NORM3D

3D DATA PROCESSING SERVICES

BIMAQ: Time-saving solution for reliability checks on 3D digital models

🌐 https://bim.norm3d.com

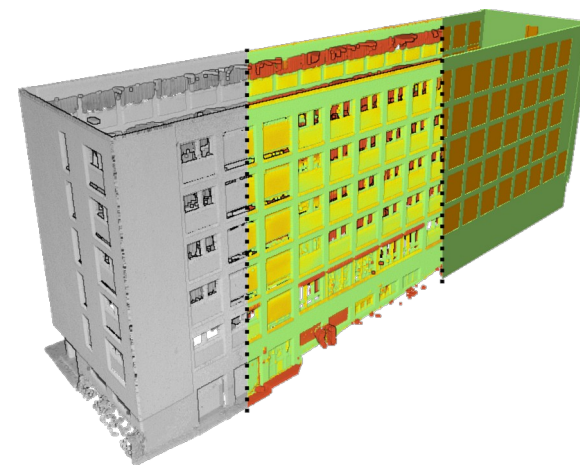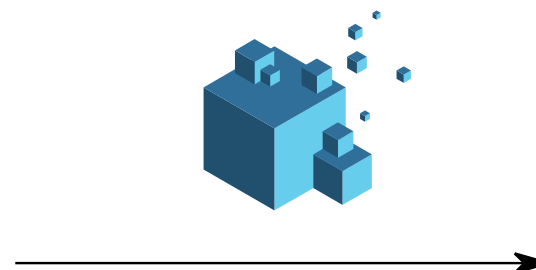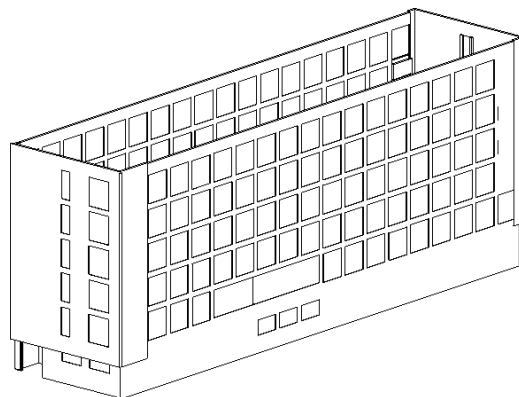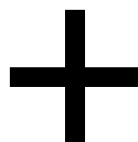✉ contact@norm3d.com   ☎ +33 (0)2 61 53 66 13

Solution for reliability checks on digital mock-ups

3D point cloud

Digital model

Quality control

E57
LAS / LAZ
RCP / RCS
PLY ...
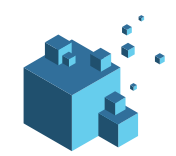
.IFC

E57
LAS / LAZ
RCP / RCS
PLY ...

.IFC

E57
RCS

.BCF

XLSX

Generation of .RCS files in the case of the input point cloud is in .RCS format

Solution for checking the reliability of digital mock-ups
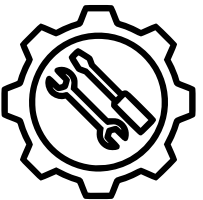
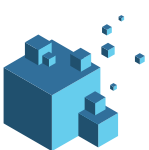Use case of the service **BIMAQ**:

Reliability control

Construction follow-up
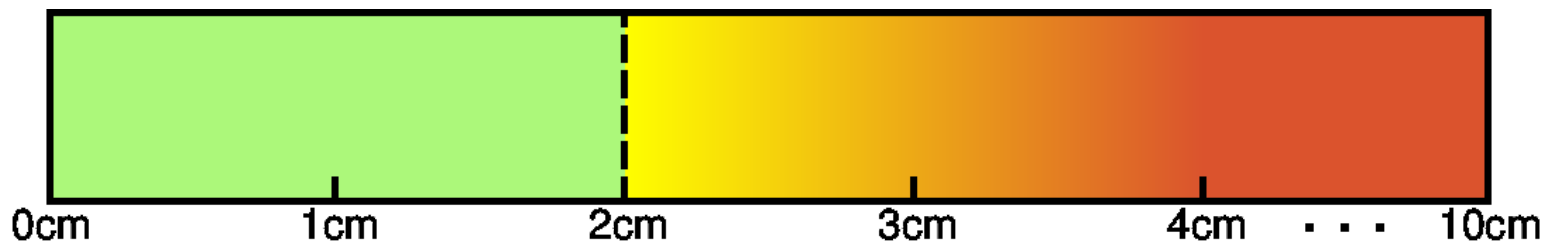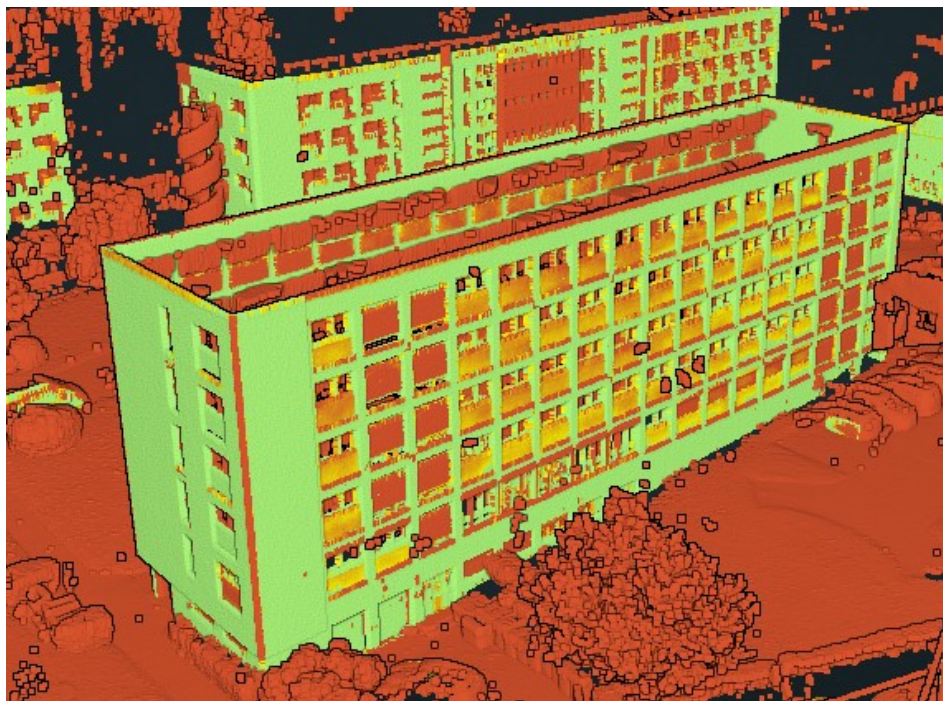
Digital model as built made easy
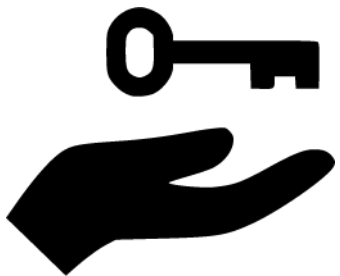
Identify areas to be updated

Reliability between the digital model and the point cloud is indicated by the coloring of the generated point cloud.

