A SOFTWARE TOOL FOR FEDERATED SIMULATION OF WIRELESS SENSOR NETWORKS AND MOBILE AD HOC NETWORKS

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The applicability of parallel discrete event simulation (PDES) to design and performance of Wireless Sensor Networks (WSNs) and mobile ad hoc networks (MANETs) is discussed. WSNs and MANETs operate in inherently parallel environments. It follows that there are many opportunities to admit parallelism into simulation of the system operation. In this paper, we provide some guidelines related to ad hoc networks simulators design and development. We place the special emphasis on the approach for federating parallel and distributed simulators, which results in a collection of disparate simulators creating federation. The design, functionality, implementation and performance of our software system MobAsim is described. It is a Java-based integrated software framework for ad hoc networks simulation performed on parallel computers or computer clusters that utilizes the paradigm of federating simulators and asynchronous distributed simulation technology. The computational results presented in the final part of the paper show the efficiency of parallel simulation performed under the MobAsim system.
Słowa kluczowe: computing, adhoc, MANET, WSN
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