Bio-Inspired Method for Improving Routing Protocol Performances in Vehicular Ad-Hoc Network

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In the Name of Allah, The Most Beneficent, The Most Merciful: “My Lord, enable me to be grateful for Your favor which You have bestowed upon me and upon my parents and to do righteousness of which You approve. And admit me by Your mercy into [the ranks of] Your righteous servants. (An-Naml:19) ”.

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LIST OF ABBREVIATIONS

ACAR	Adaptive CAR
ACO	Ant Colony Optimization
ACO-ER	Efficient Routing Algorithm based-on ACO
AGF	Advanced Greedy Forwarding
AMR	Adaptive Message Routing
AODV	Ad Hoc On-demand Distance Vector
A-STAR	Anchor-Based Structure and Traffic-aware Routing
AWCP	Adaptive Weighted Clustering Protocol
BAHG	Back-bone assisted Hop Greedy
BEA-OLSR	Best Energy-aware OLSR
BER	Bit Error Rate
BLA	Bee Life Algorithm
BOA-VRP	Bio-inspired Optimization Algorithm for Vehicle Routing Problem
C2C-CC	Car to Car Communication Consortium
CAP	Connectivity-aware Routing Protocols
CAR	Connectivity-aware Routing
CBF	Contention-based Forwarding
CF	Control Factor
C-GPSR	Chameleon Method GPSR
CM	Chameleon Method

CM-AODV	Chameleon Method AODV
CR	Crossover Factor
DCF	Distributed Coordination Function
DE	Differential Evolution
DEM	Differential Evolution Method
DREAM	Distance Routing Effective Algorithm for Mobility
DSDV	Distance-Sequence Distance Vector Routing Protocol
DSR	Dynamic Source Routing
DSRC	Dedicate Short Range Communication
DTN	Delay Tolerant Network
DV	Distance Vector
DYMO	Dynamic MANET On-demand
FCC	Federal Communication Commission
FL	Fuzzy Logic
GA	Genetic Algorithm
GeoSVR	Geographical Stateless VANET Routing
GG	Gabril Graph
GLS	Grid Location Service
GPCR	Greedy Perimeter Forwarding Routing
GPS	Global Position System
GPSR	Greedy Perimeter Stateless Routing
GRANT	Greedy Routing with Abstract Neighbor Table
GRP	Geographical Routing Protocol

GSR	Greedy and Stateless Routing
GySTAR	Improved Greedy TAR
I2I	Inter Infrastructure
IAP	Infrastructure Assisted Protocol
IETF	International Engineering Task Force
IGRP	Intersection-based Geographical Routing
IOLSR	Intelligent Optimized Link State Routing
IP	Internet Protocol
IRTIV	Intelligent Routing Using Real-time Traffic Information in VANET
IZRP	Intra Zone Routing Protocol
LF	Loss Function
LHS	Left Hand Side
LL	Lower Limit
LOUVRE	Landmark Overlays for URBAN Vehicular Routing Environments
LS	Link State
MAC	Medium Access Control
MANET	Mobile Ad-Hoc network
MAODV	Multi-cast AODV
MAV-AODV	Multi-cast with ACO Based-on MAODV
MO PSO	Multi-Objective PSO
MODE	Multi-Objective Optimization Differential Evolution

MPR	Multi point relay
MURU	Multi-hop Routing For Urban VANET
NVTime	Neighbor Validity Time
OA	Orthogonal Array
OBSG	Optimization Broadcasting scheme for VANET with GA
OBU	Onboard Unit
OCM	Optimization Control Message
OF	Objective Function
OPT	Option
OT	Optimization Target
PDR	Packet Delivery Ratio
pPSO	Parallel PSO
PRP	Proactive Routing Protocols
PSO	Particle Swarm Optimization
QoS	Quality of Service
RBVT	Road-based routing Using Vehicular Traffic
REP	Reply
RERP	Route Reply
RERQ	Route Request
RERR	Route Error
RFC	Request for comment
RHS	Right Hand Side
RNG	Relative neighborhood Graph

RRP	Reactive Routing Protocols
RSU	Road Side Unit
RTCP	Real-time connectivity Awareness
RTT	Round Trip Time
SADV	Static node Assisted Dissemination Protocol for VANET
SAP	Street-aware Routing Protocols
SAR	Spatially-aware Routing
SF	Smart Forwarding
SI	Swarm Intelligent
SIFT	Simple Forwarding Trajectory
SLAB	Statistical Location-Assisted Broadcast
SNR	Signal-to-Noise Ratio
STAR	Spatial and Traffic-aware Routing
TARCO	Traffic-aware Routing Protocol
TC	Topology Control
TO-GO	Topology Assisted Geographical Routing
TOM	Taguchi Optimization Method
UL	Upper Limit
USDOT	United State Department of Transportation
UVAR	UAV-Assisted VANET Routing Protocol
V2I	Vehicle to Infrastructure
V2V	Vehicle to Vehicle
VADD	Vehicle Assisted Data Delivery