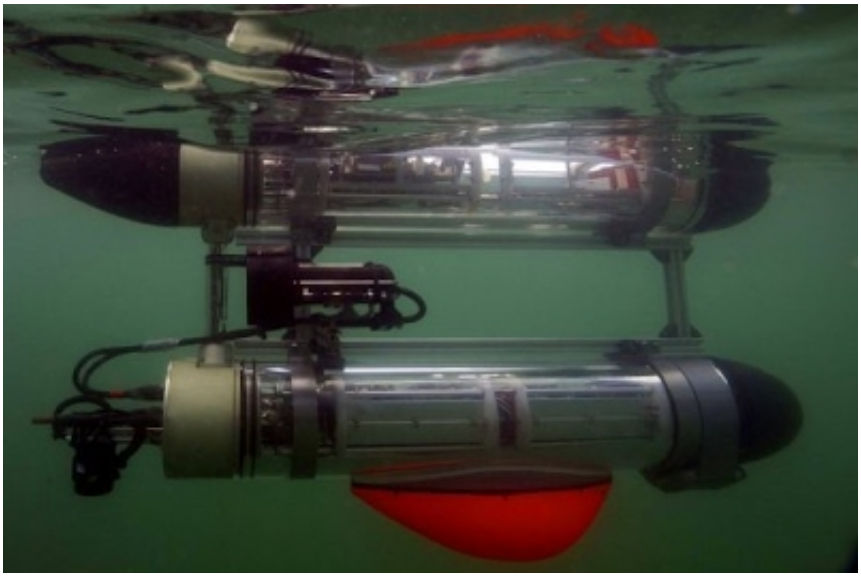
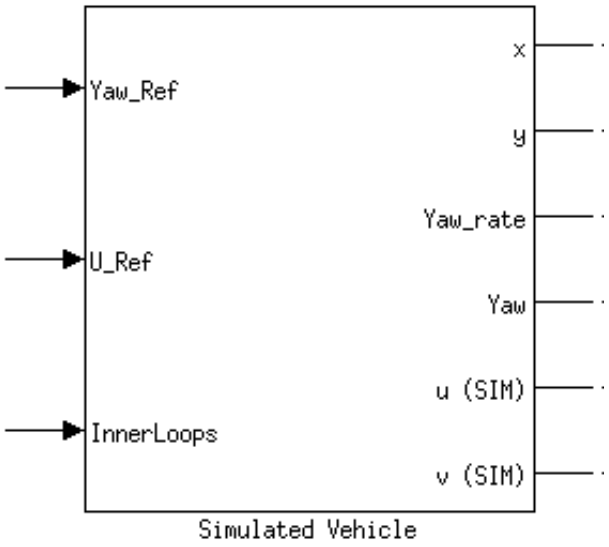
Medusa



The simulink model simulates the inputs, outputs, innerloops and real system dynamics (download availablehere):



The input "Innerloops" flag exists so it increases the flexibility of the system, the behavior depends on the following values:

0 > It does not send anything to the thrusters
1 > U_Ref receives references in m/s (x body component) and Yaw_Ref receives heading references in degrees
2 > U_Ref receives common mode in % (100% a 100%) e Yaw_Ref receives heading references in degrees
3 > U_Ref receives references in m/s (x body component) and Yaw_Ref differential mode in % (100% a 100%)
4 > U_Ref receives common mode in % (100% a 100%) and Yaw_Ref differential mode in % (100% a 100%)

The ouptus are:

x and y in meters expressed in UTM coordinate system (y points North and x to East)
Yaw_rate (deg/s) and Yaw (deg)
u and v are the body velocities, x and y respectively. (available only in simulation)

In the real vehicle the inputs and outputs are similar to the above mention.