



HEXAGON

empowering an autonomous future

3D Mapping Solution **- *The Dutch Experience* -**

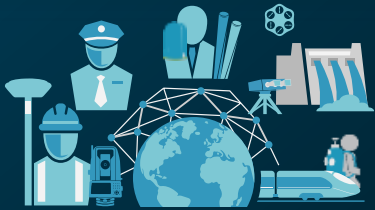
Thomas Pelzer

23 January 2025, Paris

Hexagon's Geosystems division

Surveying

Helps surveyors be more efficient and provides innovative workflows to meet client's needs with fewer resources.



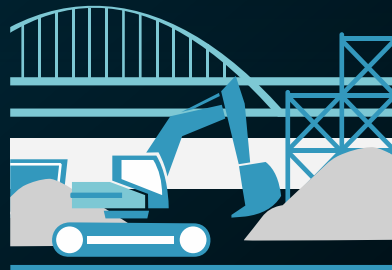
Building

Creates value for the building industry by delivering a portfolio of information, collaboration and visualisation technologies.



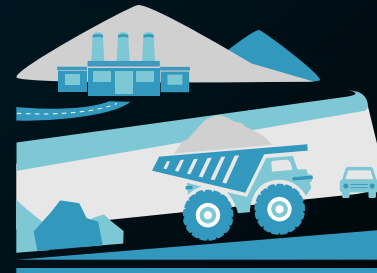
Heavy Construction

Helps contractors win, execute and complete more work on time, on budget and on specification.



Mining

Creates safer, more productive mines by delivering integrated life-of-mine solutions that optimise design, planning and operations.



Geospatial Content

Provides access to innovative airborne sensing technology and high-quality geospatial data to various industries.



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Geospatial Content Solutions

- Airborne Sensing Technology
- Content Capture & Distribution
- Mapping Services

Core capabilities: Mapping from the air



AIRBORNE Sensing Technology

Researching, developing, producing and distributing cutting-edge airborne imaging, LiDAR and hybrid sensors and data processing software to provide customers with higher data capture efficiency and more data from every flight.