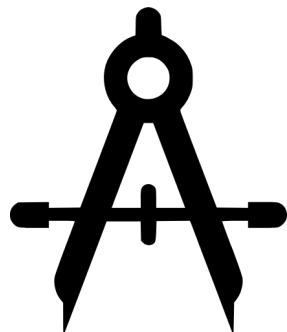0cm   1cm   2cm   3cm   4cm   · · ·   10cm

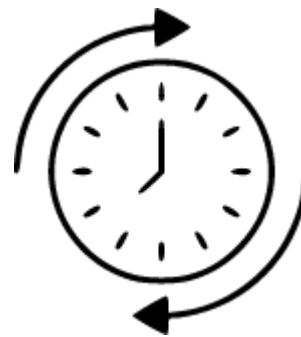# Solution for reliability checks on digital mock-ups

Easy adoption

Easy interpretation

Quick transformation

Comfort gain
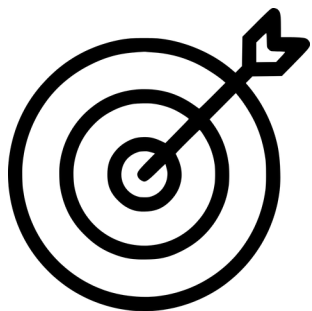
Targeted business

Interoperable
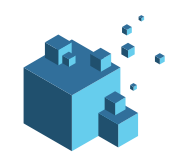
Boost ability to respond to projects

50% cost saving

Solution for reliability checks on digital mock-ups

Lifecycle analysis
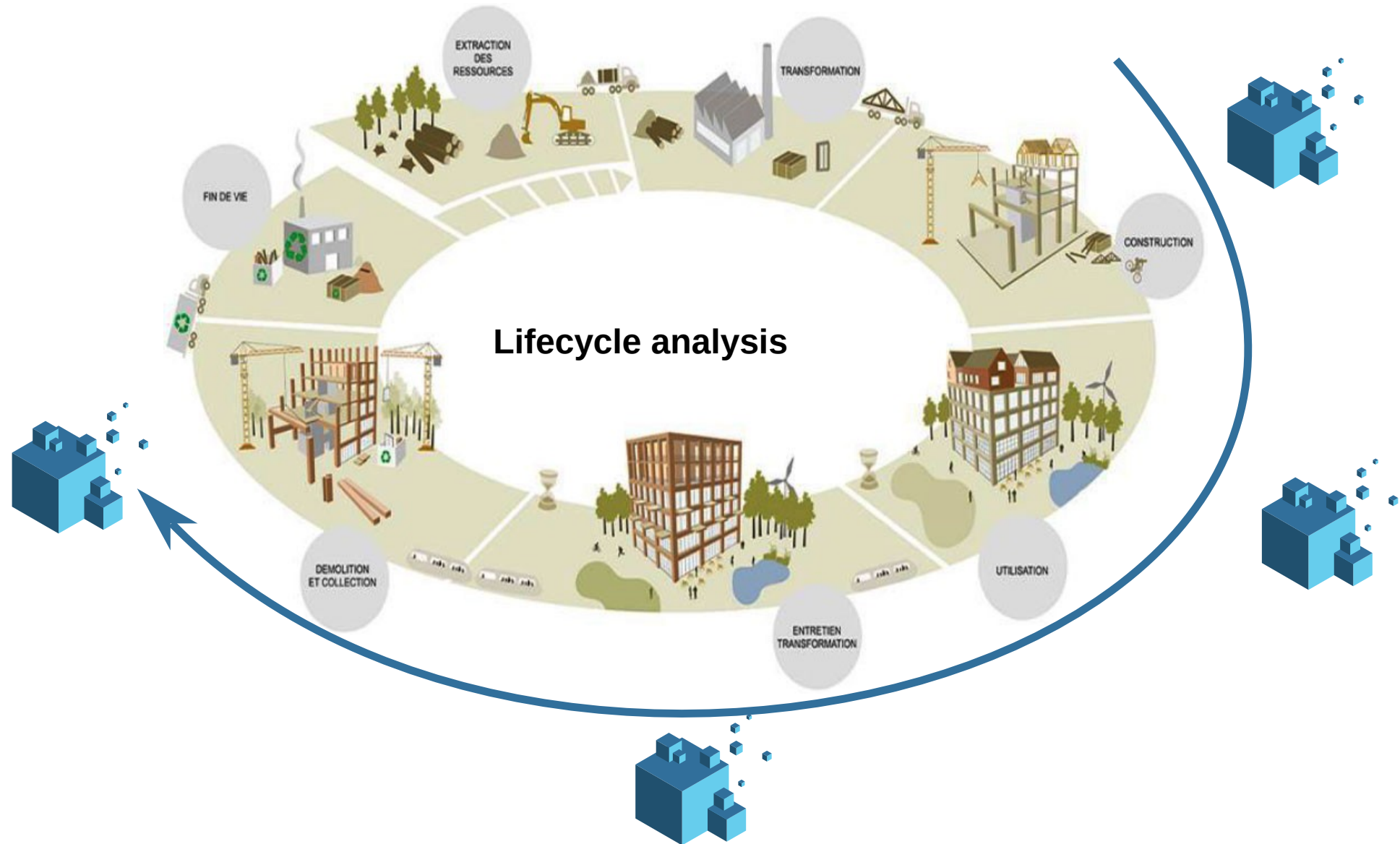
Solution for reliability checks on digital mock-ups

Example of results on a point cloud of an outdoor building:

