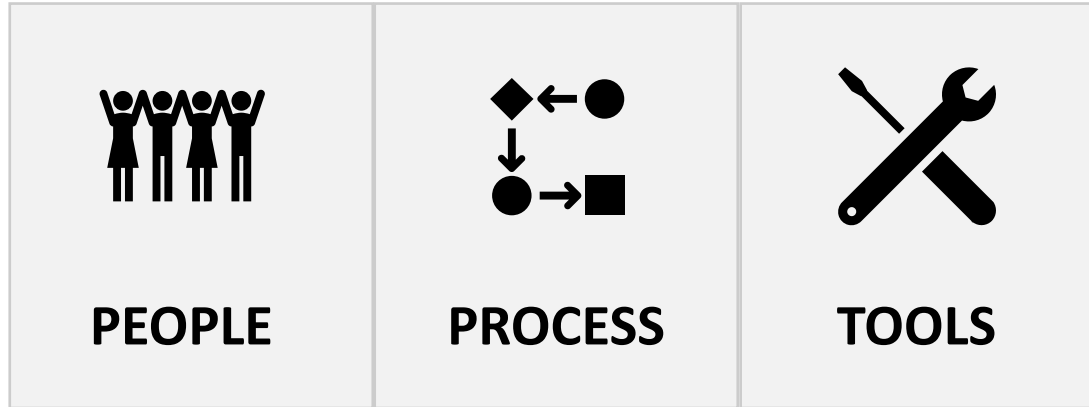
**Part 5: Security-minded approach
to information management**



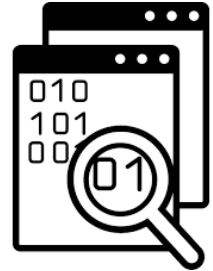
International
Organization for
Standardization

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Continuous improvement pillars



