Parameter	Case of utilisation	Description (unit of measure)	Value	Default Value	Notes
Simulation settings					
seed	Always	Seed for random numbers generation	Integer, if set to 0 it is randomly selected	0	
simulationTime	Always	Simulation duration (s)	Double, > 0	10	
Technology	Always	Choice between LTE-V2V, 802.11p, or coexistence using separate bands (no interference) or the same band)	String, [LTEV2V,80211p, COEX-NO-INTERF, COEX-STD-INTERF]	LTEV2V	Added from v3.1, coexistence options from v5.1
numVehiclesLTE	When Technology= COEX-NO-INTERF or Technology= COEX-STD-INTERF	Number of vehicles that are LTE-V2V between groups of vehicles that are IEEE 802.11p	Integer, >=0	1	From v5.1
numVehicles11p	When Technology= COEX-NO-INTERF or Technology= COEX-STD-INTERF	Number of vehicles that are IEEE 802.11p between groups of vehicles that are LTE-V2V	Integer, >=0 (cannot be 0 if numVehiclesLTE=0)	1	From v5.1
fileTrace	Always	Set file trace		false	Removed in v5.1 Replaced with TypeOfScenario
TypeOfScenario	Always	Set scenario to simulate; PPP on multiple lanes with various speeds, file traces, or ETSI highway high speed as per TR 36.885	String, [PPP,Traces, ETSI-Highway, ETSI-Urban]	PPP	Added from v5.1
positionTimeResolution	Always	Positioning update of the vehicles	Double, >= 0	0.1	Until v5.2.9 only with traffic traces, default was auto (-1); Changed in v5.2.10
roadLength	When *TypeOfScenario* =PPP or TypeOfScenario=ETSI-Highway	Length of the road to be simulated (m)	Double, > 0	4000 if TypeOfScenario =PPP, 2000 if TypeOfScenario =ETSI-Highway, 2732 if TypeOfScenario =ETSI-Urban	
roadWidth	When *TypeOfScenario* =PPP or TypeOfScenario=ETSI-Highway or TypeOfScenario=ETSI-Urban	Width of each lane (m)	Double, >= 0 (width 0 means 1-D)	3.5 if TypeOfScenario =PPP or ETSI-Urban, 4 if TypeOfScenario =ETSI-Highway	
rho	When *TypeOfScenario* =PPP or TypeOfScenario=ETSI-Highway	Density of vehicles (vehicles/km) - According to the definition, it is inv(2.5*speed)	Double, > 0	100 if TypeOfScenario =PPP, 35 if TypeOfScenario =ETSI-Highway, 24 if TypeOfScenario =ETSI-Urban	
vMean	When *TypeOfScenario* =PPP or TypeOfScenario=ETSI-Highway	Mean speed of vehicles (km/h)	Double, >= 0	114.23 if TypeOfScenario =PPP, 240 if TypeOfScenario =ETSI-Highway , 60 if	
vStDev	When *TypeOfScenario* =PPP or TypeOfScenario=ETSI-Highway	Standard deviation of speed of vehicles (km/h)	Double, >= 0	12.65 if TypeOfScenario =PPP, 0 if TypeOfScenario =ETSI-Highway, , 0 if	

Nblocks	When *TypeOfScenario* =ETSI-Urban	Number of total blocks	Integer, > 0	1	From 5.2.11
Nlanesblockh	When *TypeOfScenario* =ETSI-Urban	Number of horizontal lanes per block (both directions)	Integer, > 0	4	From 5.2.11
Nlanesblockv	When *TypeOfScenario* =ETSI-Urban	Number of vertical lanes per block (both directions)	Integer, > 0	4	From 5.2.11
NLanes	When *TypeOfScenario* =PPP or TypeOfScenario=ETSI-Highway	Number of lanes per direction	Integer, > 0	3	
filenameTrace	When *TypeOfScenario* =Traces	File trace name	String	null.txt	
fileObstaclesMap	When *TypeOfScenario* =Traces	Set obstacles map file	Boolean	false	From v3.1
filenameObstaclesMap	When *fileObstaclesMap* =true	File obstacles map name	String	null.txt	From v3.1
XminTrace	When *TypeOfScenario* =Traces	Minimum X coordinate to keep in the traffic trace (m)	Double, >= 0 or -1 (auto calculation)	-1	From v3.3
XmaxBlock	When TypeOfScenario=ETSI-Urban	Width of each block (m)	Double, >= 0	250	From v5.3.3
XmaxTrace	When *TypeOfScenario* =Traces	Maximum X coordinate to keep in the traffic trace (m)	Double, >= 0 or -1 (auto calculation)	-1	From v3.3