Example of results on a point cloud of an indoor building:
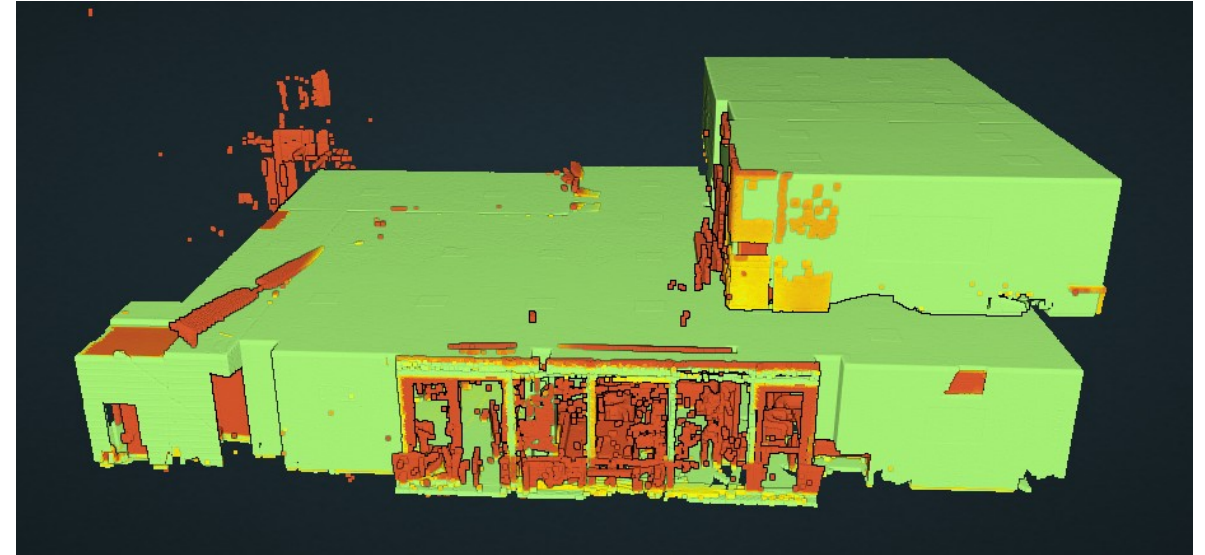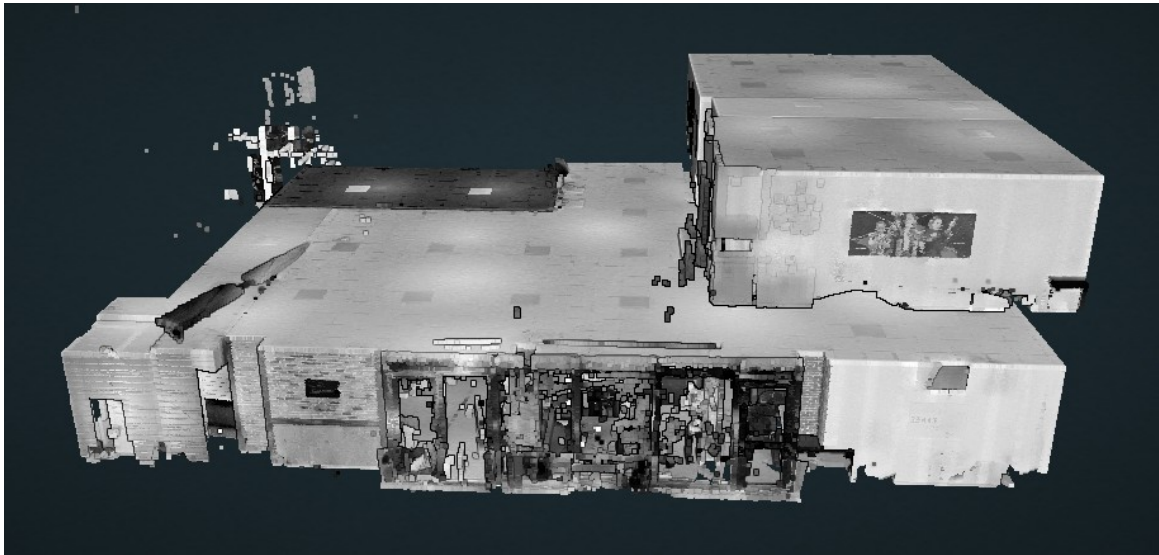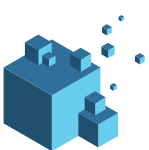
Example of a bridge point cloud result:
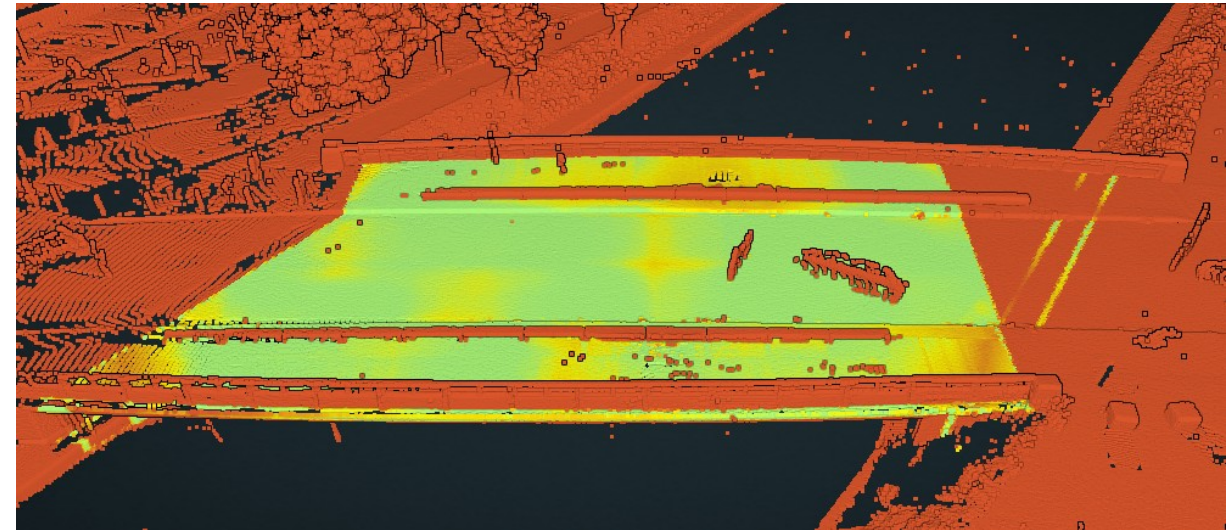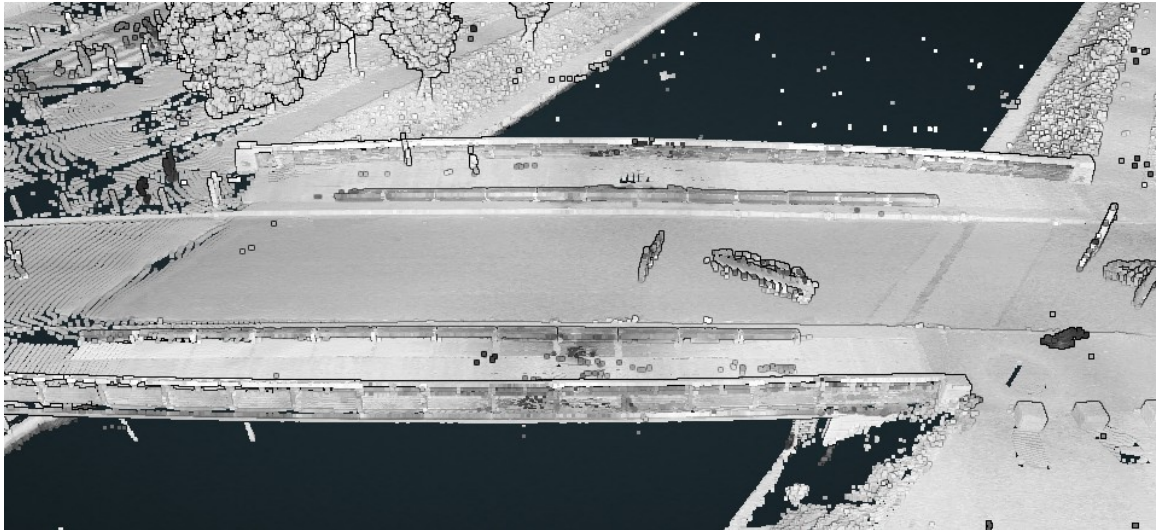
NORM3D platform authentication