Continuous improvement pillars : People



INFORMATION =ASSET

Continuous improvement pillars : People



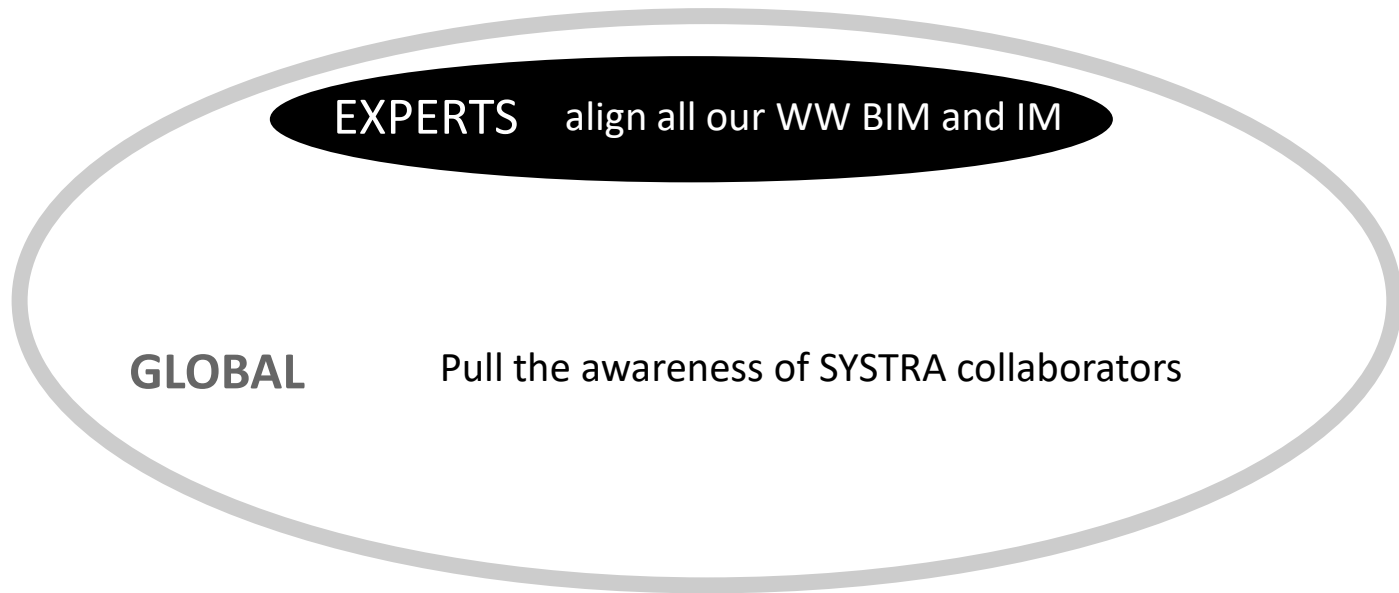
PEOPLE

- Deploying global ISO 19650 training program
(Information Management Practitioner)
- Training experts as future champions in Information management
(Information Management Professionals)

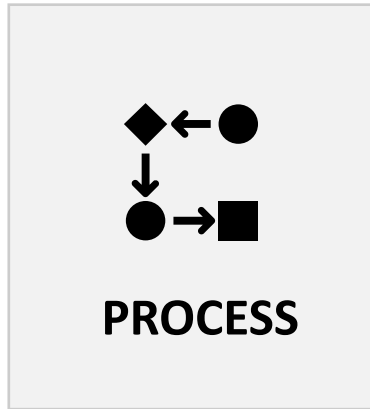
Continuous improvement pillars : People



PEOPLE



Continuous improvement pillars



IM process ?

Continuous improvement pillars

Difference between BIM and IM process ?

BSI (British Standard Institute)

Building Information Modelling (BIM) is a **collaborative process** that seeks to add value throughout the life-cycle of an asset.

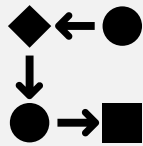
Business processes across the built environment sector in support of the management and production of information during the life cycle of built assets.

ISO 19650-1:2018 (see Introduction section)

IM process

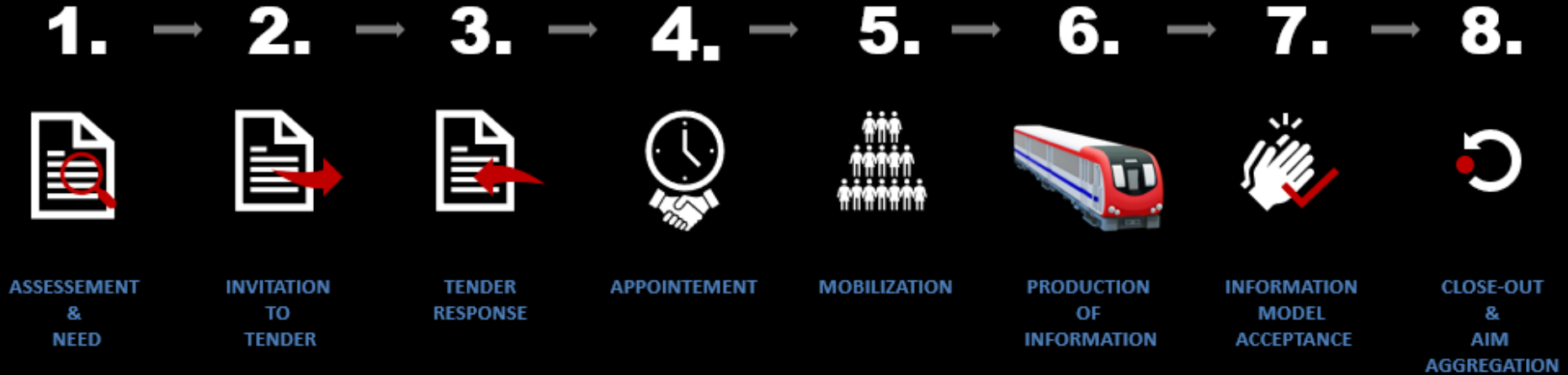
*It (IM) provides the basis for **informed decision making** and the **platform** upon which performance can be measured.*

UK Government Information Principles



PROCESS

Information management process : 8 steps



Graphical Data, Non-graphical Data, Documents

Project Information management Functions

I will require ...

