Driving Lane Change State Table

	External	Target lane open	Abort	Target lane closed	Crossing	Crossing Completed	In source lane	Delayed	Lane change timeout	Target opening timeout	Adequate indication	Crossing timeout	Indication complete	Inhibit released Intern	Stay in lane	Escape ok	Wait for next opportunity	Target lane monitoring stopped	Unsafe crossing	Lingering cross	Delayed lane change	Returning to lane	In target lane	In wrong lane	Failed	Cancel precross	Inhibit
Context states		INTENT			Flag unsafe lane					Toront lone																	
WAITING FOR ENTRY SPACE		PREINDICATION	Abort before entry	CH-3	change	CH-1	CH-1		Timeout before entry	Target lane unavailable	IGN-CAN	CH-2	CH-2	CH-2	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG
INTENT PREINDICATION		CH-3	Abort during preindication	Target closed during indication	Flag unsafe lane change	CH-1	CH-1		Not enough time during preindication	IGN-CAN	PRE CROSS MANEUVER	CH-2	CH-2	CH-2	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG
PRE CROSS MANEUVER		CH-5	Abort during precross	Aborted crossing	CROSSING	CH-10	CH-10		Lane change timed out after preindication	IGN-CAN	CH-4	Cancel delayed cross	CH-2	CH-2	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG
CROSSING		CH-5	Abort during preindication	Aborted crossing	CH-11	Stop monitoring target lane	CH-12		Stalled crossing	IGN-CAN	CH-4	Flag lingering cross	CH-2	CH-2	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG
INTENT POSTINDICATION		CH-13	Post crossing abort	CH-13	Cross during post indication	CH-10	CH-14		Flag delayed maneuver postindication	IGN-CAN	CH-4	IGN-CAN	Start inhibit phase	CH-2	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG
INHIBITING SUCCESSIVE LANE CHANGE		CH-13	Inhibit preemption	CH-13	Cross during successive lane change inhibit period	CH-10	CH-14		Flag delayed maneuver inhibit successive	IGN-CAN	CH-4	IGN-CAN	CH-4	Verify lane	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG
RETURNING TO SOURCE LANE		CH-13	IGN-1	CH-13	CH-15	IGN-2	Back in source lane		IGN-CAN	IGN-CAN	CH-4	IGN-CAN	CH-2	CH-2	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG
Transitory states Target closed during indication	<u> </u>	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BSG	CH-BSG	WAITING FOR	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG
Flag unsafe lane change		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CROSSING	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG
Flag lingering cross		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CROSSING	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG
Flag delayed maneuver postindication		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	INTENT POSTINDICATION	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG
Flag delayed maneuver inhibit successive		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	INHIBITING SUCCESSIVE LANE CHANGE	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG
Stop monitoring target lane		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BSG	CH-BSG	CH-BSG	INTENT POSTINDICATION	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG
Verify lane		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	Successful lane change	Ended up in wrong lane	CH-BSG	CH-BSG	CH-BSG
Start monitoring target lane		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	WAITING FOR ENTRY SPACE	INTENT PREINDICATION	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG
Timeout before entry		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	Pre cross fail	CH-BSG	CH-BSG
Abort before entry		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	Pre cross fail	CH-BSG	CH-BSG
Target lane unavailable		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	Pre cross fail	CH-BSG	CH-BSG
Not enough time during		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	Pre cross fail	CH-BSG	CH-BSG
Abort during preindication		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	Pre cross fail	CH-BSG	CH-BSG
Abort during precross		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	Cancel precross	CH-BSG
Lane change timed out after		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	Cancel precross	CH-BSG
Aborted crossing		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	RETURNING TO	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG
Cancel delayed cross		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	Cancel precross	CH-BSG
Cancel precross		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	Pre cross fail	CH-BSG	CH-BSG
Start inhibit phase		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	on bod	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	INHIBITING SUCCESSIVE
Final Deletion states		OH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	OH-BEE		CH-BEE	CH-BEE	CH-BEE	CH-BEE	OH-BEE	OH-BEE		CH-B3G	CH-B3G	CH-B3G	CH-B3G	CH-B3G	CH-B3G	CH-B3G	CH-B3G	CH-B3G	CH-B3G	CH-B3G	LANE CHANGE
Stalled crossing		CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL		CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL
Successful lane change		CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL		CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL
Pre cross fail		CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL		CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL
Back in source lane		CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL		CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL
Cross during post indication		CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL		CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL
Inhibit preemption		CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL		CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL
Post crossing abort		CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL		CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL
Cross during successive lane		CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL		CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL
change inhibit period Ended up in wrong lane		CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL		CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL

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State Activities

News	Miles Alexandra and in Abic about	Information Advantation
Name	What's going on in this state	Informal action taken
Start monitoring target lane	We initialize the newly created Driving Lane Change instance	Send an event to self delayed by the total time permited for a single Driving Lane Change as defined in the active lane change spec. Begin monitoring the target lane and transition to next state based on an immediate evaluation.
WAITING FOR ENTRY SPACE	We are in the source Driving Lane waiting	
WATING FOR ENTITY SPACE	We are in the source Driving Lane waiting for it to be okay to enter the target Driving Lane	Send an event to self delayed by the target opening timeout in the active lane change behavior specification.
INTENT PREINDICATION	We are signaling our intention to get into the target Driving Lane	Cancel the opening timeout delayed event to self and tell PANEL to signal in our turn direction. Send an event to self delayed by the minumum advance indication in our active lane change spec
PRE CROSS MANEUVER	The turn signal is still on and we are moving toward the interstitial Lane Division with the intention to cross into the Target Lane	We confirm with DRIVING that we are ready to cross in our turn direction and send an event to self delayed by the maximum maneuver duration in our active lane change spec.
CROSSING	Some part of the Ego Vehicle has breached the adjacent Lane Division in the direction of the target lane	No actions. We are just waiting for the Ego Vehicle to fully enter the target lane
INTENT POSTINDICATION		No actions.
INHIBITING SUCCESSIVE LANE CHANGE	We cancel the turn signals and, for safety, we wait a bit before executing any additional lane changes	No actions.
RETURNING TO SOURCE LANE	We are maneuvering back to our original Driving Lane after a failed crossing	No actions, just waiting to get fully back in our original lane
Target closed during indication	While signaling, but before maneuvering the target lane became unavailable. We cancel our turn signal and wait for another opportunity	Cancel turn signal and delayed Adequate indication event
Flag unsafe lane change	A crossing event has occurred before an adequate pre-indication period.	Cancel the target opening and adequate indication delayed events to self. Note that a premature crossing has occurred by setting the appropriate boolean attribute. Notify driving and activate the turn signals in the turn direction. Proceed to the CROSSING state
Flag lingering cross	It was taking too long to cross over the interstitial Lane Division for some reason.	Set the appropriate boolean attribute to record this fact and remain in CROSSING state.
Flag delayed maneuver inhibit successive	The lane change maneuver timed out while inhibiting the next maneuver.	Notify DRIVING, set the appropriate boolean attribute and remain in the INHIBIT SUCCESSIVE LANE CHANGE state
Flag delayed maneuver postindication	The entire lane change maneuver period has been exceeded for some reason while in the INTENT POSTINDICATION state.	Notify DRIVING, set the appropriate boolean attribute and remain in the INTENT POSTINDICATION state
Stop monitoring target lane	Now that the crossing is complete there is no need to monitor the target lane for an opening anymore	Cancel monitoring by triggering the local method. Cancel the Crossing timeout event to self if still pending. Send an event to self delayed by the mimumum completion signaling interval as determined by our active lane change specification
Start inhibit phase	Prep transition into INHIBIT phase	Cancel the turn signal and send an event to self delayed by the inhibit period found in the active lane change spec
Verify lane	Did we end up in the correct target lane?	We're done, so cancel the max maneuver delayed event to self, if it hasn't fired already. Also check to see if the intended target lane is our active driving lane. If not, fail the maneuver.
Successful lane change	We have successfully completed the Driving Lane Change	Notify the MultiLane Maneuver and then delete self
Timeout before entry Abort before entry		
Target lane unavailable		
Not enough time during preindication Abort during preindication		
Lane change timed out after preindication		
Cancel delayed cross		
Abort during precross		
Aborted crossing	Crossing cannot be completed	Cancel the lingering cross delayed event to self if not already fired. Cancel the max lane change time exceeded delayed event to self if not already fired. Cancel the turn signal. Notify DRIVING that we are returing to the source lane. Stop monitoring for an opening in the target lane
Cancel precross		
Stalled crossing		
Back in source lane Pre cross fail		
Cross during post indication		
Post crossing abort Inhibit preemption		
Cross during successive lane change inhibit period		
Ended up in wrong lane		
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Comments

Comment	Description									
IGN-1	As an abort is effectively in process we can safely ignore this event									
IGN-2	This is a lingering event that may have happened at the same time as an abort or target lane closed. We can safely discard it since we are waiting to									
	find out if we are in the source lane									
IGN-3	We're already in the target lane, so it doesn't matter now									
IGN-4	We've already aborted, so there's nothing else to do									
IGN-5	Doesn't matter since we've aborted the lane change									
IGN-6	This could be the crossing back over toward the target lane, so we just wait until fully in the source lane									
IGN-7	At this point, we are committed unless we get an explicit return to source lane command									
IGN-CAN	We can safely ignore a delayed event arriving after it has been canceled.									
CH-1	We must be in the source lane upon entry to this state. If we get this event before a Crossing event, then something is wrong.									
CH-2	Delayed event could not have been requested before entering this state									
CH-3	Coordination with the external source should be configured to ensure that we can't get two consecutive events of this particular event. So, if we got an open here, it means that it wasn't previously which is really bad, since we shouldn't have gotten into this state in the first place. (Make sure the domain operations/class methods are properly specified/translated)									
CH-4	This delayed event was canceled or expired before entering this state									
CH-5	It had to be open to get us into this state, and if it closes, we leave the state. A second open may indicate a problem in the interface domain operations or a class method									
CH-6	Similar to CH-5, but with a different event. We're crossing which means that we were already in the source lane. Next we should get an in target lane which takes us to a new state before another in source lane occurs.									
CH-7	We can't be in the source lane at this point. Of course, this lane may become the source lane in a future lane change, but not this one									
CH-8	We already got that event (duplicates should be screened out)									
CH-9	It is not possible to abort if we've made it all the way into the target lane									
CH-10	Causality. A crossing event must always preceed an 'in the source lane' event									
CH-11	We already got the crossing event. It is an error if the source of this event sends more than one prior to initiating another lane change or aborting somehow									
CH-12	We should end up in the target lane unless we are forced to return in which case we would have gotten an abort or return to source lane first									
CH-13	Target lane monitoring has been stopped, so this event cannot arrive in this state									
CH-14	We can only end up in the source lane via an aborted crossing.									
CH-15	If we are in this state, we know that crossing was never completed. So, at worst, the next event should be a lingering 'Crossing completed'									
CH-BSG	Can't happen (Blind to Self Generated event from other state) Self generated event in other state cannot be seen here.									
CH-DEL	Can't happen, the instance is deleted in this state as soon as the state's activity has completed									
CH-BEE	Blind to External Events. This transient state reacts to its own self generated event only. So it should never see a non-self generated event.									

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