YmaxBlock	When TypeOfScenario=ETSI-Urban	Height of each block (m)	Double, >= 0	433	From v5.3.3
YminTrace	When *TypeOfScenario* =Traces	Minimum Y coordinate to keep in the traffic trace (m)	Double, >= 0 or -1 (auto calculation)	-1	From v3.3
YmaxTrace	When *TypeOfScenario* =Traces	Maximum Y coordinate to keep in the traffic trace (m)	Double, >= 0 or -1 (auto calculation)	-1	From v3.3
neighborsSelection	Always	If using significant neighbors selection	Boolean	False	From v3.5; not active from v5.1
Mvicinity	If neighborsSelection=true	Margin for trajectory vicinity (m)	Integer, > 0	10	Removed in v5.1
Mborder	Always	Margin for border effect removal (m)	Integer, >= 0	0	Removed in v4.1
Application settings					
Tbeacon	Always	Beacon period (s)	Double, > 0	0.100000	Replaced in v5.2 by averageTbeacon
averageTbeacon	Always	Average beacon period (s)	Double, > 0	0.100000	From v5.2
variabilityTbeacon	Always	Interval of variability of Tbeacon from vehicle to vehicle (applies only to 11p)	Double, >=0 & <averageTbeacon; -1 means automatic based on speed	0	From v5.2; option -1 added in v5.2.3
beaconSizeBytes	Always	Beacon size (Bytes)	Integer, > 0 & <10000	190	
resourcesV2V	When Technology~=80211p	Resource allocated to V2V (%)	Integer, > 0 & <=100	100	
variableBeaconSize	When Technology=80211p	Allows packets of 2 sizes	Boolean	false	Not tested from v5.1
beaconSizeSmallBytes	When variableBeaconSize=true (& Technology=80211p)	Set size of smaller packets	Integer, >0 & <= beaconSizeBytes	190	
NbeaconsSmall	When variableBeaconSize=true (& Technology=80211p)	Set number of smaller packets after each large packet	Integer, >0	4	

cbrActive	Always	If the CBR is calculated	Boolean	true	From v5.3.0
cbrSensingInterval	If cbrActive=true	Sets the duration of the time interval for CBR calculation (s)	Double, >0	0.1	tested only from version 5.2.9, when the defult was changed from 1 to 0.1
cbrSensingIntervalDesynchN	If cbrActive=true	Sets the number of intervals for CBR desynch	Integer, >0	100	From v5.3.0
dcc_active	Always (gives error if cbrActive=false)	If the DCC is active	Boolean	true	From v5.3.0
camDiscretizationType	if varabilityTbeacon==-1	Type of discretization: 'null'=used, 'allSteps'=steps of 0.1s or 'allocationAligned' in {0.1,0.2,0.5,1}	String ('null', 'allSteps', 'allocationAligned')	null'	From v5.3.5
camDiscretizationIncrease	Always	Percentage of the admissibile increase of the generation interval	Double, >0	0	From v5.3.5
Physical layer settings					
BwMHz	Always	Bandwidth (MHz)	Double, [1.4, 5, 10, 20] if Technology=LTEV2V; only 10 otherwise	10	
Raw	Always	Awareness range (m); can be a vector of increasing numbers, which will create groups of distances for the outputs	Integer, > 0, or String including an increasing list of integers, >0	150	Before v5.2 it was an Integer (String option added from v5.2)
Ptx_dBm	Always	Transmitted power (dBm)	Double	23	
FixedPdensity	Always	If true, Ptx_dBm refers to the power adopted over 10 MHz and it is scaled in case the signal uses only a portion	Boolean	true	From v5.2.1; default changed from false to true in v5.2.3
Gt_dB	Always	Transmitter antenna gain (dB)	Double	3	From v3.1
Gr_dB	Always	Receiver antenna gain (dB)	Double	3	
F_dB	Always	Noise figure of the receiver (dB)	Double	9	
folderPERcurves	Always	Folder for the PER vs. SINR curves (names of files are fixed)	String; 'null' means not used	'null'	From v5.2; name of files have been revised in v5.2.1