(receiver of information)

APPOINTING PARTY

Information **XXX needs be successfully
delivered according to ISO19650 on **YYY**
appointment !**

... I need to deliver

(provider of Information)

APPOINTED PARTY

Project Information management Functions

**Define information requirements for
specific appointment**

Appointing Party

Provide information according to requirements
for specific appointment

Appointed Party

Project Information management parties

SYSTRA as a Consultant
(not an Owner)

*** PMC, AMO (France)**

Appointing Party

SYSTRA as a Designer

*Design delivery,
D&B contract

Appointed Party

IM process for a specific Project / Appointment

1. → 2. → 3. → 4. → 5. → 6. → 7. → 8.



ASSESSMENT
&
NEED



INVITATION
TO
TENDER



TENDER
RESPONSE



APPOINTMENT



MOBILIZATION



PRODUCTION
OF
INFORMATION



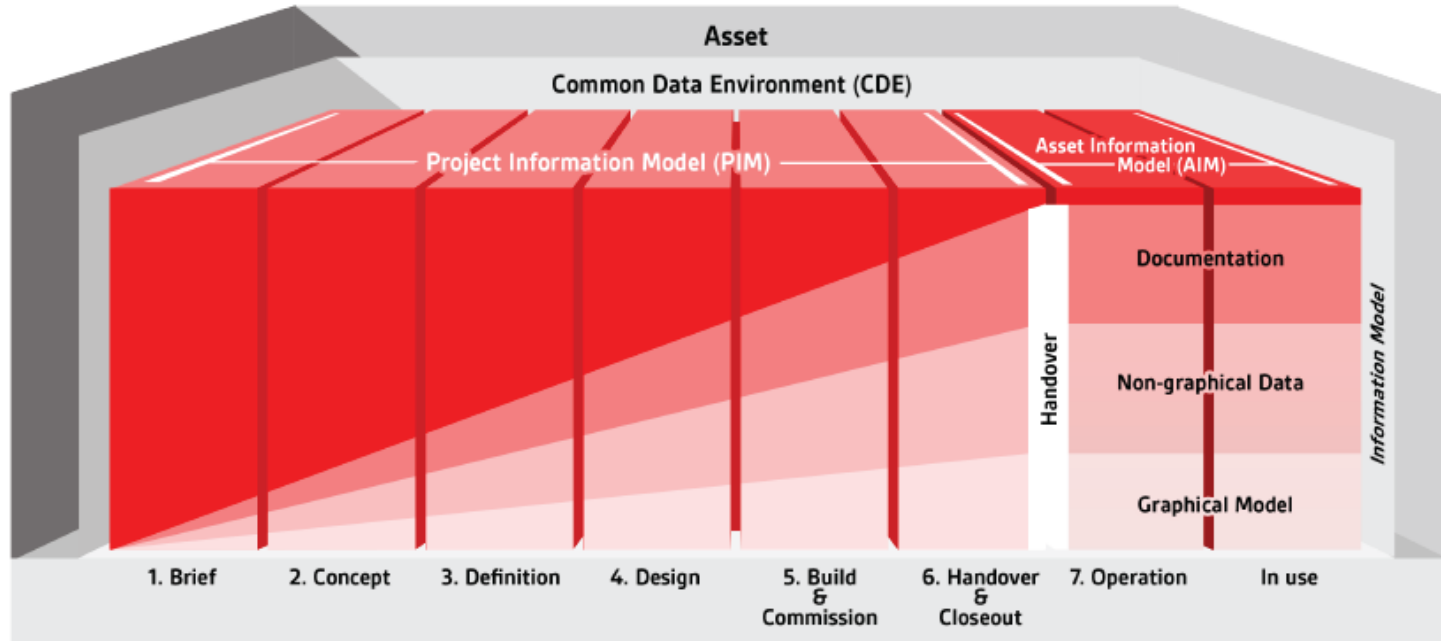
INFORMATION
MODEL
ACCEPTANCE



CLOSE-OUT
&
AIM
AGGREGATION

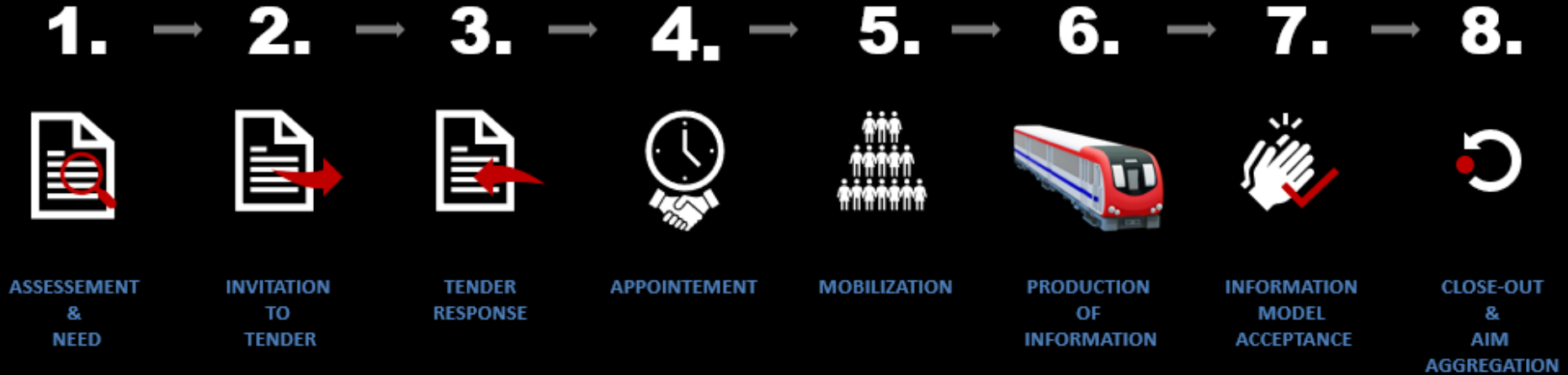


PM process for a specific Project



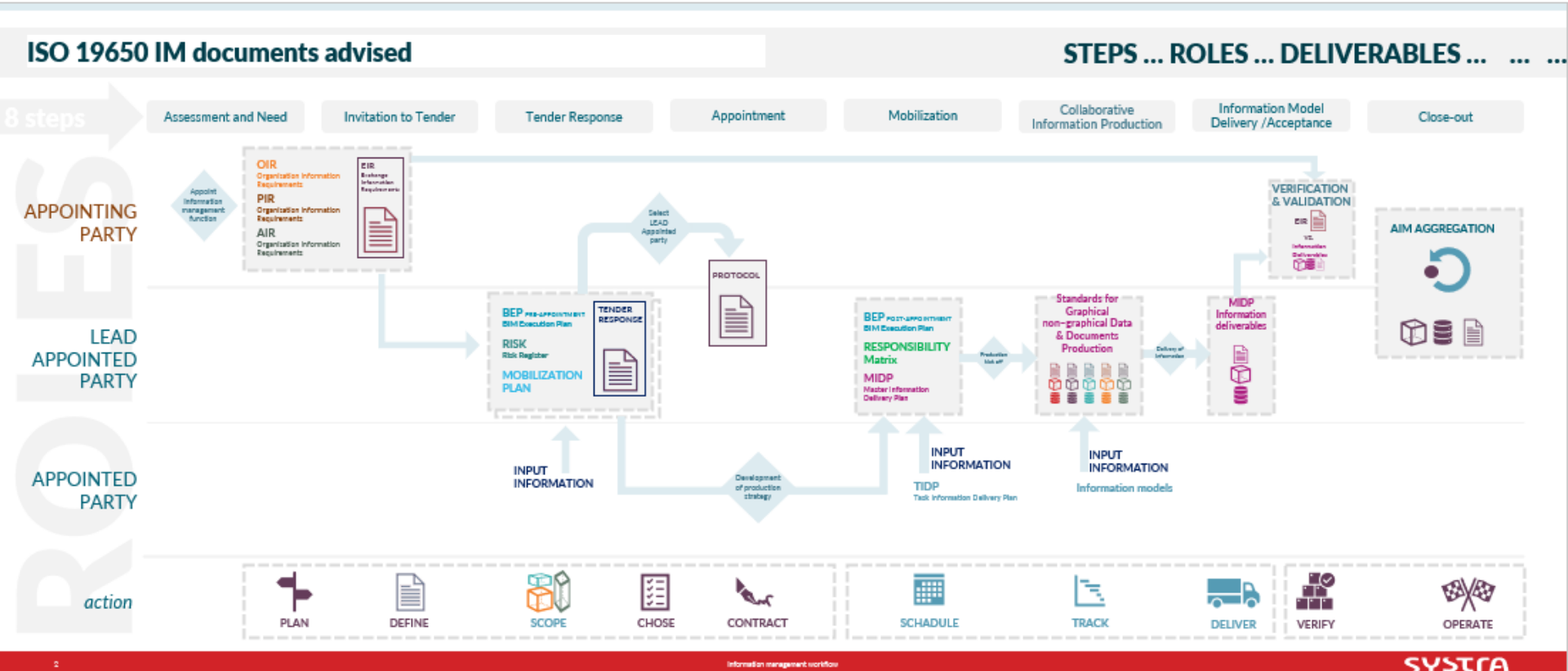
- Subdivides the **delivery of asset** into a number of common decision-making stages
- Provides a consistent set of predefined activities and outputs
- Stops decisions and wrong decisions being made that are expensive to change
- Contractual commitments are made and fulfilled and appropriate risk transfer takes place

