DENM Mapping
CAR 2 CAR Communication Consortium

About the C2C-CC

Enhancing road safety and traffic efficiency by means of Cooperative Intelligent Transport Systems and Services (C-ITS) is the dedicated goal of the CAR 2 CAR Communication Consortium. The industrial driven, non-commercial association was founded in 2002 by vehicle manufacturers affiliated with the idea of cooperative road traffic based on Vehicle-to-Vehicle Communications (V2V) and supported by Vehicle-to-Infrastructure Communications (V2I). The Consortium members represent worldwide major vehicle manufactures, equipment suppliers and research organisations.

Over the years, the CAR 2 CAR Communication Consortium has evolved to be one of the key players in preparing the initial deployment of C-ITS in Europe and the subsequent innovation phases. CAR 2 CAR members focus on wireless V2V communication applications based on ITS-G5 and concentrate all efforts on creating standards to ensure the interoperability of cooperative systems, spanning all vehicle classes across borders and brands. As a key contributor, the CAR 2 CAR Communication Consortium and its members work in close cooperation with the European and international standardisation organisations.

Disclaimer

TPEG2-TEC (ISO 21219-15:2023)			Codes according to DENM/CDD standard		
TPEG2 index	referenceWordCC	referenceWordSCC	DENM index	CauseCode	SubCauseCode
1_0	traffic congestion		1_0	trafficCondition	unavailable
1_1	traffic congestion	increased volume of traffic	1_1	trafficCondition	increasedVolumeOfTraffic
1_255	traffic congestion	undecodable traffic congestion	1_0	trafficCondition	unavailable
2_0	accident		2_0	accident	unavailable
2_1	accident	multi-vehicle accident	2_1	accident	multiVehicleAccident
2_2	accident	major accident	2_2	accident	heavyAccident
2_3	accident	accident involving lorry	2_3	accident	accidentInvolvingLorry
2_4	accident	accident involving bus	2_4	accident	accidentInvolvingBus
2_5	accident	accident involving hazardous materials	2_5	accident	accidentInvolvingHazardousMaterials
2_6	accident	accident in opposite lane	2_6	accident	accidentOnOppositeLane
2_7	accident	unsecured accident	2_7	accident	unsecuredAccident
2_255	accident	undecodable accident	2_0	accident	unavailable
3_0	roadworks		3_0	roadworks	unavailable
3_1	roadworks	major roadworks	3_1	roadworks	majorRoadworks
3_2	roadworks	road marking work	3_2	roadworks	roadMarkingWork
3_3	roadworks	slow moving road maintenance	3_3	roadworks	slowMovingRoadMaintenance
3_255	roadworks	undecodable roadworks	3_0	roadworks	unavailable
4_0	narrow lanes				
4_1	narrow lanes	contraflow			
4_2	narrow lanes	hard shoulder closed			
4_3	narrow lanes	slip lane closed			
4_4	narrow lanes	crawler lane closed			
4_255	narrow lanes	undecodable narrow lane type			
5_0	impassability		5_0	impassability	unavailable
5_1	impassability	flooding	5_1	impassability	flooding
5_2	impassability	danger of avalanches	5_2	impassability	dangerOfAvalanches
5_3	impassability	blasting of avalanches	5_3	impassability	blastingOfAvalanches
5_4	impassability	landslips	5_4	impassability	landslips

