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Handoff Triggering for Wireless Sensor Networks with Performance Needs

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Title:	Handoff Triggering for Wireless Sensor Networks with Performance Needs
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Abstract:	<p>In this paper, we deal with mobility management for wireless sensor networks and we focus on the first phase of a handoff procedure which is concerned with the mechanics of measuring important parameters and initiating (triggering) the handoff decision process. We introduce a range of metrics that could potentially be used in triggering a handoff and we focus on two easy-to-find local values, namely the Received Signal Strength Indicator (RSSI) and the Local Link Loss. We investigate these metrics on their ability to provide correct triggers for the decision process, taking into account different threshold values, averaging methods, averaging windows, and hysteresis margins. We evaluate the performance of the different metrics and methods using not only the resulting end-to-end packet loss, the handoff triggers, the eventual handoffs performed, and the handoff success rate, but also using the new concept of on-time triggering. Our evaluation provides a unique insight into the mechanics of the handoff trigger and decision phases.</p>