IM process for a specific Project



Creation, verification, collaboration, sharing, validation, mobilization, delivery, archiving ... Processes

IM process for a specific deliverables



Continuous improvement pillars



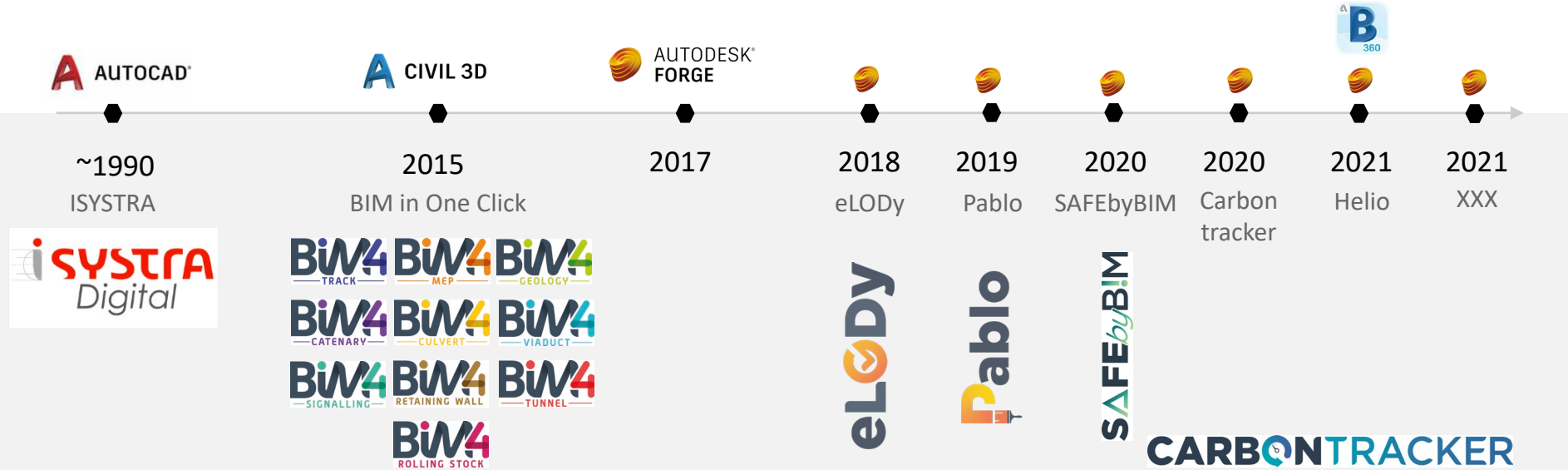
TOOLS

IM tools ?



SYSTRA development DNA

We are using Autodesk, Bentley and Trimble tools.
Our internal developments are based on Autodesk Technology.

