Erlang meets WSNs: a functional approach to WSN programming

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WSN challenges
Applications executed in distributed environments, composed of heterogeneous devices with different capabilities and limited resources, interconnected using short and unreliable wireless links.

Micro-programming (state of the art)
Programmer has to decompose the problem and develop code for each node. This approach does not hide the complexity of WSNs.

Macro-programming (state of the art)
Developer can see the whole network as a single entity. This approach reduces the complexity of development, but solutions can be applied on a limited number of scenarios.

WSN - Erlang (concurrency, heterogeneity, bit streams, fault-tolerance)

Problem
Code and fix - No reusability - Difficult to maintain

Solution

Current work
(1) further reducing the hardware requirements of our interpreter, and
(2) exploring how to adapt testing and model checking approaches developed for Erlang to WSN-Erlang.