Unit Tests performed on the models

- **DriverSwRequest:**
    - **Enable button:** This unit test checks if the reqMode changes to reqMode.Cruise when the enable button is pressed.
    - **Set button:** This unit test checks if the reqMode changes to reqMode.Set when the Set button is pressed.
    - **Disable button:** This unit test checks if the reqMode changes to reqMode.Disabled when the disabled button is pressed.
    - **Resume button:** This unit test checks if the reqMode changes to reqMode.resRequest when the cruise control system is reengaged.
    - **Increment Button Short:** This unit test checks if the reqMode changes to reqMode.inc_short when the “Inc” button is pressed.
    - **Increment Button Hold:** This unit test checks if the reqMode changes to reqMode.inc_Long when the “Inc” button is held for more than 500 milli seconds.
    - **Decrement Button Short:** This unit test checks if the reqMode changes to reqMode.dec_short when the “Dec” button is pressed.
    - **Decrement Button Hold:** This unit test checks if the reqMode changes to reqMode.dec_Long when the “Dec” button is held for more than 500 milli seconds.

- **CruiseControlMode Mode:**
    - **KeyPosition:** This unit test checks if Key is inserted when the Driver requests to engage the Cruise Control System.
    - **DriveMode:** This unit test checks if the mode is in Drive when the Driver requests to engage the Cruise Control System.
    - **AboveBreakThreshold:** This unit test checks if the brake pressure applied by the driver is higher than 5Psi whether the Cruise Control system disengages.
    - **Vehicle Above Speed Range:** This unit test checks if the Cruise Control System is not engaged when the Driver tries to engage it when the vehicle speed is above operating range.
    - **Vehicle Below Speed Range:** This unit test checks if the Cruise Control System is not engaged when the Driver tries to engage it when the vehicle speed is below operating range.
    - **Increment:** This unit test checks if the vehicle speed increases by 1kmph when the reqMode changes to reqMode.inc_short
    - **IncrementHold:** This unit test checks if the vehicle speed increases by 5kmph when the reqMode changes to reqMode.inc_Long
    - **Decrement:** This unit test checks if the vehicle speed increases by 1kmph when the reqMode changes to reqMode.dec_short
    - **DecrementHold:** This unit test checks if the vehicle speed increases by 5kmph when the reqMode changes to reqMode.dec_Long

- **TargetSpeedThrottle Model:**
    - **opMode.Enabled** : This unit test checks if the opMode changes from opMode.Disabled to opMode.Enabled when the reqMode changes to reqMode.Cruise
    - **opMode.Disabled:** This unit test checks if the opMode changes from opMode.Enabled or opMode.Activated to opMode.Disabled when the reqMode changes to reqMode.Cancel
    - **opMode.Activate:** This unit test checks if the opMode changes from opMode.Enabled to opMode.Activate when the reqMode changes to reqMode.Set
    - **opMode.Increment:** This unit test checks if the opMode changes from opMode.Activate to opMode.Increment when the reqMode changes to reqMode.inc_Short
    - **opMode.Decrement:** This unit test checks if the opMode changes from opMode.Activate to opMode.Decrement when the reqMode changes to reqMode.dec_Short
- **crs_controller:**
    - **Functional Test:** This functional test checks if the DriverSwRequest, CruiseControlMode and TargetSpeedThrottle models are functioning as expected.