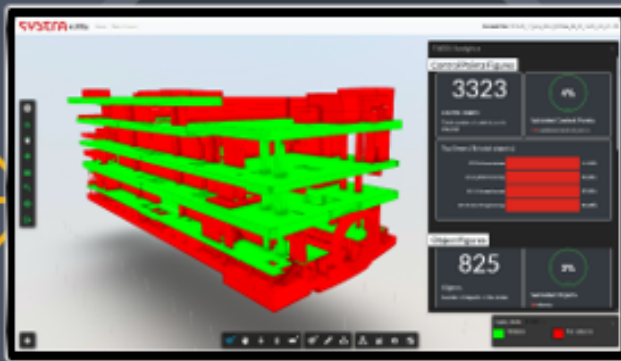




Trust your BIM data

Automation of the verification process for the production of large-scale BIM projects

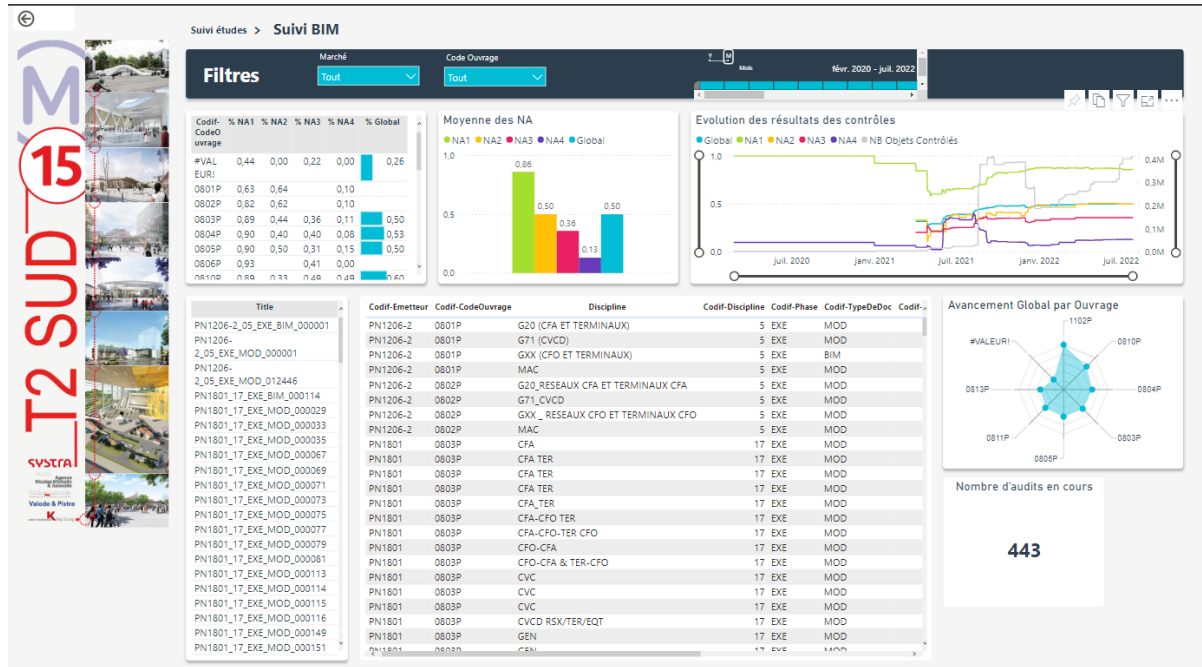
60 %
reduction in checking time for a BIM model



Standardisation of models and implementation of the OpenBIM process using the IFC (ISO 16739) and BCF formats

Accessibility of the solution and the information

Improved design quality



3941 models checked 2121

41 days vs. 985 days

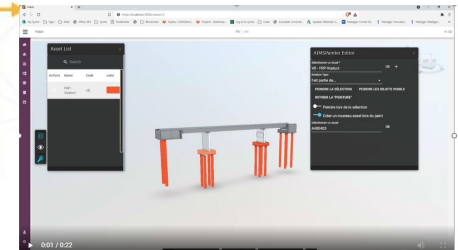
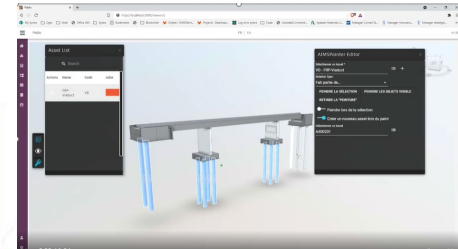
Saved appx 2,5 years !



