

GPS-Denied, Dismount Location and Tracking



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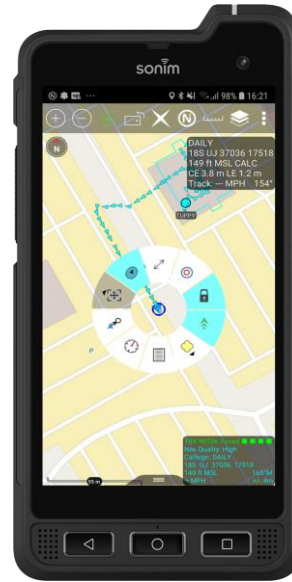
TRX NEON Personnel Tracker - Offline

NEON Personnel Tracker is a low SWaP, Android Location Service that delivers continuous location both indoors and out when dismounted personnel are operating with and without GPS in both naturally and intentionally denied environments. The NEON solution is deployed with an Android Location Service APK and UWB Tracking Unit that operate completely offline, without an internet or cloud connection.

- 2D/3D indoor and outdoor location
- GPS-denied location for dismounts
- Sensor fusion and RF ranging
- ATAK and IS-GPS-153-D plug-ins
- External location constraint API
- Warfighter location and motion
- Warfighter map/waypoint check-in
- Collaborative constraint sharing
- Ultra-wideband (UWB) ranging
- Spoofing and jamming resilience



NEON Tracking Unit



NEON with ATAK UI

Accurate location information is essential for effective navigation, situational awareness, targeting, and tracking. GPS may be denied in triple canopy, urban canyon, subterranean environments and indoors, and can be easily jammed. The NEON Personnel Tracker Location Service uses a suite of patented algorithms to fuse inertial sensor data, GPS (including resilient GPS sources), warfighter waypoint check-ins, and ultra-wideband (UWB) shared constraints, along with position data from third party sources (e.g. pseudolites and external ranging inputs) to deliver reliable location.

This offline version of NEON is deployed as an Android Location Service with each tracked person paired with a small, body worn tracking accessory (NEON Offline Tracking Unit). This configuration is easily integrated as a subsystem of an overall PNT architecture that extends operations when dismounted personnel are operating in naturally or intentionally denied environments. NEON is integrated with ATAK (Android Tactical Assault Kit), an Android UI and mapping engine which allows for targeting, navigation, and generalized situational awareness, via an easy to use plug-in architecture.

NEON can optionally support available building data (e.g. shapefile, RF and structural features) allowing for seamless 3D tracking indoors and in underground areas.

Key Features

Low SWaP-C Nav Fusion

GPS-denied location (X,Y,Z), timestamps, and error bound estimates.

Flexible Constraint Processing

Supports inputs from resilient GPS sources as well as Gaussian and non-Gaussian 3rd party constraints.

Precise Detail on Movement and Activity

Real-time classification of soldier activity and status - motion level and posture.

UWB Ranging Technology

Drop Beacons enable accurate UWB ranging corrections.

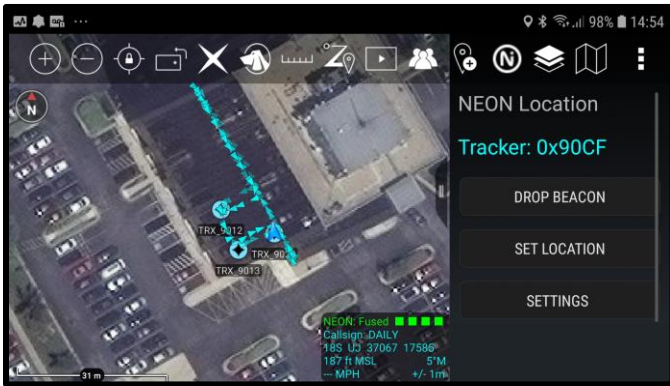
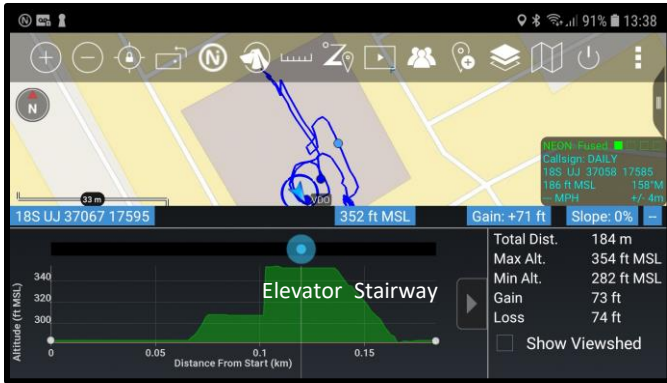
Dismount Nav Assurance

Spoofing detection and geo-referencing; assured nav throughout spoofing and jamming events.

3rd Party App Integration

Well tested, Android API supports 3rd party apps; ATAK plug-in available.

NEON Location Service Integration with ATAK



NEON Tracking Unit Technical Data (TU8U-O)

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

NEON Offline Dev Kit

The NEON Personnel Tracker Offline Dev Kit includes four NEON Offline Tracking/Beacon Units and 1-year licenses for NEON Command, NEON Personnel Tracker app, and cloud access for four users. Each of the tracking units includes perpetual license for NEON PT Basic Android software.



Model #: NEON-PT-DK40-1

Visit www.trxsystems.com/personnel-tracker-offline



NEON-ATAK Integration

NEON extends ATAK's outdoor blue force tracking capability to include GPS-denied environments. Integrated via a NEON Plug-In for ATAK, NEON users are seamlessly tracked inside buildings and in underground areas such as tunnels, gaining the benefit of dramatically improved situational awareness. Through the ATAK UI, NEON users can access initialization indicators, manual check-in, and UWB configuration capabilities that allow for 3D tracking inside buildings and underground, showing tracking details including elevators and stairways.

Ultra-Wideband (UWB)

NEON incorporates Ultra-Wideband (UWB) technology that provides accurate ranging to enhance tracking accuracy. NEON UWB Tracking Units support user-to-user sharing of location data, providing valuable location constraints between team members. Tracking Units can also act as UWB beacons that can be placed for a known event/activity or can be dropped ad-hoc at an incident; in either case, providing a highly accurate location constraint for all users in the group. These UWB capabilities are also fully integrated with ATAK.

Assured Dismount Navigation

NEON detects spoofing and will provide an indication of disruption events via ATAK or through the NEON API. The approach includes integrity monitoring using inertial sensor fusion to deliver assurance and can, optionally, be integrated with 3rd party GNSS Assurance software.

NEON-ATAK Drop Kit

The NEON ATAK Drop Kit includes 20 Offline UWB Tracking Units and is specifically packaged for use with ATAK. Each of the Offline UWB Tracking Units includes a perpetual license for the NEON Location Service and a 1-year hardware warranty. Available options include additional UWB units to be used for spares or UWB drop beacons and extended s/w maintenance.



Model #: NEON-PT-ATAK-KIT-20

