

# Getting Plant Floor Data Under Control

An introduction to the Traceable 3D Solution

PMC

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ATS

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# Today's Agenda

- ▶ **Introductions – 5 minutes**
- ▶ **What is Traceable 3D – 10 minutes**
- ▶ **Benefits of Traceable 3D**
  - ▶ **Benefits in the Field – 15 minutes**
  - ▶ **Benefits in the Office – 15 minutes**
- ▶ **FARO Scan Data Management Roadmap- 15 minutes**

# PMC + ATS + FARO

The FARO logo is displayed in white, bold, sans-serif capital letters on a dark blue rectangular background.

**OEM**

- Scanning Hardware & Software Manufacture
- WebShare Developer

The ATS logo is displayed in red, bold, sans-serif capital letters with a slight 3D effect on a grey rectangular background.

**Extend**

- Manufacture of Traceable 3D
- Developer WebShare Extension

The PMC logo is displayed in blue, bold, italicized sans-serif capital letters on a white rectangular background.

**Local Support**

- North America Installer of Traceable 3D
- US WebShare Host

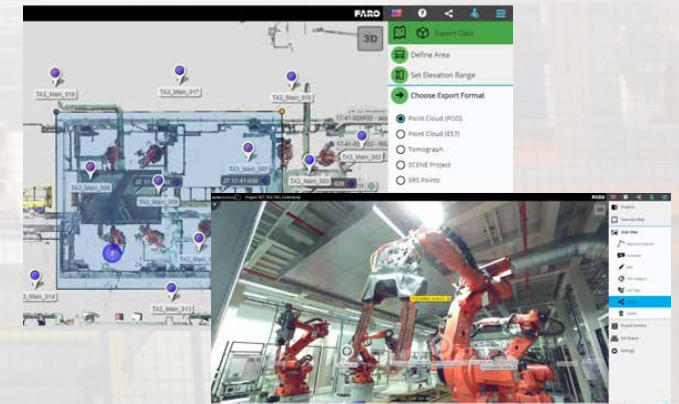
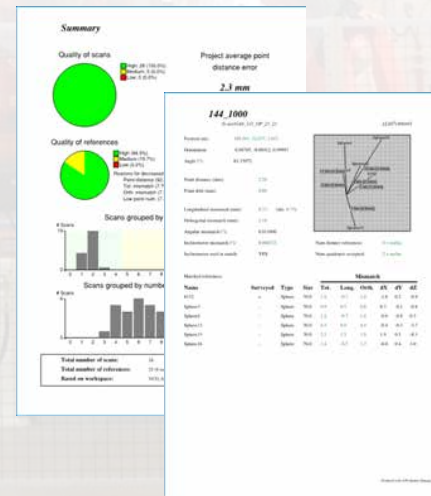
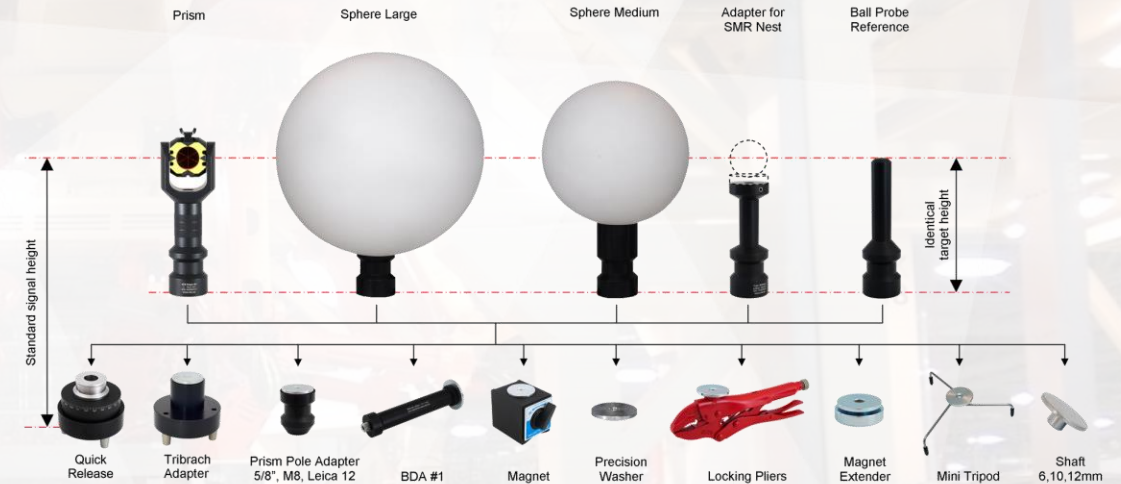
# What is Traceable 3D ?



# What is Traceable 3D ?

Traceable 3D provides four critical benefits:

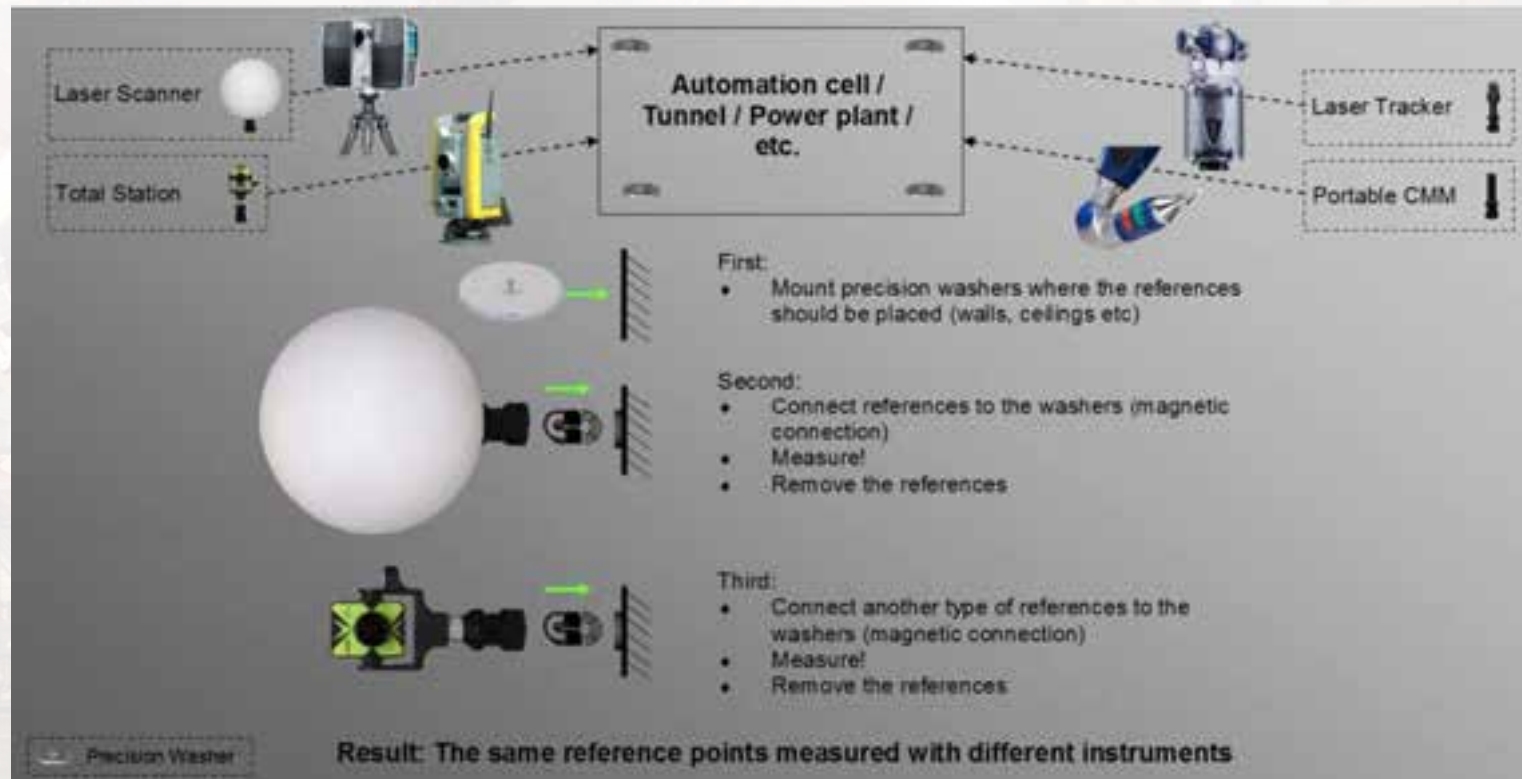
- ▶ Repeatable
  - ▶ Accurate
  - ▶ Provable
  - ▶ Accessible
- ▶ Hardware
  - ▶ Software