Build BIM data for your Future Digital Twin

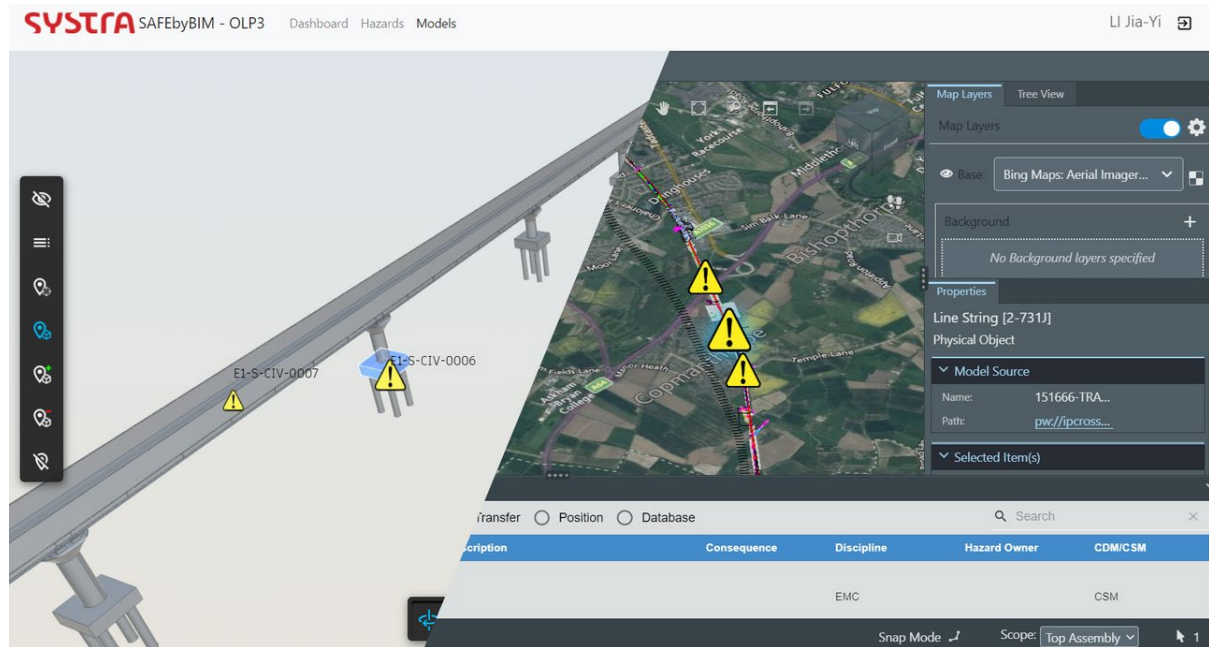
AIM is essential preliminary step for populating your digital twin.
Use PABLO to build BIM data for your Asset Information Model

- **Build your AIM in 4 stages**



SAFEbyBIM

Is a web-based **hazard management application** that provides robust and efficient way of managing and communicating hazards in the project context.



CARBONTRACKER

QUANTIFY

MANAGE

OPTIMIZE

Carbon becomes the business of all technical teams and no longer just specialists

Support of client teams in the implementation of an eco-design approach integrating the carbon footprint as a design criterion

