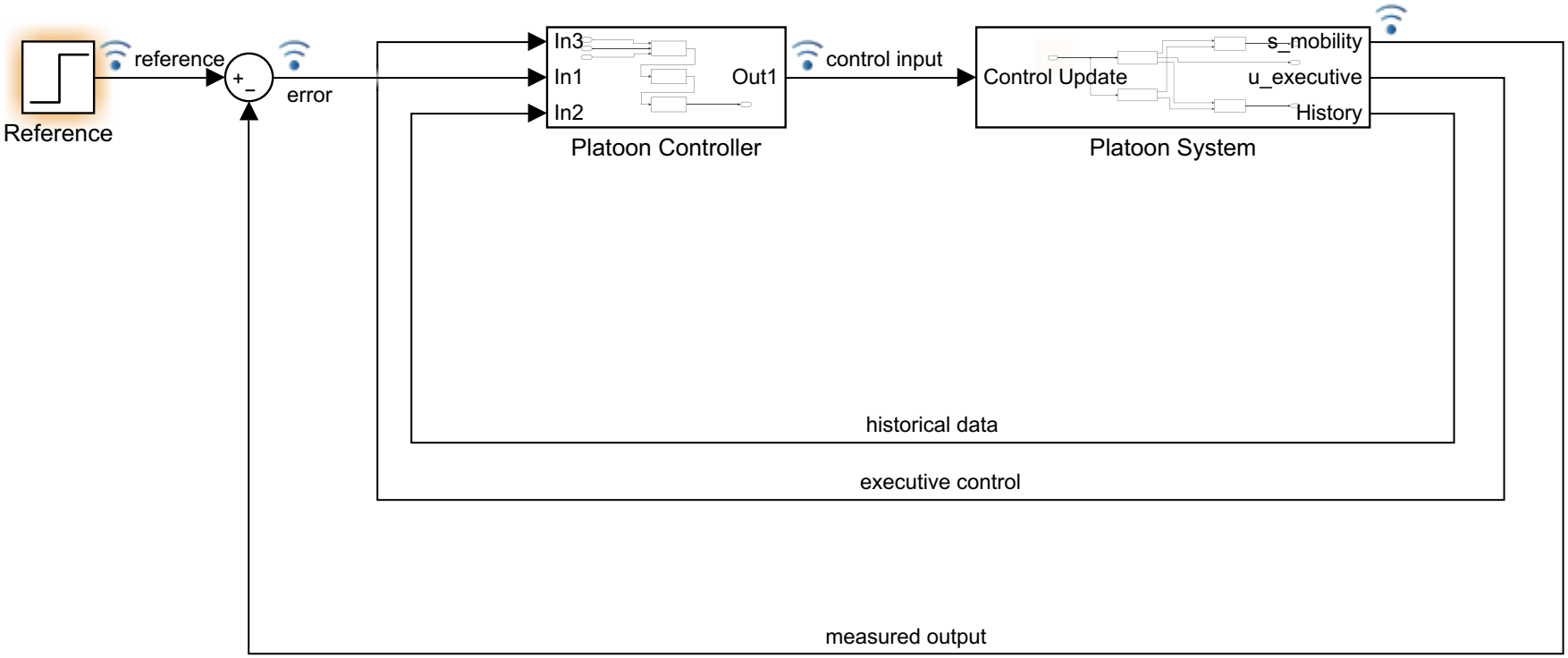
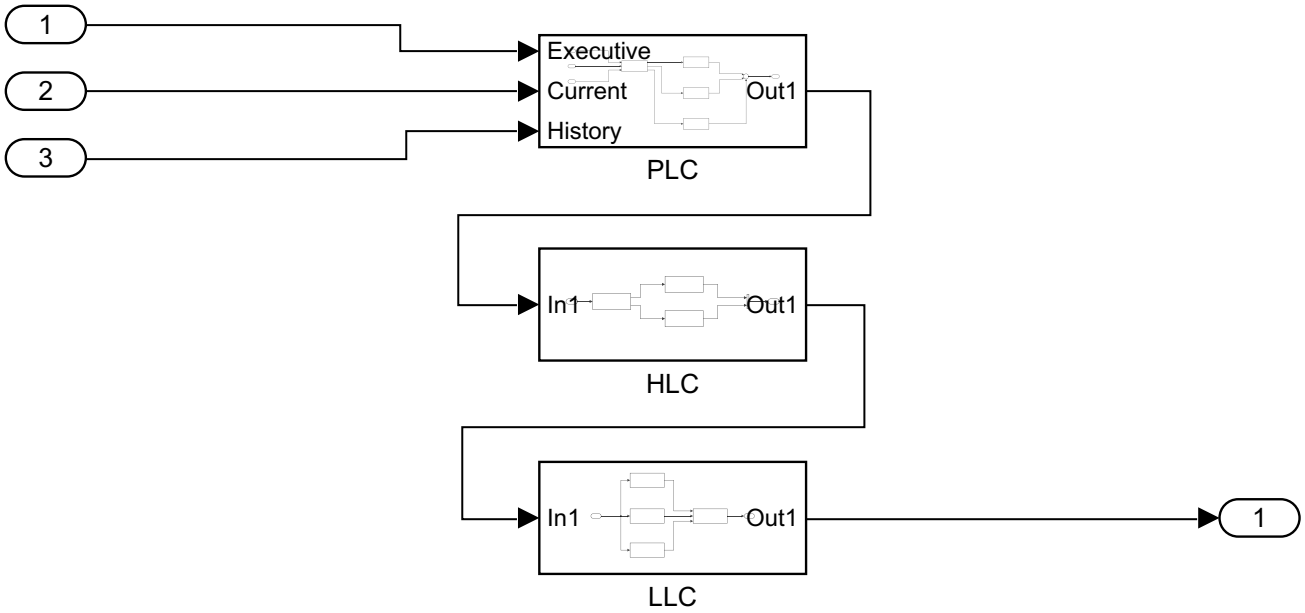

reference
Reference
+
-
error
In3
In1
In2
Out1
Platoon Controller
control input
Control Update
s_mobility
u_executive
History
Platoon System
historical data
executive control
measured output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3
Executive
Current
History
Out1
PLC
In1
Out1
HLC
In1
Out1
LLC
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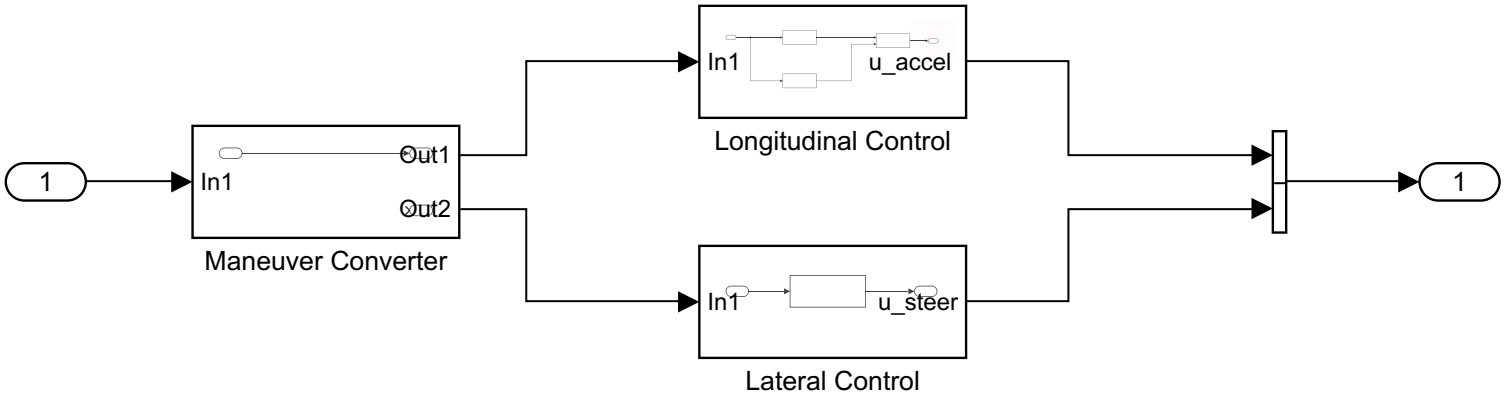
1
In1
Out1
Out2
Maneuver Converter
In1
u_accel
Longitudinal Control
In1
u_steer
Lateral Control
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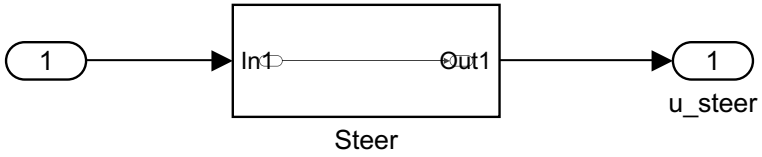
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In1
Out1
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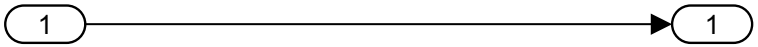
u_steer