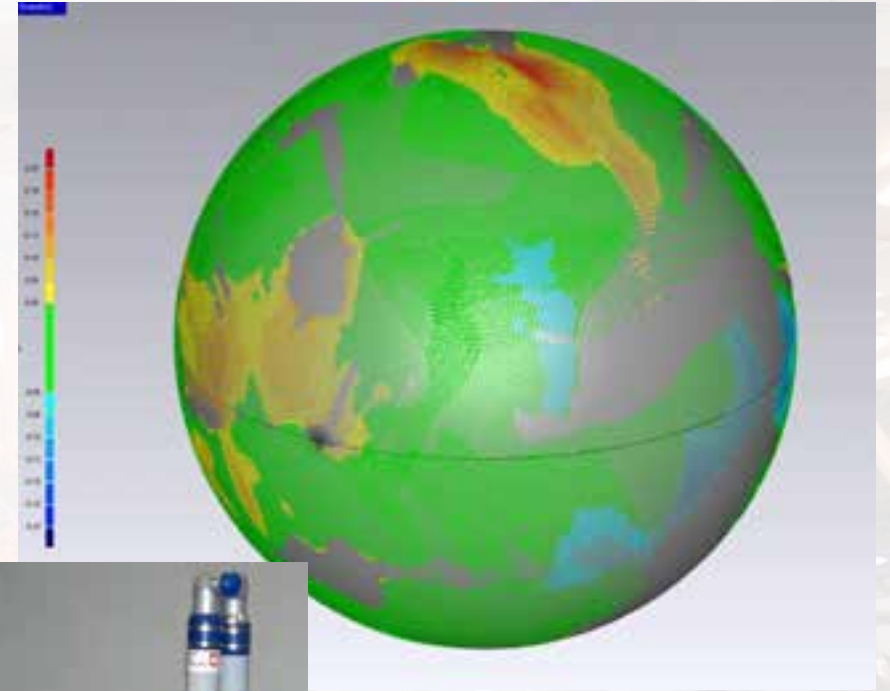
# What is Traceable 3D ?



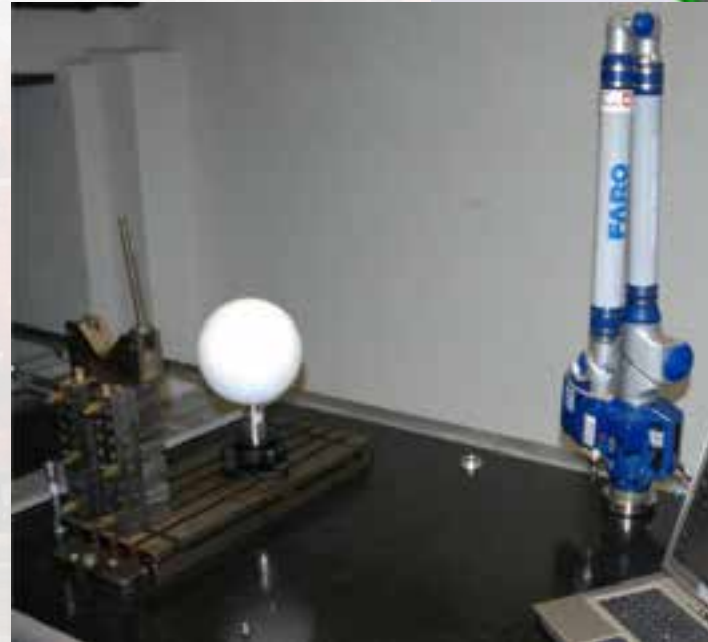
- ▶ Repeatable
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- ▶ Provable
- ▶ Accessible



# What is Traceable 3D ?

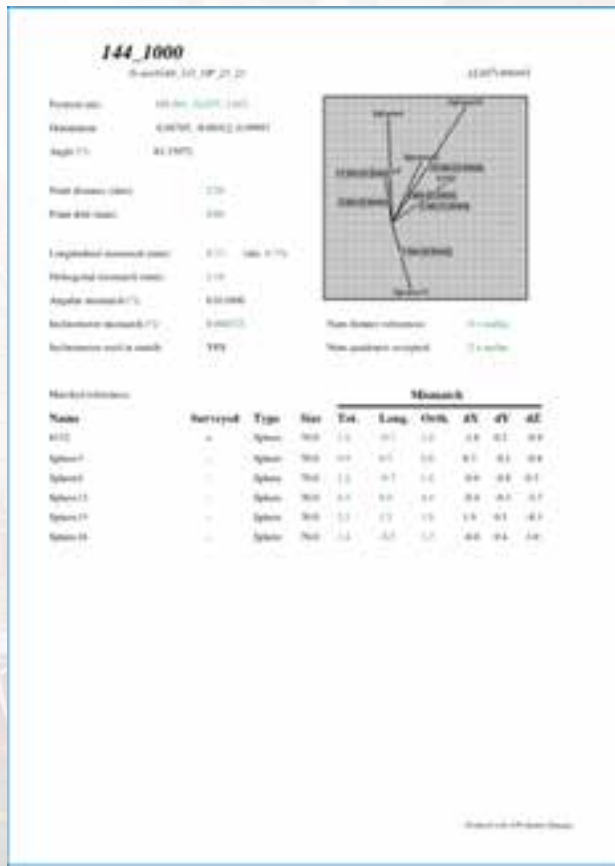
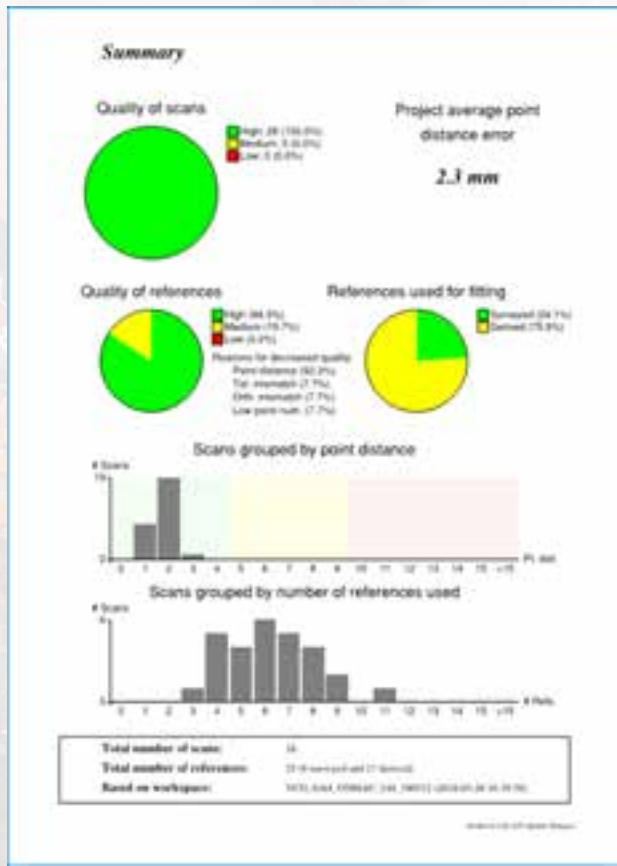


