

Hazards and Functions

This document lists *hazards* and the *functions*. First and second table lists hazards from cooperation perspective and vehicular perspective, respectively. The guide words that are either not applicable to a function or that leads to hazards which are already generated (by other guide words) are not included.

Cooperative Function	Guide word	Hazard
Keep optimized inter-vehicular distance within a platoon	NO	Not keeping optimized inter-vehicular distance with in a platoon
	MORE	Keeping more than optimal inter-vehicular distance with in a platoon
	LESS	Does not keep optimized inter-vehicular distance with in a platoon
	PART OF	Optimized inter-vehicular distance is not kept in some part of platoon
Make place for a vehicle to join platoon	NO	Does not make place for a vehicle to join platoon
	MORE	More than optimal space is created for a vehicle to join platoon
	LESS	Less than optimal space is created for a vehicle to join platoon
	PART OF	Only a part of the platoon (not all of the designated vehicles in the platoon) make place for a vehicle to join platoon
	REVERSE	Platoon decreases inter-vehicular distance when making place to join platoon (reverses of making a place - reducing space)
	OTHER THAN	Platoon breaks up when vehicle wants to join (other possible scenario while making place)
Merge with another platoon	NO	Platoon does not merge with other platoon when desired
	MORE	Platoon merges with more than one platoon while it should only be merging with one
	PART OF	Only part of the platoon merges with another platoon while merging
	REVERSE	Another platoon merges with current platoon while the reverse is desired

Split into two platoons	NO	The platoon does not split when a split is desired
	MORE	Platoon splits into more than two platoons
	AS WELL AS	The platoon splits and merges into a platoon while only a split is desired
	OTHER THAN	After the split less than two platoons remain since the resulting platoons contain less than two vehicles
Change leader	NO	Leading vehicle is not changed while this is desired
	MORE	Multiple vehicles in a platoon are assigned leader role while only one vehicle should.
	LESS	First follower is not assigned the leader role when the leader leaves a platoon
	OTHER THAN	Platoon breaks up when the leading vehicle is changed
Keep proper distance to surrounding traffic	NO	Platoon does not keep proper distance to surrounding vehicles
	MORE	Platoon keeps more than enough distance to surrounding vehicles
	LESS	Platoon keeps less than enough distance to surrounding vehicles
	PART OF	Only some of the vehicles in the platoon keep proper distance to surrounding vehicles

Vehicle Function	Guide Word	Hazard
Keep a proper distance to the surrounding traffic as part of a platoon (follower)	NO	Not keeping proper distance to neighbouring vehicle(s) while driving autonomously inside of platoon
	MORE	Keeping more than optimal (>2.0s) distance to neighbouring vehicles while driving autonomously inside of platoon
	LESS	Keeping less than optimal (<0.3s) distance to neighbouring vehicles while driving autonomously inside platoon
	PART OF	Not keeping proper distance to some (part) of the neighbouring vehicles while driving autonomously inside platoon
	OTHER THAN	Not driving autonomously inside of platoon
Leading the platoon (driving manually)	NO	Not driving manually while leading
	AS WELL AS	Current vehicle taking leader role while another vehicle already leads the platoon
	PART OF	Taking leader role while the current vehicle is (a part of the platoon) not the first (in the leader position) of platoon

	REVERSE	Taking leader role while driving manually behind the platoon
Take leader role of platoon	NO	Not taking the leader role when desired
	AS WELL AS	Taking both leader and follower role in a platoon at the same time
	REVERSE	Switching out of leader role when not desired
Switch from leader to follower role	NO	Continue being leader of platoon when not desired
	PART OF	Switch from leader role, but does not take follower role (only part of the complete role switch happens)
	REVERSE	Take leader role of platoon while not desired
Join platoon	NO	Not being able to join platoon while desired
	REVERSE	Leave platoon instead of joining
Leave platoon	NO	Not being able to leave platoon
	REVERSE	Join platoon instead of leaving
Timely react to actions of surrounding vehicles in platoon	NO	Not reacting timely to actions of surrounding vehicles
	MORE	React more (false positive) to actions of surrounding vehicles
	LESS	React less (not within timing constraints or false negatives) to actions of surrounding vehicles
	PART OF	Not reacting properly (reacting partly) to actions of surrounding vehicles (because of incorrect vehicle dynamics inputs)
	OTHER THAN	React to actions of vehicles outside of platoon as if they are inside
Follow traffic indications, signs and rules	NO	Not following traffic indications, signs and rules
	LESS	Only follow some of the traffic indications, signs and rules
	PART OF	Not following all traffic indications, signs and rules
	OTHER THAN	Following traffic indications, signs, and rules from a different region (Example different signs in different inter-connected countries in Europe)
Autonomously follow the vehicle in front (follower)	NO	Does not follow vehicle in front when desired
	MORE	Follow more than one vehicle in front
	PART OF	Following a different vehicle than the vehicle in front