Access the NORM3D platform via the following link:https://bim.norm3d.com/

To authenticate, click on the icon ⟶] or access the following link :https://bim.norm3d.com/login
Login

Enter your NORM3D account login and password, then click on the Login button.

Identifier

Password

Login
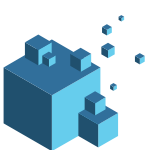
Launch NORM3D processing

Once authenticated, click on

Start processing via BIMAQ
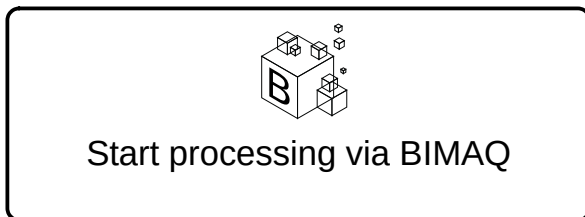
to start BIMAQ processing.

Click on

IFC file
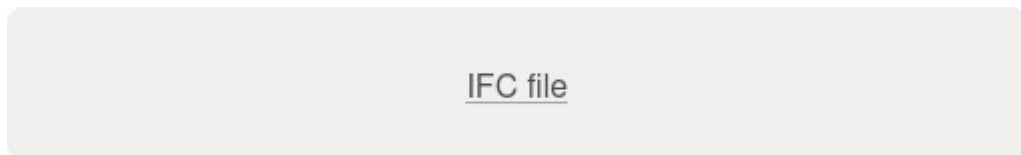
to indicate the reference IFC.

Click on
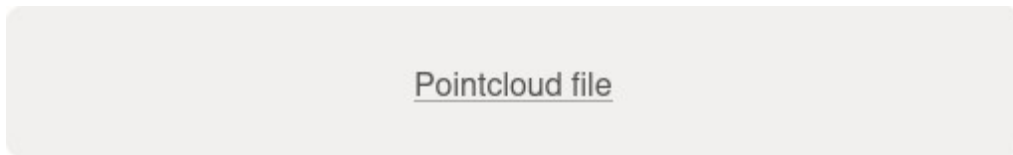
Pointcloud file

to specify the 3D point cloud to be analyzed.

As soon as the files have finished being uploaded, the following message appears:

Your processing is being launched. You will receive a summary email shortly.

New processing

Once processing has started, you'll receive an email notifying you that processing has begun.

Solution for reliability checks on digital mock-ups
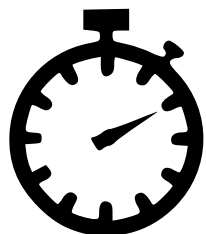
Processing time varies according to the number of points in the point cloud:

~ 15 min for 600 million points

~ 40 min for 2.2 billion points

Once processing has been completed, you'll receive an email notifying you that processing has been completed. The notification email contains URL links for :

E57

XLSX

View results   Download .E57   Download .BCF   Download .XLSX
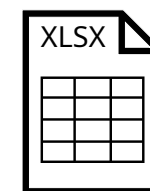
Find all processing results in your personal space:

Dashboard   ⟶   Processing list

View BIMAQ results for digital mock-up reliability

Display point cloud

Display digital model

Cut point cloud
or digital mock-up

Change rendering mode

Change rendering mode

Solution for reliability checks on digital mock-ups
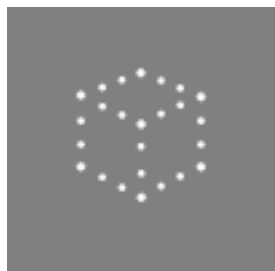
The point cloud display allows you to check the fidelity of the point cloud to the model, using the following color palette:

Element not present in

Element not aligned with model

Element aligned with model

Solution for reliability checks on digital mock-ups

Digital mock-up display for checking fidelity of model elements in relation to point clouds, with the following colorization :

Aligned — Elements aligned, geometric error < 2cm

Misaligned — Elements not aligned, geometrical error [2cm, 10cm].

No matching — Elements without correspondence with 3D point cloud, error > 10 cm
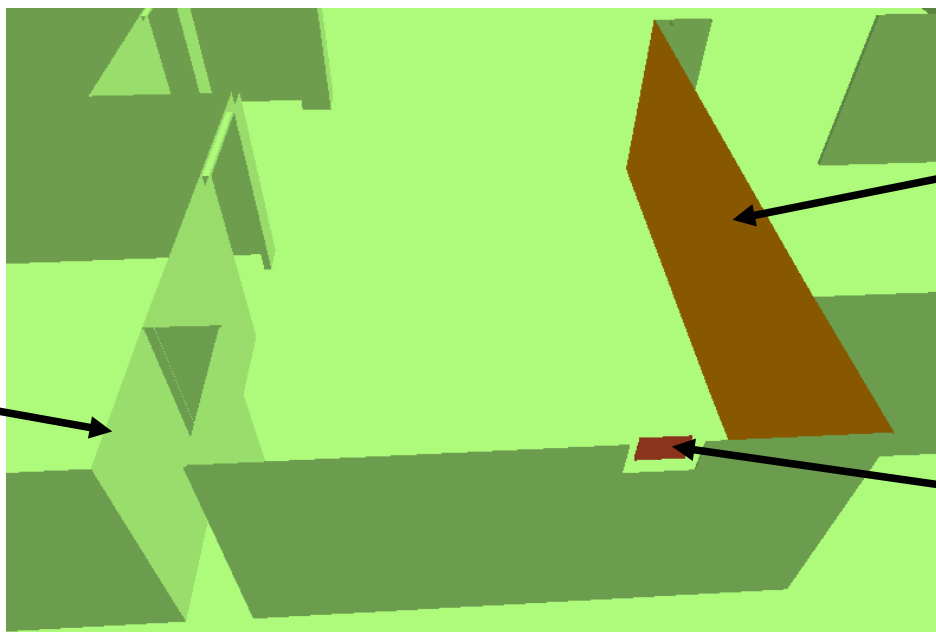
Solution for reliability checks on digital mock-ups

To display the 3D point cloud with its original colors, or the model colored according to the type of IFC elements, click on the following icon :

Solution for reliability checks on digital mock-ups

The color palette can be adjusted with the (+) and (-) buttons to vary the tolerance level.

