TU Clausthal

Bachelor-, Master- und Doktorandenseminar
des Instituts für Informatik

An Evaluation of Data Dissemination Delays in Wireless Sensor Networks Using Constructive Interference

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The minimization of data dissemination delays is always a challenge in Wireless Sensor and Actuator Networks (WSANs). It is nonetheless important because dissemination delays can lead to actuator asynchronism. By exploiting the physical phenomenon of Constructive Interference (CI), the dissemination delays can be reduced. To evaluate data dissemination delays in Constructive Interference-based Wireless Sensor and Actuator Networks (CI-WSANs), this thesis designs a Wireless Piano that can play music fluently and show delays via hearing. We practically measure dissemination delays and frequency stability using test instruments (e.g. multimeter, oscilloscope). To the best of our knowledge, this is the first attempt to disseminate digital music data in CI-WSANs. The results of the experiment exhibit that CI has a positive influence on data dissemination delays.

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Seminarraum 210, IfI, Am Regenbogen 15

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