CONTENT Capture & Distribution

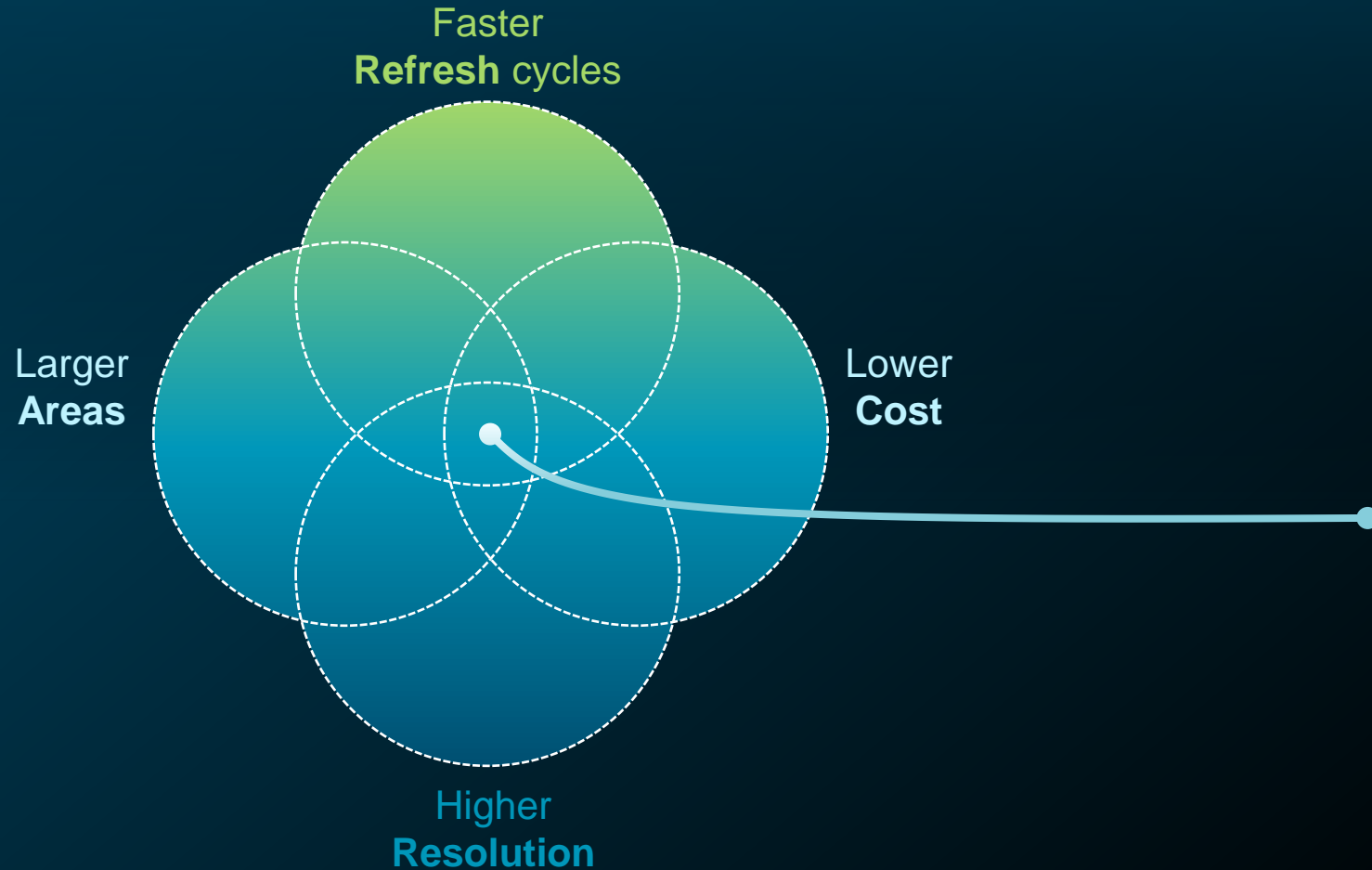
Capturing and distributing high-resolution airborne data, including orthophotos, elevation data, 3D models and analytics as a service to provide customers with immediate access to geospatial information.



MAPPING Services

Providing data acquisition and processing services to selected, strategic Hexagon customers and partners to expand their capacities to serve their clients and local markets.

The need to achieve higher mapping efficiency



OUR FOCUS

1. Efficient Capture
2. Efficient Processing
3. Easy Accessibility for Everyone

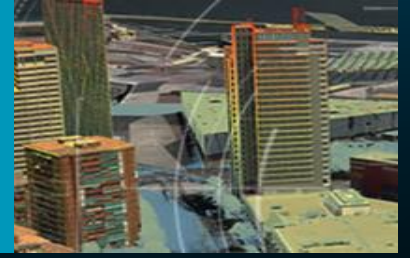
Airborne sensor portfolio

<p>Airborne Hybrid Oblique Imaging & LiDAR Sensor</p>	 <p>CityMapper-2</p>	 <p>CountryMapper</p>	
<p>Airborne Imagery Sensors</p>	 <p>DMC-4</p>	 <p>ADS100</p>	 <p>ContentMapper</p>
<p>Airborne Topographic LiDAR Sensors</p>	 <p>SPL100</p>	 <p>TerrainMapper-3</p>	
<p>Airborne Bathymetric LiDAR Sensors</p>	 <p>Chiroptera-5</p>	 <p>HawkEye-5</p>	



