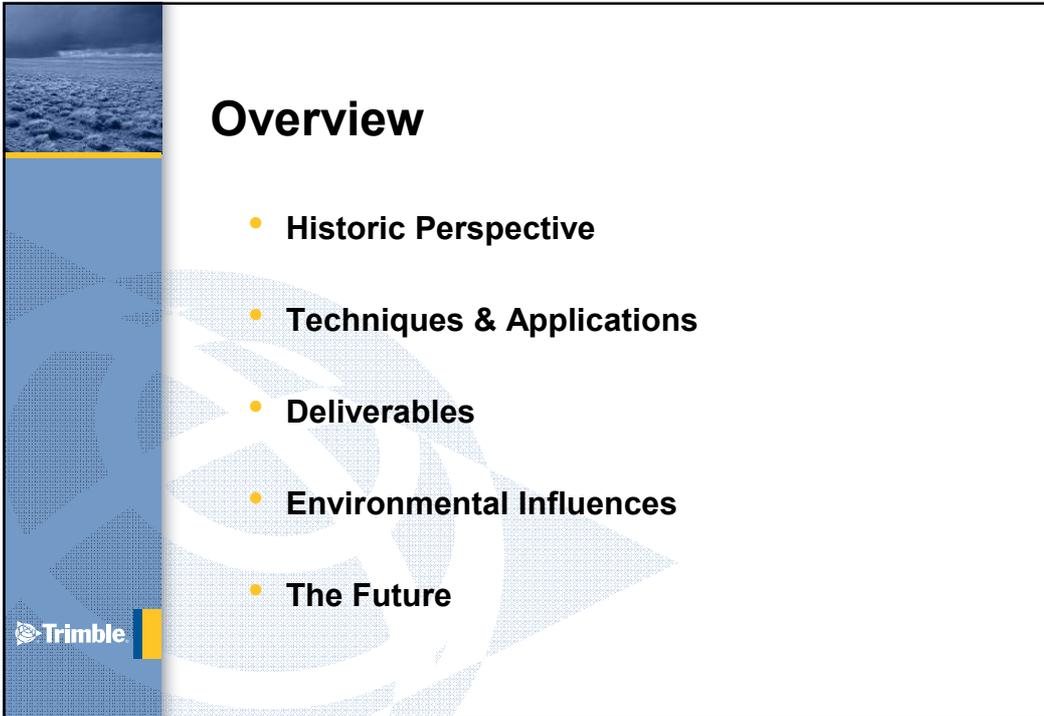




Spatial Imaging the New Surveying Revolution

Bryan Williams

FIG Working Week – Stockholm, Sweden, 14-19 Jun 2008



Overview

- **Historic Perspective**
- **Techniques & Applications**
- **Deliverables**
- **Environmental Influences**
- **The Future**



Spatial Imaging Equipment

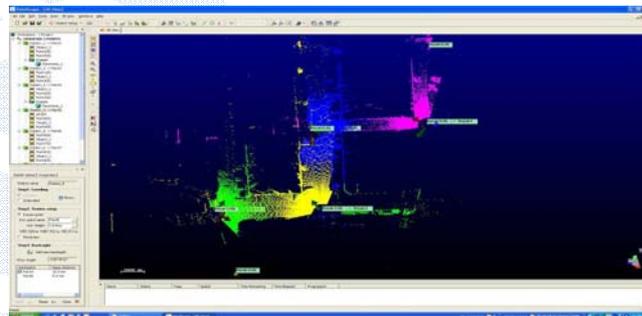


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Spatial Imaging Techniques

Applying Survey Techniques

- Traversing
- Re-sectioning
- Error reporting in the field
- Confidence in data collection

