

Description:

Cruise control is a system that automatically controls the speed of a motor vehicle. This Cruise Control System in Simulink® has 5 models.

- **DriverSwRequest Model:** This model primarily receives input from the driver. The input signals generated by the driver would be translated by the model to a set of modes called reqMode.
 - **reqMode.Cruise:** This mode is output of the model when the driver engages the cruise control system.
 - **reqMode.Cancel:** This mode is output of the model when the driver disengages the cruise control system
 - **reqMode.Set:** This mode is the output of the model when the driver sets the target speed for the cruise control system
 - **reqMode.resumeReq:** This mode is the output of the model when the driver re-engages the cruise control system
 - **reqMode.inc_Short:** This mode is the output of the model when the driver wants to increase the target speed for the cruise control system.
 - **reqMode.inc_Middle :** This mode is the output of the model when the previous mode was req.inc_short. This mode is a precursor to the reqMode.inc_Long
 - **reqMode.inc_Long:** This mode is the output of the model when the driver held the “Inc” button for 500 milli seconds.
 - **reqMode.dec_Short:** This mode is the output of the model when the driver wants to decrease the target speed for the cruise control system.
 - **reqMode.dec_Middle :** This mode is the output of the model when the previous mode was req.dec_short. This mode is a precursor to the reqMode.dec_Long
 - **reqMode.dec_Long:** This mode is the output of the model when the driver held the “Dec” button for 500 milli seconds.
 - **reqMode.NoRequest:** : This mode is the output of the model when there is no input from the driver.
- **CruiseControlMode Model:** This model interprets the output of **DriverSwRequest** model and translates it into a set of modes called opMode.
 - **opMode.Disable:** This mode is the output of the model when the cruise control system is not enabled or when the reqMode is reqMode.Cancel
 - **opMode.Enable:** This mode is the output of the model when driver requests to enable the Cruise Control system i.e. The reqMode is set to reqMode.Cruise
 - **opMode.Activate :** This mode is the output of the model when the reqMode changes to reqMode.Set
 - **opMode.Increment:** This mode is the output of the model when the reqMode changes to reqMode.inc_Short
 - **opMode.IncrementHold:** This mode is the output of the model when the reqMode changes to reqMode.inc_Long
 - **opMode.Decrement :** This mode is the output of the model when the reqMode changes to reqMode.dec_Short

- **opMode.DecrementHold:** This mode is the output of the model when the reqMode changes to reqMode.dec_Long
- **TargetSpeedThrottle:** This model decides on whether to increase or decrease the speed to match the target speed and determine throttle.
- **crs_controller:** This is a top model which references DriverSwRequest, CruiseControlMode and TargetSpeedThrottle models. This model forwards its outputs to crs_plant model

crs_plant: This model increases or decreases the speed of the motor vehicle based on the outputs of crs_controller.