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TPEG2 index	referenceWordCC	referenceWordSCC	DENM index	CauseCode	SubCauseCode
5_5	impassability	chemical spillage	5_5	impassability	chemicalSpillage
5_6	impassability	winter closure	5_6	impassability	winterClosure
5_255	impassability	undecodable impassability	5_0	impassability	unavailable
6_0	slippery road		6_0	adverseWeatherCondition-Adhesion	unavailable
6_1	slippery road	heavy frost on road	6_1	adverseWeatherCondition-Adhesion	heavyFrostOnRoad
6_2	slippery road	fuel on road	6_2	adverseWeatherCondition-Adhesion	fuelOnRoad
6_3	slippery road	mud on road	6_3	adverseWeatherCondition-Adhesion	mudOnRoad
6_4	slippery road	snow on road	6_4	adverseWeatherCondition-Adhesion	snowOnRoad
6_5	slippery road	ice on road	6_5	adverseWeatherCondition-Adhesion	iceOnRoad
6_6	slippery road	black ice on road	6_6	adverseWeatherCondition-Adhesion	blackIceOnRoad
6_7	slippery road	oil on road	6_7	adverseWeatherCondition-Adhesion	oilOnRoad
6_8	slippery road	loose chippings	6_8	adverseWeatherCondition-Adhesion	looseChippings
6_9	slippery road	instant black ice	6_9	adverseWeatherCondition-Adhesion	instantBlackIce
6_10	slippery road	roads salted	6_10	adverseWeatherCondition-Adhesion	roadsSalted
6_255	slippery road	undecodable slippery road	6_0	adverseWeatherCondition-Adhesion	unavailable
7_0	aquaplaning		7_0	aquaplaning	unavailable

TPEG2-TEC (ISO 21219-15:2023)			Codes according to DENM/CDD standard		
TPEG2 index	referenceWordCC	referenceWordSCC	DENM index	CauseCode	SubCauseCode
8_0	fire		9_10	hazardousLocation-SurfaceCondition	fire
8_1	fire	major fire	9_10	hazardousLocation-SurfaceCondition	fire
8_2	fire	forest fire	9_10	hazardousLocation-SurfaceCondition	fire
8_255	fire	undecodable fire	9_10	hazardousLocation-SurfaceCondition	fire
9_0	hazardous driving conditions		9_0	hazardousLocation-SurfaceCondition	unavailable
9_1	hazardous driving conditions	rock falls	9_1	hazardousLocation-SurfaceCondition	rockfalls
9_2	hazardous driving conditions	earthquake damage	9_2	hazardousLocation-SurfaceCondition	earthquakeDamage
9_3	hazardous driving conditions	sewer collapse	9_3	hazardousLocation-SurfaceCondition	sewerCollapse
9_4	hazardous driving conditions	subsidence	9_4	hazardousLocation-SurfaceCondition	subsidence
9_5	hazardous driving conditions	snow drifts	9_5	hazardousLocation-SurfaceCondition	snowDrifts
9_6	hazardous driving conditions	storm damage	9_6	hazardousLocation-SurfaceCondition	stormDamage
9_7	hazardous driving conditions	burst pipe	9_7	hazardousLocation-SurfaceCondition	burstPipe
9_8	hazardous driving conditions	volcano eruption	9_8	hazardousLocation-SurfaceCondition	volcanoEruption
9_9	hazardous driving conditions	falling ice	9_9	hazardousLocation-SurfaceCondition	fallingIce

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9_255	hazardous driving conditions	undecodable hazardous driving conditions	9_0	hazardousLocation-SurfaceCondition	unavailable
10_0	objects on the road		10_0	hazardousLocation-ObstacleOnTheRoad	unavailable
10_1	objects on the road	shed load	10_1	hazardousLocation-ObstacleOnTheRoad	shedLoad
10_2	objects on the road	parts of vehicles	10_2	hazardousLocation-ObstacleOnTheRoad	partsOfVehicles
10_3	objects on the road	parts of tyres	10_3	hazardousLocation-ObstacleOnTheRoad	partsOfTyres
10_4	objects on the road	large objects	10_4	hazardousLocation-ObstacleOnTheRoad	bigObjects
10_5	objects on the road	fallen trees	10_5	hazardousLocation-ObstacleOnTheRoad	fallenTrees
10_6	objects on the road	hub caps	10_6	hazardousLocation-ObstacleOnTheRoad	hubCaps
10_7	objects on the road	stationary vehicle	10_7	hazardousLocation-ObstacleOnTheRoad	waitingVehicles
10_255	objects on the road	undecodable objects on the road	10_0	hazardousLocation-ObstacleOnTheRoad	unavailable
11_0	animals on roadway		11_0	hazardousLocation-AnimalOnTheRoad	unavailable
11_1	animals on roadway	wild animals	11_1	hazardousLocation-AnimalOnTheRoad	wildAnimals
11_2	animals on roadway	herd of animals	11_2	hazardousLocation-AnimalOnTheRoad	herdOfAnimals
11_3	animals on roadway	small animals	11_3	hazardousLocation-AnimalOnTheRoad	smallAnimals