- ▶ Repeatable
- ▶ Accurate
- ▶ Provable
- ▶ Accessible



# What is Traceable 3D ?

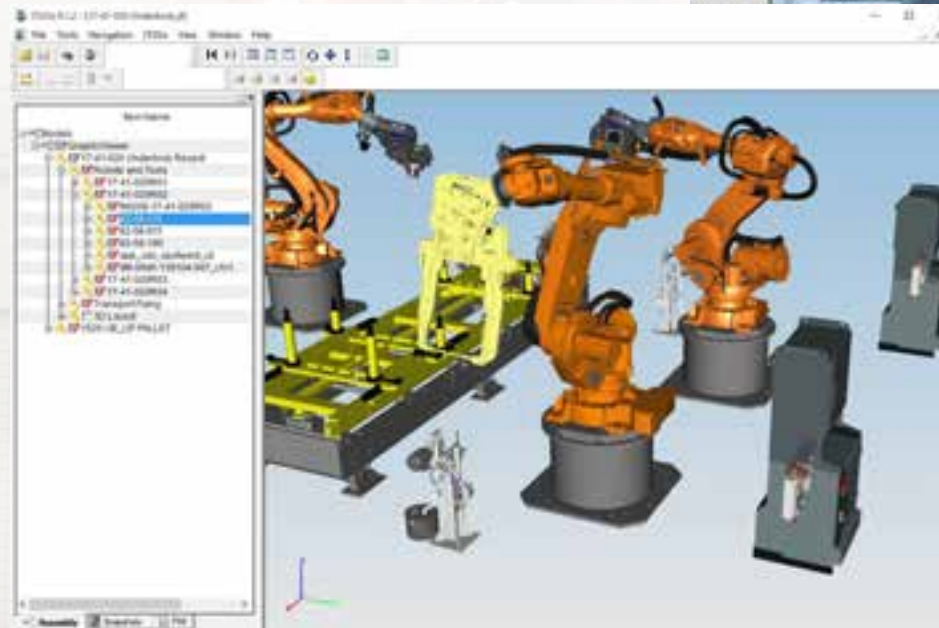
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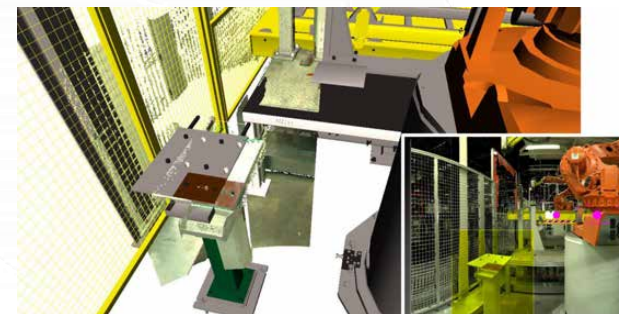
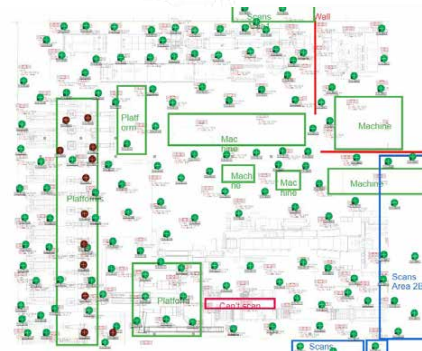
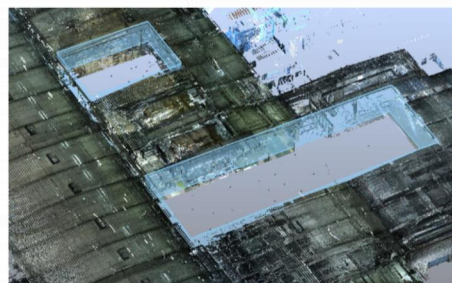
# What is Traceable 3D ?

- ▶ Repeatable
- ▶ Accurate
- ▶ Provable
- ▶ Accessible





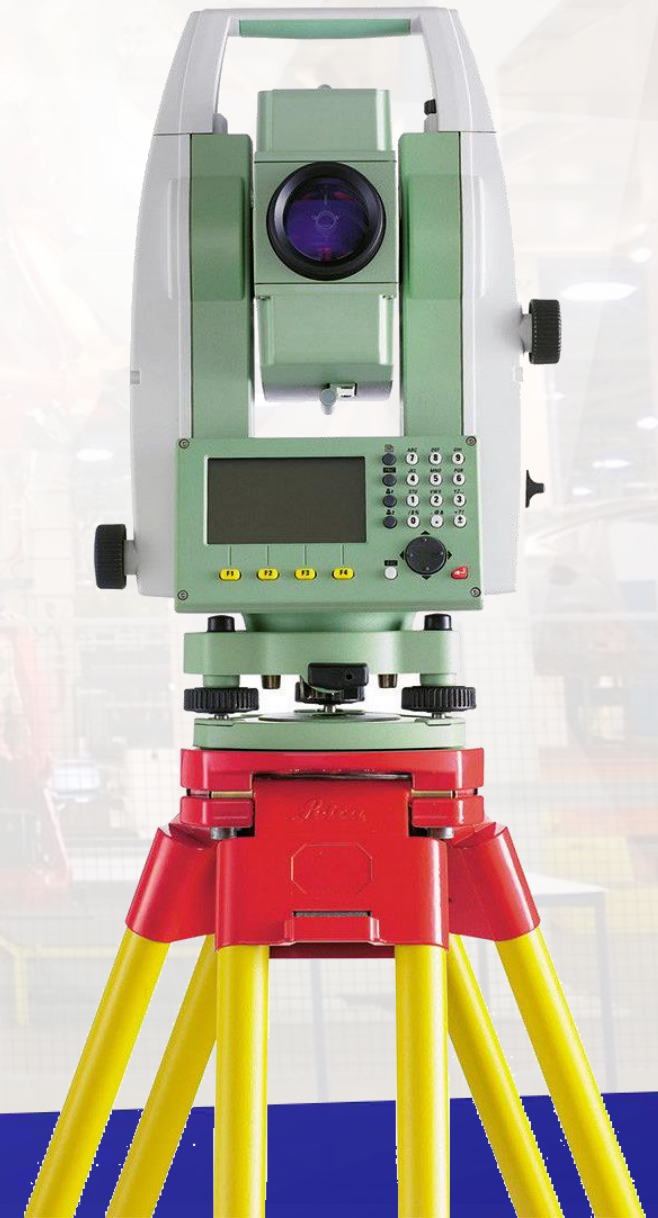
# Benefits in the Field



**PTMC**

# Eliminate repeated survey costs

- ▶ Large scanning projects require survey
- ▶ Survey distributes error over a greater distance providing much more accurate registrations
- ▶ Survey eliminates the need for costly master registrations



# Eliminate repeated survey costs

## Actual costs to complete surveys

- ▶ \$17,500 – Mexico (1.6m sq. ft.)
- ▶ \$47,100 – US (3.5m sq. ft.)

