The Applications of Smart Airport Solutions by Hexagon

Alvin Hu
Hexagon Geosystems Taiwan
Hexagon (Nasdaq Stockholm: HEXA B) is a global leader in sensor, software and autonomous solutions. We are putting data to work to boost efficiency, productivity, and quality across industrial, manufacturing, infrastructure, safety, and mobility applications.

Hexagon is a digital solutions company leading the creation of autonomous connected ecosystems (ACE) in the markets it serves.

OUR FOCUS IS DATA
- Leverage beyond data creation
- From automation to autonomy

OUR COMMITMENT IS INNOVATION
- Transformation focus, with 10–12% of net sales invested in R&D
- 3,800+ employees in R&D
- 3,700+ active patents

OUR STRENGTH IS PROVEN
- More than 20,000 employees across 50 countries
- 3.8 bn EUR in sales in 2018
- 25% operating margin

OUR VALUE IS VITAL
- Solutions deliver productivity and quality
- Broad range of industries served
- Unmatched scope of technologies in the portfolio
Smart Solutions by Hexagon

Smart Engineering Construction

- Smart Construction
- PaveSmart 3D
- Building Information Modelling (BIM)

Smart Operation and Safety Management

- Mobile Reality Capture – Above and Underground
- Automatic Drone Detection
- Flight planning and re-routing
Smart Engineering Construction
Smart Engineering Construction

- Integration of field work and office work
- Seamless integration of construction process
- New digital construction concept
Smart Construction-Leica ICon Use BIM for Layout
Smart Construction Workflow

- Add layout points
- Prepare & sync
- Orient / Layout
- As-built check
- Round-trip points
PaveSmart 3D

The Leica PaveSmart - 3D system eliminates the need for complex, heavy-duty traditional methods. The asphalt paving job done faster, more efficiently and right at the first time.

- String-less paving to reduce costs and shorten project time
- Automatic leapfrog for continuous paving to increase quality
- String line inaccuracy eliminated with consistent paving quality 24/7
- Lower road maintenance costs due to accurate paved surface
- Improved safety for workers on site due to removal of string lines
PaveSmart 3D

- Airport Slipform Pavement
- Asphalt Pavement
- Highway Pavement
- Road Pavement Reconstruction
- Race Track Pavement
- Roadside Slipform Pavement
PaveSmart 3D
LEICA HDS Laser Scanner-BIM

- Quick obtain massive point cloud data on site
- Provide a true basis for airport architectural design and construction inspection
- Comparison between point clouds and BIM model
Smart Operation and Safety Management
Mobile Reality Capture – Above and Underground

Below and Above Ground Asset Management

- Facilities 3D modeling
- Flatness of road
- Cracks detection
- Pipes/cables mapping
- Buried Objects detection
- Cavities detection
- Leakage detection
Mobile Reality Capture – Above and Underground
Automatic Drone Detection

Confidential
Automatic Drone Detection

CONNECT • VISUALIZE • ANALYZE • ACT
Automatic Drone Detection

- Radar reliability plus Luciad software flexibility
- Shows location of intruding UAV in real-time
- Direct connecting to drone detection radar sensors
- Dynamically define airspaces and early warning domes and get alerts when drones are detected to intrude these areas
- Real-time 3D visualization in combination with other data sources such as 3D buildings, aerial imagery, and street vector data gives increased situational awareness
- Decision maker can get fast and accurate respond to the situation
Flight planning and re-routing
Flight planning and re-routing
Flight planning and re-routing

- Integrated flight planning and re-routing with Luciad, SAP and Lufthansa system
- Comparing flight routes from SAP HANA database and weather information in real-time with position and time taking into account
- The system automatically calculates alternatives routes considering the cost
- Real-time decision support for mission-critical operations
Thank you