folderPERcurvesNLOS	When TypeOfScenario =ETSI-Urban	Folder for the PER vs. SINR curves in Crossing NLOS scenario (names of files are	String; 'null' means not used	'null'	From v5.3
pWithLTEPHY	When Technology ~= LTEV2V	Option to use in 11p SINR and data-rate of the MCS of LTE	Boolean	false	From v4.1
Mode	When Technology = 80211p	802.11p TX Mode	Integer, [1,2,3,4,5,6,7,8]	3	From v3.1, replaced in v5.1 by MCS_11p
MCS_11p	When pWithLTEPHY=false (& Technology ~= LTEV2V)	802.11p TX MCS	Integer, [0,1,2,3,4,5,6,7]	2	From v5.1
MCS_pWithLTEphy	When pWithLTEPHY=true (& Technology ~= LTEV2V)	LTE MCS to use in 802.11p	Integer, within 0 and 28	3	From v4.1
rilModel11p	When Technology ~= LTEV2V	Activates a model to consider the destructive effect of short but strong interference in ITS-G5	Boolean	false	From v5.3.0
CW	When Technology ~= LTEV2V	Contention Window	Integer in [3, 7, 15, 31, 63] (was Integer,	15 (was 16)	From v3.1. Modified in v5.2
AifsN	When Technology ~= LTEV2V	Arbitration inter-frame space N	Integer, >= 0	6	From v5.1 (was fixed before)
CCAthreshold11p	When Technology ~= LTEV2V	CCA threshold of IEEE 802.11p for undecodable signals (dBm)	Double	-65	From v5.2; replaced in v5.2.9 by CCAthr11p_notsync

CCAthr11p_notsync	When *Technology* ~= LTEV2V	CCA threshold of IEEE 802.11p for undecodable signals (dBm)	Double	-65	From v5.2.9; replaces CCAthreshold11p
CCAthr11p_sync	When *Technology* ~= LTEV2V	CCA threshold of IEEE 802.11p for decodable signals (dBm) - also used for CBR calculation	Double	-85	From v5.2.9
sinrThreshold11p	When *Technology* ~= LTEV2V	SINR threshold to be used for all IEEE 802.11p transmissions	Double; -1000 means that curves or embedded thresholds are used	-1000	From v5.2; modified in v5.3.0
sinrThreshold11p_LOS	When *Technology* ~= LTEV2V	SINR threshold to be used for all IEEE 802.11p transmissions	Double; -1000 means that curves or embedded thresholds are used	-1000	From v5.3.0 replaces sinrThreshold11p
BLERcurveLTE	When *Technology* ~= 80211p	Option to use error vs. SINR curves	Boolean	false	From v4.1; to be tested in v5.1; removed in v5.2
filenameBLER	When BLERcurveLTE=true (& Technology~=802.11p)	File to be used as error vs. SINR curves	String	null.txt	Removed in v5.2
RBPsBeacon	When BLERcurveLTE=true (& Technology~=802.11p)	Number of RBs pairs per beacon to use with BLER	Integer	20	Removed in v5.3.0
MCS	When *Technology* = LTEV2V	Modulation and coding scheme	Integer, >= 0 & <= 28	4	Replaced in v5.1 by MCS_LTE
MCS_LTE	When *Technology* ~= 80211p	Modulation and coding scheme	Integer, >= 0 & <= 28	4	From v5.1
sinrThresholdLTE	When *Technology* ~= 80211p	SINR threshold to be used for all LTE-V2X transmissions	Double; -1000 means that curves or	-1000	From v5.2
duplex	When *Technology* = LTEV2V	Duplexing type	String, [HD,FD]	HD	Replaced in v5.1 by duplexLTE
duplexLTE	When *Technology* ~= 80211p	Duplexing type	String, [HD,FD]	HD	From v5.1
Ksi_dB	When *Technology* ~= 80211p	Self-interference cancellation coefficient (dB)	Double	-110	
NumBeaconsFrequency	When *Technology* ~= 80211p	Maximum number of BRs in the frequency domain	Integer, > 0 or -1(meaning all BRs)	-1	From v3.1
ifAdjacent	When *Technology* ~= 80211p	If using adjacent PSCCH and PSSCH	Boolean	true	From v3.5
BRoverlapAllowed	When *Technology* ~= 80211p	If true it allows beacon resources to partially overlap	Boolean	false	From v5.2.1; it cannot be set if the algorithm is not Mode 4 or random
sizeSubchannel	When *Technology* ~= 80211p	Subchannel size in LTE-V2V	Integer (input values must be supported by 3GPP standard)	-1	From v3.5
winnerModel	Always	Set Winner+ channel model	Boolean	True	From v3.1; removed oin v5.3.0
