

## **Introduction**

TDOA positioning system is a UWB positioning anchor, UWB positioning tag and Center Location Engine (CLE), RTLS-Controller, positioning visualization software (RTLS-DISPLAY). The composed products can realize a centimeter-level high-precision real-time positioning system according to the positioning method of the time difference of arrival. This system is characterized by:

- 1) The anchor tag is equipped with R&D and self-developed UWB modules. After years of project tests in complex industrial control environments such as mines and nuclear power plants, the modules are safe and reliable.
- 2) The system adopts the POE power supply mode to reduce the workload of on-site cable deployment.
- 3) Customers can read the position coordinate information from the central positioning engine software (CLE) for secondary development



## **Application**

- •Smart Agriculture
- •Asset tracking
- •Automotive
- •Building control
- Factory 4.0
- •medical insurance
- •Logistics Warehouse
- •mining
- •Retail
- •Safety
- •Access control
- Crowd management
- •Sports analysis

## **Main Features**

- Positioning algorithm: TDOA
- Synchronization method: Wireless
- Accuracy: X-Y: 30cm in 3D in Line of Sight
- Support frequency band: 3.5G-4.2G
- Density: 1200Hz(@6.8Mbps)
- Typical distance between anchor and tag
  - •50m @6.8Mbps
  - •100m @110Kbps
- Maximum number of tags: unlimited
- Executive standard
  - Compliant with IEEE 802.15.4 UWB standard
  - Comply with FIRA Alliance standards (YCHIOT is a member of UWB FIRA Alliance)
  - Comply with the national standard "Information Technology Real-time Positioning" (YCHIOT is the drafting unit of the national standard for this technology)

**Hardware selection**



**Central Location Engine (CLE)**

- Central Position Engine (CLE) for tag position calculation and clock synchronization
- Operating environment: windows ; Linux (under development)
- Read and write data through the Ethernet LAN port
- Provide API for console program and visualization software side

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Wireless Sync
Solver2D
FP1RF : Enabled
Zero algorithm : Enabled
solveTime : 250 ms
Logging: vector file (blinks and CCP from all masters), Debug messages and Diagnostics (L4)
No dns_cle.cfg : use MDNS discovery
Starting RTLSDataServer on port 3335 ...
MDNS query for _dw_rtls_anchor
*** WARNING *** The program 'lle' uses the Apple Bonjour compatibility layer of Avahi.
Starting RTLSClientServer on port 3334 ...
*** WARNING *** Please fix your application to use the native API of Avahi!
*** WARNING *** For more information see <http://0pointer.de/blog/projects/avahi-compat.html>
Anchor (1) discovered : B7E9F014B7EFC028 at 3000:10.18.18.9
    
```

**Positioning Visualization Software (RTLS-DISPLAY)**

- Support remote management anchor
- Support real-time display of tag positioning track
- Support UWB parameter setting
- Provide RTLS-DISPLAY source code for a fee
- Customers can customize functions independently