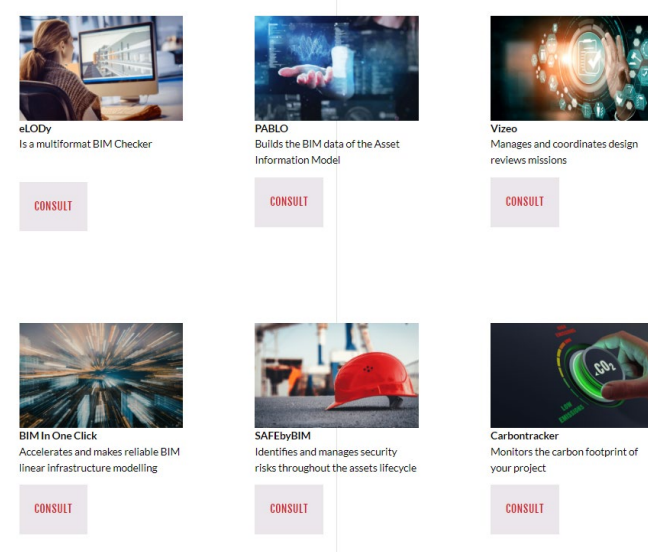
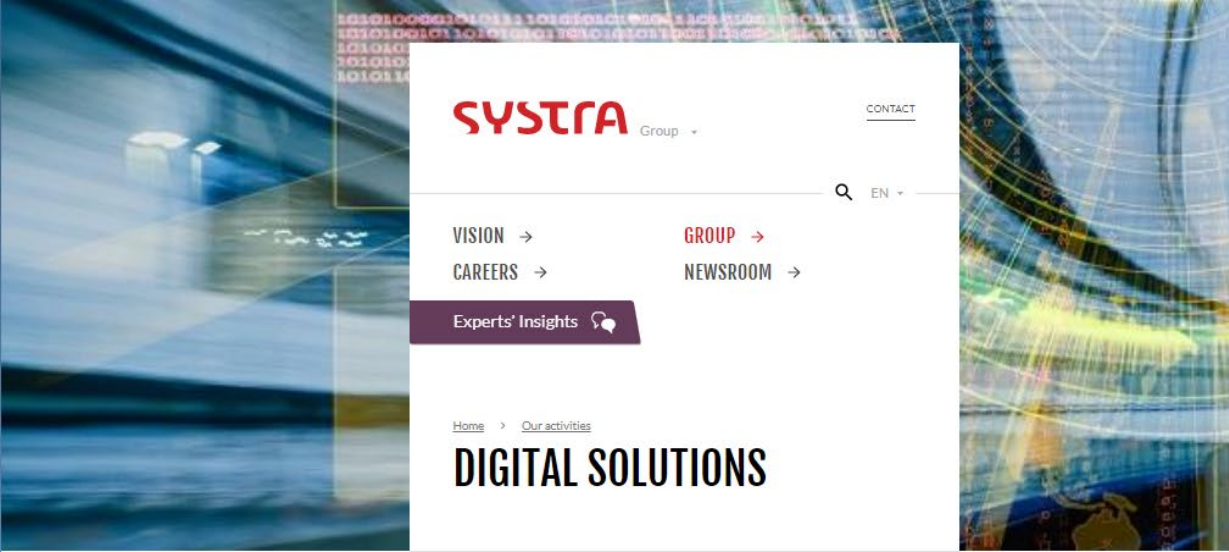


Design choices made easier through visualization immediate carbon emissions saved

More informed, real-time decision thanks to BIM and scenario comparison including material transport

More reliability in carbon calculations compared to manual approach

DESIGN LOW CARBON RAILWAY INFRASTRUCTURE

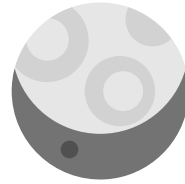


➡ Check out our Website : [Digital Solutions | Systra](https://www.systra.com/en/markets/digital-solutions/) <https://www.systra.com/en/markets/digital-solutions/>

➡ Check our AU Stand at Forge Village (Carbon space)



ISO 19650 as a saviour !



ISO 19650 is there to help ...



Effective management of information :

Having the right Information at the right time... to enable to efficient decision-making processes.

Collaboratively production of information :

Enable Single Source of Truth

ISO 19650 is there to help ... achieve



Everyone aligned
(experts and organization)



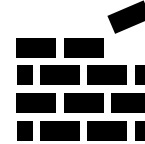
Build a Developer-unit



Common IT strategy
(Connected environment and Single source of truth)



Enroll all stakeholders reaching for the same goal
(client, contractors, PMs, engineers)



Assure Permanent investment

Share, rump up, deploy, develop, create, manage, deliver 😊