Steer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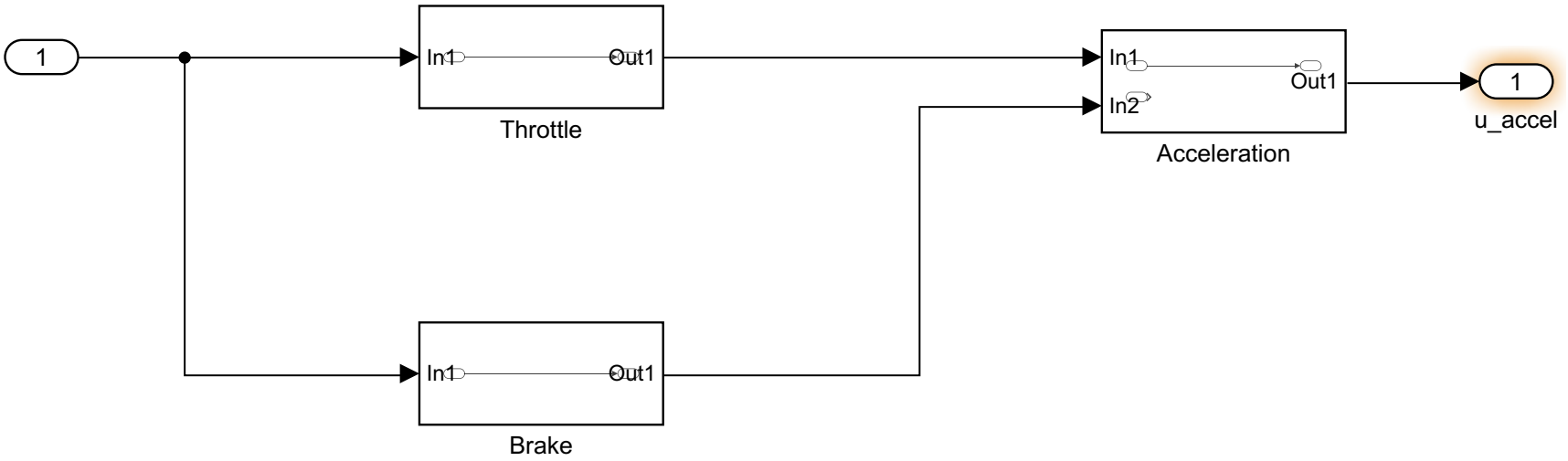
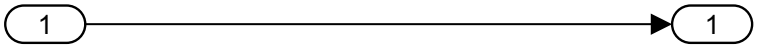

1
In1
Out1
Throttle
In1
Out1
Brake
In1
In2
Out1
Acceleration
1
u_accel

1
1
2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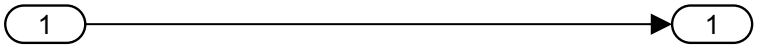
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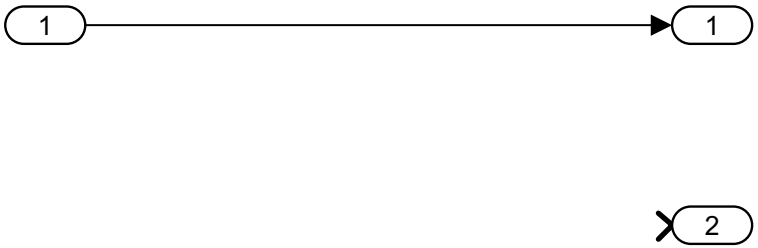
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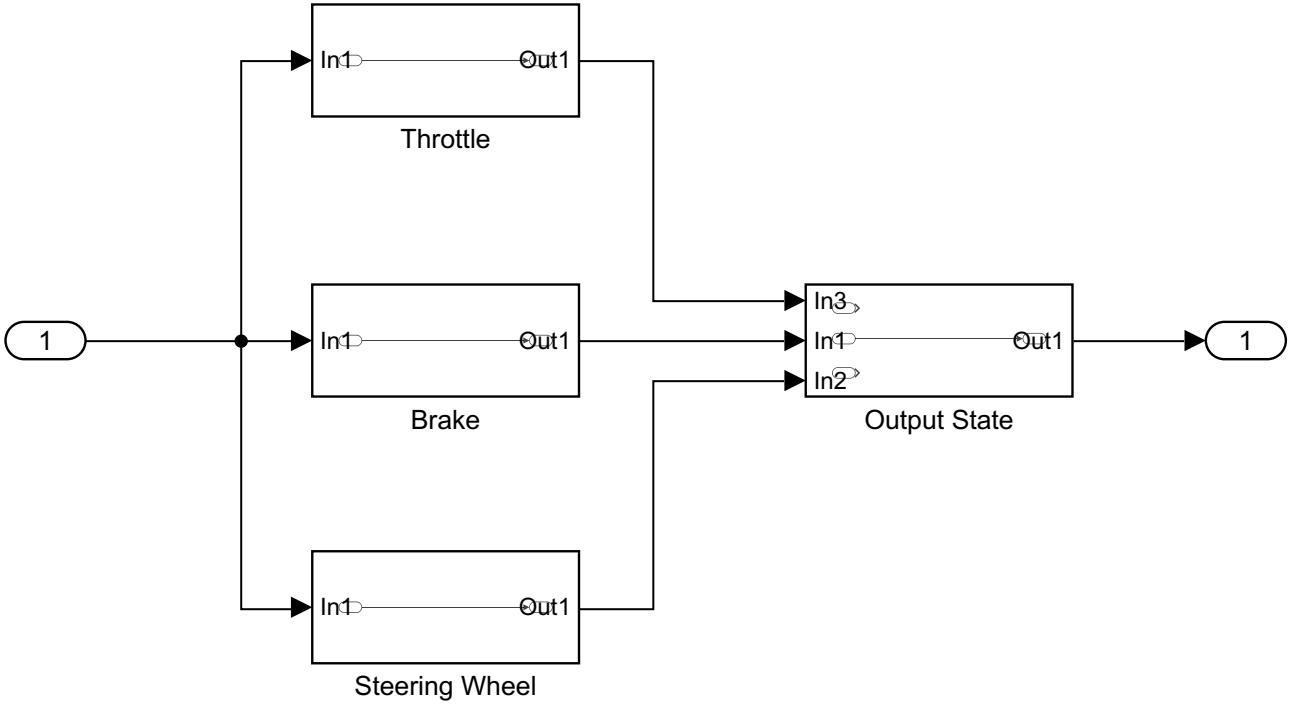
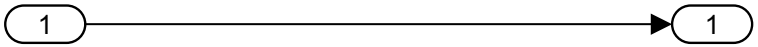

1
In1
Out1
Throttle
In1
Out1
Brake
In1
Out1
Steering Wheel
In3
In1
In2
Out1
Output State
1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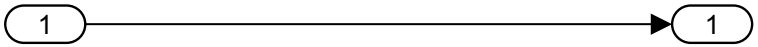
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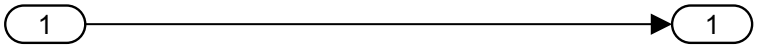
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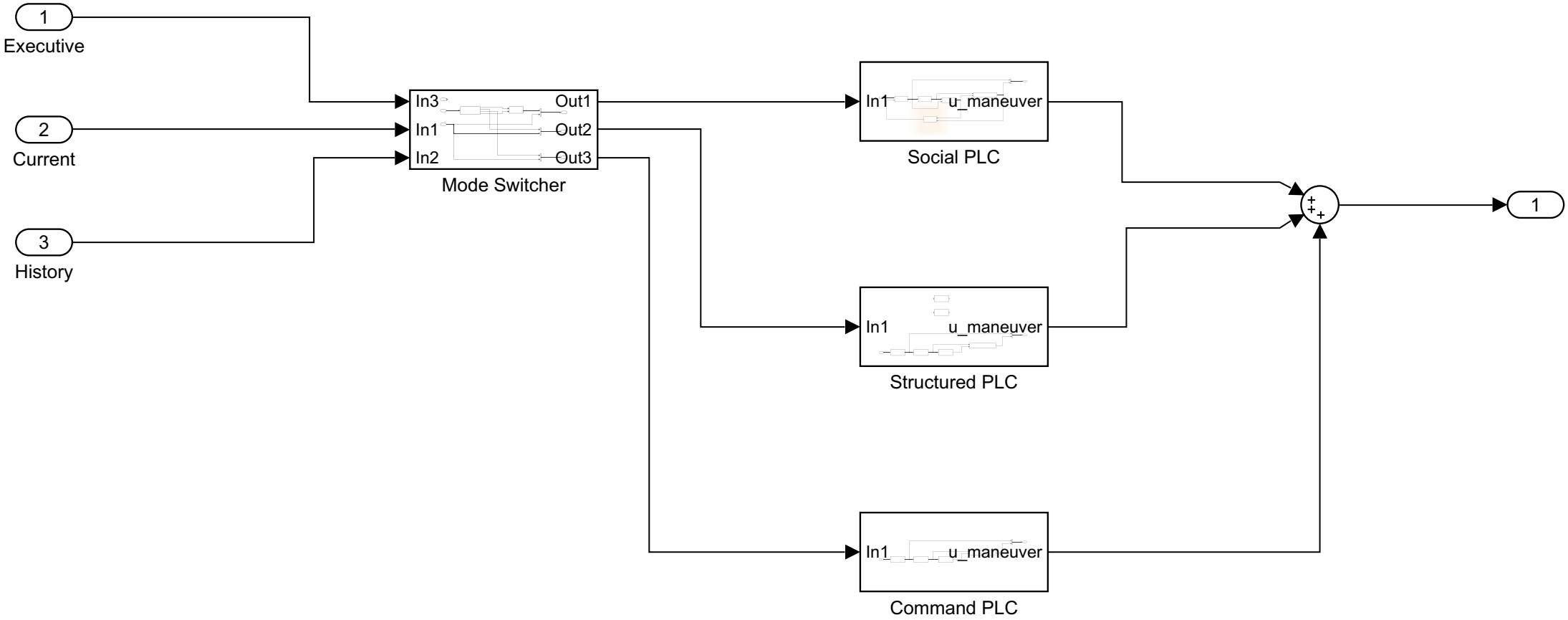