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TPEG2 index	referenceWordCC	referenceWordSCC	DENM index	CauseCode	SubCauseCode
11_4	animals on roadway	large animals	11_4	hazardousLocation-AnimalOnTheRoad	largeAnimals
11_255	animals on roadway	undecodable animals on roadway	11_0	hazardousLocation-AnimalOnTheRoad	unavailable
12_0	people on roadway		12_0	humanPresenceOnTheRoad	unavailable
12_1	people on roadway	children on roadway	12_1	humanPresenceOnTheRoad	childrenOnRoadway
12_2	people on roadway	cyclists on roadway	12_2	humanPresenceOnTheRoad	cyclistOnRoadway
12_3	people on roadway	moped rider on roadway	12_3	humanPresenceOnTheRoad	motorcyclistOnRoadway
12_255	people on roadway	undecodable people on roadway	12_0	humanPresenceOnTheRoad	unavailable
13_0	broken down vehicles		91_0	vehicleBreakdown	unavailable
13_1	broken down vehicles	broken-down vehicle on fire	91_10	vehicleBreakdown	vehicleOnFire
13_2	broken down vehicles	broken-down unlit vehicle	91_0	vehicleBreakdown	unavailable
13_255	broken down vehicles	undecodable broken-down vehicle	91_0	vehicleBreakdown	unavailable
14_0	vehicle on wrong carriageway		14_0	wrongWayDriving	unavailable
15_0	rescue and recovery work in progress		15_0	rescueAndRecoveryWorkInProgress	unavailable
15_1	rescue and recovery work in progress	emergency vehicles	15_1	rescueAndRecoveryWorkInProgress	emergencyVehicles
15_2	rescue and recovery work in progress	rescue helicopter landing	15_2	rescueAndRecoveryWorkInProgress	rescueHelicopterLanding
15_3	rescue and recovery work in progress	police activity ongoing	15_3	rescueAndRecoveryWorkInProgress	policeActivityOngoing
15_4	rescue and recovery work in progress	medical emergency ongoing	15_4	rescueAndRecoveryWorkInProgress	medicalEmergencyOngoing
15_5	rescue and recovery work in progress	child abduction in progress	15_5	rescueAndRecoveryWorkInProgress	childAbductionInProgress
15_255	rescue and recovery work in progress	undecodable rescue and recovery work in progress	15_0	rescueAndRecoveryWorkInProgress	unavailable
16_0	regulatory measure				

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TPEG2 index	referenceWordCC	referenceWordSCC	DENM index	CauseCode	SubCauseCode
16_1	regulatory measure	security alert			
16_2	regulatory measure	contagious disease	93_0	humanProblem	unavailable
16_3	regulatory measure	environmental	9_0	hazardousLocation-SurfaceCondition	unavailable
16_4	regulatory measure	smog alert			
16_5	regulatory measure	batch service in progress	1_0	trafficCondition	unavailable
16_6	regulatory measure	road closed by the regulatory authorities	5_0	impassability	unavailable
16_255	regulatory measure	undecodable regulatory measure			
17_0	extreme weather conditions		17_0	adverseWeatherCondition-ExtremeWeatherCondition	unavailable
17_1	extreme weather conditions	strong winds	17_1	adverseWeatherCondition-ExtremeWeatherCondition	strongWinds
17_2	extreme weather conditions	damaging hail	17_2	adverseWeatherCondition-ExtremeWeatherCondition	damagingHail
17_3	extreme weather conditions	hurricane	17_3	adverseWeatherCondition-ExtremeWeatherCondition	hurricane
17_4	extreme weather conditions	thunderstorm	17_4	adverseWeatherCondition-ExtremeWeatherCondition	thunderstorm
17_5	extreme weather conditions	tornado	17_5	adverseWeatherCondition-ExtremeWeatherCondition	tornado
17_6	extreme weather conditions	blizzard	17_6	adverseWeatherCondition-ExtremeWeatherCondition	blizzard
17_255	extreme weather conditions	undecodable extreme weather condition	17_0	adverseWeatherCondition-ExtremeWeatherCondition	unavailable
18_0	visibility reduced		18_0	adverseWeatherCondition-Visibility	unavailable
18_1	visibility reduced	visibility reduced due to fog	18_1	adverseWeatherCondition-Visibility	fog