2cm tolerance

3cm tolerance

Solution for reliability checks on digital mock-ups

To classify points into 2 categories (within or beyond tolerance), click on the binarization button.
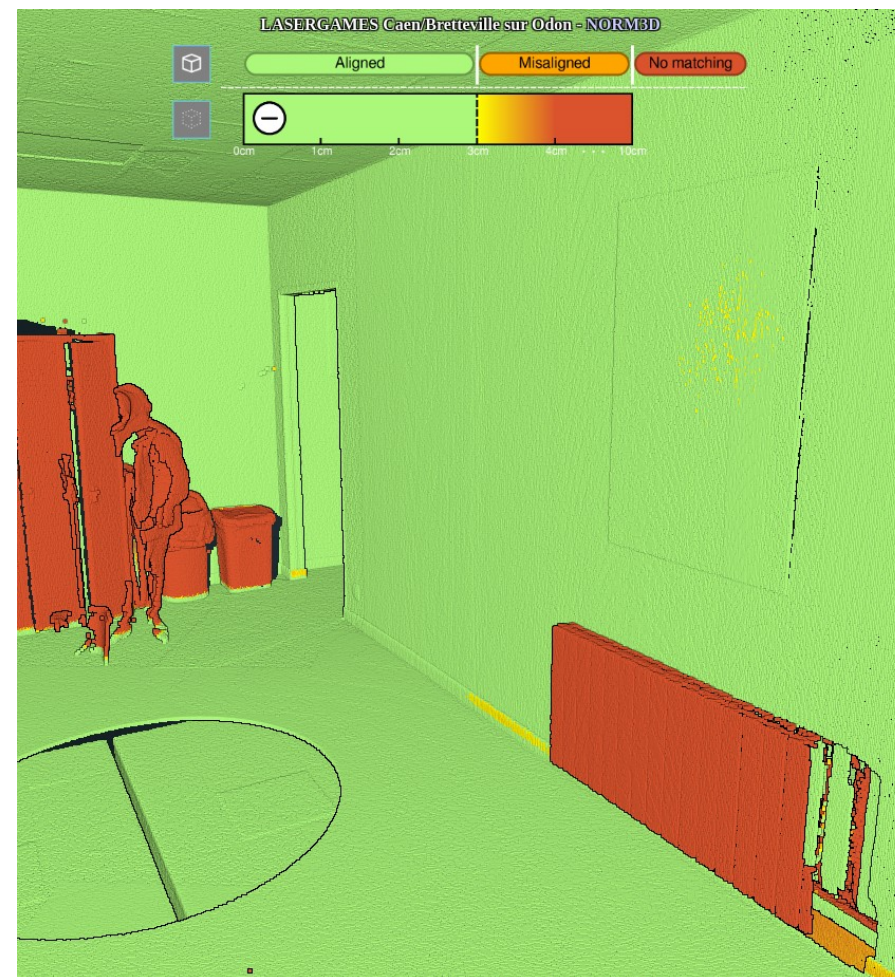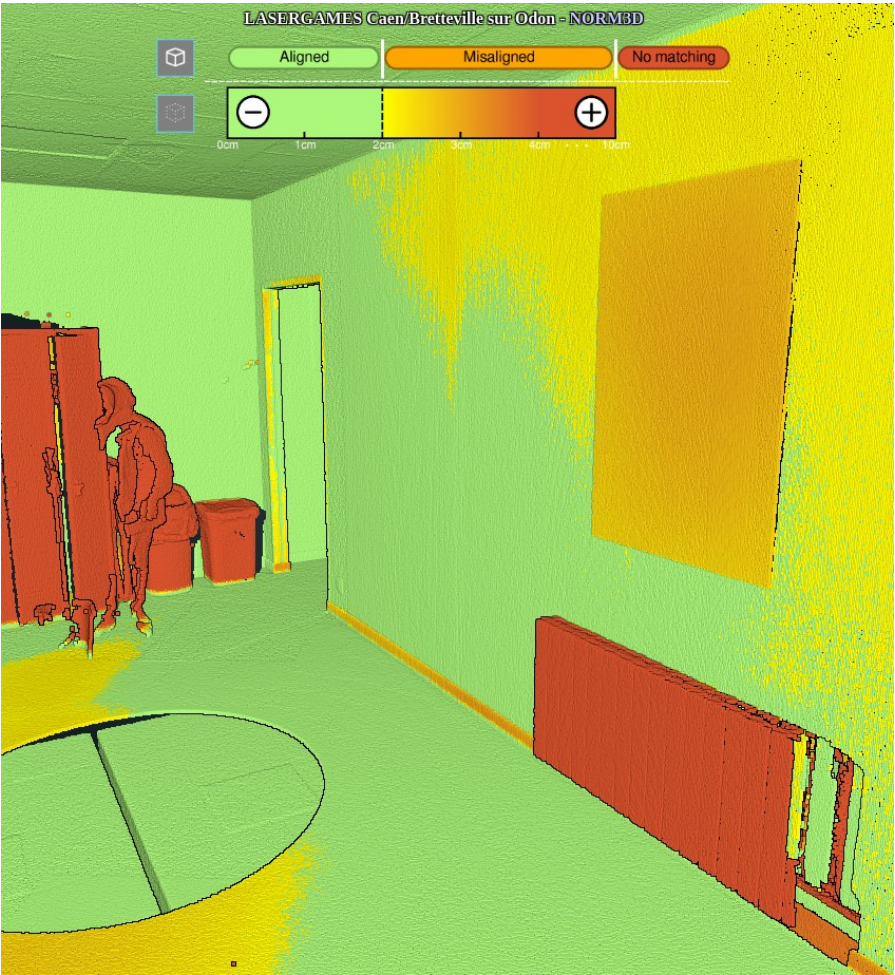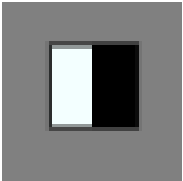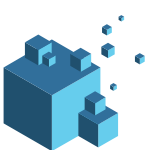

