Webinar
The 3 Keys to Effective 3D Scan-based Inspection
About 3D Systems Geomagic

The #1 3D scanning software maker
Find the Right Hardware
Choosing the right 3D scanner can be daunting.

**Structured Light**
- Stationary area scanners
- Robot-mounted area scanners
- Self-tracked scanners

**Laser Triangulation**
- Area scanners
- Portable CMM arm scanners
- Self tracked scanners
- Laser or optical CMM tracked scanners
- Stationary CMM scanners

**Medium & Long-Range**
- Phase-shift scanners
- Time-of-flight scanners

**Industrial CT**
- Computed tomography 3D reconstruction
When you get it right...
You will transform your business
## Structured-light 3D Scanners

<table>
<thead>
<tr>
<th>Ideal scan object size</th>
<th>Accuracy</th>
<th>Speed</th>
<th>Portability</th>
<th>Unattended Operation</th>
<th>Low Cost</th>
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<tbody>
<tr>
<td><strong>Small</strong></td>
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<td>longest dimension &lt;25 cm/10 in</td>
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<td>longest dimension &lt;1 m/3 ft</td>
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<td>longest dimension &gt;1 m/3 ft</td>
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<td>⬤</td>
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</tbody>
</table>

- **Stationary area structured light scanners**
  - Accuracy: ⬤
  - Speed: ⬤
  - Portability: ⬤
  - Unattended Operation: ⬤
  - Low Cost: ⬤

- **Robot-mounted area structured light scanners**
  - Accuracy: ⬤
  - Speed: ⬤
  - Portability: ⬤
  - Unattended Operation: ⬤
  - Low Cost: ⬤

- **Self-tracked structured light scanners**
  - Accuracy: ⬤
  - Speed: ⬤
  - Portability: ⬤
  - Unattended Operation: ⬤
  - Low Cost: ⬤
### Laser-triangulation 3D Scanners

<table>
<thead>
<tr>
<th>Ideal scan object size</th>
<th>Stationary area laser scanners</th>
<th>Portable CMM arm laser scanners</th>
<th>Self-tracked laser scanners</th>
<th>Laser or optically tracked CMM laser scanners</th>
<th>Stationary CMM laser scanners</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Small longest dimension &lt;25 cm/10 in</td>
<td>Medium longest dimension &lt;1 m/3 ft</td>
<td>Large longest dimension &gt;1 m/3 ft</td>
<td>Accuracy</td>
<td>Speed</td>
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<tr>
<td></td>
<td>Portable CMM arm laser scanners</td>
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<td></td>
<td>Self-tracked laser scanners</td>
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<td>Laser or optically tracked CMM laser scanners</td>
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<td>Stationary CMM laser scanners</td>
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* Not applicable
## Medium and Long-range 3D Scanners

<table>
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<th>Speed</th>
<th>Portability</th>
<th>Unattended Operation</th>
<th>Low Cost</th>
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<td><strong>Very Large</strong></td>
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<td><strong>Phase-shift</strong> laser scanners</td>
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<td><strong>Time-of-flight</strong> laser scanners</td>
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## Industrial CT 3D Scanners

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<td><strong>Industrial CT Systems</strong></td>
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Get the complimentary eBook

Detailed info to help you find the right 3D scanner
Our People Know
Poll Question:

Do you use 3D scanning today?
Find the Right Software
Software for 3D Scan-based Inspection

**Contact Measurement (Traditional) Inspection Software**
Contact inspection software that’s been upgraded to handle scan data

**Scan-native Inspection Software**
Full_featured inspection software built from the ground up to work with 3D scan data

**3D Scanner Operating Software**
Inspection add-on modules offered with 3D scanner operating software
Contact measurement inspection software

Pros
1. You probably already have it
2. Familiar interface and report format
3. No need to learn a new software

Cons
1. Not 3D scan-native
2. Unable to handle medium or large-sized 3D scan files
3. Poor scan data optimization & cleanup capabilities
4. Limited scan-specific functionality
### 3D scanner operating software

#### Pros

1. Cheap or sometimes free with scanner purchase
2. Tightly integrated with each 3D scanner
3. One source of tech support for both scanner and software

#### Cons

1. Limited inspection functionality
2. Often unable to handle medium or large-sized 3D scan files
3. Limits your freedom to add different 3D scanners in the future
Scan-native inspection software

Pros

1. Get the most functionality out of 3D scanning
2. Ensures measurement precision & repeatability
3. Handle large scan data sets
4. Flexibility to work with data from all 3D scanners (futureproof)
5. Backward compatible with contact measurement systems
Time Study:
Inspecting a Typical 3D Scanned Part

- Geomagic Control X 2018: 3 min 10 sec
- 3D scanner operating software: 9 min 21 sec
- Contact measurement software: Failed to load scan file (software crashed)
Scan-native inspection software (continued)

Pros

1. Get the most functionality out of 3D scanning
2. Ensures measurement precision & repeatability
3. Handle large scan data sets
4. Flexibility to work with data from all 3D scanners (futureproof)
5. Backward compatible with contact measurement systems

Cons

1. Higher upfront investment
2. Requires learning a new software
Find the Right People
Who should use 3D scanning in your organization?

You are probably one of the right people

Think about who else can benefit from 3D scanning

- R&D
- Design
- Engineering
- Manufacturing
- Supply chain
Ensure Quality Everywhere

• Get the most out of your 3D scanner
• Measure more parts, more often, in more places
• Measure more reliably across people, teams, and locations
• Empower more people to improve quality at every step
Geomagic® Control X™

Ensure Quality Everywhere

EASY TO LEARN
• For experts and non-experts alike

QUICK TO USE
• Flexible
• Works the way you do
• Fast algorithms

EVERYTHING YOU NEED
• Complete toolset at one price
• Easy automation with clicks, not code

MODERN SOFTWARE
• Born to work with any 3D scanner
easyJet cuts aircraft damage assessment time by 80% with Geomagic Control X
Ensure Quality Everywhere
Find the Right Hardware
Find the Right Software
Find the Right People
Call Us
NA: +1.800.691.1839
EMEA: +49.6151.357.0
China: +86.400.890.7899
ANZ: +61.450.593.739
Japan: +81.3.5798.2510
India: +91.98404.78347
SEA: +60.12.398.8473
Korea: +82.2.6262.9900

Get a Demo
See Geomagic Control X for yourself
Go to 3dsystems.com/software
Poll Question:

Would you like a personalized demonstration of Geomagic Control X?
Call Us
NA: +1.800.691.1839
EMEA: +49.6151.357.0
China: +86.400.890.7899
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