



Pictometry

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Agenda

- Introduction
- Pictometry
- Goals
- Results
- Conclusions
- Recommendations
- Discussion

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Introduction

- Context
- Project
- Research January – April 2007

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Pictometry Characteristics

Geo-referenced: ortho + oblique

GSD ortho: 15cm

GSD oblique: 10 – 18 cm

Ortho images → AHN (5m)

30% Overlap (no stereo)

Flying Height: 1km

Size ortho: 350m x 560m

Pricing: € 250 / km²



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Possible Applications

- Homeland Security
- Urban planning
- Illegal Buildings
- Fire departments
- Disaster management
- Signal propagation
- Fly-Around Simulations
- "Our Limit is Your Imagination"



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Research Aim

- To arrive at an understanding how Pictometry might be of benefit to support the tasks and *ambitions* of Kadaster:
 - To be the principal supplier of real estate and geo-information within the Netherlands
 - Authoritative within Europe

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Research Questions

- Accuracy?
- Updating topographic maps?
- Oblique images \leftrightarrow Traditional Photogrammetry?
- Measuring of cadastral boundaries?
- Costs?

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Planar Accuracy



Elevation Accuracy

- Depends on accuracy AHN
 - Systematic error 5cm
 - Random error 15cm

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Fuelling Station/Storage Place



Which side are the trees?



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Looking Underneath Buildings



Recognition of non-buildings



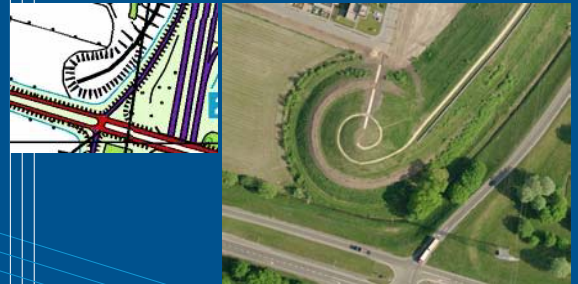
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What crosses the Road?



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Third Dimension



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Traditional ↔ Pictometry

Advantages

- 15cm ↔ 36 cm
- View Underneath Objects
- Height measuring tool
- (oblique) → attribute assignment
- Software is easy and intuitive
- Colour

Disadvantages

- No stereo (at present)
- No polygon mapping

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Preliminary Cadastral Boundaries



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Preliminary Boundaries



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Costs

- Not able to substantially reduce the costs of cadastral and topographic mapping procedures and work processes in the **short term**.
- Beneficial in the long term (production, goodwill, leadership)

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Conclusions Strategic++

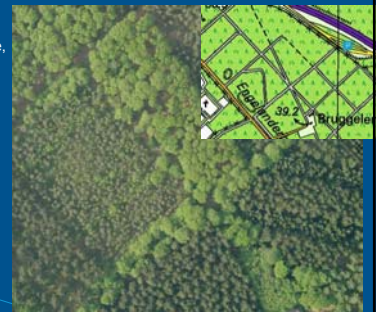
- Photogrammetry and **oblique** images
- Growth market:
 - Cities 50.000+
 - OS, Cadastre Spain
 - Microsoft local.live.com
- Catalyser for GII
- Survey tool, not only viewing
- Accurate
- Pricing: € 250 / km²



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Conclusions Strategic--

- Stereo images
- Functionality software, integration GIS



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Conclusions Pictometry Tactical/Operational++

- Identifying preliminary boundaries via notary
- Building registration
- Maintenance topographic maps – if stereo
- Add on to Top Map
- Building 3D City Models
- Easy, intuitive interface, very accessible
- Navigation tool for entering databases (e.g. building registration, WOZ)
- Communication citizens and government

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Conclusions Pictometry Tactical/Operational--

- Additional functionality required
- Footprint difficult identifiable
- System needs DEM – not if stereo images
- No integrated aero-triangulation

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Main Conclusions

- Applicable in Workprocesses Kadaster
- Potential to grow out to a technology that could be beneficially used for many geo-information applications in the Netherlands
- A technology for the millions
- Many potentials still have to be discovered

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Recommendations

- Further studies
 - Existing/potentially new applications
 - Navigation tool
 - Cyclomedia (detail ↔ complete)
 - Product development
- Pilots
 - Updating topographic map
 - Transactions: preliminary boundaries
 - Building registration: number of floors, area, volume, roof print, type

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