GALAXY with SwathTRAK™ Technology

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SwathTRAK Advantages:

- Maintain a constant swath width on the ground, even in complex terrain, for ***predictable point distribution***.
- Achieve ***consistent point density*** on mountain peaks and valleys within a single swath, enabling higher-quality data sets.
- ***Save*** up to ***40% on collection costs***, compared to traditional fixed-FOV sensors, by moving flightlines further apart in complex terrain.

SwathTRAK maintains a fixed-width data swath in complex terrain by varying the scan FOV dynamically in-flight. Compare data swath widths with and without SwathTRAK enabled in the above survey collect (≈650m of terrain relief).

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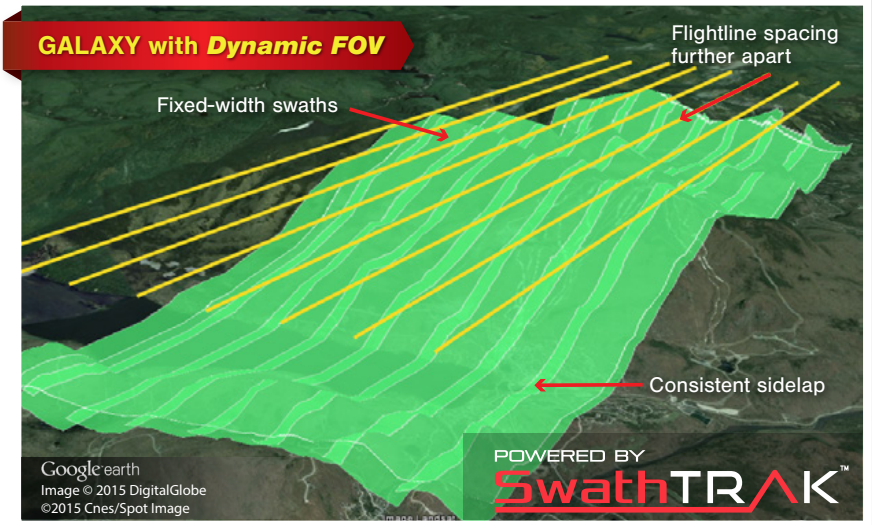
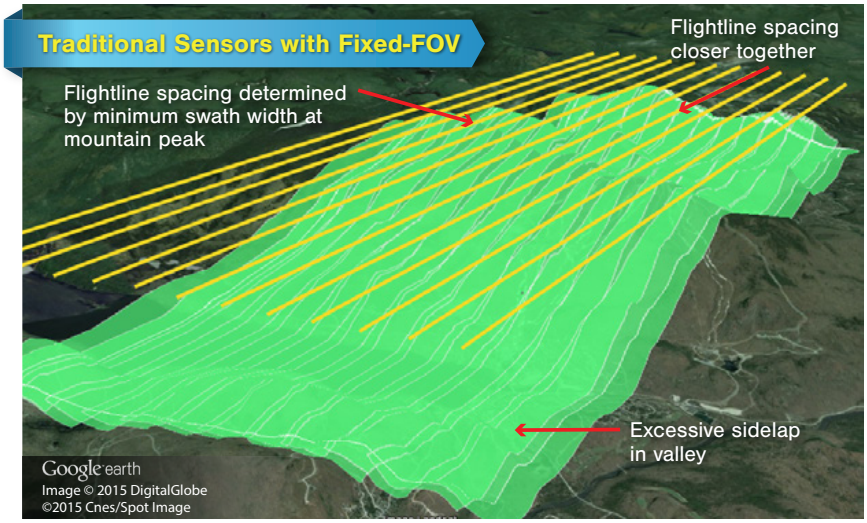
Teledyne Optech's new Galaxy airborne lidar sensor with SwathTRAK™ technology achieves tremendous density performance and up to a 40% increase in collection efficiency over traditional fixed-FOV sensors.

Collecting uniform point density in high-relief terrain has plagued lidar surveyors for years. As the data swath approached a mountain peak the swath width would narrow. Conversely, in the mountain valleys the swath would widen for a given fixed FOV. Consequently, flightline spacing was conservatively planned for the worst-case scenario where swath widths narrowed at the peaks. This necessary increase in flightlines can significantly drive up collection costs in high-relief terrain. SwathTRAK™ solves this problem by dynamically changing the scan FOV to maintain a fixed-width swath over the ground. When the terrain drops away from the aircraft, the sensor FOV narrows, and when the terrain rises, the scan FOV widens. This allows the flightlines to be moved further apart and reduces the total number of flightlines overall. This innovative and patent-pending technique has the added benefit of maintaining more consistent point density and XY point distribution across the entire data set.



*Galaxy with SwathTRAK can space flightlines further apart due to the dynamic widening of the sensor FOV in response to terrain variation, yielding up to a **40% increase** in collection efficiency over fixed-FOV sensor designs.*



Fixed-FOV sensors require tighter flightline spacing to ensure adequate coverage on mountain peaks when swath widths narrow.

Survey Parameters

Area:	53 km²
Point Density:	8 pts/m²
Aircraft Speed:	130 knots
Altitude:	1400 m AGL
Terrain Relief:	650 m

Sensor Parameters

SwathTRAK:	OFF	ON
Laser PRF (effective):	500 kHz	500 kHz
FOV:	Fixed 30°	Variable 18-42°
Sidelap:	50%	20%
Swath Width:	530-925 m	750 m
No. of Flightlines	13	8
Time On Line:	0:41:51	0:26:31
Total Time: (5 min turns)	1:41:51	1:01:31

The potential cost savings associated with SwathTRAK is significant. In a recent survey in Quebec, Canada, SwathTRAK reduced the required flightlines for a fixed-FOV mission plan from 13 flightlines down to only 8 flightlines for the same point density requirement. That represents a 37% reduction in collection time for that specific survey. Such a unique capability makes the Optech Galaxy the must-have sensor for surveyors serious about maximizing their ROI and efficiency, while simultaneously increasing overall data quality.