The ATS precision washer system makes this a one-time cost.

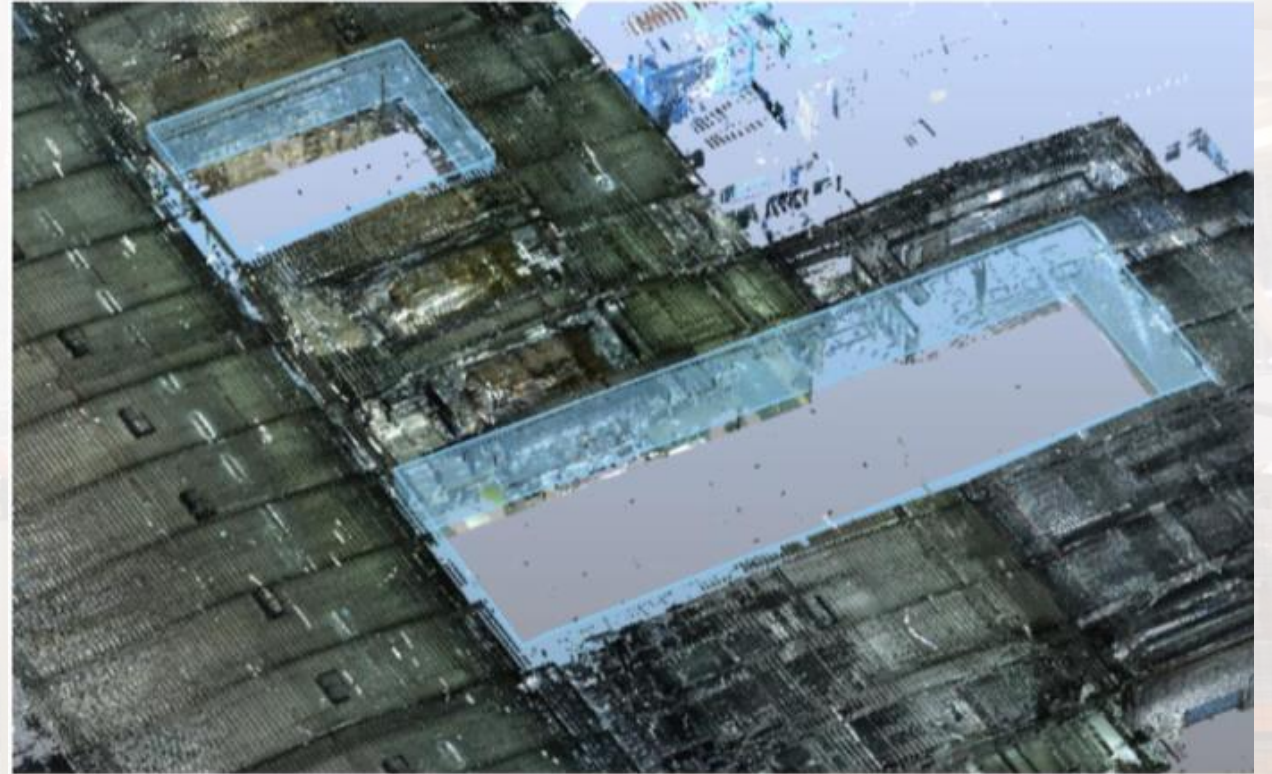
## Cost Savings

**\$15,000 to \$50,000 per major scanning project.**



# Partial Rescanning

- ▶ When doing follow up scanning it is almost impossible to align new scan data to old.
- ▶ In most cases a alignment accuracy measured in multiple inches (3" to 4") should be expected.
- ▶ This is a timely and difficult process with huge datasets.

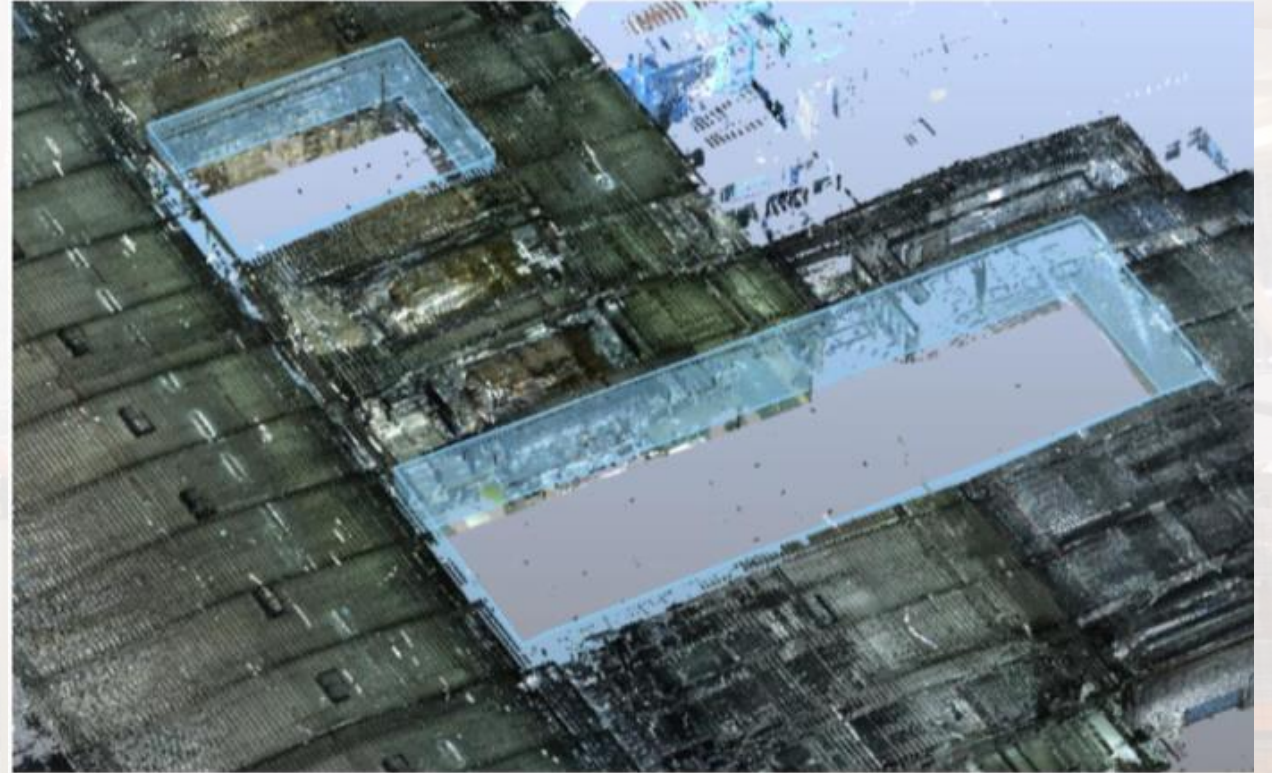


# Partial Rescanning

- ▶ With the ATS system you can accurately insert new partial data with millimeter accuracy with as little as 3 washers visible in the new dataset.

