Planned Movement

	External	Follow	Approach changed	Passed entry crosswalk	EL closed	EV holding at entry crosswalk	Crosswalk hold released	Clear	Passed entry interface	Internal	Wait for EV	Intersection open	Approaching entry crosswalks	Multiple entry crosswalks	Traverse connector	Traversing
WAITING FOR EV ARRIVAL		Open the intersection	Abandoned	CH-1	IGN-1	IGN-2	IGN-3	CH-2	Interface hold breached		CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG
EV BEFORE ENTRY INTERFACE		IGN-8	CH-4	CH-8	Reinitiate approach	HOLDING AT ENTRY CROSSWALK	IGN-4	CH-2	Check for entry crosswalks		CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG
HOLDING AT ENTRY CROSSWALK		CH-3	CH-4	CH-5	IGN-5	IGN-6	Reinitiate approach	CH-2	CH-5		CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG
TRAVERSING ENTRY CROSSWALKS		CH-3	CH-4	Deactivate entry crosswalk	IGN-7	CH-7	CH-7	CH-2	CH-8		CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG
INSIDE THE INTERSECTION		CH-3	CH-4	CH-6	IGN-7	CH-7	CH-7	Clear	CH-8		CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG
Prepare intersection traversal		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE		WAITING FOR EV ARRIVAL	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG
Open the intersection		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE		CH-BSG	EV BEFORE ENTRY INTERFACE	CH-BSG	CH-BSG	CH-BSG	CH-BSG
Reinitiate approach		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE		EV BEFORE ENTRY INTERFACE	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG
Check for entry crosswalks		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE		CH-BSG	CH-BSG	TRAVERSING ENTRY CROSSWALKS	CH-BSG	Check connector type	CH-BSG
Deactivate entry crosswalk		CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE	CH-BEE		CH-BSG	CH-BSG	CH-BSG	TRAVERSING ENTRY CROSSWALKS	Check connector type	CH-BSG
Check connector type		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	INSIDE THE INTERSECTION
Abandoned		CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL		CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG
Interface hold breached		CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL		CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG
Clear		CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL	CH-DEL		CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG	CH-BSG

State Activities

Name	What's going on in this state	Informal action taken
Prepare intersection traversal	At the beginning of an Entrance Lane Approach a Planned Movement is initiated. To prepare for our arrival in that Entrance Lane at the Intersection, it is necessary to begin monitoring activity in the Entry and Exit Crosswalks. Based on the Movement to be executed, holds are placed on the relevant encroach positions. Also a turn signal is initiated in the appropriate direciton if the Movement is a Turn Movement.	Relate self to all Crosswalks, if any, at the entrance to the Intersection in our Entrance Lane and Activate each returned instance of Entry Crosswalk. This will in turn create a corresponding instance of Crosswalk Approach. When a Crosswalk Approach comes into existence or is deleted there is an implicit bridge to an external entity that activates and deactivates monitoring of pedestrians in the associated Crosswalk. The same process is repeated for any Exit Crosswalks in the target exit Conduit.
WAITING FOR EV ARRIVAL	The EV is on its way to this Connector, but has either not arrived yet due to the traffic signal or blocking lead traffic	Wait
#REF!	Here we allow the EV to proceed into the Intersection and initiate monitoring of all prioirity (oncoming and or cross traffic) that we must yield to	Release hold on the Intersection interface (placed by ELA) Based on our Movement's direction (Thru, Turn) and the active signal in our Entrance Lane, we invoke the Monitor() method for each selected Oncoming Traffic Yield Requirement instance
EV BEFORE ENTRY INTERFACE	The Ego Vehicle is in the target EL and our Connector's XL is available for exit, but the EV hasn't passed all Entry Crosswalks yet, or if no Entry Crosswalks has not yet crossed the Intersection Interface The interface is defined as either the furthest boundary of the furthest Entry Crosswalk or, if no Entry Crosswalks the stop line. If neither stop line nor Entry Crosswalks, then the perceived end of the Road Segment of the Entrance Lane.	Check to see if there is a hold at any Entry Crosswalk. If so, we know that the EV must be holding and that we probably ignored the the EV holding at entry crosswalk signal so we send the missed signal to ourselves Otherwise we just wait
HOLDING AT ENTRY CROSSWALK	The Ego Vehicle is waiting at some point before the Entry Crosswalk before it can safely enter it	Wait
Reinitiate approach	Because the EV was held up by an Entry Crosswalk, we need to wait for clearance from the Entrance Lane Approach since a new stop-go decision must be made before following the Connector	Signal the Entrance Lane Approach that the EV is awaiting clearance at the Interface. Return to the state where we wait for this clearance
Check connector type	Based on the type of Movement we need to create the appropriate type of Connector Traversal to handle the Traversal from Entrance Lane to some lane in the Exit Conduit	Stop monitoring the Entry Crosswalks Send self directed signal to proceed to next state Find the turn movement if any and, if there is a turn, is there a turn after stop possible? Save status for later reference Select the planned Connector to use for this Movement If there is a turn after stop
INSIDE THE INTERSECTION	We're somewhere inside the Intersection passed the entry Interface	Since we've entered the Intersection, we no longer need to monitor the Entry Crosswalks
Clear	Success! The Conector Traversal was completed and we've cleared the Intersection	Notify the Entrance Lane Approach Stop monitoring the Exit Crosswalks, if any And we also delete all instances of Cross Traffic Lane. Via an implicit bridge via external entity, the deletion of each instance will terminate the monitoring of each Cross Traffic Lane's traffic.
Abandoned	We're going to have to execute a different Planned Movement	Release all encroaches inside the Intersection (they will need to be reset by the alternate Planned Movement) Notify the ELA that the Planned Movement has been deleted

Comments

Comment	Description
IGN-1	*It can certainly happen, but we don't react to the signal status until the next state where we explicitly check*
IGN-2	*Happens when there is no stop line in front of the crosswalk and EV is lead vehicle. But we will check again in a later state, so we can ignore for now*
IGN-3	*The EV isn't being held up yet, so we don't take any action here*
IGN-4	*We don't tell the EV to move. The EV may automatically move as soon as the Crosswalk clears, so we just care about the EV arrival*
IGN-5	*If there is a stop line before the crosswalk, it is possible that the EV crosses that stopline without entering the Entry Crosswalk. But we don't react to this event because we'll wait for another Follow from ELA since the Monitor stop go needs to be run again to give us a go decision.*
IGN-6	*If we check for hold status and send self directed event at exact same time as hold is released, we may get a spurious hold released event. We safely ignore it because we will eventually cycle back around and check again later.*
IGN-7	*At this point the EL status is only of interest to the Connector Traversal which will handle it*
IGN-8	*If EV had to wait at entry crosswalk, we will be told to follow again. Ingored since we already got a follow earlier. We wait for the EV to pass*
CH-1	*The ELA placed a hold on the Intersection Interface and we don't release that until a Follow event is received. So the EV can't be in the Intersection yet*
CH-2	*This event comes from the Connector Traversal, but we haven't created one yet*
CH-3	*We already got this event from ELA and ELA must wait for us to finish before sending another*
CH-4	*ELA cannot change approach after follow begins*
CH-5	*The EV cannot proceed without a stop-go decision*
CH-6	*We already got this event which means that the EV has already passed all Entry Crosswalks*
CH-7	*The EV has already passed any Entry Crosswalks*
CH-8	*We always pass the intersection interface before encountring the entry crosswalk, so this event cannot happen first*
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.*