

# PATHPARTNER

Engineering Product Innovations of the Future

## RTLS

Real-time location system (RTLS) is a technology used for Indoor Positioning. It relies on known positions of anchors to determine the positions of moving tags.



## WHAT WE OFFER?

We build custom positioning solutions as per your requirements

- ✓ End-to-end product engineering services
- ✓ Independent hardware Design and Custom integration with other products
- ✓ Consultation services



We are a Decawave Partner

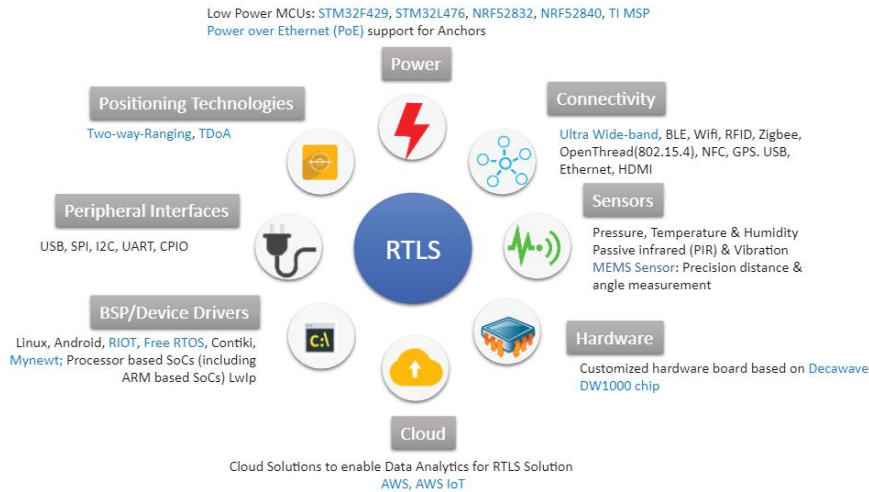


## ASSET TRACKING FOR CONFINED REGIONS

IMPROVE EFFICIENCY,  
SAVE TIME AND ENABLE  
STIFF SECURITY BY  
TRACKING YOUR ASSETS  
USING ULTRA WIDEBAND  
TECHNOLOGY (UWB)

# OUR RTLS COMPETENCY

We build custom positioning solutions as per your requirements



## WE HAVE WORKED ON

### SMART YARD MANAGEMENT

For an European Multinational

### VEHICLE TRACKING AND MONITORING

For an Automotive Solution Provider

### LAPTOP TRACKING

For an Indian IT company



## ULTRA-WIDEBAND TECHNOLOGY ADVANTAGES

UWB, one of the most advanced technologies used in RTLS, has the following advantages over the other technologies

### ACCURACY

Can attain an accuracy in the range of 10-50 cms

### EASILY MEASURABLE

UWB technology uses short bursts of radio impulses with incisive rises & drops

### LESS PROBABILITY OF INTERFERENCE

UWB's operating frequency is 3.1 - 10.6GHz

### SIGNAL STRENGTH INDEPENDENT

Positioning techniques do not rely on the signal strength

## RTLS POSITIONING TECHNOLOGIES

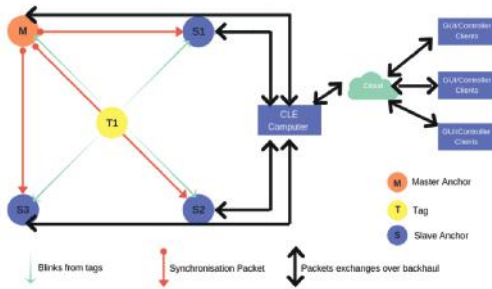
Depending on the end user application, the right positioning technology can be selected

Our solution is based on:

TDoA (TIME DIFFERENCE OF ARRIVAL)

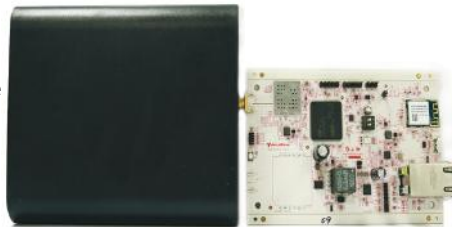
Radio waves from the tags reach every anchor at different times. The difference in the time of arrival of the radio waves is used to calculate the location of the tags.

# ABOUT OUR RTLS MODULE



## Anchor Hardware Specifications

- ✓ ARM Cortex-M4 32b microcontroller
- ✓ Decawave's DW1000 802.15.4 UWB (Ultra-Wide Band) RF transceiver IC
- ✓ 5V Power supply
- ✓ 10/100 Ethernet
- ✓ Wi-Fi 802.11b/g/n 2.4GHz
- ✓ One Multi colour LED (RGB)
- ✓ Operating Voltage: 5V +250m
- ✓ Operating Temperature Range
- ✓ -40° to +85° C
- ✓ Accuracy: 30cm
- ✓ RoHS complaint
- ✓ DFU programmable
- ✓ IP65 enclosuret



## Tag Hardware Specification

- ✓ Decawave's DW1000 UWB transceiver
- ✓ nRF52832 microcontroller
- ✓ Motion sensor
- ✓ UWB PCB antenna
- ✓ Low-power design, supply voltage: 2.8 V to 3.6 V
- ✓ Battery powered
- ✓ Option to mount pressure sensor

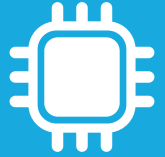


## BASIC COMPONENTS OF A TDOA BASED RTLS SYSTEM

### ANCHORS

The stationary device with known position used as a mediator between the Tags and the CLE

(Central Location Engine)



### TAGS

The portable device attached to the asset to be tracked. They communicate with anchors using radio waves



### APPLICATION INTERFACE

The UI where the tracking will be displayed



### CENTRAL LOCATION ENGINE (CLE)

CLE performs Multi-lateration and wireless synchronization scheme



## ABOUT PATHPARTNER

PathPartner is a specialist in product engineering, providing concept-to-production services to customers across automotive, consumer electronics, broadcast, medical and internet-of-things domains.

Through innovative technologies built around deep learning, computer vision, multimedia, imaging, and the internet of things, we solve complex business challenges for our customers. Our comprehensive portfolio of services coupled with state-of-the-art technology building blocks provides our customers with advantages of top-of-the-line technologies, superior performance and faster time to market.

ISO 9001:2015, ISO 27001:2013 certified

12+ Years | 300+ Projects | 100+ Clients



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