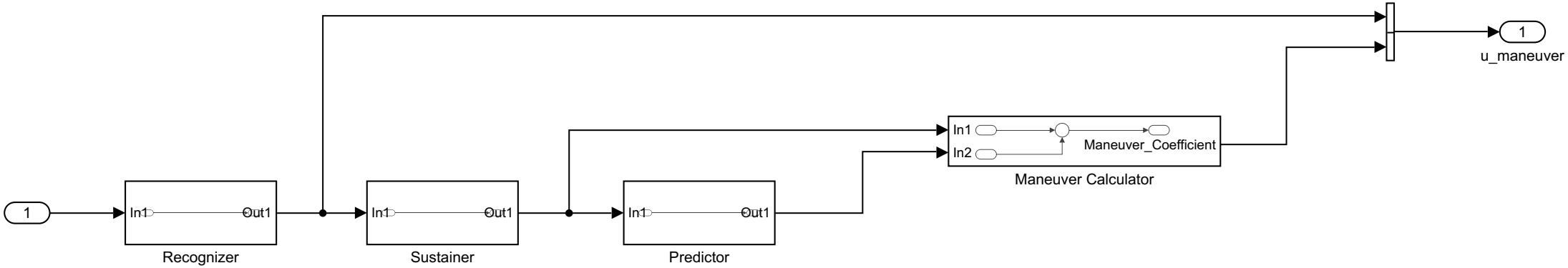
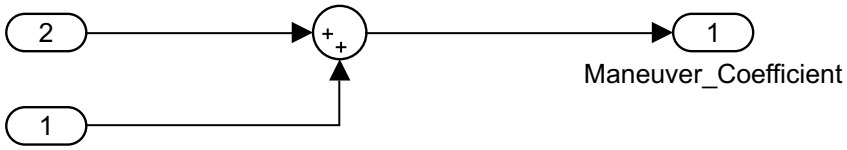

1
Executive
2
Current
3
History
In3
In1
In2
Out1
Out2
Out3
Mode Switcher
In1
u_maneuver
Social PLC
In1
u_maneuver
Structured PLC
In1
u_maneuver
Command PLC
1


1
In1
Out1
Recognizer
In1
Out1
Sustainer
In1
Out1
Predictor
In1
In2
Maneuver_Coefficient
Maneuver Calculator
1
u_maneuver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+
+
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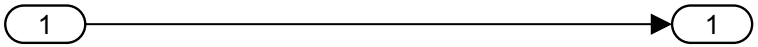
Maneuver_Coefficient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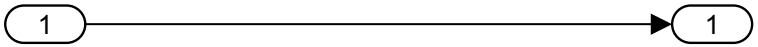
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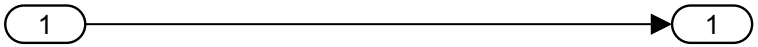
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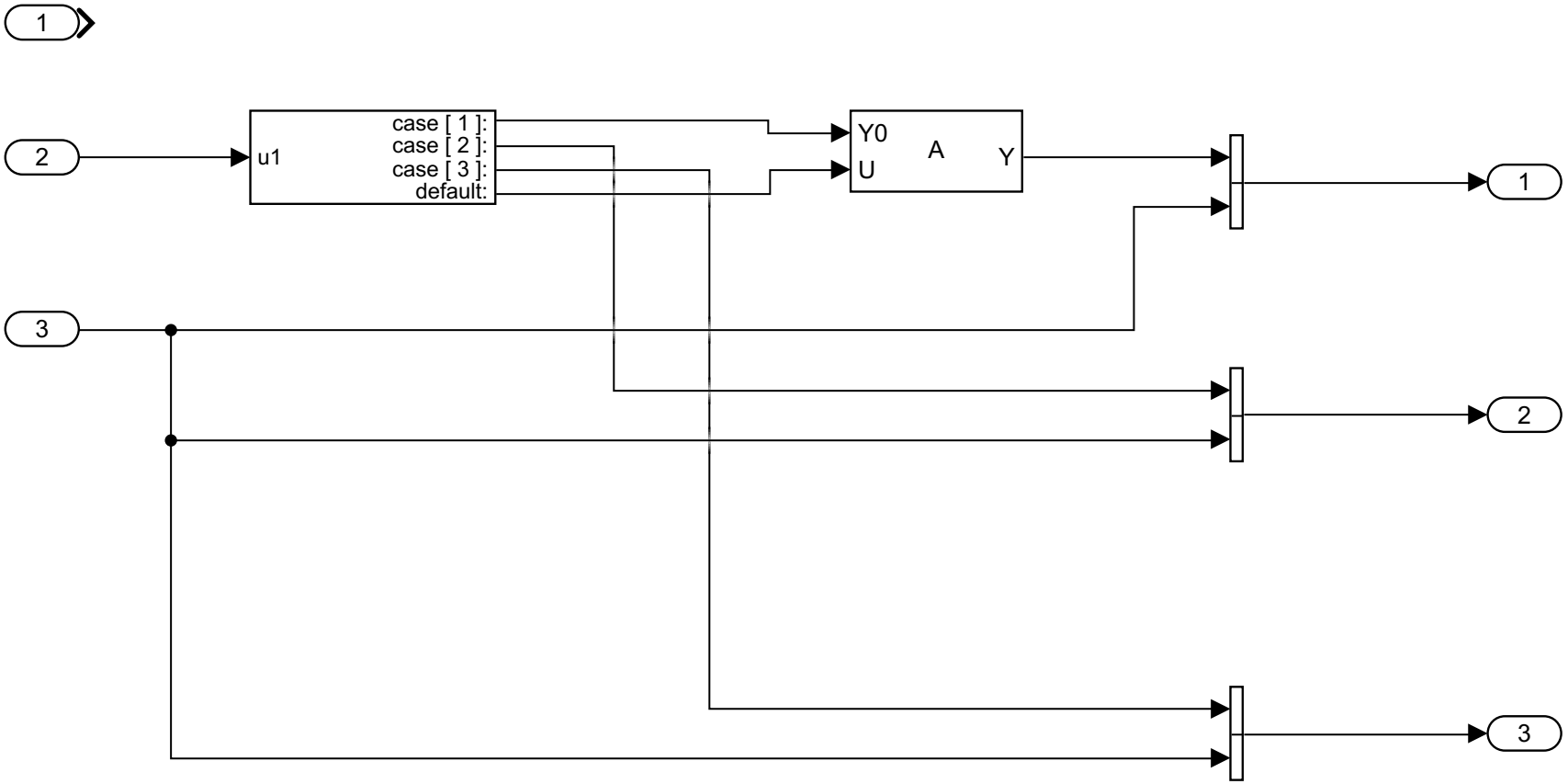