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TPEG2 index	referenceWordCC	referenceWordSCC	DENM index	CauseCode	SubCauseCode
18_2	visibility reduced	visibility reduced due to smoke	18_2	adverseWeatherCondition-Visibility	smoke
18_3	visibility reduced	visibility reduced due to heavy snowfall	18_3	adverseWeatherCondition-Visibility	heavySnowfall
18_4	visibility reduced	visibility reduced due to heavy rain	18_4	adverseWeatherCondition-Visibility	heavyRain
18_5	visibility reduced	visibility reduced due to heavy hail	18_5	adverseWeatherCondition-Visibility	heavyHail
18_6	visibility reduced	visibility reduced due to low sun glare	18_6	adverseWeatherCondition-Visibility	lowSunGlare
18_7	visibility reduced	visibility reduced due to sandstorms	18_7	adverseWeatherCondition-Visibility	sandstorms
18_8	visibility reduced	visibility reduced due to swarms of insects	18_8	adverseWeatherCondition-Visibility	swarmsOfInsects
18_255	visibility reduced	undecodable visibility reduced	18_0	adverseWeatherCondition-Visibility	unavailable
19_0	precipitation		19_0	adverseWeatherCondition-Precipitation	unavailable
19_1	precipitation	heavy rain	19_1	adverseWeatherCondition-Precipitation	heavyRain
19_2	precipitation	heavy snowfall	19_2	adverseWeatherCondition-Precipitation	heavySnowfall
19_3	precipitation	soft hail	19_3	adverseWeatherCondition-Precipitation	softHail
19_255	precipitation	undecodable precipitation	19_0	adverseWeatherCondition-Precipitation	unavailable
20_0	reckless persons		20_0	violence	unavailable
20_1	reckless persons	reckless driver	20_0	violence	unavailable
20_2	reckless persons	gunfire on road	20_0	violence	unavailable
20_3	reckless persons	persons throwing objects	20_3	violence	stoneThrowingPersons

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TPEG2 index	referenceWordCC	referenceWordSCC	DENM index	CauseCode	SubCauseCode
20_255	reckless persons	undecodable reckless persons	20_0	violence	unavailable
21_0	overheight warning system triggered		1_0	trafficCondition	unavailable
22_0	traffic regulations changed		99_0	dangerousSituation	unavailable
23_0	major event		1_0	trafficCondition	unavailable
23_1	major event	sports event	1_0	trafficCondition	unavailable
23_2	major event	demonstration	1_0	trafficCondition	unavailable
23_3	major event	demonstration with vehicles	1_0	trafficCondition	unavailable
23_4	major event	concert	1_0	trafficCondition	unavailable
23_5	major event	fair	1_0	trafficCondition	unavailable
23_6	major event	military training	1_0	trafficCondition	unavailable
23_7	major event	emergency training	1_0	trafficCondition	unavailable
23_8	major event	festival	1_0	trafficCondition	unavailable
23_9	major event	procession	1_0	trafficCondition	unavailable
23_255	major event	undecodable major event	1_0	trafficCondition	unavailable
24_0	service not operating				
24_1	service not operating	ferry service not operating			
24_2	service not operating	air service not operating			
24_3	service not operating	train service not operating			
24_4	service not operating	bus service not operating			
24_255	service not operating	undecodable service not operating			
25_0	service not useable				
25_1	service not useable	fuel station closed			
25_2	service not useable	service area closed			
25_3	service not useable	service area busy			
25_4	service not useable	parking full			
25_5	service not useable	car park closed			
25_255	service not useable	undecodable service not usable			
26_0	slow-moving vehicles		26_0	slowVehicle	unavailable

