A Programmable Interactive Approach for QualNet-based Network Model Evaluation and Testing

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***Abstract*—In the previous work, an interactive real-time user interface (RTUI), which is a reliable human-in-the-loop framework that allows human users to dynamically modify the parameters of network model during the simulation process, is investigated. However, the delay overhead of parameter re-configuration commands transmission is unavoidable, especially for a great amount of parameters in a large scale network model. In this paper, a programmable dynamic simulation interface (PDSI) is further proposed. With the proposed PDSI, each of the pre-programmed re-configuration commands is marked with a time label, and then all the commands are encapsulated as packets and sent to the simulator in advance. Depending on the time label, the re-configuration command is pre-cached in the event queue and precisely implemented according to the pre-programmed order, which eliminates the delay overhead of command transmission for the parameter changing of network model. Simulation results demonstrate the efficiency of the proposed PDSI compared to the RTUI.**

***Keyword*—PDSI, RTUI, pre-cache, programmable, QualNet**

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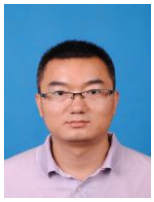

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