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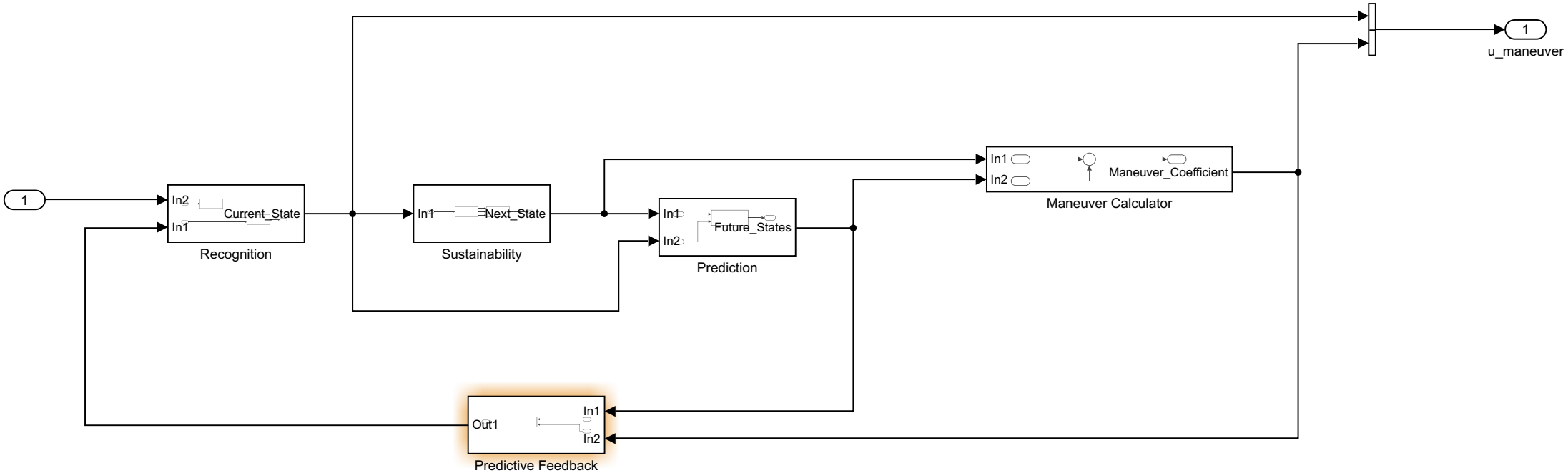
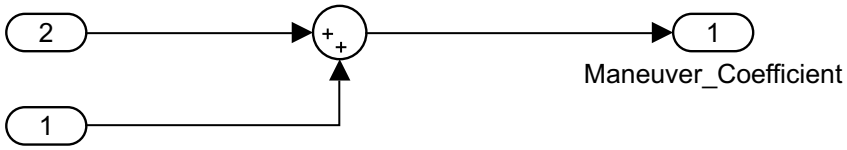
2
u1
case [1]:
case [2]:
case [3]:
default:
Y0
U
A
Y
1
3
1
2
3


1
In2
In1
Current_State
Recognition
In1
Next_State
Sustainability
In1
In2
Future_States
Prediction
In1
In2
Maneuver_Coefficient
Maneuver Calculator
1
u_maneuver
Out1
In1
In2
Predictive Feedback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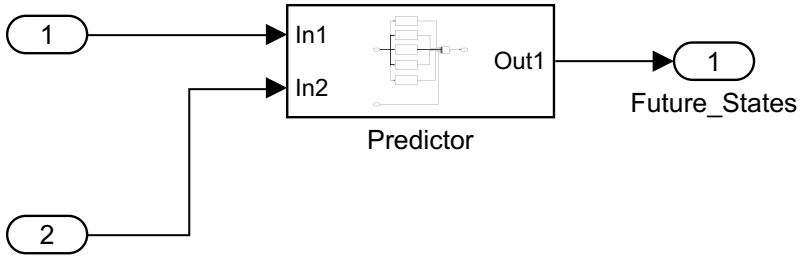
+
+
1
Maneuver_Coefficient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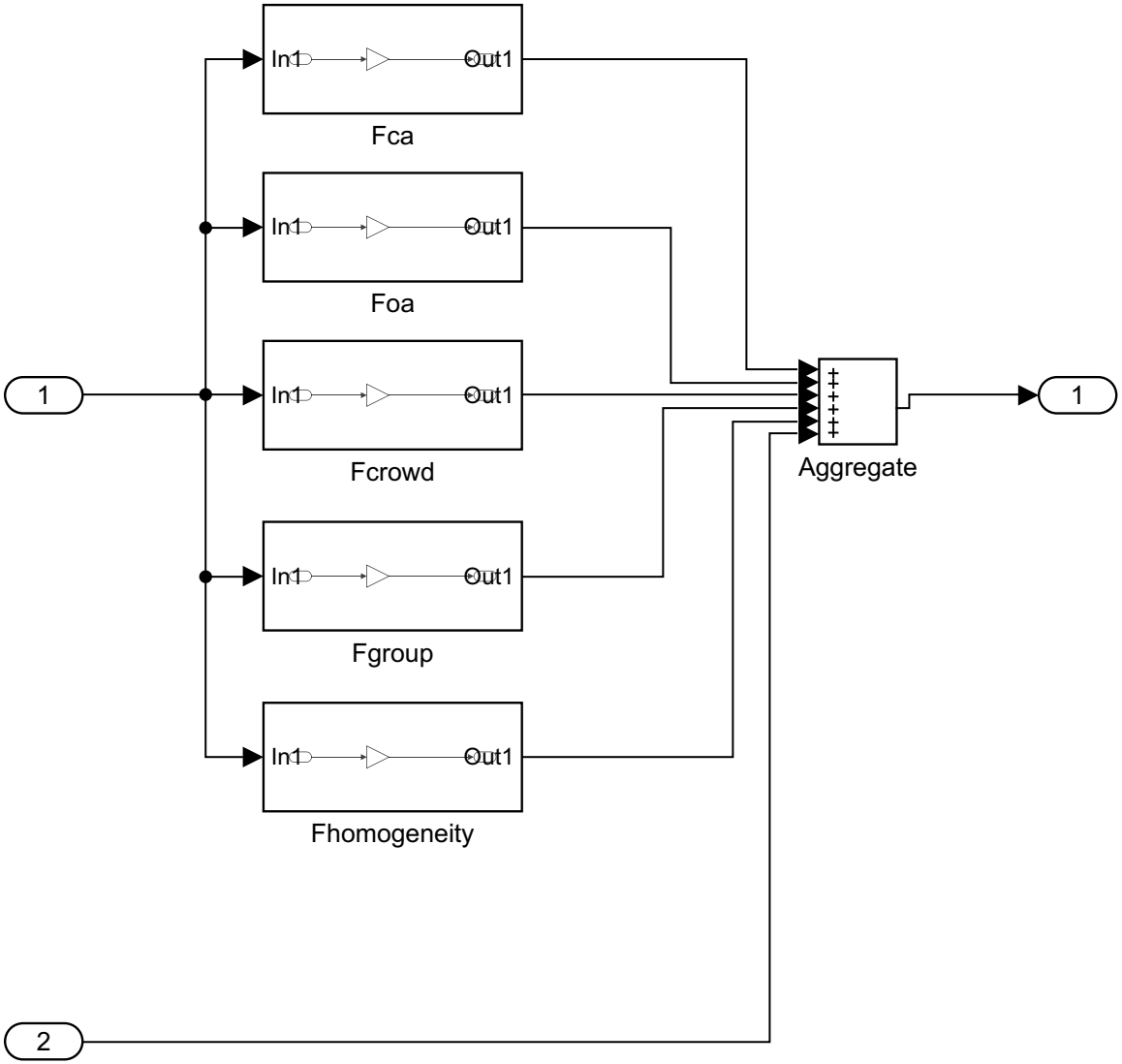
In2
Predictor
Out1
1
Future_States
2


In1
Out1
Fca
In1
Out1
Foa
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In1
Out1
Fcrowd
Aggregate
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In1
Out1
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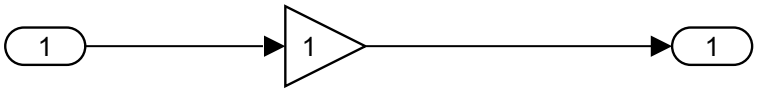