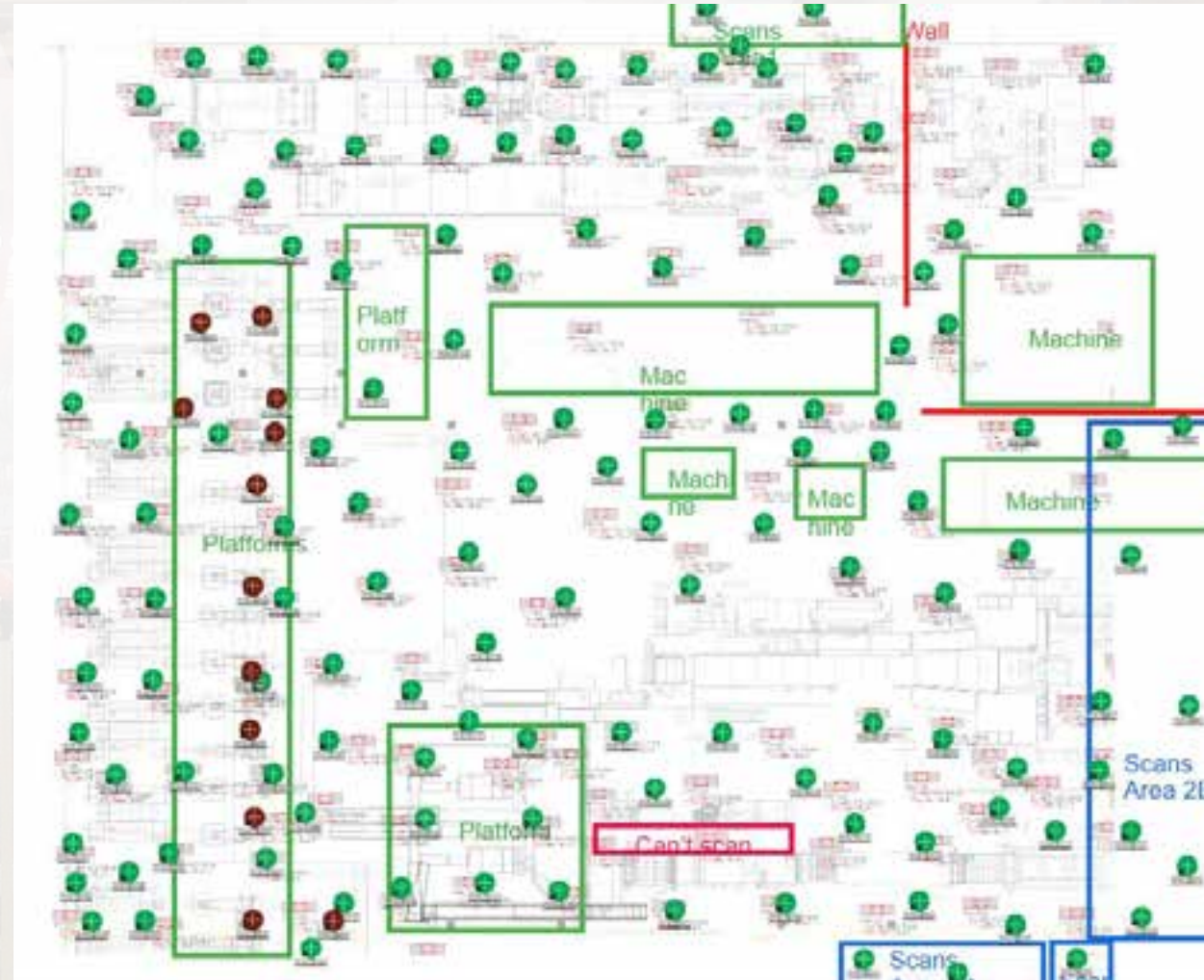
## Cost Savings

- ▶ Area shown would require 40 fewer hours.
- ▶ At \$65 per hour for a scanner technician charge rate that is \$2,600 per small project.



## Reduce number of scans

- ▶ An analysis of factory scan data shows that approx. 12% of all scans are done to establish alignment of the scan data to the building.
- ▶ Extra scans also account for 12% of the hours leading to a need of more access time for the scan team.
- ▶ These scans can be mostly eliminated with the Traceable 3D system.

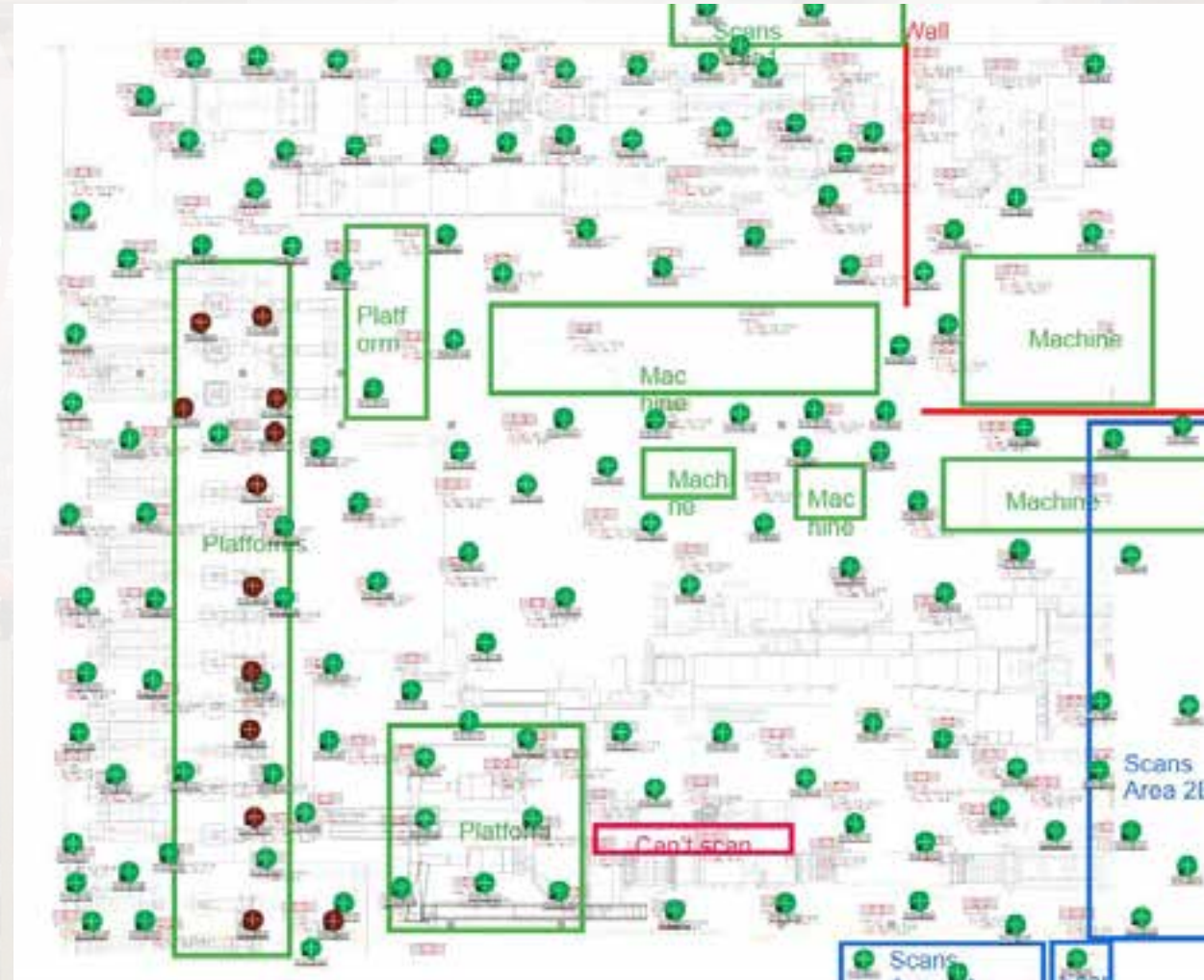


# Reduce number of scans

- ▶ By reducing the number of scans required for alignment you can save both time and money.