Unified Processing

Orthophotos,
Obliques, LiDAR,
Mesh, DTM



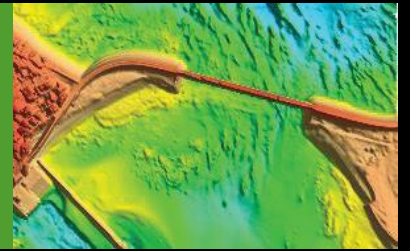
Orthophotos,
DSM



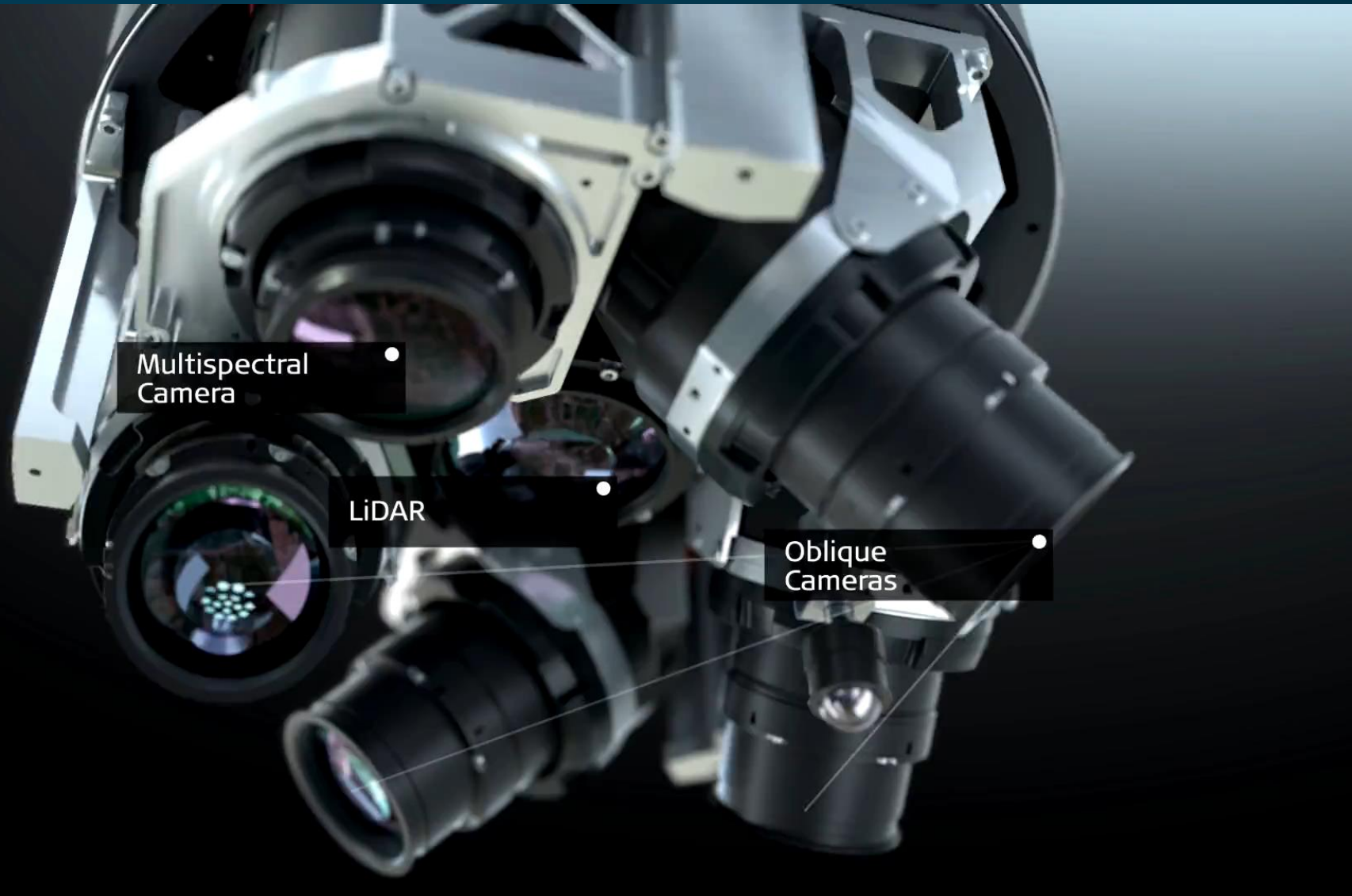
