

SAM

Static And Mobile

SAM stands for **Static And Mobile** LiDAR mapping system. By using up to two Faro Focus^{3D} high-speed laser scanners combined with a 360° panoramic camera and a precise GNSS/IMU system, SAM brings wheels to your scanners. SAM enables you to mount your terrestrial laser scanners on to any vehicle and get ready for mobile mapping.

Efficient

With a lightweight design (25 kg platform) the system can be installed easily on any mobile device. The compact scanners are quickly installed and measure the surface with up to two million points per second. With the quick release the scanners are dismantled within a minute and can be used for terrestrial laser scanning as well.

Precise

With the integrated GNSS/IMU system, SAM's surveyed data are ready to fulfill the accuracy needed for infrastructure projects. SAM takes the static precision to mobility and changes the contractors thinking by transforming their customer's expectations.



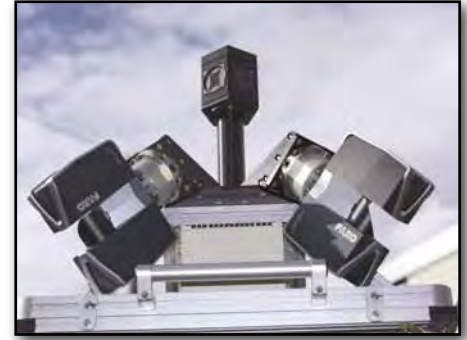
Optional: Mobile Thermography

SAM is completely integrated within IGI's *Modular Systems*. Therefore it can be extended with different sensors as *DigiTHERM* - the IGI thermal camera. Also parts of the system can be used in other fields of applications e.g. the IMU for airborne sensors.

SAM - Static And Mobile Mapping System

Precision Navigation

The onboard navigation system includes a highly accurate GNSS/IMU navigation system (*TERRAcontrol Compact*) which has an integrated high end, dual antenna, multi constellation GNSS receiver. The system includes software packages for data post-processing.



PERFORMANCE Focus^{3D} Laser Scanner¹

Ranging Unit Range Focus ^{3D} X 330 Range Focus ^{3D} X 130 Measurement Speed Wavelength Ranging Error	0.6m - 330m outdoor or indoor with low ambient light and normal incidence to a 90% reflective surface				
	0.6m - 130m outdoor or indoor with low ambient light and normal incidence to a 90% reflective surface				
	122,000 / 244,000 / 488,000 / 976,000				
	1550 NM, Laser Class 1 eye safe				
	± 2mm				
	Ranging Noise	@10m	@10m Noise Compressed	@25m	@25m Noise Compressed
	@ 90% refl.	0.3 mm	0.15 mm	0.3 mm	0.15 mm
	@ 10% refl.	0.4 mm	0.2 mm	0.5 mm	0.25 mm
Deflection Unit Field of View (Vertical) Max. Vertical Scan Speed	300° 97 Hz				

¹ Based on Faro Focus^{3D} technical specifications

PERFORMANCE

Performance*	Compact MEMS**	Compact MEMS Plus	Compact FOG-I**	Compact FOG-II**	Compact FOG-III
Position [m]	0.02	0.02	0.02	0.02	0.02
Velocity [m/s]	0.005	0.005	0.005	0.005	0.005
Roll / Pitch [deg]	0.015	0.01	0.008	0.004	0.003
True heading [deg]	0.03	0.02	0.015	0.01	0.007
Gyro-Bias [deg / h]	1	1	0.03	0.03	0.03
Gyro-RW (Random Walk) [deg / sqrt(h)]	0.07	0.07	0.005	0.005	0.005
Accelerometer Bias [mg]	0.1	0.1	0.3	0.3	0.3
Data rate	up to 400 Hz	up to 600 Hz	up to 256 Hz	up to 256 Hz	up to 600 Hz

PERFORMANCE, after 60 sec GNSS outage

Performance*	Compact MEMS**	Compact MEMS Plus	Compact FOG-I**	Compact FOG-II**	Compact FOG-III
Position [m]	0.3	0.15	0.1	0.06	0.06
Roll / Pitch [deg]	0.018	0.012	0.008	0.004	0.003
True heading [deg]	0.03	0.02	0.015	0.01	0.007

* Post Processing ** Upgrades to higher accuracy possible at any time

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