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Received the B.S. and M.S. degrees in computer science from Gabes University, Tunisia, in 2010 and 2012, respectively. He is currently a Temporary Attached of Teaching and Research at Franche Comté University, Besançon, France. He is working toward the Ph.D. degree with the Telecom SudParis, Evry, France and National School of Computer Science (ENSI), Manouba, Tunisia. His research interests include communications optimization in vehicular ad hoc networks, quality of service, and mobility management.

### *“An Optimized Clustering Protocol in Vehicular Ad Hoc Networks”*

#### **Abstract:**

*The continuing increase in road traffic accidents throughout the world has motivated the development of Intelligent Transportation Systems (ITS) and other applications to improve road safety and driving comfort. A communication network, called a Vehicular Ad-hoc NETWORK (VANET), in which the vehicles are equipped with wireless devices, has been developed to make these applications feasible. A challenging problem when designing communication protocols in VANETs is coping with high vehicle mobility. Motivated by this observation, we propose an Adaptive Weighted Cluster Protocol (AWCP) to reduce the impact of mobility in VANET. AWCP is a road map dependent and uses road IDs and movement direction in order to make the clusters structure as stable as possible. In order to optimize the QoS of this protocol, we define a multi-objective problem whose inputs are the AWCP's parameters and whose objectives are: providing stable cluster structures, maximizing data delivery rate, and reducing the clustering overhead.*