Overview

- Decawave TTK1000 **T**DoA **T**ool **K**it has been developed to allow licensees to quickly develop their own Real Time Location System.
- The tool kit allows customers to evaluate the technology in days, complete Proof of Concepts in weeks and develop your own system in a few months.
- From hardware design files to full software source code, this tool kit provides full ownership of the solution with a license to customize the HW and SW to your exact needs and manufacturing of your own products.
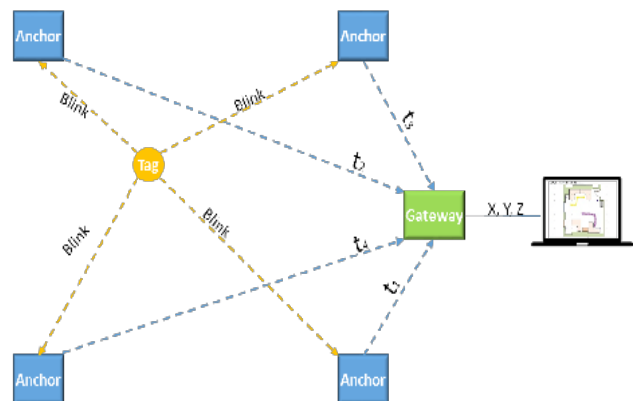

- Based on a time difference of arrival (TDoA) scheme, this implementation results in long Tag battery life while enabling location for a very high density of devices in Real Time with a high accuracy.
- Scalable, with a large coverage between anchors and a wireless synchronization scheme removing the need for wired synchronization, this implementation also allows you to quickly design large scale cost effective systems.
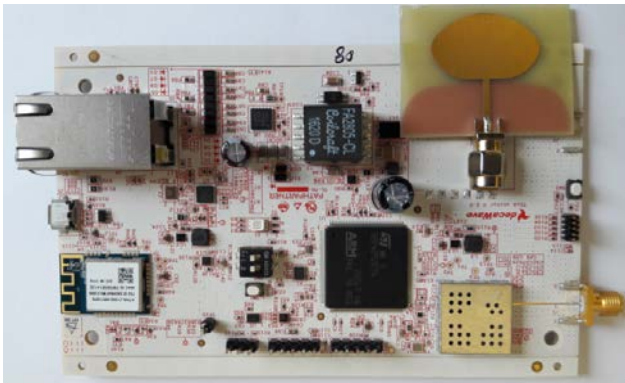
Applications

- Agriculture
- Asset Tracking
- Automotive
- Building Control
- Factory 4.0
- HealthCare
- Logistics/Warehouse
- Mining
- Retail
- Safety
- Access control
- Crowd management
- Sports analytics

- Licensees of TTK100 are provided with the following:
  - 10x Anchors based on STM F4 MCU
  - 10x UWB Anchor Antenna
  - 20x DWM1001 Tags
  - 1x Ethernet Hub
  - Anchor design files, Tag carrier board design files
  - Tag and Anchor Source code
  - Example upper layer client applications
  - 40 hours email support
  - License permits to design & manufacture own products
  - RTLS Control/Display client application software and source code
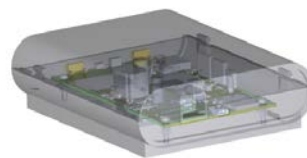 - Source code for central location engine (CLE) position solver

Anchor

- STM32F4 Anchor source code
- FreeRTOS and LWIP based
- Power over Ethernet or USB
- Ethernet & WiFi data backhaul
- Wireless synchronization over UWB
- Optional: Wired synchronization over Ethernet (requires additional HW)

Tag

- DWM1001 nRF52832 Tag
- Tag source code, Embedded Studio project
- Configurable update rate up to 10 Hz
- Internal UWB CH5 antenna
- Accelerometer for power optimization
- xxx mA/h Li-Po rechargeable battery*

Central Location Engine PC Software

- Interfaces to anchors via WiFi or Ethernet
- Runs Central Location Engine (CLE) for Tag location computation and clock synchronisation
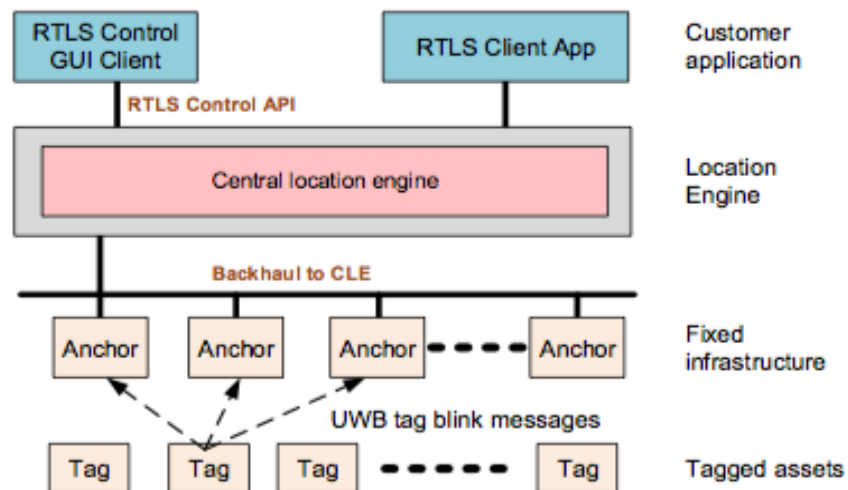- Provides the API to RTLS Control and Display Clients

Key Features

- Accuracy: 30cm in 3D in Line of Sight
- Density: 1200Hz (Aloha@6.8Mbps)
- Distance between anchors line of sight:
    80m CH5 6.8Mbps
    250m CH2 110Kbps
- Max # of anchors: unlimited

Anchor Enclosure

Figure 1: High Level System Architecture Diagram

TTK1000 Price $25,000 for more information contact tdoa@decawave.com