

OPNET University program

The OPNET Modeler® Wireless Suite provides high fidelity modeling, simulation, and analysis of a broad range of wireless networks. Technology developers leverage advanced simulation capabilities and rich protocol model suites to design and optimize proprietary wireless protocols, such as access control and scheduling algorithms. Simulations incorporate motion in mobile networks, including ground, airborne, and satellite systems. Modeler Wireless Suite supports any network with mobile devices, including cellular (GSM, CDMA, UMTS, IEEE 802.16 WiMAX, LTE, etc.), mobile ad hoc, wireless LAN (IEEE 802.11), personal area networks (Bluetooth, ZigBee, etc.) and satellite. OPNET Modeler can analyze end-to-end behavior, tune network performance, and evaluate growth scenarios for revenue-generating network services.

OPNET solutions model communications devices, protocols, technologies, and architectures, and simulate their performance in a dynamic virtual network environment. Integrated code debugging and data analysis features facilitate the design process. OPNET Network R&D solutions enable a broad range of academic research including:

- Evaluating and enhancing wireless protocols i.e., WiMAX, WiFi, UMTS, etc.
- Designing MANET routing protocols
- Studying new power management schemes for sensor networks
- Researching new enhancements to core network technologies i.e., IPv6, MPLS, etc.
- Analyzing optical network designs

OPNET provides its software for FREE to qualifying universities worldwide for academic research and teaching. Over 25,000 university professors and students use OPNET products in Electrical Engineering, Computer Science, Management Information Systems, and related disciplines, and more benefits related to the university program.

OPNET has introduced university program licenses to De Montfort university to contribute in placing research excellence and innovation, and supports DMU to achieve its research strategy (<http://www.dmu.ac.uk/research/strategy-and-aims/strategy-and-aims.aspx>).

OPNET Technologies, Inc. License Agreement Review

De Montfort University (G-3250306)

Unsigned License Agreements

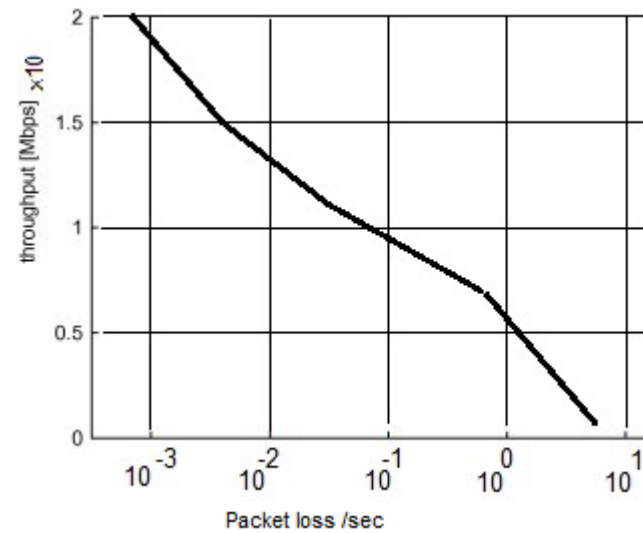
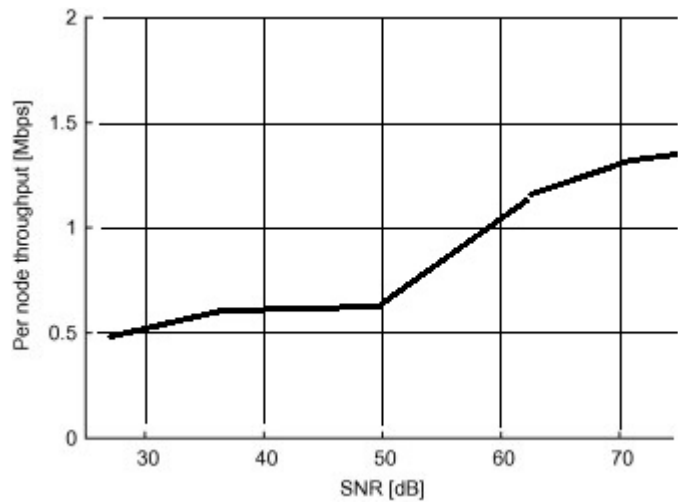
View	#	Type	Products	Status
No Matching License Agreement Records Found				

License Agreements In Place

View	#	Type	Products	Status
	76751-101	Maintenance	Educational use only and Modeler and Simulation Runtime Single and Wireless	Accepted By: Hassan Fadel 10/21/2012 10:10
View	76751-102	Maintenance	Educational use only and Modeler and Simulation Runtime Single and Wireless	
	76751-103	Maintenance	Flow Analysis	
	76751-104	Maintenance	Flow Analysis	
View	76751	Master License Agreement		Accepted By: Hassan Fadel 10/21/2012 10:11
	76751-101	Usage	Educational use only and Modeler and Simulation Runtime Single and Wireless	Accepted By: Hassan Fadel 10/21/2012 10:11
View	76751-102	Usage	Educational use only and Modeler and Simulation Runtime Single and Wireless	
	76751-103	Usage	Flow Analysis	
	76751-104	Usage	Flow Analysis	

OPNET is used in my research project to study the effect of using radio spectrum utilization techniques (like TH Transmission hyperspace™) & CRN (Cognitive Radio Networks) on the overall data network performance. Both techniques are used to allow higher and better utilization of the available radio spectrum. However, using such techniques, to optimize the radio channel, may have a direct (positive or negative) impact on the fixed part of the network. This project aims to investigate the interplay of fixed and radio networks during channel optimization and develop additional approaches to ensuring overall network efficiency and robustness. The investigations will show the impact of using the spectrum utilization techniques on overall network performance and QoS (Quality of Service).

Here are examples of evaluating the TCP throughput versus SNR and packet loss in wireless LAN environment:



Other examples show the OPNET capabilities in visualizing the network simulation results in a rich, integrated environment, and network topology graphical presentation

