

*Málaga, January 2013*

Executive Summary

- TITLE:** D4.3.2: SW package for QoS of VANETs in Ns-2
- PAPERS RELATED:** J. Toutouh, J. García-Nieto, E. Alba. **Intelligent OLSR Routing Protocol Optimization for VANETs**. IEEE Transactions on Vehicular Technology, 60(4):1884-1894, May 2012. DOI: <http://dx.doi.org/10.1109/TVT.2012.2188552>
- J. García-Nieto, J. Toutouh, E. Alba. **Automatic Tuning of Communication Protocols for Vehicular Ad-Hoc Networks Using Metaheuristics**. Engineering Applications of Artificial Intelligence. 23(5):795-805, August 2010, DOI: <http://dx.doi.org/10.1016/j.engappai.2010.01.012>
- ABSTRACT:** In VANETs, the use of network simulators is a common practice when facing new protocol design and evaluation. Ns-2 is a popular discrete event simulator targeted at networking research. It provides substantial support for simulation of TCP, routing, and multicast protocols over wired and wireless networks. In this sense, Ns-2 simulation traces are used to calculate QoS indicators to measure the performance of the network [PINB12]. These traces entail information concerning: acting protocols, packets delivered, packets received, dropped packets, delays, queue sizes, etc. Therefore, using AWK and Shell scripting methods, a series of script packages have been developed in the scope of this project to measure QoS indicators, like: Packet Delivery Ratio (PDR), Network Routing Load (NRL), Average End to End Delay (AEED), and Drop Packets (DP). A subset of most representative software scripts developed here are: `metrics.awk` (PDR, NRL, AEED, DP), `throughput.awk`, `delay.awk`, and `congestion_window_size.awk`.
- GOALS:**
1. Generation of software scripts to implement QoS metrics for VANETs
 2. Web repository for AWK scripts and TCL instances
- CONCLUSIONS:**
1. The use of standard metrics to measure QoS indicators in VANETs leads the systematic evaluation of protocols and applications, then providing a common framework for experiments and comparisons.
- RELATION WITH PAST DELIVERABLES:** PRE: D4.3.1-2012 (advisable reading)
- OTHERS:** [PINB12] Bijan Paul, Md. Ibrahim, Md. Abu Naser Bikas: Performance Evaluation of AODV and DSR with Varying Pause Time and Speed Time Over TCP and CBR Connections in VANET. CoRR abs/1203.3240 (2012)