2cm tolerance
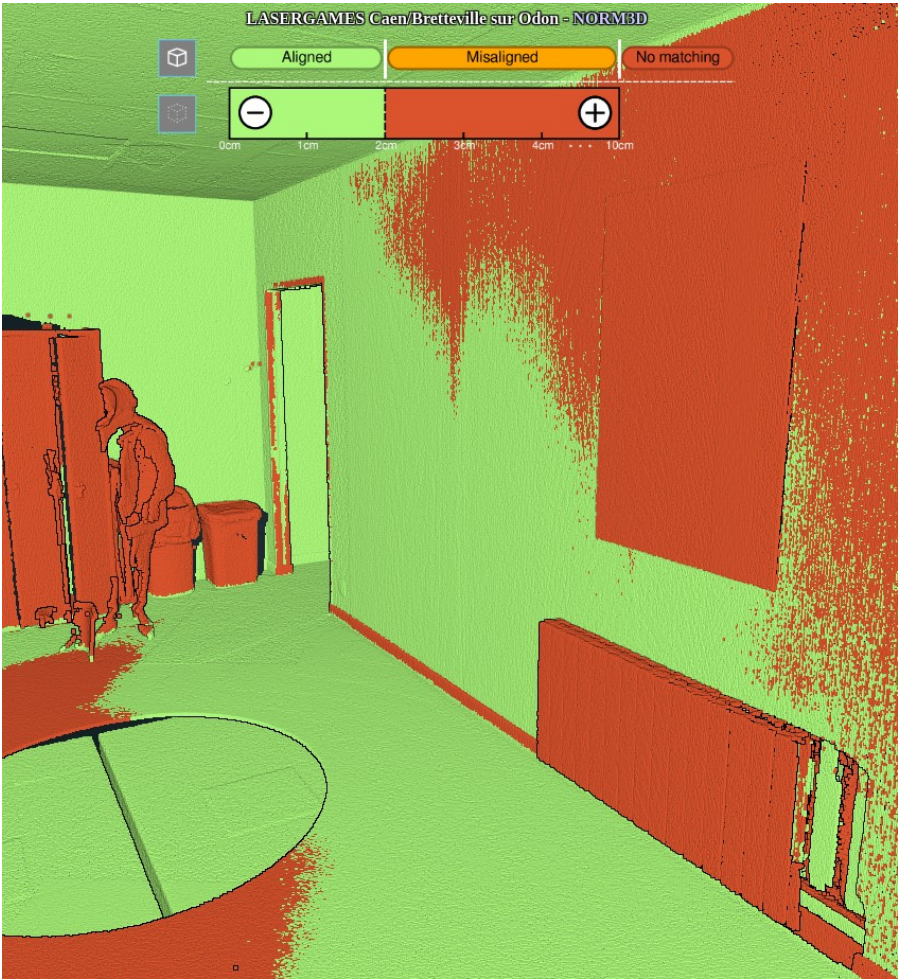
2cm tolerance with binarization

Solution for reliability checks on digital mock-ups

It is also possible to display the distance between the point cloud and the digital model. The coloring of the digital model indicates whether the points in the point cloud are in front (positive deviation) or behind the model (negative deviation).
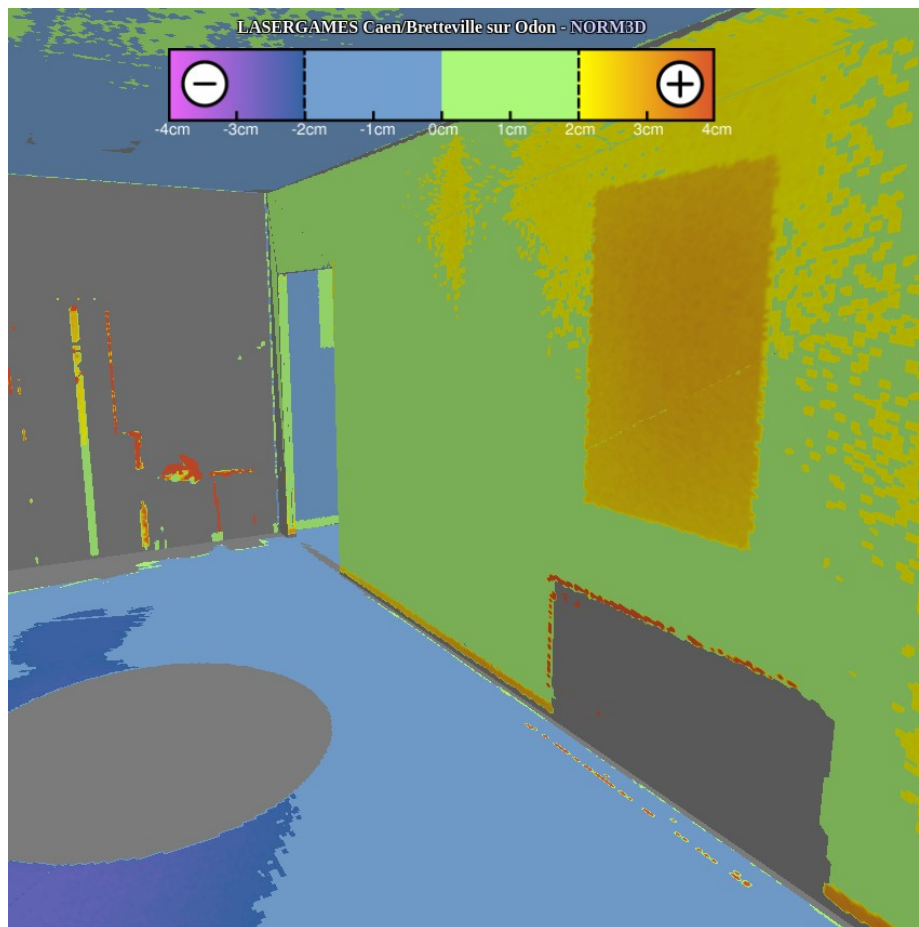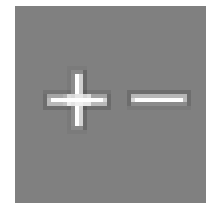
2cm tolerance

It is also possible to vary the tolerance with the (+) or (-) buttons, or to activate binarization with the button :

Solution for reliability checks on digital mock-ups

- BIMAQ generates a .BCF (BIM Collaborative Format) file to help track problem management within an IFC digital model.

- The following identified elements are included in the generated .BCF file:

Misaligned **No matching**

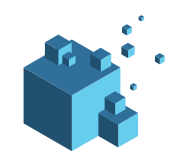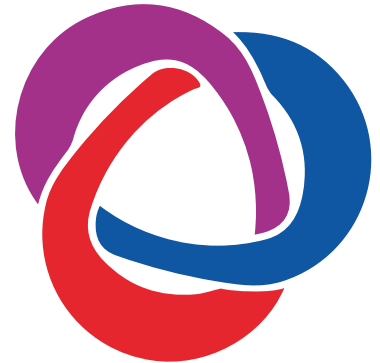- The elements identified as aligned are not included in the generated .BCF file.

Aligned

Solution for the reliability control of digital model

The button with the BCF icon allows to display the information contained in a .BCF, by distributing the information according to the classification of objects (Alined, Misaligned or No Matching).

IFC Category Filtering

Download .XLSX file

Download .IFC file

Download .BCF file

Identifier of the item in the IFC file

IFC Element GUID

Type of IFC element

IFC element mark (ID Revit)

Location of the IFC element. A click on the imaginette allows to teleport the viewer to the indicated location.

