

Abstract

Mobile Ad Hoc Networks are flexible, self configuring networks that do not need a fixed infrastructure. When these nets are simulated, mobility models can be used to specify node movements. The work in this thesis focuses on designing an extension of the random trip mobility model on a city section from EPFL (Swiss federal institute of technology). Road data is extracted from the census TIGER database, displayed in Google Earth and used as input for the model. This model produces output that can be used in the open source network simulator ns-2.

We created utilities that take output from a database of US counties, the TIGER database, and convert it to KML. KML is an XML based format used by Google Earth to store geographical data, so that it can be viewed in Google Earth. This data will then be used as input to the modified mobility model and finally run through the ns-2 simulator. We present some NAM traces, a network animator that will show node movements over time.

We managed to complete most of the goals we set out, apart from being able to modify node positions in Google Earth. This was skipped because the model we modified had an initialization phase that made node positions random regardless of initial position. We were also asked to add the ability to set stationary nodes in Google Earth; this was not added due to time constraints.