UWB Radiotracking

zactrack uses DecaWave's unrivalled precise indoor and outdoor real time location system.

- **Precise location system <10cm**
- **Easy and quick setup**
- **Very small transmitter**
- **Permissive, passes through materials**
- **Works in all weather conditions**

- For more information please go to https://www.decawave.com
- Worldwide Telecommunications Regulations governing the use of Ultra-Wideband radio https://www.decawave.com/sites/default/files/apr001_uwb_worldwide_regulations_summaryrev1.2.pdf

RTLS Real Time Location System

A simplified model

The tracking server calculates all individual distances from zacTag to each anchor and triangulates the real time position … The simplified spring model describes this method.

Tracking Accuracy

The technical accuracy of the system is +/- 5cm. But the actual “Accuracy” of the whole tracking system in general is influenced by the combination of three factors:

- **Update rate**
  The rate of positional measurements per second defines the amount of data for the prediction math. The higher the update rate, the smoother my movements.
  (typical for UWB radio tracking: 15Hz to 35 Hz)

- **Error distribution**
  The maximum radius and the shape of the error distribution defines the amount of filtering to achieve a stable position measurement.

- **Latency**
  The latency is the delay between the actual movement in the real world and the output of the calculated position over the network including the actual movement behavior of the effect device (fixture, camera,...) . Bad update rate und error distribution will increase the overall latency.

Radio Interference

Reflection

- Metallic surfaces
- Wire meshes
- Water surfaces

Distortion

- Magnetic fields
- LED walls
- Speakers

Shielding

- 5cm water – 100%
- Body parts
- Metal in costumes

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