Deviation in cm of the IFC element

Misaligned (37)

	IFCTYPE	IFCID	GUID	TAG	ERR_CM
	IfcDoor	7470	0e_gF9PQ...	187488	5.5
	IfcWallStandardCase	5331	3Hg1fqG...	175099	5

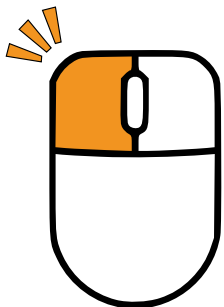Columns can be sorted by clicking on the ▲ ▼ icons.

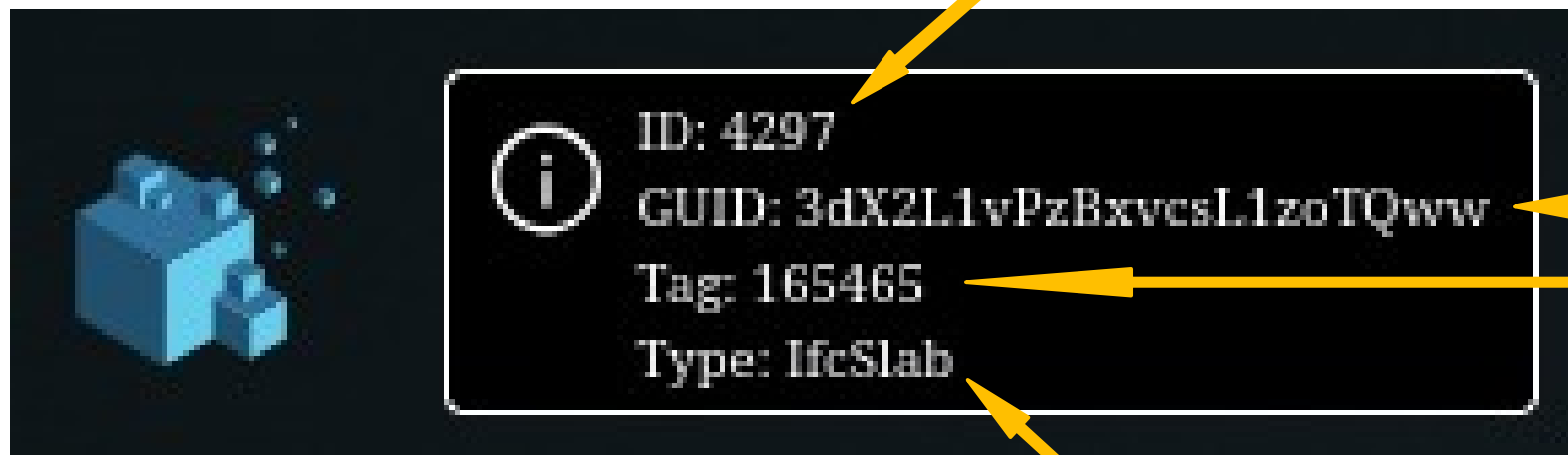Press Ctrl-f to search for an IFC element from its ID or Tag.

Solution for the reliability control of digital model

At any time, you can select an IFC item with the mouse click and find the information about the selected item in the information window at the top left.

Left mouse click to select an IFC element

Identifier of the item in the IFC file

ID: 4297
GUID: 3dX2L1vPzBxvcsL1zoTQww
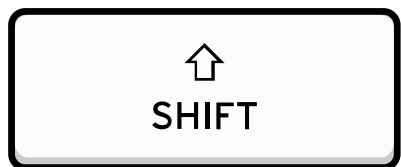Tag: 165465
Type: IfcSlab

IFC Element GUID

Tag associated with IFC element
(e.g. element ID in Autodesk Revit)
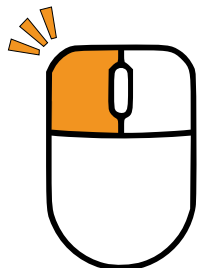
Type of IFC element

Solution for the reliability control of digital model

You can also select an IFC element by holding the Shift key and a mouse click to find the information about the selected item in the BCF information window
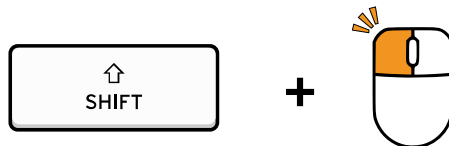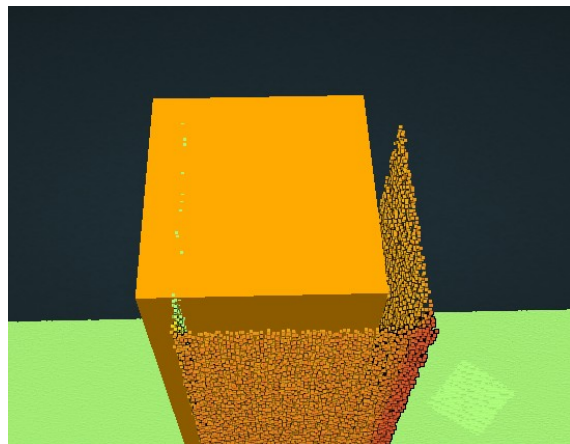
SHIFT + to find an IFC element in the BCF table

A flashing red rectangle indicates the selected IFC element

	IFCTYPE	IFCID	GUID	TAG	ERR_CM
	IfcDoor	7470	0e_gF9PQ...	187488	5.5
	IfcWallStandardCase	5331	3Hg1fqG...	175099	5

Misaligned (37)

Solution for the reliability control of digital model

Example correction scenario:

Tag: CAD Element ID
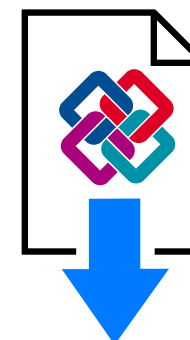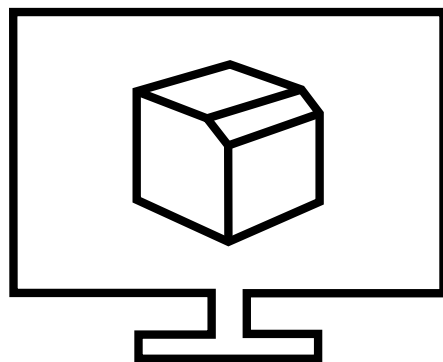
Export IFC

Solution for checking the reliability of digital mock-ups

Example of a correction scenario :