## Cost Savings

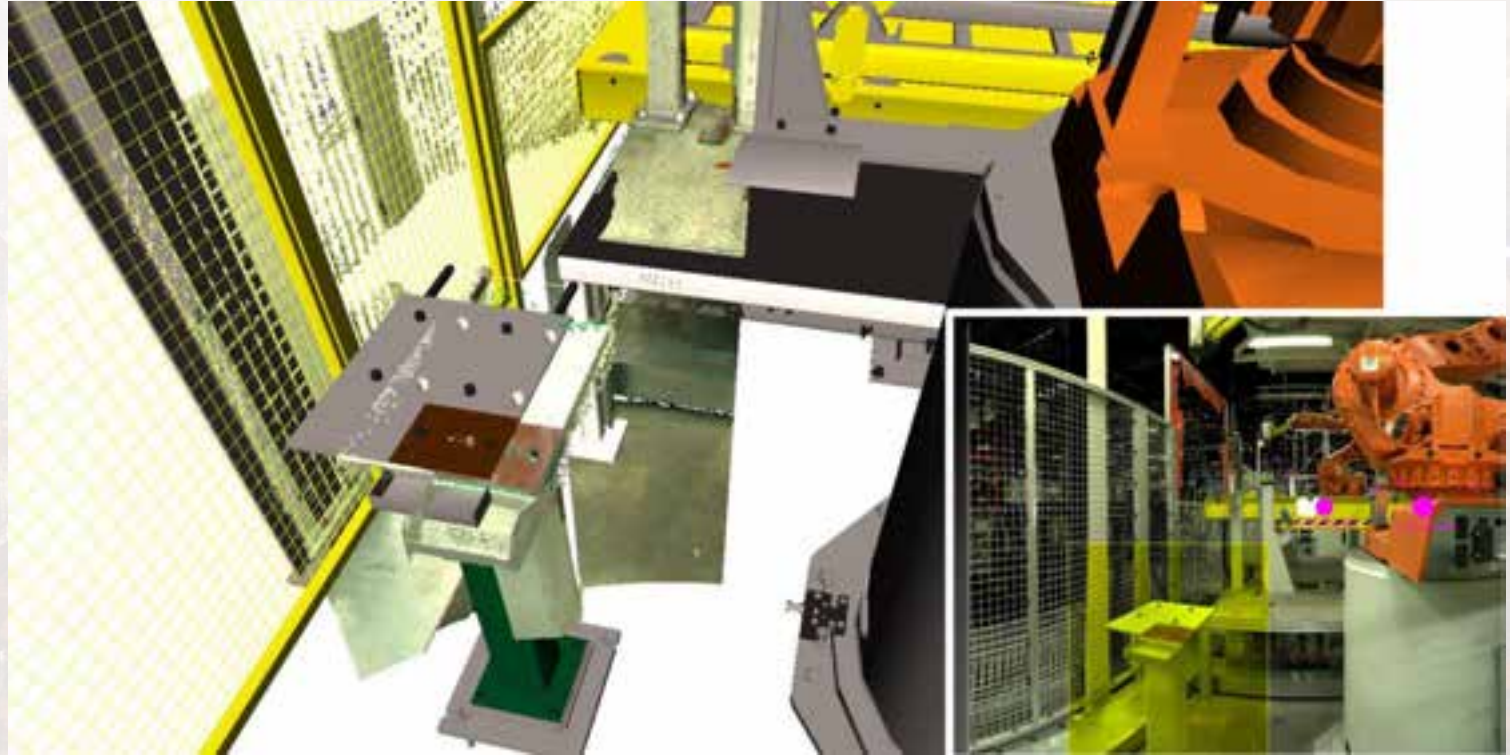
- ▶ On a \$65,000 scan project alignment scanning accounts for \$5,200 to \$7,800 in cost.
- ▶ 1-2 days less time on-site for scanning / survey crew.



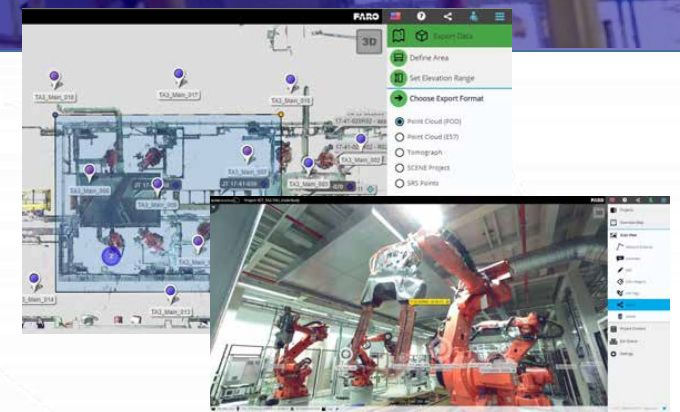
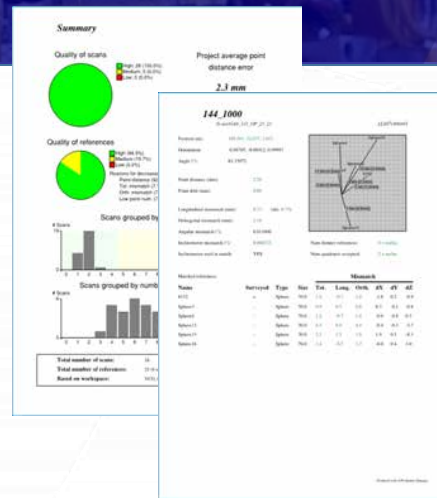


# Pushing out to Construction

- ▶ Millions of dollars are wasted every year by having inconstant or a lack of benchmarks for use in construction.
- ▶ The largest savings is also the hardest to put a fixed number to.