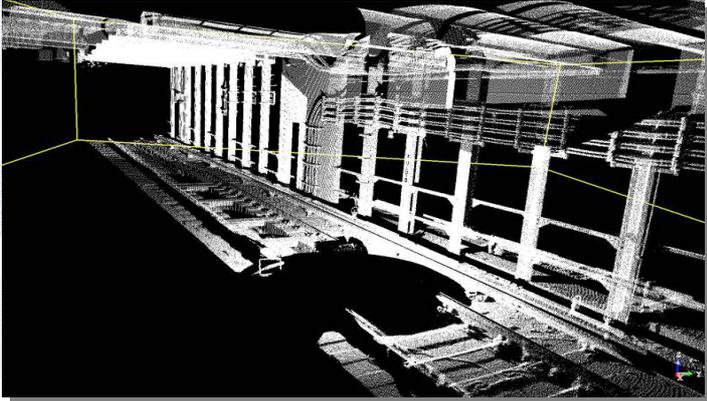


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Spatial Imaging Techniques

Adopting Technique to the Application

- Tunnel Inspection
 - Reference Points

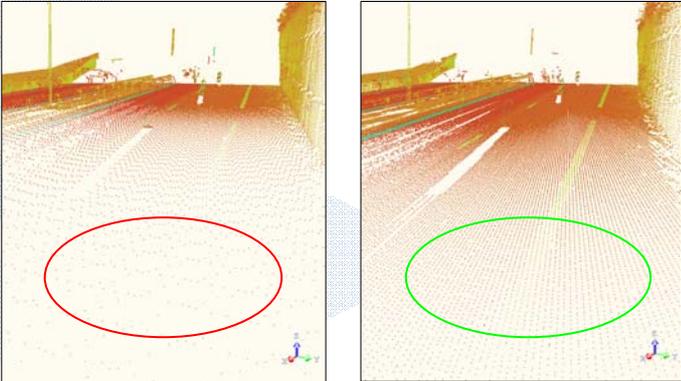


The image shows a 3D point cloud of a tunnel interior. The tunnel is long and narrow, with a series of vertical supports on the right side. Yellow lines are drawn on the floor and walls to indicate reference points. The Trimble logo is visible in the bottom left corner.

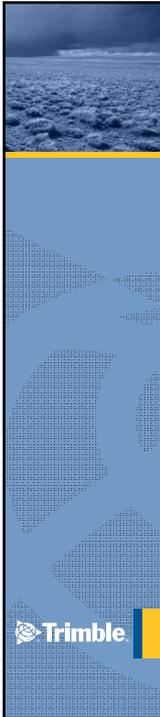
Spatial Imaging Techniques

Adopting Technique to the Application

- Roads
 - Traversing with SureScan™ Technology



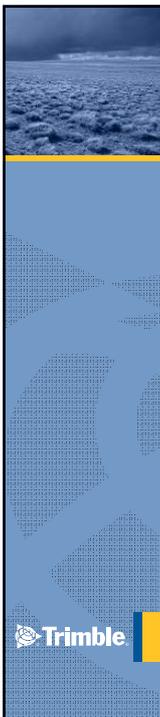
The image shows two side-by-side point cloud images of a road surface. The left image has a red circle drawn on the road surface, and the right image has a green circle drawn on the road surface. The Trimble logo is visible in the bottom left corner.



Spatial Imaging Techniques

Adopting Technique to the Application

- Accidents and Forensics
 - Free Stationing



Spatial Imaging Techniques

Adopting Technique to the Application

- Quarries
 - Single Station



Spatial Imaging Techniques

Adopting Technique to the Application

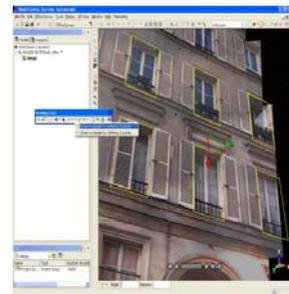
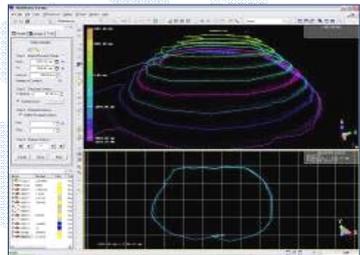
- **Integrated Surveying**
 - Scanning and GPS simultaneously



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Focus on the Deliverable

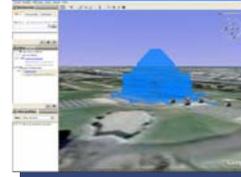
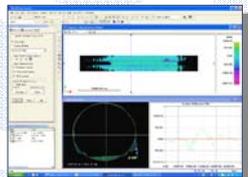
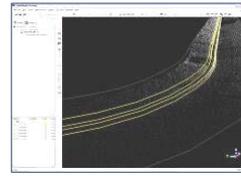
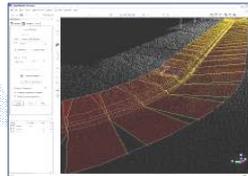
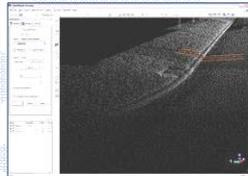
- **Customer deliverable expectations will increase**
- **Creation of rich deliverables**
- **2D and 3D**
- **Greater use of imagery**



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Focus on the Deliverable

- Automated tools
- Inspection comparison tools
- Google Earth Exports



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Environmental Influences

- Atmospheric conditions
 - Ice, snow, build up
 - Rain and fog
 - Dust, heat shimmer.
 - Site access



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Looking to the Future

- Increasing demand for complex data collection
- Imagery becoming an acceptable way to document features
- 3D design starting to proliferate
- Online collaboration
- Real-time updates
- Faster data collection
- Refinement of technique

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Thank you

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