channelModel	Always	Set the channel model (0=Winne+, N=N slopes, with N=1 2 3)	Intege, 0 to 3	0	From v5.3.0
stdDevShadowLOS_dB	Always	Standard deviation of shadowing in LOS (dB)	Integer	3	From v3.1
stdDevShadowNLOS_dB	Always	Standard deviation of shadowing in NLOS (dB)	Integer	4	From v3.1
L0_dB	When *channelModel*>0	Path loss at 1m (dB)	Double, >0	47.86	
beta	When *channelModel*>0	Path loss exponent	Double, >0	2.20	
d_threshold1	When *channelModel*>1	Distance threshold in 2/3 slopes model	Double, >=1	10	From v5.3.0

beta2	When *channelModel>1*	Path loss exponent, second slope	Double, >0	2.20	From v5.3.0
d_threshold2	When *channelModel>2*	Second distance threshold in 3 slopes model	Double, >=1	10	From v5.3.0
beta3	When *channelModel>2*	Path loss exponent, third slope	Double, >0	2.20	From v5.3.0
Abuild_dB	When *winnerModel* = false & *fileObstaclesMap* = true	Attenuation every meter inside buildings (dB)	Double	0.4	From v3.1
Awall_dB	When *winnerModel* = false & *fileObstaclesMap* = true	Attenuation for each wall crossed (dB)	Double	6	From v3.1
Settings of resource allocation algorithm					
BRAlgorithm	Always	Allocation algorithm	Integer, [2,7,9,10,18,101,102]	18	
			1 - Controlled		Not supported from v4.1
			2 - Controlled with scheduled BR		Not tested from v5.0
			3 - Autonomous with sensing range		Not supported from v4.1
			4 - Autonomous with BR map		Not supported from v4.1
			5 - Autonomous with sensing (Qualcomm)		Not supported from v4.1
			6 - Autonomous with sensing (Intel)		Not supported from v4.1
			7 - Controlled with Maximum Reuse Distance (MRD)		From v3.5; not tested from v5.0
			8 - Autonomous with sensing with allocations synch to beacon interval (3GPP		From v3.1; not supported from v5.1
			9 - Controlled with power control and target blocking rate		From v3.5; not tested from v5.0; removed from v5.4
			10 - Controlled with Maximum Reuse Power (MRD)		From v4.1; not tested from v5.0
			18 - Autonomous with sensing (3GPP standard mode 4)		From v4.1
			101 - Random allocation		From v4.1
			102 - Ordered allocation following X coordinate		From v4.1; not tested from v5.0
posError95	When *BRAlgorithm* = 2	LTE positioning error - 95th percentile (m)	Double	0	
Tupdate	When *BRAlgorithm* = 2	Time interval between position updates at the eNodesB (s)	Double, > 0	*Tbeacon*	

Mreuse	When *BRAlgorithm* = 2	Reuse margin (m)	Integer	0	
Treassign	When *BRAlgorithm* = 2,7,9, 10	Interval of scheduled reassignment (s)	Double, > 0	*Tbeacon*	
randomOrder	All algorithms except *BRAlgorithm* = 101,102	Set whether resources are selected randomly (at first assignment for all BRAlgorithm	Boolean	True	Removed from v4.1
blockTarget	When *BRAlgorithm* = 9	Target blocking rate	Double	0.01	From v3.5; removed in v5.4
knownShadowing	When *BRAlgorithm* = 10	Sets if the shadowing is estimated by the eNodeB	Boolean	false	From v4.1
Rsense	When *BRAlgorithm* = 3	Sensing Range (m)	Integer, >= Raw & <Rnoise (distance at which rx power is	Raw	Algorithm not supported from v4.1
pReselect	When *BRAlgorithm* = 5	Probability of resources reselection	Double	0.1	Algorithm not supported from v4.1
kBest	When *BRAlgorithm* = 5	Number of best candidates for resource reselection	Integer	20	Algorithm not supported from v4.1
hysteresysM	When *BRAlgorithm* = 5	Hysteresys Margin (dB) for resource reselection	Double	6	Algorithm not supported from v4.1
Tsps	When *BRAlgorithm* = 6	Resource Reselection Period for Semi-persistent Scheduling (s)	Double	0.5	Algorithm not supported from v4.1