In1
Out1
Fhomogeneity
2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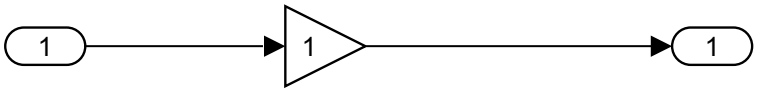
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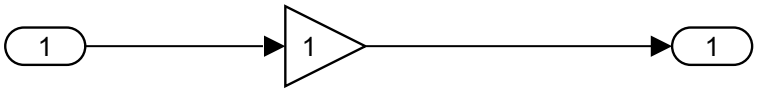
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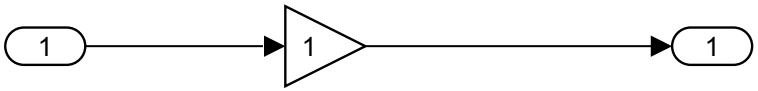
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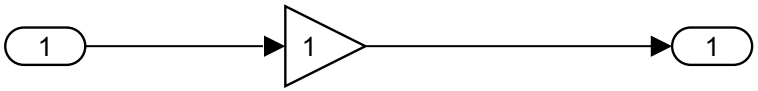
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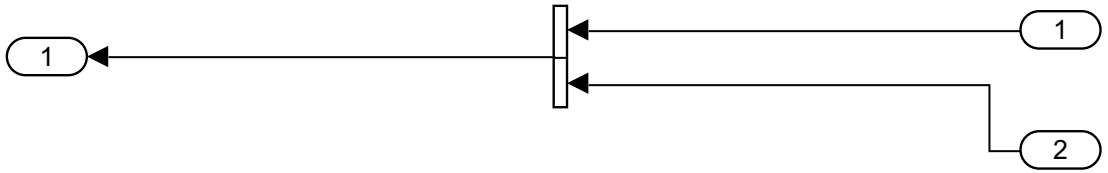
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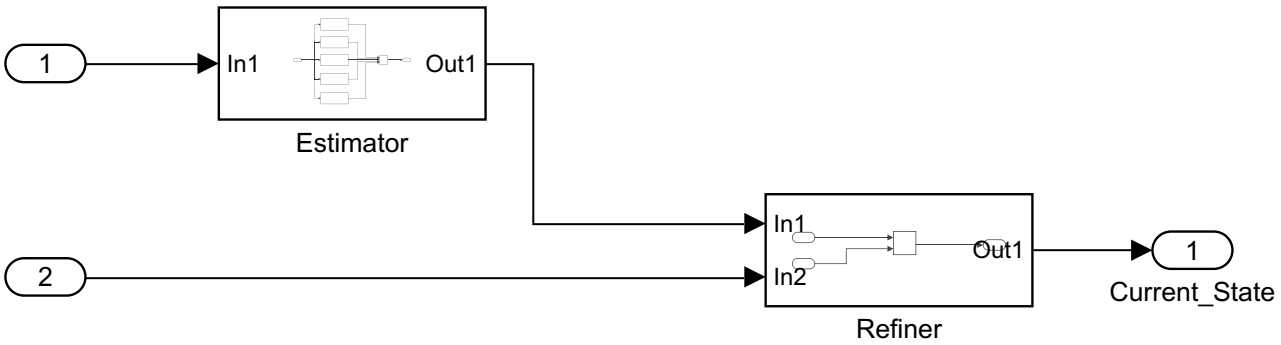
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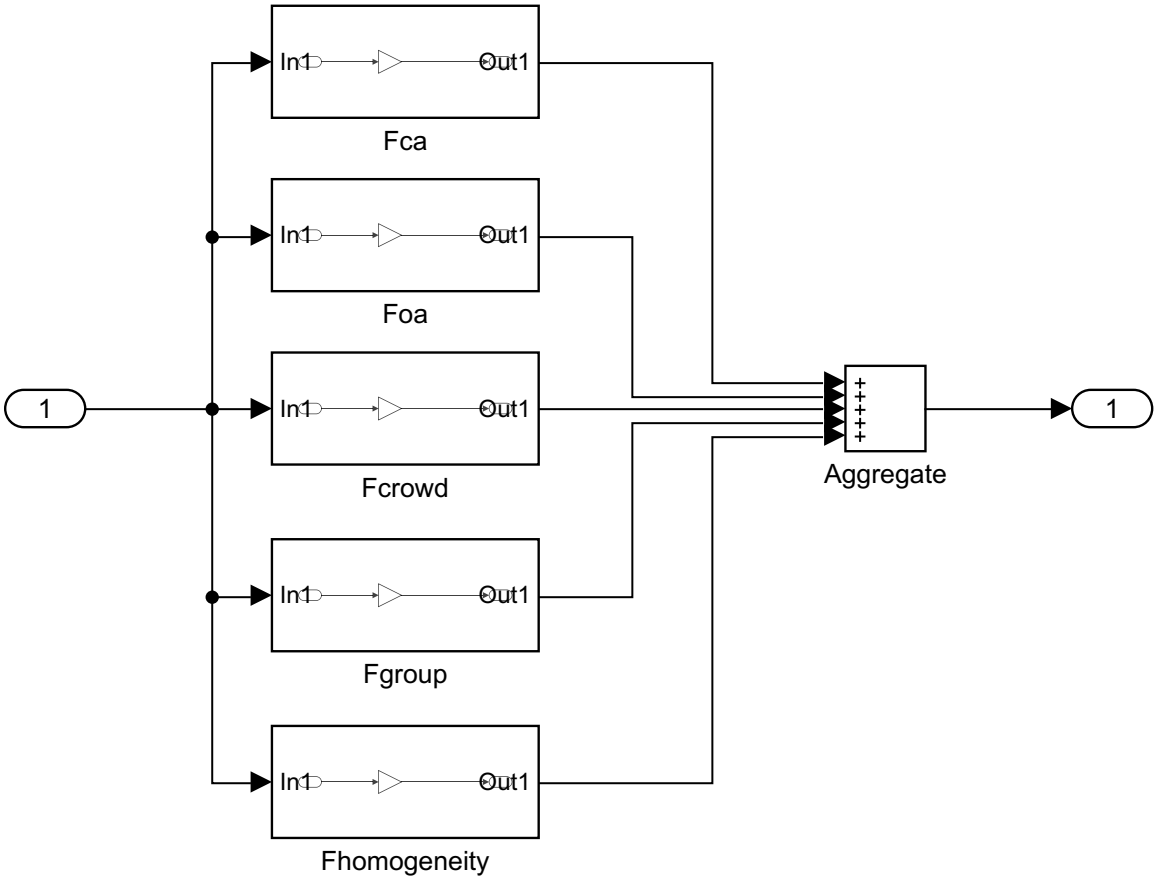
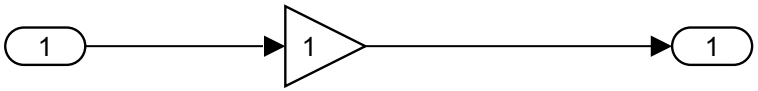
Out1
Estimator
2
In1
In2
Out1
Refiner
1
Current_State


1
In1
Out1
Fca
In1
Out1
Foa
In1
Out1
Fcrowd
In1
