

## LIST OF SYMBOLS AND ABBREVIATIONS

ACK	-	Acknowledgement
AODV	-	Ad hoc On Demand Distance Vector
AQM	-	Ad hoc QoS multicasting protocol,
ADMR	-	Adaptive Demand-driven Multicast Routing protocol
ATSA	-	Adaptive Time Division Multiple Access Slot Assignment Protocols
AQRA	-	Agent-based Distributed QoS Multicast Routing Algorithm
ACO	-	Ant Colony Optimization
ADSR	-	Ant DSR
ANN	-	Artificial Neural Network
$B_{av}$	-	Available bandwidth
$P_{ij}$	-	Available Battery power
CDMA	-	Code Division Multiple Access
CBR	-	Constant Bit Rate
$C_1, C_2$	-	Constant factors having a value between 0 and 1
CTMC	-	Continuous-Time Markov Chain
CRA	-	Cooperative Rate Adaptation
CAMP	-	Core Assisted Mesh protocol
CORA	-	Correlation based Rate Adaptation
CBMR	-	Cross layer Based Multipath Routing
CLD	-	Cross Layer Design
CFRA	-	Cross-Layer based Fair Resource Allocation
CBR-PARA	-	Cross-layer Based Routing and Power Aware Rate Adjustment

CBRRC	-	Cross-Layer Based Routing and Rate Control
CRNS	-	Cross-layer based routing using forwarding node selection
CSR-MAN	-	Cross-layer based Secure Routing in MANETs
BW	-	Current Link Bandwidth
DTN	-	Delay Tolerant Network
DSDV	-	Destination Sequenced Distance Vector
DDM	-	Differential Destination Multicast
DRA	-	Differential Rate Adaptation
$D_{ij}$	-	Distance
DSRP	-	Distributed Slots Reservation Protocols
DTDMA	-	Distributed TIME Division Multiple Access
DTDMA	-	Distributed Time Division Multiple Access
DYGES	-	Dynamic Generation Size approach
DSR	-	Dynamic Source Routing
$E_{con}(t)$	-	Energy consumed by a node after time $t$
EEMAC	-	Energy Efficient MAC Protocol
$\rho$	-	Energy ratio
EFQRM	-	Entropy-based Fuzzy controllers QoS Routing algorithm in MANET
PLR	-	Estimation of Packet Loss Ratio
ETX	-	Expected Transmission Count Metric
ETT	-	Expected Transmission Time
FIB	-	Fibonacci Increment Backoff
FACO	-	Fuzzy Ant Colony Based Routing Protocol
FE-AODV	-	Fuzzy Energy-based AODV
FLoP	-	Fuzzy Logic Probabilistic
FLS1	-	Fuzzy Logic System 1
FLS2	-	Fuzzy Logic System 2

FEEPRP	-	Fuzzy Logic-based Energy-Efficient Packet Loss Preventive Routing Protocol
GF	-	Galois Field
GPS	-	Global Positioning System
T <sub>i</sub>	-	Idle time period
IRS	-	Immediately Reachable Set
E	-	Initial energy
N <sub>i</sub>	-	Intermediate nodes
LOAOMDV	-	Link Optimization Ad-hoc On-Demand Multipath Distance Vector Routing
LQ <sub>ij</sub>	-	Link Quality
BW <sub>loc</sub>	-	Local Bandwidth
MAC	-	Medium Access Control
MF	-	Membership Function
$\lambda(z_i)$	-	Membership Function
MAC	-	Message Authentication Code
BW <sub>min</sub>	-	Minimum Bandwidth
MAODV	-	Multicast Ad hoc On-demand Distance Vector routing protocol
MQMGA	-	Multiple constraints QoS Multicast routing optimization algorithms based on Genetic Algorithm
MQMR	-	Multi-path QoS Multicast Routing
NEBS	-	Network Entry Based Scheduling
N <sub>r</sub>	-	Number of packets received by the node after time t
N <sub>t</sub>	-	Number of packets transmitted by the node after time t
ODMRP	-	On-Demand Multicast Routing Protocol
OAR	-	Opportunistic Auto Rate
OLSRv2	-	Optimized Link State Routing Protocol v2
PDR	-	Packet Delivery Ratio

PDA	-	Personal Digital Assistance
PLEB	-	Pessimistic Linear-Exponential Backoff
PHY	-	Physical Layer
PCF	-	Point Coordination- Function
P	-	Power
$\Delta$	-	Power gap
Prx	-	Power received at the node
Ptx	-	Power transmitted
PDTMRP	-	Power-Aware Dual-Tree-Based Multicast Routing Protocol
Tin	-	Predefined time period
QoS	-	Quality of Service
QOLSR	-	Quality of service OLSR
QoS	-	Quality-of-Service
R	-	Rate
RS	-	Reachable Set
$\beta$	-	Receiver gain
RBAR	-	Receiver-Based Auto Rate
Trx	-	Reception time
RDYGES	-	Recovery Dynamic Generation Size approach
RMQR	-	Reliable Multi-path QoS Routing
RRAF	-	Reliable Routing Algorithm based on Fuzzy-logic
RTS/CTS	-	Request to Send /Clear to Send
BWres	-	Residual bandwidth
E <sub>res</sub>	-	Residual energy
RAT	-	Resource Allocation Table
RREP	-	Route Reply
RREQ	-	Route Request
SMRP	-	Service-aware Multi-constrained Routing Protocol

SNR/RP	-	Signal-to-Noise Ratio/Received Power
SAA	-	Slot Adjustment Algorithm
SAP	-	Slot Adjustment Protocol
SDP	-	Slot Decision Policies
SIP	-	Slot Inhibited Policies
Prrx	-	Successful acknowledgment packet reception probability
Prtx	-	Successful packet delivery probability in the forward direction
$g$	-	System loss
TORA	-	Temporally Ordered Routing Algorithm
TDMA	-	Time Division Multiple Access Medium Access Control
TDMA/FDD	-	Time Division Multiple Access/ Frequency Division Duplex
TCP/IP	-	Transmission Control Protocol/Internet Protocol
Ttx	-	Transmission time
$\alpha$	-	Transmitter gain
UGS	-	Unsolicited Grant Services
VeMAC	-	Vehicular Ad-hoc Networks
VSLOT	-	Virtual Slot Scheduling
$\mu$	-	Wavelength
WSN	-	Wireless Sensor Networks
ZRP	-	Zone Routing Protocol