Topographic
LiDAR Point
Cloud



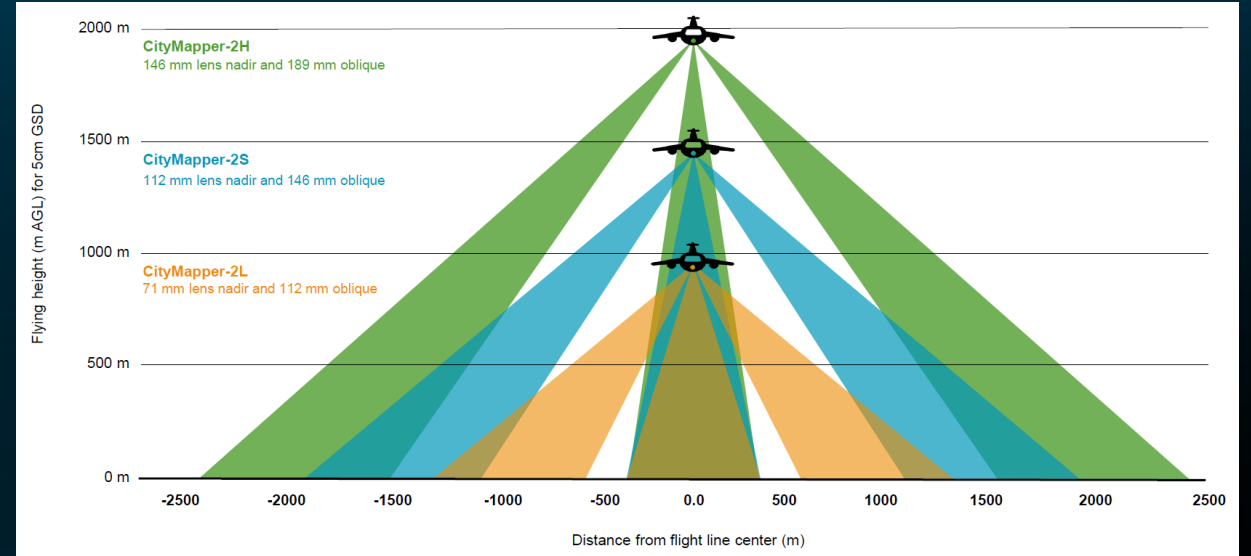
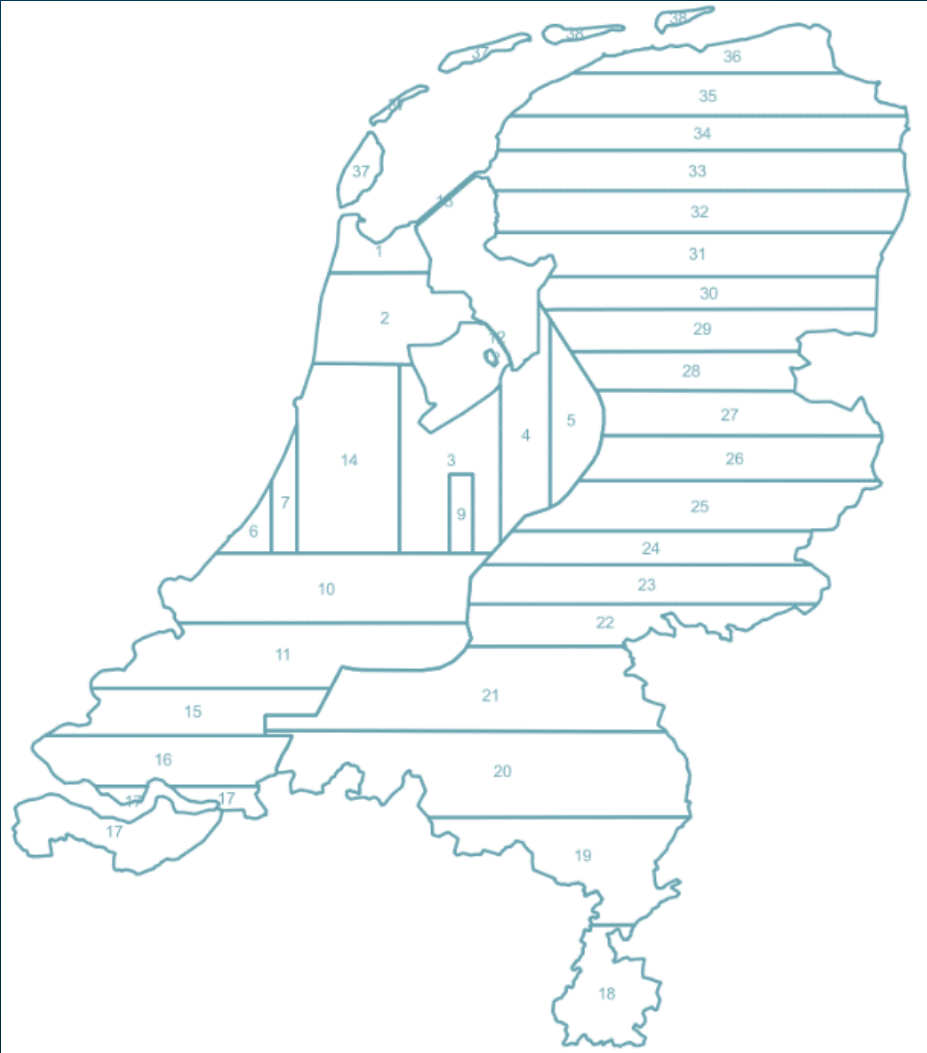
Bathymetric
LiDAR Point
Cloud