Out1
Fgroup
In1
Out1
Fhomogeneity
Aggregate
1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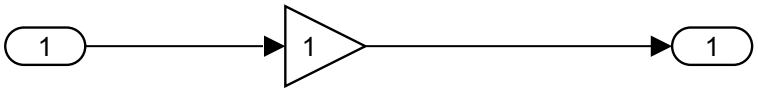
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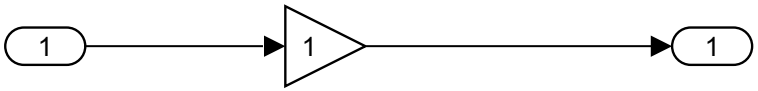
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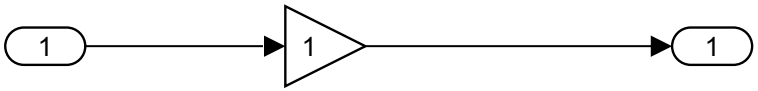
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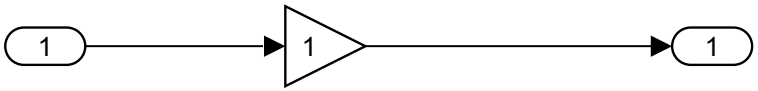
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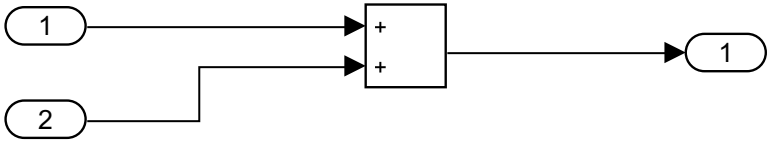
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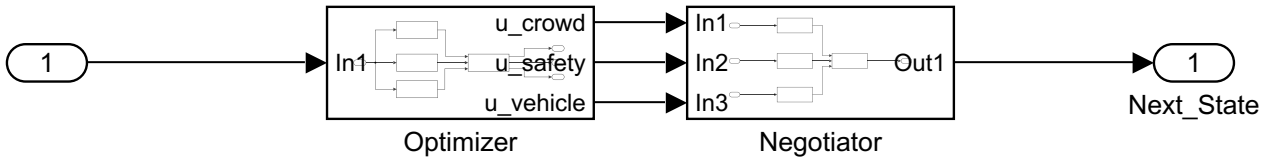
+
1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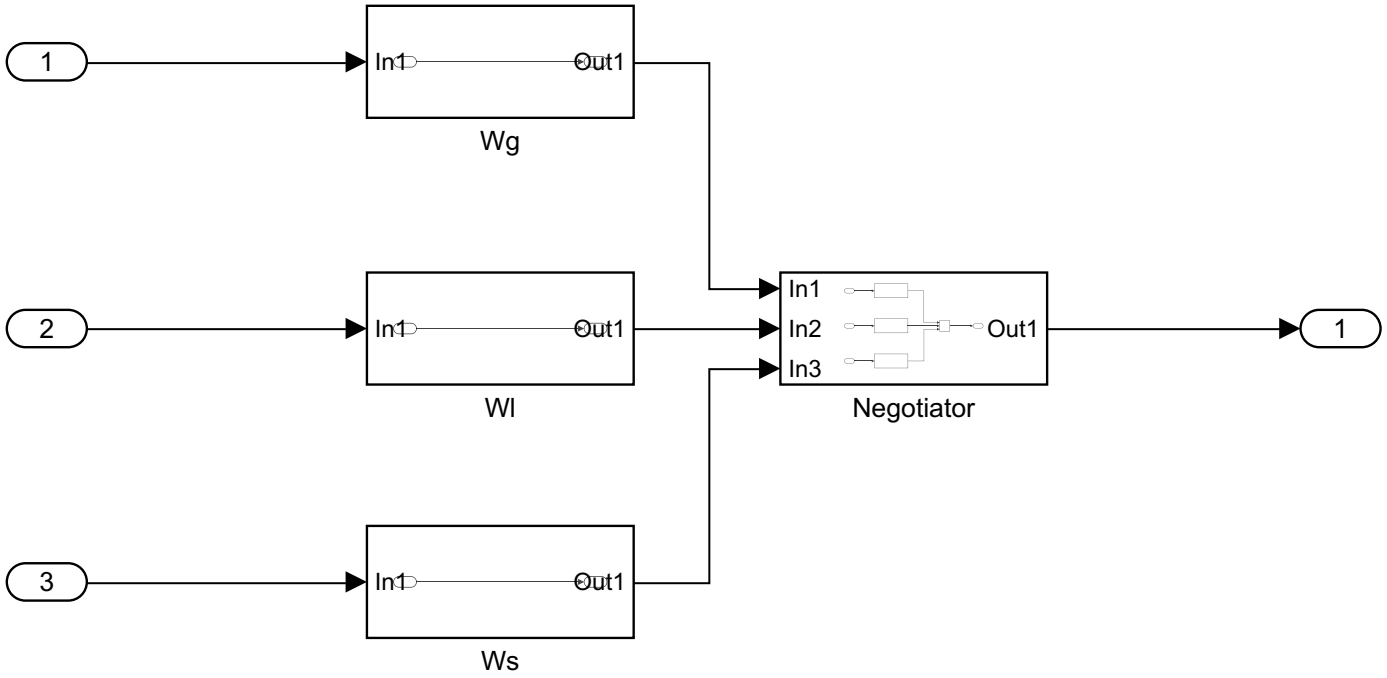
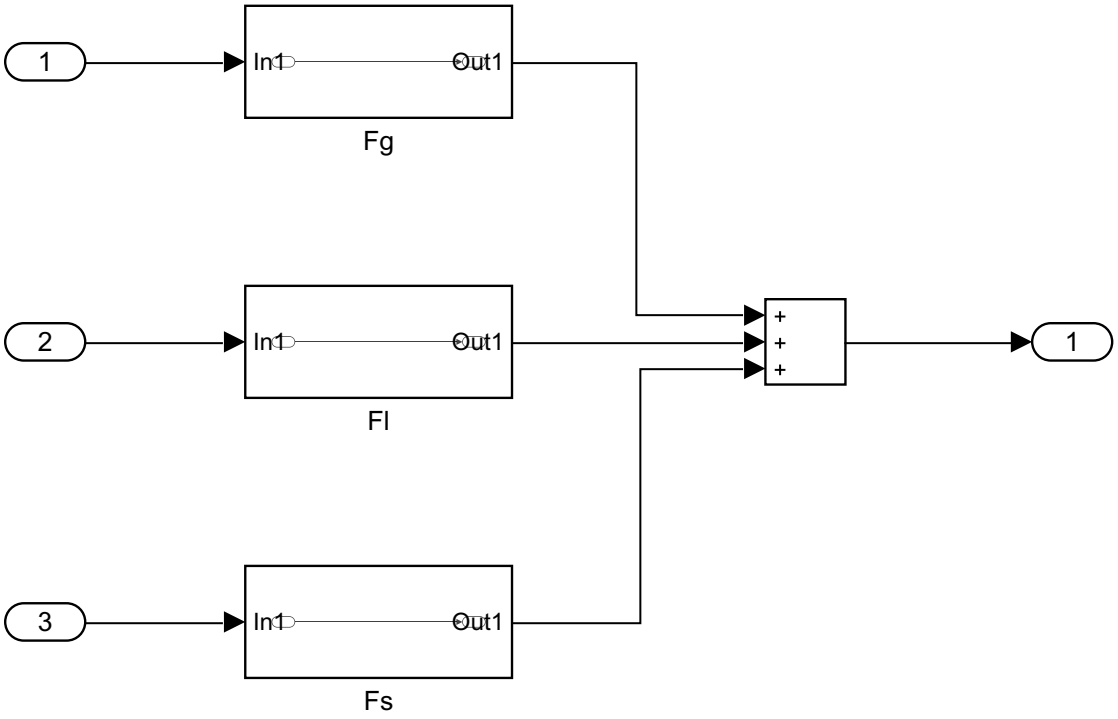
In1
u_crowd
u_safety
u_vehicle
Optimizer
In1
In2
In3
Out1
Negotiator
1
Next_State


1
In1
Out1
Wg
2
In1
Out1
Wl
3
