

NEON[®] Personnel Tracker

Tracking and Mapping

NEON Personnel Tracker delivers indoor and outdoor location improving operational efficiency, command effectiveness and safety for security, public safety and industrial applications.

Personnel Tracker provides:

- Real-time 3D visualization of location and tracks of individuals and teams
- Cloud based playback and after-action review capabilities
- Easy integration with 3rd party applications via NEON API.



NEON Personnel Tracker Application

NEON Personnel Tracker is an Android application tightly integrated with the NEON Location Solution where a suite of patented algorithms fuse inertial sensor data, Wi-Fi readings and inferred building data to deliver reliable 3D location. Personnel wearing a NEON Tracking Unit and carrying an Android device running the NEON Location Service can be seamlessly located both indoors and out. Optional use of geo-referenced UWB or BLE beacons enhances positioning accuracy.

The NEON Command Software enables quick 3D building map creation and connects to the NEON Cloud Service for access to stored location data.



NEON Tracking Unit



NEON Command Software



Key Features

3D Location Service

Android-Based NEON Location Service delivers real-time 3D location (X, Y, Z), timestamp and error bound estimates.

Rapid 3D Map Creation

Simple PC-based tool supports rapid creation of 3D building maps (including geo-referenced floor plan import).

API for Simple Integration

Interface for 3rd party developed Android apps providing real-time location data and allowing users to input constraints.

Cloud-based Logging

User data is stored in a cloud account allowing for simple access, visualization and export.

Optional Beacon Support

Enhanced accuracy provided through ranging to geo-referenced BLE or Ultra-wideband beacons. UWB provides sub-meter ranging accuracy.

Technical Data

NEON® Tracking Units

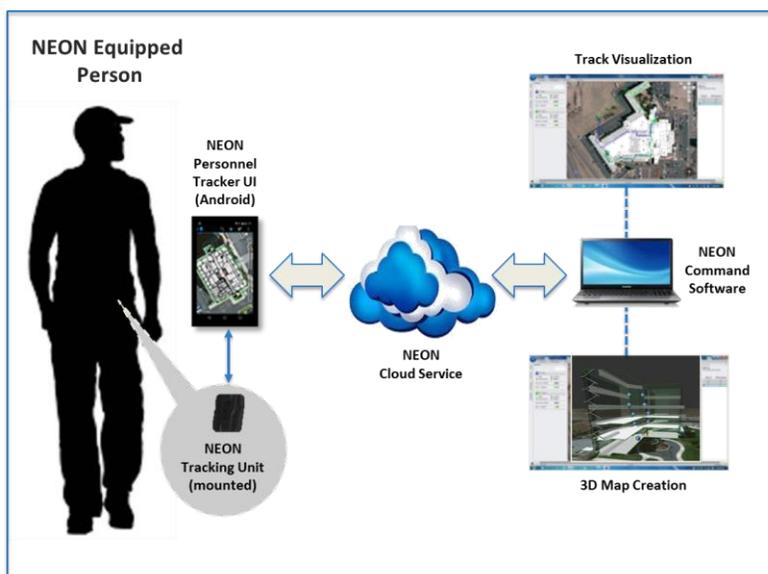
Dimensions (H x W x D)	52 x 66 x 19mm (2.1 x 2.6 x 0.75in)
Operating Temperature	-20 to 60 °C (-4 to 140 °F)
Battery	Lithium Polymer BLE (TU8B): 8-10 hours UWB (TU8U): 6-8 hours
Android-Tracking Unit Connection	Bluetooth

NEON System Performance with TU8

Accuracy Metric	R95
Horizontal Error*	5 meters or better (typical)
Vertical Error*	+/-1 meter
Ultra-wideband LOS Ranging	<1 meter (TU8U)

*Location accuracy is affected by precision of initialization, frequency of user check-ins, sensor integrity, UWB/BLE ranging and map information.

Multi-Purpose NEON Tracking/Anchor Units include temperature compensated gyroscopes, accelerometers, magnetic field sensors, and a barometric pressure sensor. Model TU8B supports BLE ranging; Model TU8U supports BLE and UWB ranging.



Customer Provided Android device (API level 19 - Android 4.4 Kit Kat), Windows 7 computer (or later)



TRX Patented Location Technology

The NEON Location Solution leverages TRX's patented sensor fusion and mapping algorithms to deliver real-time 3D location within buildings and other GPS-denied areas.

The NEON Location Service software includes:

- NEON Device Library - Sensor fusion and navigation algorithms which make up the device library were designed specifically to support indoor pedestrian location applications. The intelligence of the sensor fusion portion of the NEON software lies in part in its ability to isolate and select the areas in which a sensor's estimates are most accurate while eliminating the rest.
- FeatureSLAM™ Mapping - Structural, RF, and magnetic features are detected, located, and fused to provide constraints that enhance the 3D location. Bluetooth, UWB and Wi-Fi signal levels can be learned automatically and implemented as ranging sources or constraints.

The NEON Location Service uniquely implements constraints and corrections so that sensors inherently subject to inertial drift, magnetic interference and other errors can now deliver seamless and accurate 3D location inside buildings where GPS doesn't work.