Leica CityMapper-2 technology



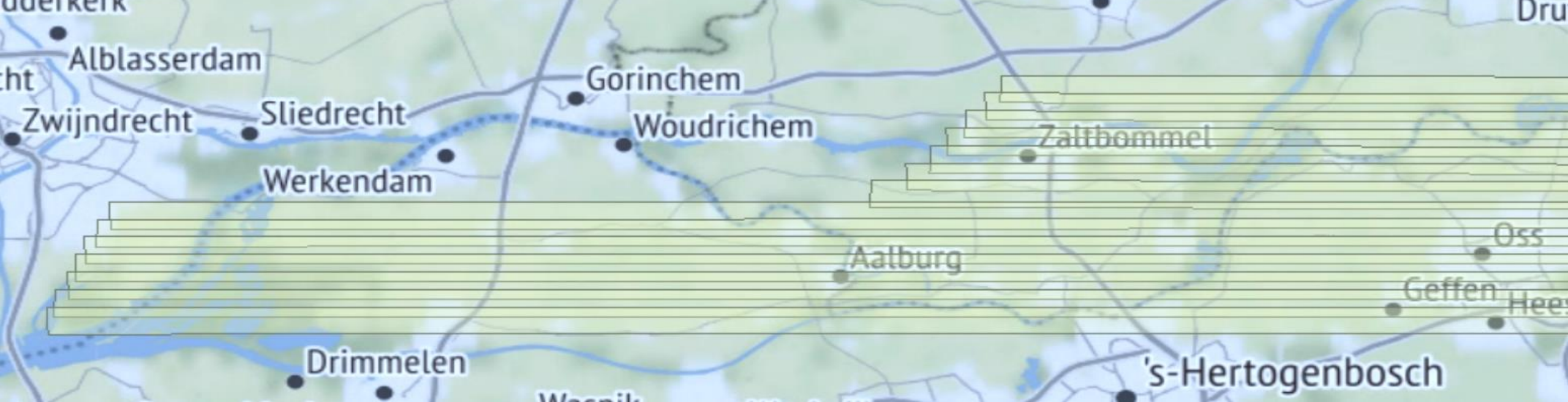
Covering The Netherlands year-on-year with Leica CityMapper-2 sensors