MBest	When *BRAlgorithm* = 6	Number of best candidates for resource reselection	Integer	20	Algorithm not supported from v4.1
probResKeep	When *BRAlgorithm* = 18	Probability to keep the previously selected BR	Double, >=0 & <=0.8	0	From v3.1
ratioSelectedMode4	When *BRAlgorithm* = 18	Percentage of resources to be considered for random selection	Double, >0 & <=1	0.2	From v3.5
NsensingPeriod	When *BRAlgorithm* = 18	Number of beacon periods during which performing	Integer, >0	10	From v3.1; eplaced by TsensingPeriod in v5.1
TsensingPeriod	When *BRAlgorithm* = 18	Duration of the sensing period	Double, >0	1	From v5.1
minRandValueMode4	When *BRAlgorithm* = 18	Minimum duration keeping the same allocation	Integer,>0; -1 for standard values	-1	From v3.5
maxRandValueMode4	When *BRAlgorithm* = 18	Maximum duration keeping the same allocation	Integer,>minRandValueMode4; -1 for standard values	-1	From v3.5
subframeT1Mode4	When *BRAlgorithm* = 18	Minimum subframe for the next allocation	Integer, >=1 & <=4	1	From v3.5
subframeT2Mode4	When *BRAlgorithm* = 18	Maximum subframe for the next allocation	Integer, >=20 & <=100	100	From v3.5
powerThresholdMode4	When *BRAlgorithm* = 18	Minimum power threshold to consider a BR as occupied	Integer, >=-128 & <=-2 (multiple of 2)	-110	From v3.5
minSCIsinr	When *BRAlgorithm* = 18	Minimum SINR for a SCI to be correctly decoded (dB)	Double	0	From v3.5
Output settings					
outputFolder	Always	Folder for the output files	String	Output	From v3.1

printNeighbors	Always	Activate the print to file of the number of neighbors	Boolean	False	
printSpeed	Always	Activate the print to file of the speed distribution	Boolean	False	From v5.3.0
printUpdateDelay	Always	Activate the print to file of the update delay (a.k.a. inter-packet gap) between successive successfully received beacons	Boolean	False	Previously named *printBeaconDelay*
printPacketDelay	Always	Activate the print to file of the packet delay between successive successfully	Boolean	False	From v3.1
printdataAge	Always	Activate the print to file of the data age of successfully received beacons	Boolean	False	From 5.2
delayResolution	When *printUpdateDelay* = true or *printUpdateDelay* = true or printdataAge = true	Delay resolution (s)	Double, >0	0.001	From v3.1
printDistanceDetails	Always	Activate the print to file of the details on reception rate for distances from 0 up to the max awareness range	Boolean	False	From v3.1; replaces in v5.2 by printPacketReceptionRatio
printPacketReceptionRatio	Always	Activate the print to file the packet reception ratio for distances from 0 up to the max	Boolean	False	From 5.2
prrResolution	When printPacketReceptionRatio=tru	Gralunarity in PRR vs. distance calculation (m)	Integer, >0	10	From 5.2
printPRRmap	When *TypeOfScenario* =Traces	Activate the creation and print of a PRR map	Boolean	False	From v3.1; To be updated from v5.1
printCBR	Always	Activate the print to file of a cdf of the CBR	Boolean	False	From v4.2
printPowerControl	*if CBRactive=true*	Activate the print to file of the power control allocation	Boolean	False	From v3.5; To be updated from v5.1
powerResolution	When *printPowerControl* = true	Power resolution (dBm)	Double,>0	1	From v3.5
Addditional settings					
RSUcfg	Always	Name of the optional configuration file setting the RSUs	String ('null' means that there are no RSUs)	null	From v5.2.2 Must contain: [NumberOfRSUs] (integer, >=0), [Technology] ('11p' or 'LTE''), [PacketType] ('CAM' if LTE; 'CAM' or 'DENM' or 'hp'DENM' if 11p), [xLocation] (array of integers), [yLocation] (array of integers)