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Datamate

Purdue ECT Team

Construction Engineering & Management, Purdue University, ectinfo@purdue.edu

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DATUMATE

THE NEED

Datamate is digitally transforming **civil engineering processes** used in **construction, surveying and infrastructure inspection** markets with **fully automated, highly precise, cost effective and safe** tools.

FIGURE 1 DATUMATE – AUTOMATED FIELD-TO-PLAN PROCESS

Datamate utilizes state-of-the-art image processing and advanced drones and camera technologies dramatically reducing the amount of time surveying crews spend in the field, speeding up construction progress checks and shortening infrastructure inspection duration, while maintaining survey grade accuracy.

Datamate's intuitive, simple and automated solutions increase productivity by saving field and office time in civil engineering and inspection projects of roads, intersections, stockpile volumes, topography, piping, industrial facilities, bridges, property surveys, building facades, railways, cellular infrastructure and more.

Datamate's core competency is rooted in a team of experienced construction and surveying professionals.

THE TECHNOLOGY

DatuSurvey™ - Photogrammetry Software for Fast Track Office Productivity

DatuSurvey™ turns drone and regular camera-based images into accurate, georeferenced 2D maps and 3D models, saving the need for expensive and risky field work and expediting deliveries.

FIGURE 2 IMAGE DIGITIZATION WITH DATUSURVEY™
GENERATION of 3D CAD Vectors

DatuSite™ - Photogrammetry Software for Construction & Infrastructure projects

DatuSite™ employs aerial and ground photography to generate point cloud for 3D modeling, map generation (1:100 scale maps, 1-2 cm accuracy), volume calculations and reports, in order to quickly and accurately monitor construction sites as they evolve, analyze as-built sites and inspect infrastructure and utilities. The collected data can be exported in multiple formats (DXF, PLY, PDF, JPG, BMP, LAS and LAZ). The figure below describes dense point cloud generation and visualization.

FIGURE 3 DATUSITE™

DatuFly™ – A Professional Imagery App for Drones

DatuFly™ is a tablet app for easy flight planning and automated, high resolution photo shooting, optimized per job type. The image taking plan is executed based on the best practice requirements of DatuSurvey™ photogrammetry software that automates surveyors' office work.

FIGURE 4 DATUFLY™ - FLIGHT PLAN

BENEFITS

- Reduced operational costs: save up to 30% office time
- Reduced field and office work times / Safe process
- Automated and intuitive: user interface that follows surveyor work process
- Comprehensive Field-to-Plan solution
- Professional survey-grade results: 1:100 scale maps (1 cm/pixel)

STATUS

Datamate's solutions have been used by multiple construction and surveying companies worldwide since 2012. Datamate's close range photogrammetry software was awarded the "Most Innovative Product of GeoForm" in 2013. In 2016, Datamate signed a partnership agreement with the world's leading drone manufacturer DJI, offering a drone software and app package that fully automates and expedites site surveys. The DJI-Datamate [Site Survey Solution](#) is a comprehensive and professional package of imagery and mapping tools that help surveying, construction, inspection and infrastructure companies rapidly generate a working model, site visualization, analytics and plan.

BARRIERS

- **Regulation.** No longer a barrier in the USA. The new FAA rules require that USA pilot:
  - Must be at least 16 years old and pass an initial aeronautical knowledge test - the material is available online
  - Must be vetted by the Transportation Safety Administration (TSA)
- **Accuracy Concerns** – While accuracy concerns are valid, Datamate's unique Photogrammetry algorithms enable accuracy verification per point.
- **Psychological Barrier** – it takes time for any new technology to become accepted by the users accustomed to traditional methods
- **The correct choice of a drone** - the drone should be professional enough on one hand and easy to use on the other.
- **Weather conditions.** See the table below

	Phantom 4 Pro	Inspire 2	Matrice 200	Matrice 600
Max. Wind speed	10 m/s	10 m/s	10 m/s	8 m/s
Temperature range	3-104	-4 – 104 F	-4 – 113 F)	41 – 104 F

FIGURE 5 WEATHER CONDITION PERFORMANCE OF SAMPLE DRONES

POINTS OF CONTACT

Itay Segev, VP Product and Strategy, Datumate

Phone: (972) 73-705-7070, FAX: (972) 73-705-7075, E-mail: itays@datumate.com

Liel Anisenko, Director of Marketing, Datumate

Phone: (972) 73-705-7080, FAX: (972) 73-705-7075, E-mail: liela@datumate.com

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REVIEWERS

Peer reviewed as an emerging construction technology

DISCLAIMER

Purdue University does not endorse this technology nor represents that the information presented can be relied upon without further investigation.

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