NATIONWIDE PRODUCTS

1. Nadir & Oblique Imagery
2. Orthophoto Mosaic
3. Classified Aerial Point Cloud
4. Textured Mesh

Highly efficient flight planning with HxMap



Leica CityMapper-2 technology | GSD improvements



From 10cm GSD...

Rich levels of detail



... to 6cm GSD imagery

Unprecedented levels of detail

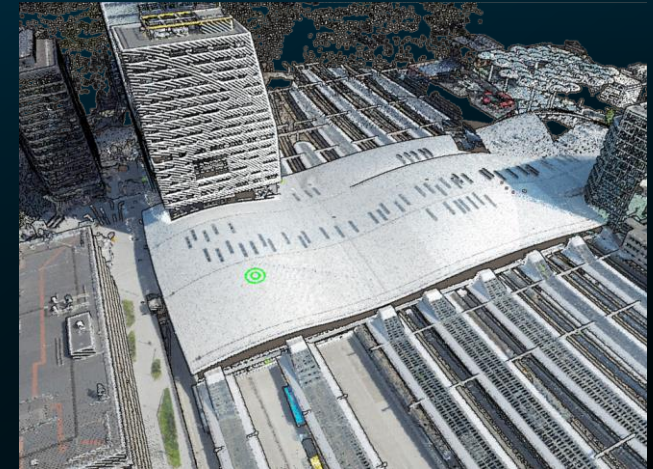


Textured mesh | cutting-edge technology

Nadir

Oblique

Aerial point cloud



Textured mesh

Latest in-house mesh production methods

Create the most accurate 3D digital representation of the physical world



Examples of textured mesh



Key Benefits

1. Instant access
2. Coverage everywhere
3. High quality
4. OGC compliancy
5. Embedded functions & features*

*viewer dependent / at customer's discretion



Typical data quality of airborne mesh captured with the Leica CityMapper-2



HxGN Content Program

The largest library of high-resolution aerial imagery, elevation data, 3D models and analytics across North America and Europe.

The aerial data is orthorectified, accurate and available at multiple resolutions.

Derive valuable insights with high-quality aerial data



Highly accurate & consistent

Our data is captured using high-performance sensors and processed using ground control and rigorous QA/QC routines that emphasize data accuracy and clarity.



Reliable refresh cycle

We capture data in the same season according to planned refresh schedules, allowing you to budget and prepare in advance.



Comprehensive

As the world's largest aerial data provider, we offer a full stack of high-resolution 2D and 3D data sets to enable you to make well-informed decisions.



Machine learning ready

Exceptional data consistency over large areas makes our data sets ideal for training machine learning algorithms.



