iLIANE

LiDAR aided Navigation Equipment

With **iLIANE** iMAR provides a setup for navigation and localization in GNSS denied environment. The system provides the optical system (LiDAR), the inertial system (iNAT), the data processor, the processing software, the power conditioning.

Due to the sensor setup, **iLIANE** works in both daylight and night environment with the same performance. It s used for both to navigate within a 3D map without any need of GNSS and also to support the generation of a 3D map. Navigation without as well as with GNSS is supported.

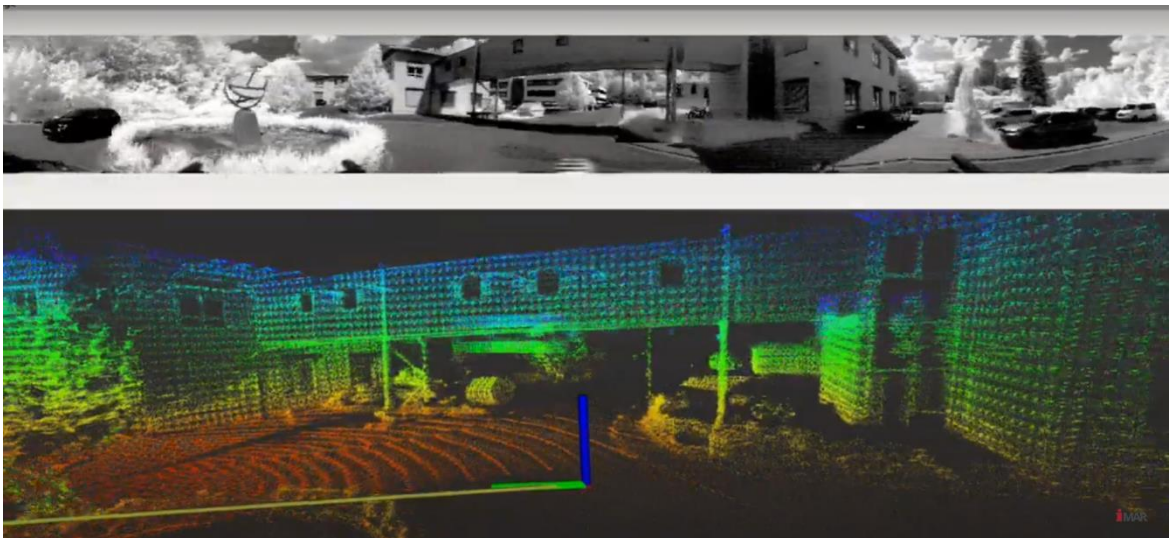
iLIANE features:

- small size, highly robust, easy to use
- operable on each vehicle's roof
- internal LiDAR, IMU, GNSS receiver (all-frequencies / all-constellations, SBAS & RTK support, single and dual antenna support), wheel sensor interface
- available with all class of INS performance, from MEMS over FOG to RLG based systems of series iNAT (commercial / industrial) and iSULONA / iPRENA (defence / protection)
- excellent accuracy also in operation without any GNSS and without any wheel sensor – 0.1 … 0.5 % distance travelled.
- Automatic map generation and capability to use this map during future travls. Map referencing capability to a definable Reference Frame (WGS84, ETRS89, UTM)
- Capability to improve and adapt previous generated maps with each following travel

iLIANE can be used as navigation equipment as well as for environment and infrastructure surveying tasks. The setup is delivered fully calibrated. Easy to use - no engineer's knowledge is required for opeation.

iLIANE is also the perfect setup for people movers or autonomous trucks on industrial areas for GNSS independent opeation or where strong degradation of GNSS signals is expected.

iLIANE is also the choice for automated mapping activities. The high resolution LiDAR imaging system, combined with the excellent data fusion by hardware and software allows localisation on centimeter level and – together with iMAR's outstanding INS/GNSS iNAT solution, also an accurate geo-referencing of map and vehiclle.



iLIANE System Configuration:

Optical Sensor:	advanced LiDAR, 360° view, with specific time synchronization
INS/GNSS:	iNAT-M300 (MEMS based), iNAT-FSSG (FOG based), iNAT-RQT (RLG based) INS/GNSS
Optional Sensor Configurations:	- pure IMU/LiDAR (without GNSS or any other sensors)
	- INS/LiDAR (incl. GNSS)
	- INS/LiDAR + (incl. GNSS) + Wheel Sensor (VMS)
Signal Processing & Algo Configurations:	- Navigation within a static, existing map
	- Navigation and simultaneous map generation (SLAM)
	- Geo-referenced map generation (standard accuracy) and navigation within this map
	- Geo-referenced map generation (high accuracy incl. iPosCAL-SURV)
Algorithms:	iMAR's advanced real-time sensor data fusion (INS +LiDAR) incl. loop closure

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