Export BCF

BCF collaborative tools

BIMcollab

SOLIBRI
A NEMETSCHEK COMPANY

usBIM.bcf

AUTODESK
REVIT

GRAPHISOFT
Archicad

ALLPLAN
A NEMETSCHEK COMPANY

www

Export IFC
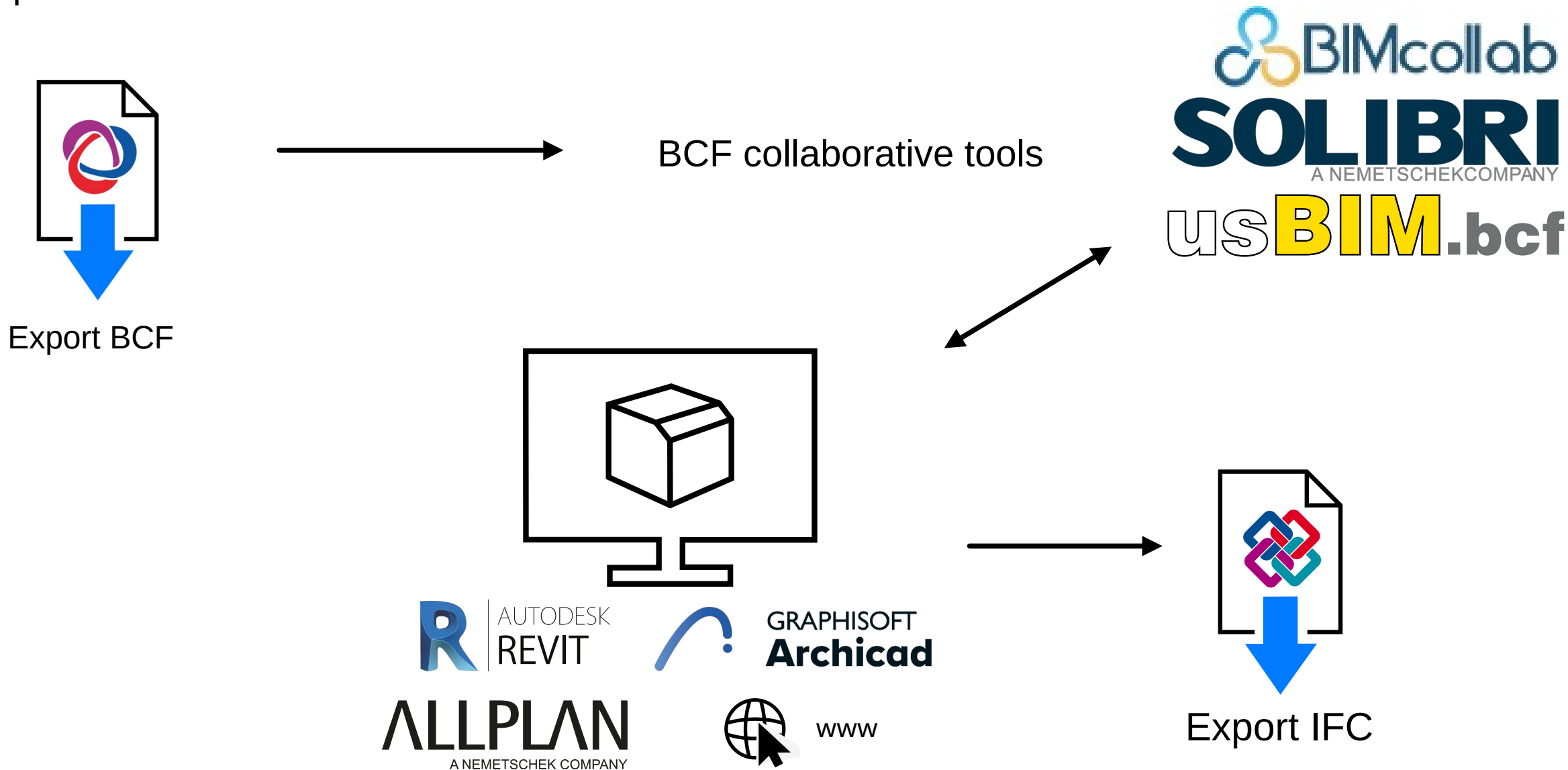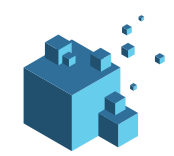
Solution for reliability checks on digital mock-ups

• NORM3D welcomes your recommendations, suggestions and experience sharing, so that we can best meet your expectations for a 3D data processing solution.
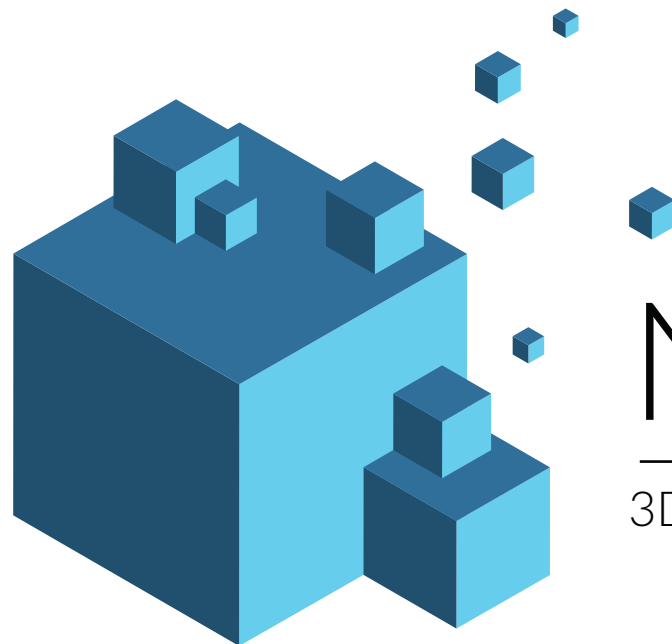
• You can reach NORM3D via the following channels:

✉ contact@norm3d.com

☎ +33 (0)2 61 53 66 13

NORM**3D**

3D DATA PROCESSING SERVICES

🌐 https://norm3d.com

in https://linkedin.com/company/norm3d
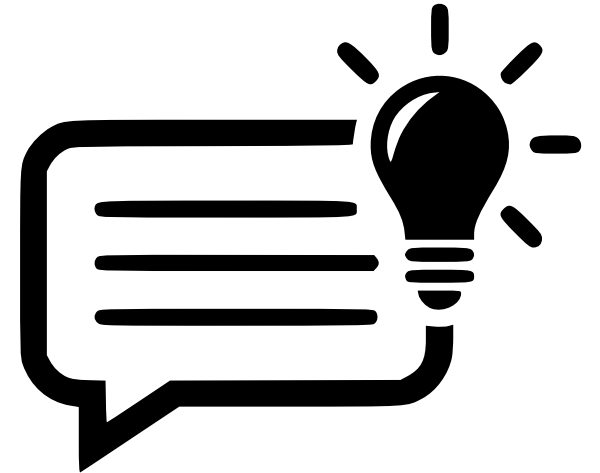
✉ contact@norm3d.com

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