Immediate data access

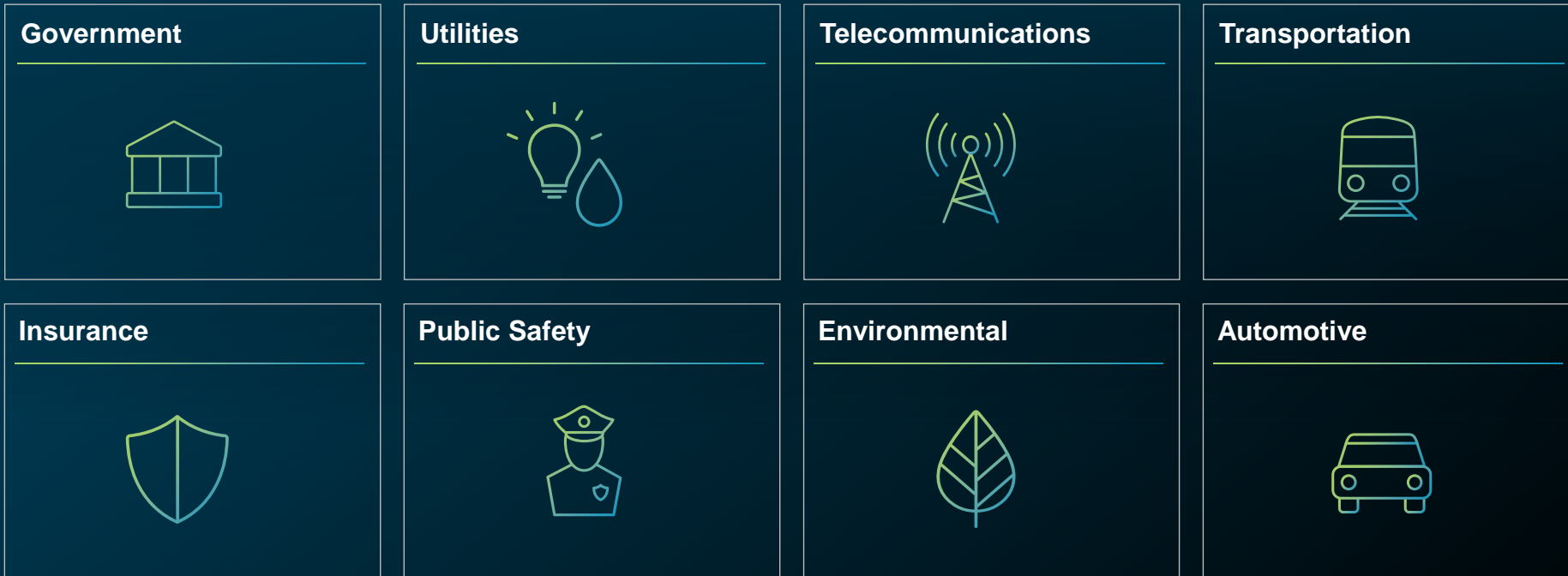
Deploy quickly with on-demand cloud streaming or pixel download. Multiple consumption models ensure smooth integration with existing workflows.



Flexible use terms

Flexible data use terms allow users to build derivative products, analytics, and value-added layers.

Serving various industries and applications



Exceptional consistency over large areas makes our data ideal for large-volume analytics, feature extraction and training machine learning algorithms.

We provide for applications such as urban planning, asset management, public safety, utility mapping, app development, and many more.

Examples of 3D use cases across segments



Urban Planning

By integrating 3D data into urban planning, cities can become more efficient, resilient, and sustainable, enhancing the quality of life for their residents while preserving environmental and cultural assets.



Simulation & Visualisation

By creating realistic and interactive 3D models, stakeholders can explore and predict outcomes, test designs, and make informed decisions in a virtual, intuitive and risk-free environment. This enables more informed decisions, reduces costs, and fosters creativity and innovation.



Command & Control

Leveraging 3D data in command and control enhances situational awareness, improves decision-making, and streamlines operations by providing a detailed and dynamic spatial understanding of environments and scenarios.



Permitting & Event Planning

By integrating 3D data into permitting and event planning, organizers can improve safety, enhance attendee experiences, streamline compliance, and minimize environmental and community impacts, ensuring successful and well-regulated events.



Stakeholder Management

Incorporating 3D data into stakeholder management enhances communication, fosters understanding, and builds trust by providing immersive, accessible, and visually compelling representations of complex concepts.



