

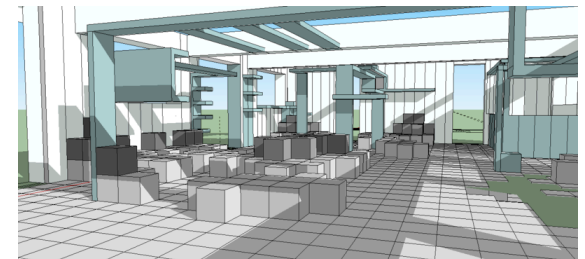
B.Sc. Thesis: Building your own cities; or generating synthetic cities for wireless network testing

Background of the thesis

Wireless networks are becoming a key part of our everyday life, and in the near future not only will phones, tablets, and computers be networked but all kinds of industrial and home devices will also be connected. This is causing new engineering challenges, and the old ways of deploying wireless devices, after limited simulations, will not be safe enough or sufficient. Ideally, we should test (via detailed computer simulations) how these complex future networks will work in literally millions of different environments. INETS has a project where we are studying the use of *synthetic cities* as a basis for providing such virtual test environments. These are computer-generated, very detailed 3D environments – just like in computer games – and these artificial cities are designed to replicate the key structures of actual cities.

Tasks & Tools

The focus of this thesis will be on making early tests for this synthetic cities approach. Your task, should you choose to accept it, will be learning two existing tools and then integrating their work-flows: a city generation tool used by industry and a state-of-the-art radio propagation simulator. After learning to use the software tools, you will define with the help of your supervisors example cases that will be generated and analyzed in order to study the impact of varying urban landscape on propagation conditions in future wireless networks.



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