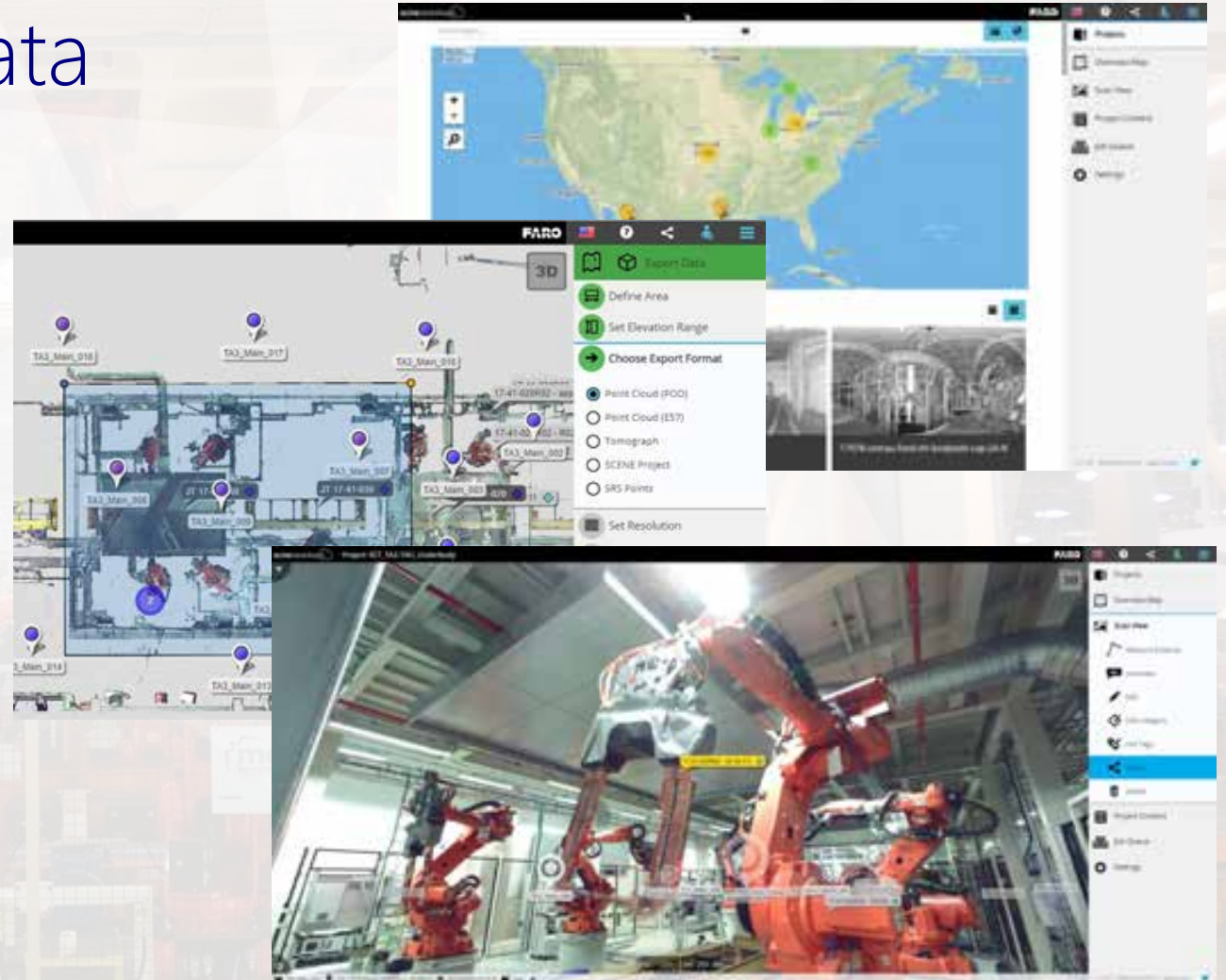


# Benefits in the Office



# Engineers searching for data

- ▶ Multiple studies show that Engineers are spending 2.5 hours per day searching for information...
- ▶ Making reality data easy to find can make a significant dent in this number.



# Engineers searching for data

## Cost Savings

- ▶ Assuming 1,000 knowledge workers x 2.5 hours/day searching on average wastes \$48,000 per week, or nearly \$2.5 million per year



# Reduced Travel

- ▶ Making scan data accessible to a project team will reduce the need to travel to the site.
- ▶ Since most employees prefer not to travel simply making data accessible will organically reduce travel cost significantly.



# Reduced Travel

- ▶ On typical major projects 100s of trips to the site are made by employees and suppliers.

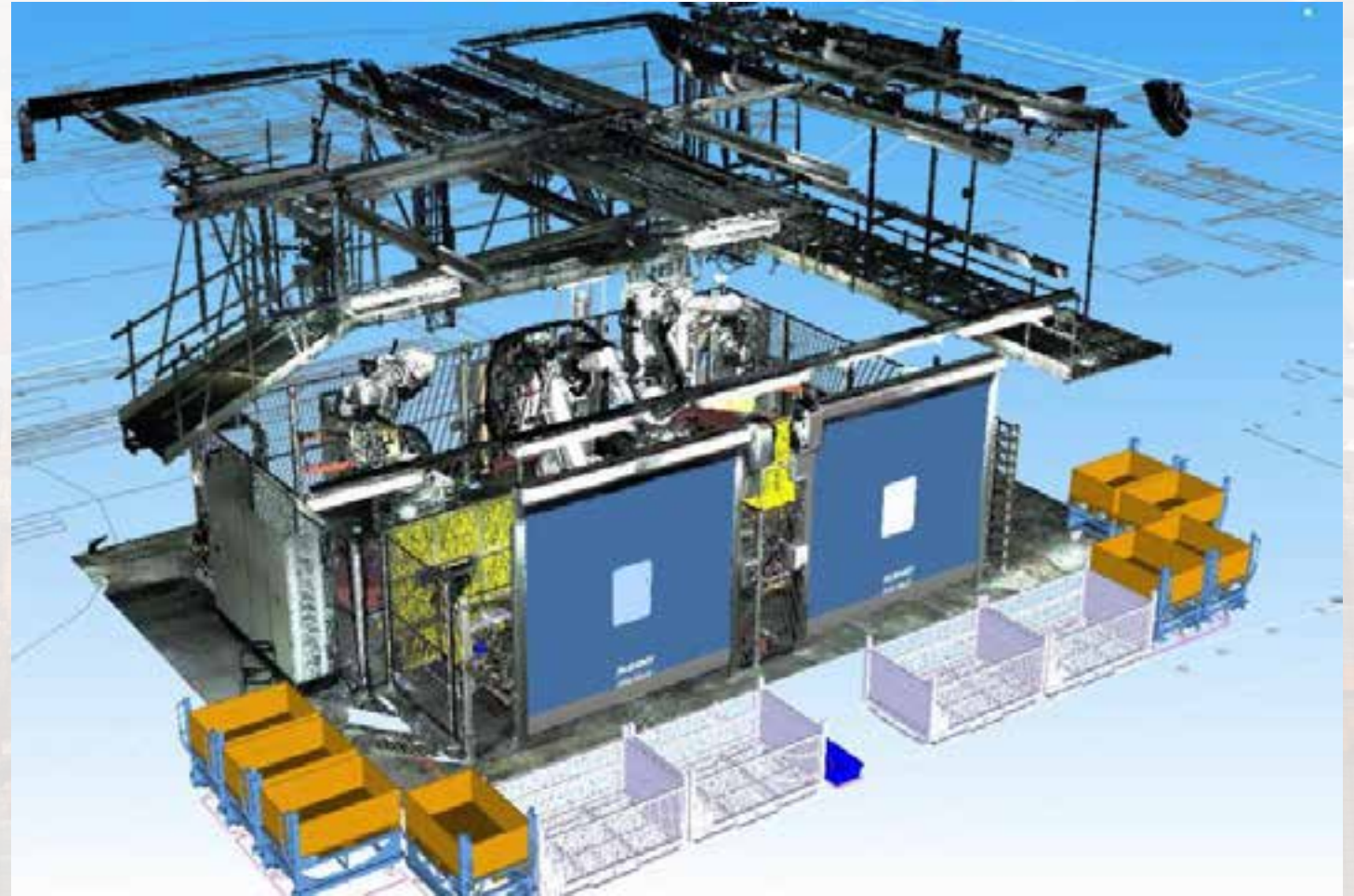
## Cost Savings

- ▶ A single 2 day trip to a plant in Illinois cost \$2,641.
- ▶ Even a 10% reduction in travel can account for millions in savings.