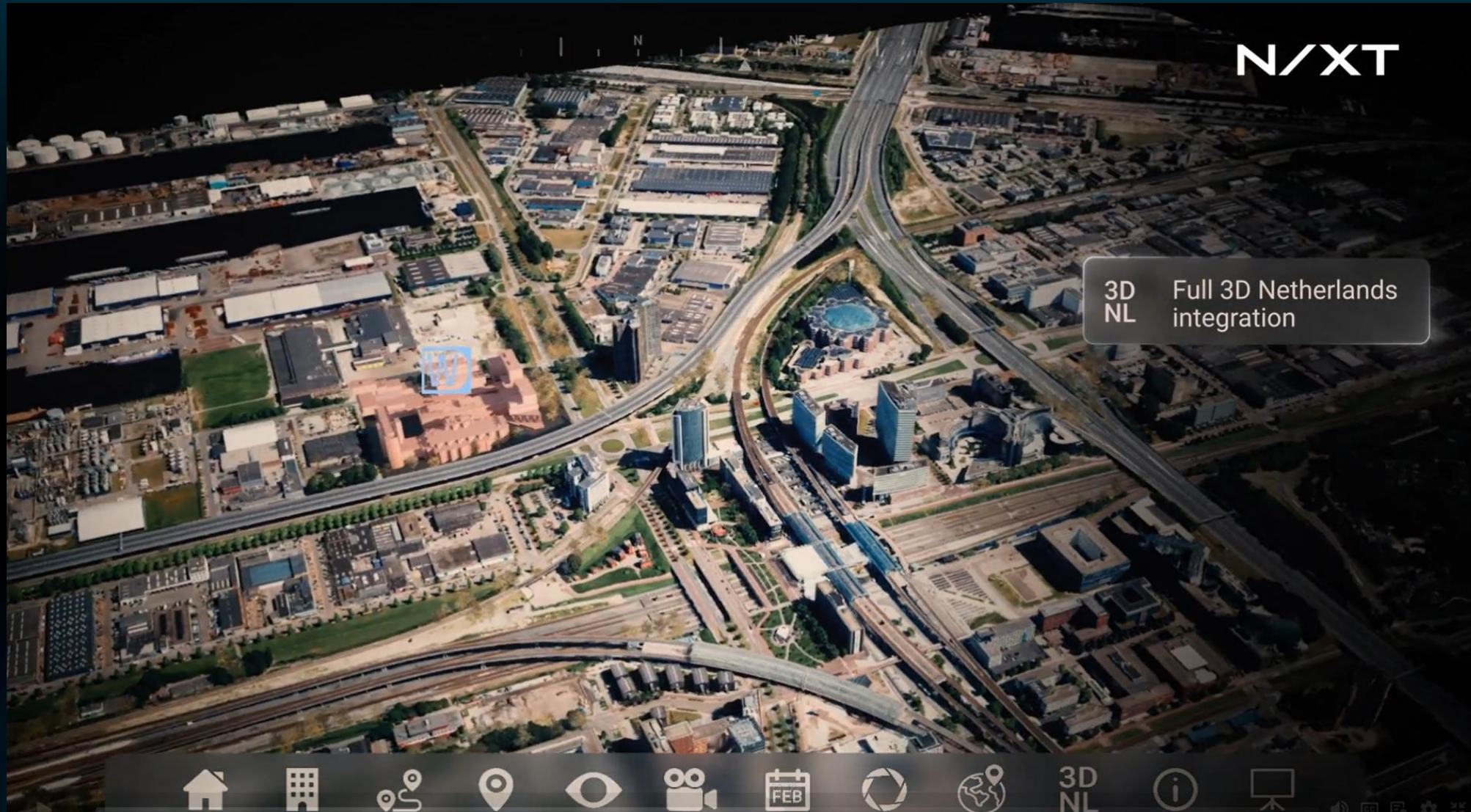
Asset Management

3D data in asset management enhances visibility, precision, and decision-making by providing spatially accurate, interactive, and visually rich representations of assets throughout their lifecycle. Organizations improve control, reduce downtime, extend asset lifespans, and make data-driven decisions that optimize performance and costs.

Proof of Concept | VDL Automated Vehicles



Reference Case | Parallel N/XT





QUESTIONS?