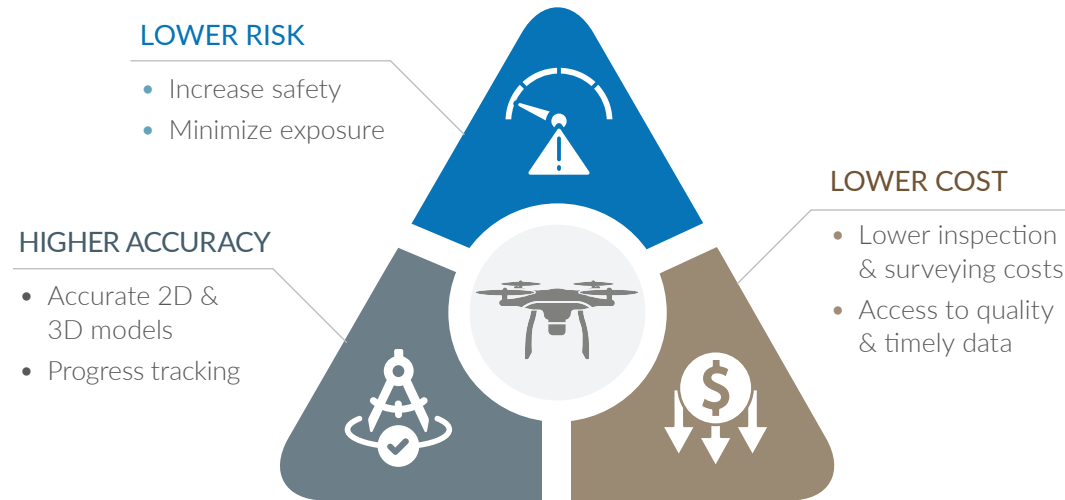


UAS – DRONES

Efficient asset management
& inspection services

UNMANNED AIRCRAFT SYSTEMS (UAS)

UAS, commonly known as drones, are sensor rich devices capable of capturing quality data. SYSTRA's UAS program creates insightful data for the engineering, construction and transportation industry to **increase operational efficiency** throughout projects lifecycle.



LOWER RISK

Increasing safety and minimizing risks onsite is important on all projects. Drones allow for remote supervision of work while **minimizing exposure to construction site safety risks**.

By minimizing the time workers need to be onsite, safety risks and travel requirements are greatly reduced, allowing a substantial amount of the inspection work to be done remotely after the drone has landed.

HIGHER ACCURACY

Drone data and photogrammetry create useful georeferenced information capable of delivering accurate **2D and 3D models** for surveying and progress tracking purposes, at the fraction of the cost of conventional methods.

Accurate maps and Digital Twins can be compared over time to help predict schedule slippage or design issues before they become critical.

LOWER COST

Using drones can lower **inspection** and **surveying** costs due to their quickness and agility in challenging locations. Data captured and shared from drones can help decision makers at all levels of a project stay informed and communicate with key stakeholders.

Today, in order to stay competitive with limited budgets and tight schedules, having access to quality and timely data is key to driving any project to successful execution and completion.



For your RAILWAY INSPECTION SYSTRA CANADA HAS THE OPTIMAL SOLUTION

ADVANTAGES



Reduce equipment downtime with proactive maintenance.



Save time and cut inspection costs.



Improve stakeholder communication.

SYSTRA Turnkey Drone Solution

SYSTRA is one of the world's leading engineering and consulting groups specialized in public transport and mobility solutions. For more than 60 years, the Group has been involved with cities and regions in order to contribute to their development by creating, improving and modernizing their transport infrastructures and systems.



ENR Rankings: #3 in Mass Transit & Rail



More than **8,000 employees**



Operation presence in **80 countries**



Fly & Capture Images

With our advanced flight software, a drone mission is flown to capture location intelligence using various sensors.



Map & 3D Models

Drone data is uploaded to our cloud-hosted software to generate maps and 3D models.



Explore, Analyze & Share

Maps and models can be analyzed, annotated and shared through our secure cloud platform.

Increased Volume of Data

- Ultra dense point cloud
- Higher level detail
- Elevation data
- Digital terrain model
- 3D textured mesh



PROJECT REPORTING

- True **survey grade mapping** can be created at a fraction of the cost compared to conventional methods.
- **Safer work** environment by not having to physically be on the ground.
- Sharing data using a universal platform allows for a single point of truth.
- Work progress reporting using **real-time data**.
- Provide valuable data that previously could not be obtained economically.
- Work site **safety audits**.
- Efficient large Job site planning with **high-resolution maps**.
- Improve investor engagement with **impressive project visuals**.



ASSET MANAGEMENT

- **Digital Twin (3D model)** of assets for virtual inspection using a web browser interface.
- Inspection reports include **high-resolution imagery, maps and videos**.
- Fewer labour hours to perform inspection tasks using Digital Twins.
- Real-time asset conditions and **historical data** allow for trend forecasting and predictive maintenance.
- Easily shareable data with all project stakeholders, including maintenance personnel using **cloud-based asset management tools**.
- Safer working conditions by **limiting** the amount of exposure to **safety hazards** onsite.



SURVEYING

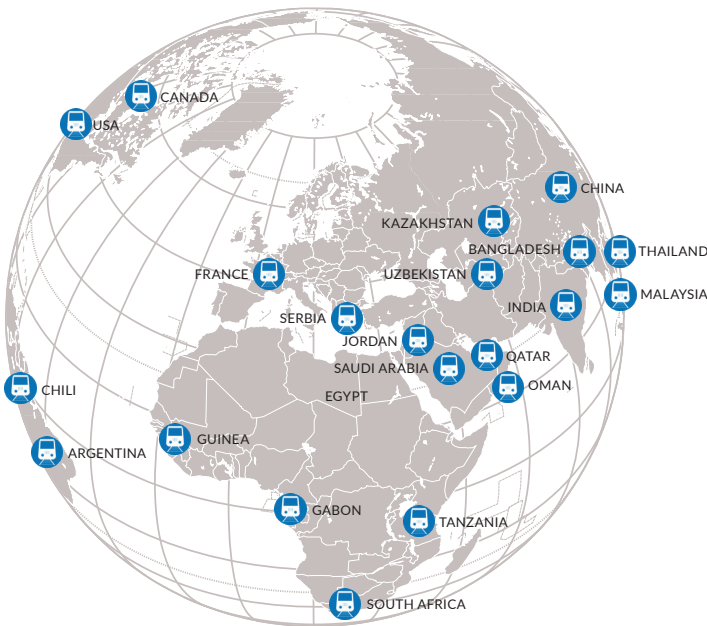
- Drones allow for a **more detailed survey**, due to denser point clouds.
- **Surface, volume and linear measurements** can be taken easily from a georeferenced point cloud using our web-based software.



INDUSTRY LEADERSHIP

Since 1991, SYSTRA Canada has successfully completed hundreds of projects around the world; below are just a few examples.

Our mission: provide innovative, reliable and efficient solutions tailored to clients' objectives.



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