In1
Out1
Ws
In1
In2
In3
Out1
Negotiator
1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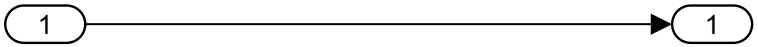
In1
Out1
Fg
2
In1
Out1
Fl
3
In1
Out1
Fs
+
+
+
1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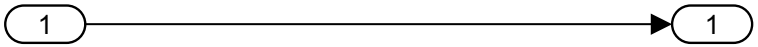
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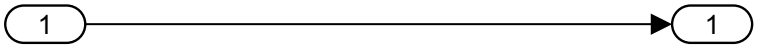
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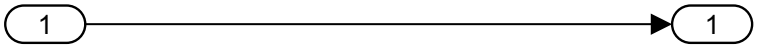
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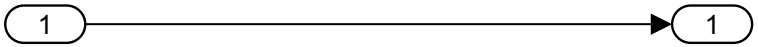
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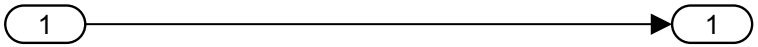
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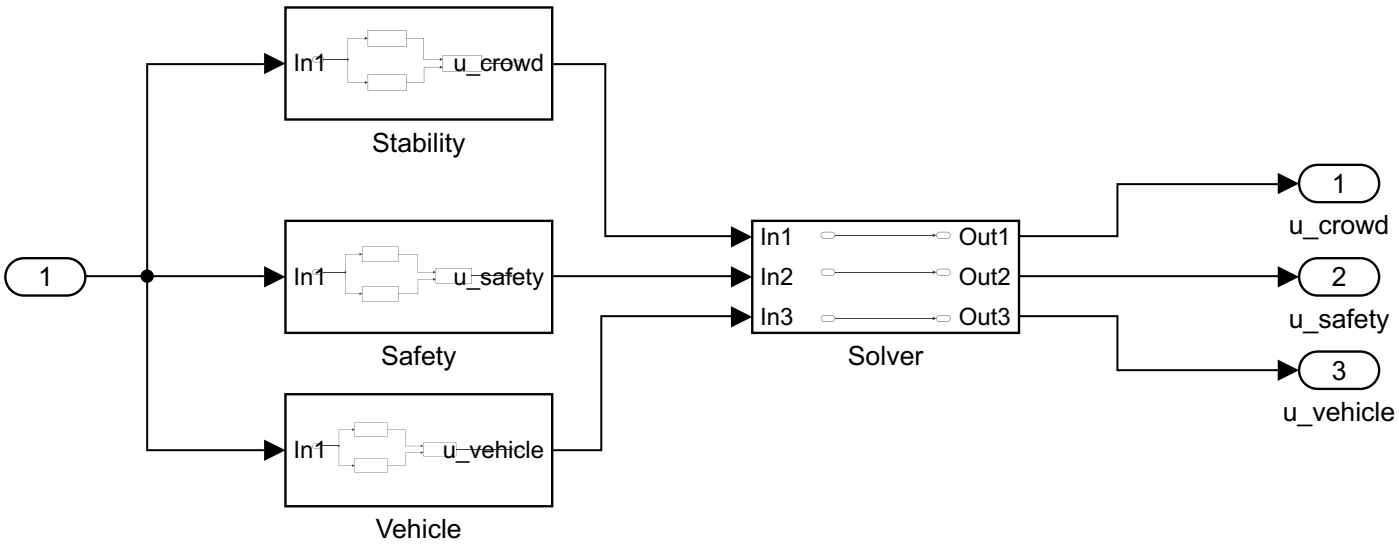
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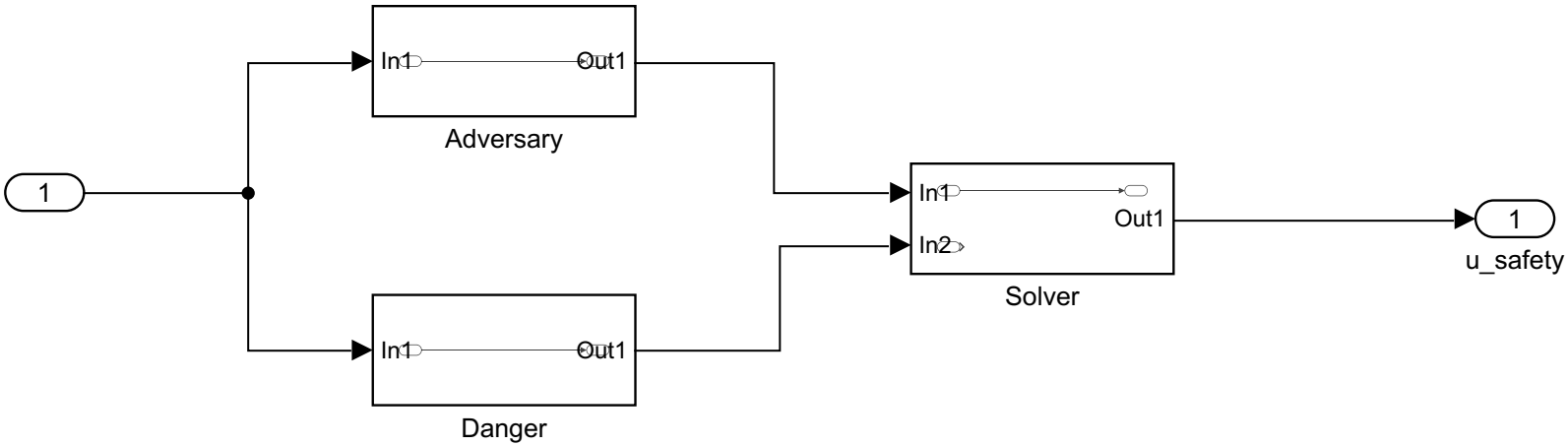
In1
u_crowd
Stability
