
NIST/AODV OPNET Model README File
April 2001

SUMMARY

The present document provides information about the NIST/AODV OPNET Model. This model for the Ad hoc On Demand Distance Vector (AODV) routing protocol was developed at the National Institute of Standards and Technology (NIST) to provide a tool for researchers and designers who need to conduct OPNET simulations of Mobile Ad hoc Networks (MANETs).

The most current information on NIST/AODV OPNET Model, including updates, can be found on the NIST Wireless Communications Technologies Group website - <http://w3.antd.nist.gov/wctg>.

CONTENTS

1. System Requirements
2. Disclaimer
3. Model Description
4. Installation Instructions
5. Bug Reporting

1. System Requirements

NIST/AODV OPNET Model uses the network simulation tool OPNET®, version 7.0 (c) by MIL3, Inc for SPARC/Solaris platforms. No simulation was run on any other version of OPNET or in any other platform (Windows). So if any bugs are encountered on any of these cases, users are kindly asked to file a bug report (see Section 5).

2. Disclaimer

Although great care has been taken to ensure that NIST/AODV OPNET Model operates properly and in conformity with the IETF draft version 8, the process of validating the model (by using it in our own simulations) is still on going.

All comments regarding the accuracy of this product are most welcome (see section 5 for contacts).

3. Model Description

NIST/AODV OPNET Model includes a hierarchical structure of models consisting of a network model, a node model, and a set of process models (Namely, the AODV Routing Process Model and the AODV WLAN MAC Process Model).

The AODV Routing Process Model is an implementation of the IETF Draft (version 08) for the Ad hoc On Demand Distance Vector routing protocol. Below is the list of all implemented features

- Expanding ring search technique (controlling route requests broadcasts);
- Hello messages broadcasts;
- Local repair in case of link breakage;
- Gratuitous requests/replies;
- Expired route deletion (an expired route is deleted after a specific time).

The WLAN MAC process Model is an implementation of the IEEE 802.11 standards provided by OPNET®. Some modifications have been added to the model in order to facilitate the interaction between the two process models (AODV and MAC).

NIST/AODV OPNET Model also includes a sample simulation sequence for an 18-node network. The scenario description is included inline within the model. [click on the Description icon that appears when you open NIST_AODV project (see section 4)]

Note: Detailed documentation regarding the programming aspect of the model will be available soon in a separate file.

4. Installation Instructions

For Windows:

- Download the nist_aodv_model.zip file.
- Unzip the file and extract the nist_aodv_model directory to your opnet model directory (op_models/).
- Launch OPNET application.
- Add nist_aodv_model directory to the model directory path (Edit -> Preferences -> mod_dirs -> insert).
- OPEN a project (NIST_AODV project should be in the list).

For other platforms:

- Download the nist_aadv_model.tar.gz file.
- Move the file to your opnet models directory (op_models/).
type "mv nist_aadv_model.tar.gz your_opnet_models_dir"
- Unzip the file and extract nist_aadv_model files.
type "gunzip nist_aadv_model.tar.gz; tar xvf nist_aadv_model.tar"
- Launch OPNET application.
- Add nist_aadv_model directory to the model directory path (Edit -> Preferences -> mod_dirs -> insert).
- OPEN a project (NIST_AADV project should be in the list).

5. Bug Reporting

If you are experiencing problems, or if you have any comments regarding this product, you can send an e-mail to the address below. Please be as specific as possible when describing the problem, and include any error messages you may be receiving.

Contact: Lyes Guemari: guemari@antd.nist.gov
Or Leonard Miller: lmiller@antd.nist.gov