# Improved Supplier Communication

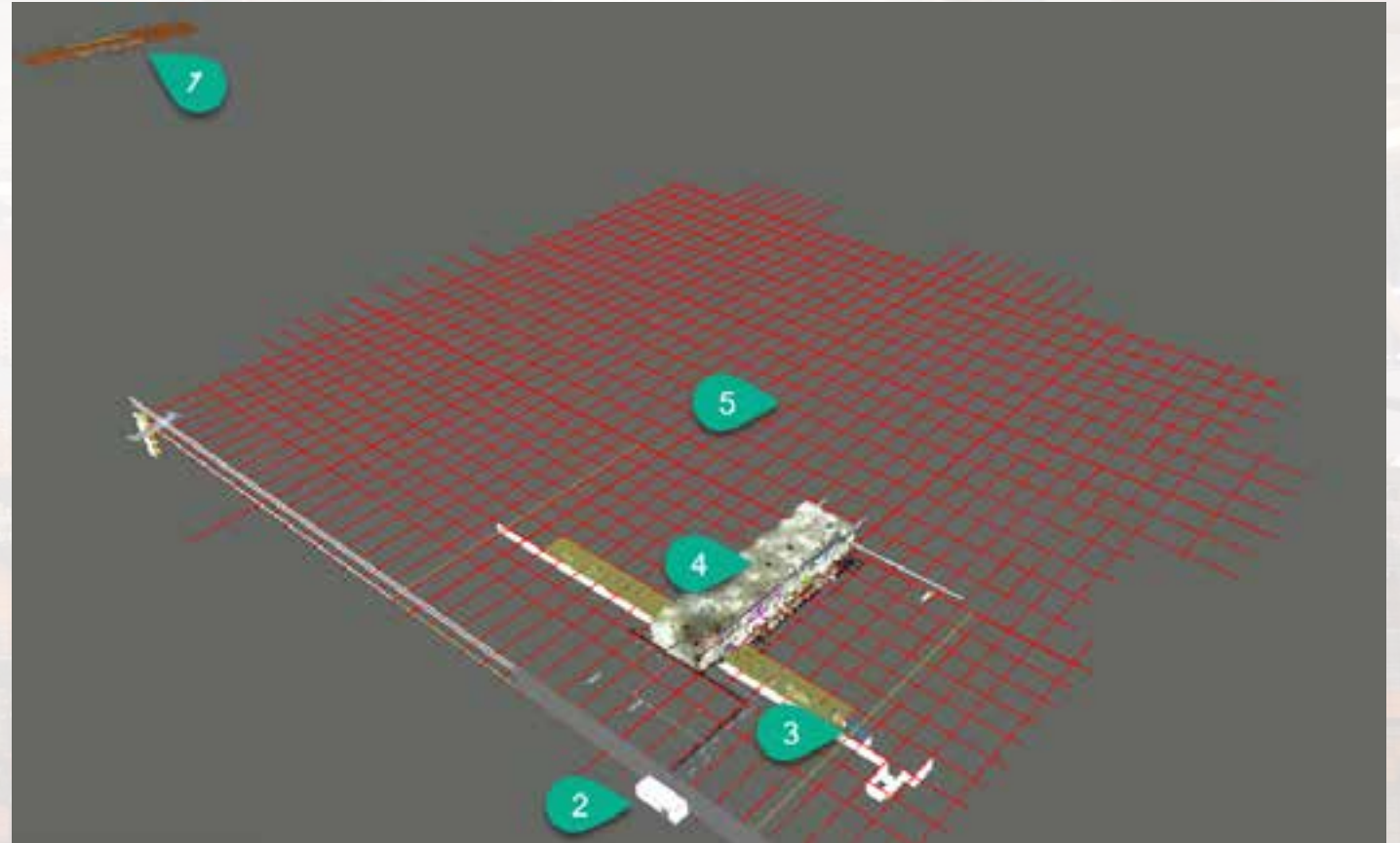
- ▶ Your supply base wants clear direction on plant alignment.
- ▶ The lack of clear alignment has severe negative impacts on project performance.



# Improved Supplier Communication

1. Structural Steel model
2. Press model
3. Building model
4. Scan aligned to grid
5. AutoCAD plant grid

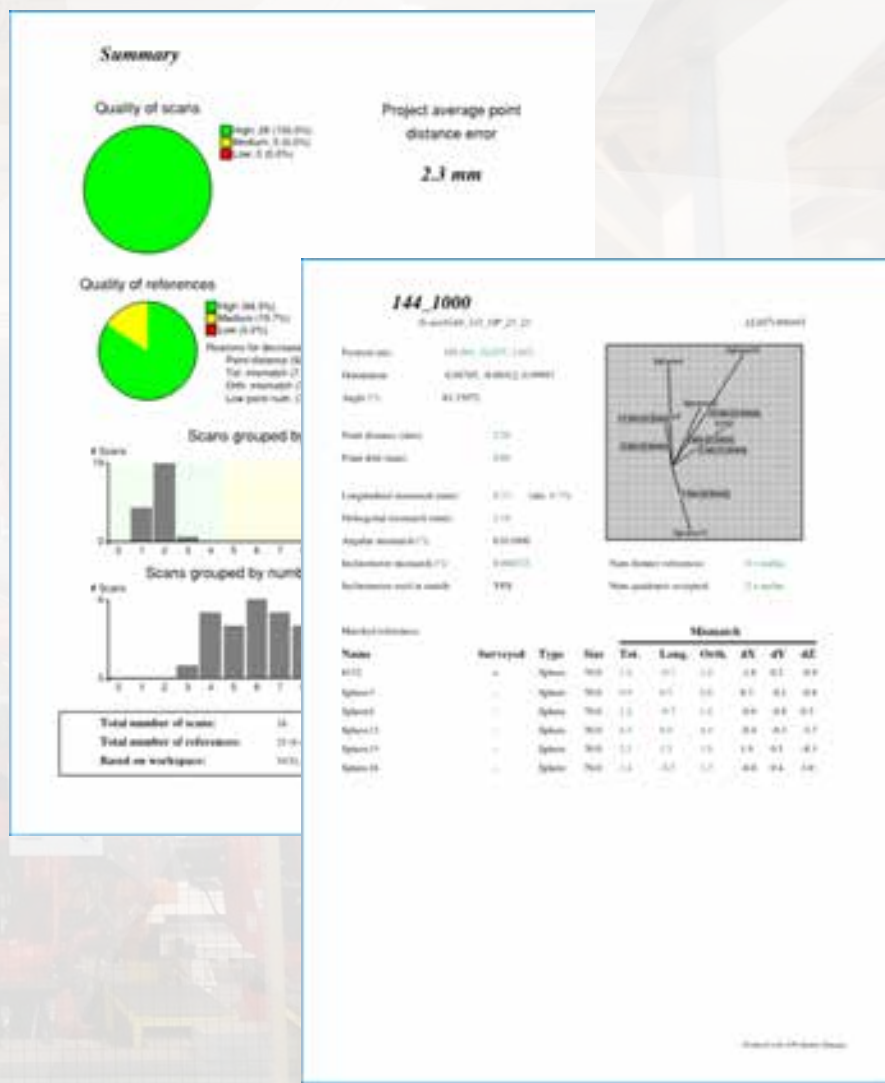
No data is aligned making coordination almost impossible.





# Provable accuracy

- ▶ When subcontracting work, how do you know delivered data is accurate and error free?
- ▶ A late discovery of errors on a 500,000 sq. ft. project took **11 days to correct** leading to a project delay.





# Q&A