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TPEG2 index	referenceWordCC	referenceWordSCC	DENM index	CauseCode	SubCauseCode
26_1	slow-moving vehicles	slow-moving maintenance vehicle	26_1	slowVehicle	maintenanceVehicle
26_2	slow-moving vehicles	vehicles slowing to look at accident	26_2	slowVehicle	vehiclesSlowingToLookAtAccident
26_3	slow-moving vehicles	abnormal load	26_3	slowVehicle	abnormalLoad
26_4	slow-moving vehicles	abnormal wide load	26_4	slowVehicle	abnormalWideLoad
26_5	slow-moving vehicles	convoy	26_5	slowVehicle	convoy
26_6	slow-moving vehicles	snowplough	26_6	slowVehicle	snowplough
26_7	slow-moving vehicles	de-icing	26_7	slowVehicle	deicing
26_8	slow-moving vehicles	salting vehicles	26_8	slowVehicle	saltingVehicles
26_255	slow-moving vehicles	undecodable slow maintenance vehicle	26_0	slowVehicle	unavailable
27_0	dangerous end of queue		27_0	dangerousEndOfQueue	unavailable
27_1	dangerous end of queue	sudden end of queue	27_1	dangerousEndOfQueue	suddenEndOfQueue
27_2	dangerous end of queue	queue over hill	27_2	dangerousEndOfQueue	queueOverHill
27_3	dangerous end of queue	queue around bend	27_3	dangerousEndOfQueue	queueAroundBend
27_4	dangerous end of queue	queue in tunnel	27_4	dangerousEndOfQueue	queueInTunnel
27_255	dangerous end of queue	undecodable dangerous end of queue	27_0	dangerousEndOfQueue	unavailable
28_0	risk of fire				
28_1	risk of fire	leakage of fuel			
28_2	risk of fire	leakage of gas			
28_255	risk of fire	undecodable risk of fire			
29_0	time delay		1_0	trafficCondition	unavailable
29_1	time delay	time delay at frontier	1_0	trafficCondition	unavailable
29_2	time delay	time delay at ferry	1_0	trafficCondition	unavailable
29_3	time delay	time delay at vehicle-on-rail terminal	1_0	trafficCondition	unavailable
29_255	time delay	undecodable time delay	1_0	trafficCondition	unavailable
30_0	police checkpoint		1_0	trafficCondition	unavailable
30_1	police checkpoint	permanent police checkpoint	1_0	trafficCondition	unavailable

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TPEG2 index	referenceWordCC	referenceWordSCC	DENM index	CauseCode	SubCauseCode
30_2	police checkpoint	temporary police checkpoint	1_0	trafficCondition	unavailable
30_255	police checkpoint	undecodable police checkpoint	1_0	trafficCondition	unavailable
31_0	malfunctioning roadside equipment				
31_1	malfunctioning roadside equipment	road-rail crossing failure	99_0	dangerousSituation	unavailable
31_2	malfunctioning roadside equipment	tunnel ventilation not working			
31_3	malfunctioning roadside equipment	traffic control signals working incorrectly	99_0	dangerousSituation	unavailable
31_4	malfunctioning roadside equipment	emergency telephones not working			
31_5	malfunctioning roadside equipment	automatic payment lanes not working			
31_255	malfunctioning roadside equipment	undecodable malfunctioning roadside equipment			