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Titel

The BOUNCE Project: Measuring Time Intervals with a 10 ps Resolution

Kurzbeschreibung

**Motivation:** Even though localization methods, such as GPS, have been existing for quite some time, precise indoor localization is still an open research topic. Many use the strength of an incoming signal for this task. However, the signal strength of electromagnetic signals is likely to be distorted by any type of obstacles, such as desks, chairs, walls, equipment, persons, and the like. Therefore, others try to use the time-of-flight of a suitable signal. Unfortunately, ultra sonic signals lack longer ranges, whereas electromagnetic signals travel with the speed of light  $c=300.000$  km/s, which is way too fast for low-cost approaches. Nevertheless, the localization by means of the time-of-flight of an electromagnetic signal would excel other low-cost methods by far.

Bearbeiter



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Veröffentlichungen

- Salomon, R., Joost, R. BOUNCE: A new High-Resolution Time-Interval Measurement Architecture. In *IEEE Embedded Systems Letters (ESL)*, 1(2):56-59 2009.
- Joost, R., Salomon, R. BOUNCE, a Concept to Measure Picosecond Time Intervals with Standard Hardware. In *Proceedings of the 13th IEEE International Conference on Emerging Technologies and Factory Automati on (ETFA2008)*, pp. 1010-1015, 2008.
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