Nested design
u-blox M8
GNSS antenna modules
Wireless+positioning
LTE
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Dead Reckoning
Timing
Precise Point Positioning (PPP)
Whitepapers

u-blox 3D Automotive Dead Reckoning technology

Increasingly dense urban environments, park houses and multi-level interchanges pose a significant problem to navigation systems based on the reception of extremely weak satellite navigation signals.

As ever more systems (e.g. car navigation, road pricing, fleet management, emergency services, etc.) depend on reliable, uninterrupted positioning and navigation, “3-Dimensional Dead Reckoning” GNSS, the ability to calculate a position in the X, Y, and Z axis when satellites signals are blocked or impeded is becoming increasingly important. Download the whitepaper: "u-blox’ 3D Dead Reckoning for Vehicle Applications"



Multi-level highway interchanges pose a problem to satellite positioning: which road am I on? 3D Dead Reckoning solves this dilemma



3D Automotive Dead Reckoning chip: a new dimension in navigation

3-Dimensional Automotive Dead Reckoning (“3D ADR”) aids traditional GPS/GNSS navigation via intelligent algorithms based on distance, direction and elevation changes made during satellite signal interruption. u-blox' 3D ADR GNSS chip UBX-M8030-Kx-DR blends satellite navigation data with individual wheel speed, gyroscope and accelerometer information to deliver accurate positioning regardless of changes in a vehicle’s speed, heading or vertical displacement, even when satellite signals are partially or completely blocked. This is especially important when quick navigation decisions must be made immediately upon exiting tunnels and parkhouses.



3D Automotive Dead Reckoning module with integrated sensors

The NEO-M8L Automotive Dead Reckoning (ADR) module includes integrated motion, direction and elevation sensors. The module integrates gyro and accelerometer with u-blox’ leading GNSS platform u-blox M8 to achieve the highest- performance indoor/outdoor positioning solution available, perfect for all road vehicle and high-accuracy navigation applications.

In addition to accessing the integrated module’s gyro and accelerometer data, accident reconstruction systems can provide the location of an accident to facilitate insurance claims even if a collision occurs in a tunnel or park house. High-end navigation devices are able to guide drivers through tunnels of several kilometers thanks to the unsurpassed accuracy of u-blox’ ADR system. Stolen vehicles can be located instantly due to continuous monitoring of sensor data and storage of location in non-volatile memory.

Devices for usage-based insurance, stolen vehicle recovery, road pricing, fleet management, emergency services, and vehicle navigation depend on reliable, uninterrupted positioning including tunnels, park houses and stacked highways. The NEO-M8L is the ideal solution for all road vehicle based applications, able to calculate a position in all circumstances based on its own internal sensors, regardless of satellite visibility and end-device orientation.



Evaluation tools

u-blox‘ ADR technology can be evaluated with specific blueprints (for 3D ADR chipset) and EVK-M8L evaluation kit supporting the NEO-M8L.

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