In1
u_safety
Safety
In1
u_vehicle
Vehicle
In1
In2
In3
Out1
Out2
Out3
Solver
1
u_crowd
2
u_safety
3
u_vehicle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In1
Out1
Danger
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In2
Out1
Solver
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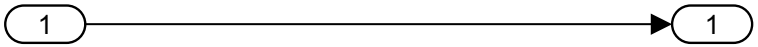
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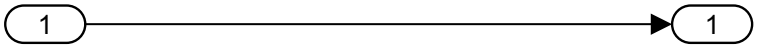
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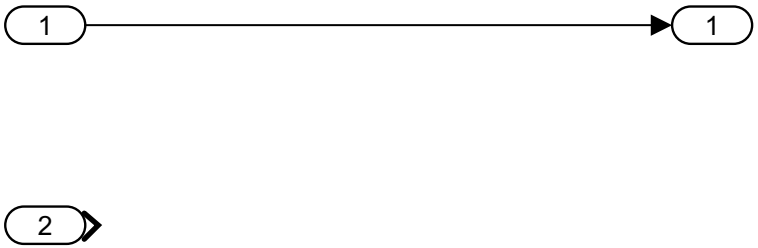
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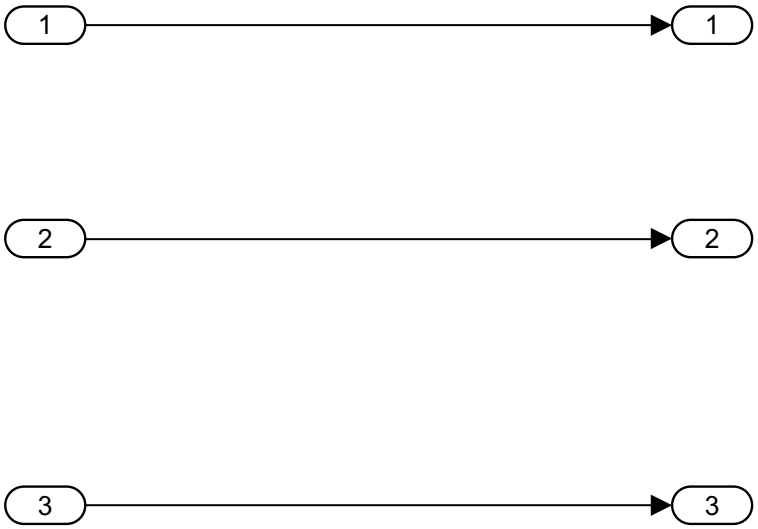
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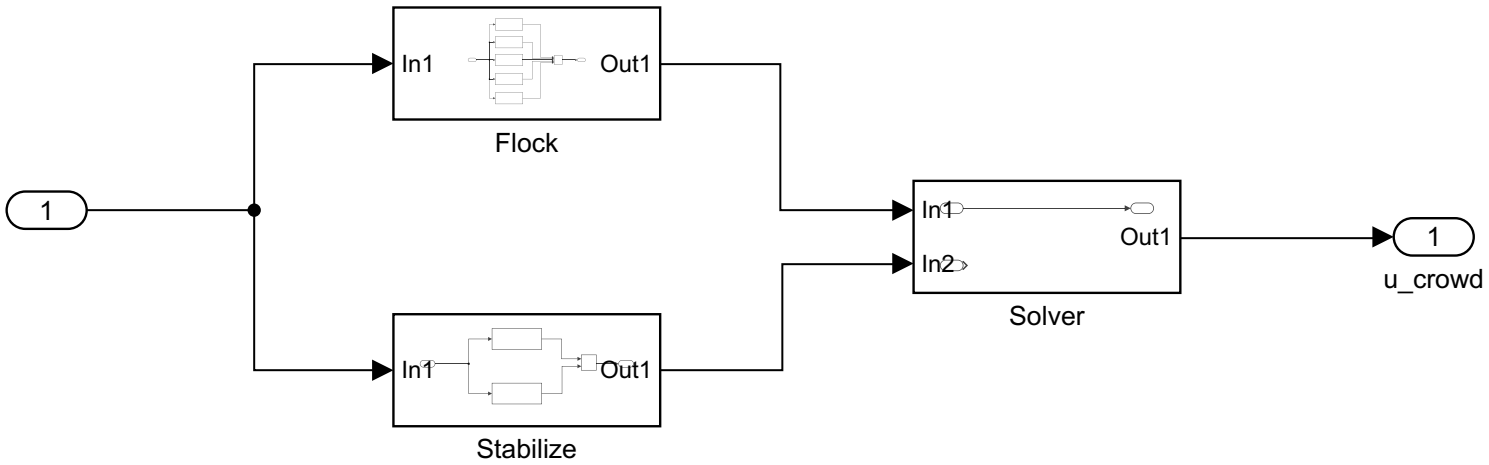
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In1
Out1
Stabilize
In1
In2
Out1
Solver
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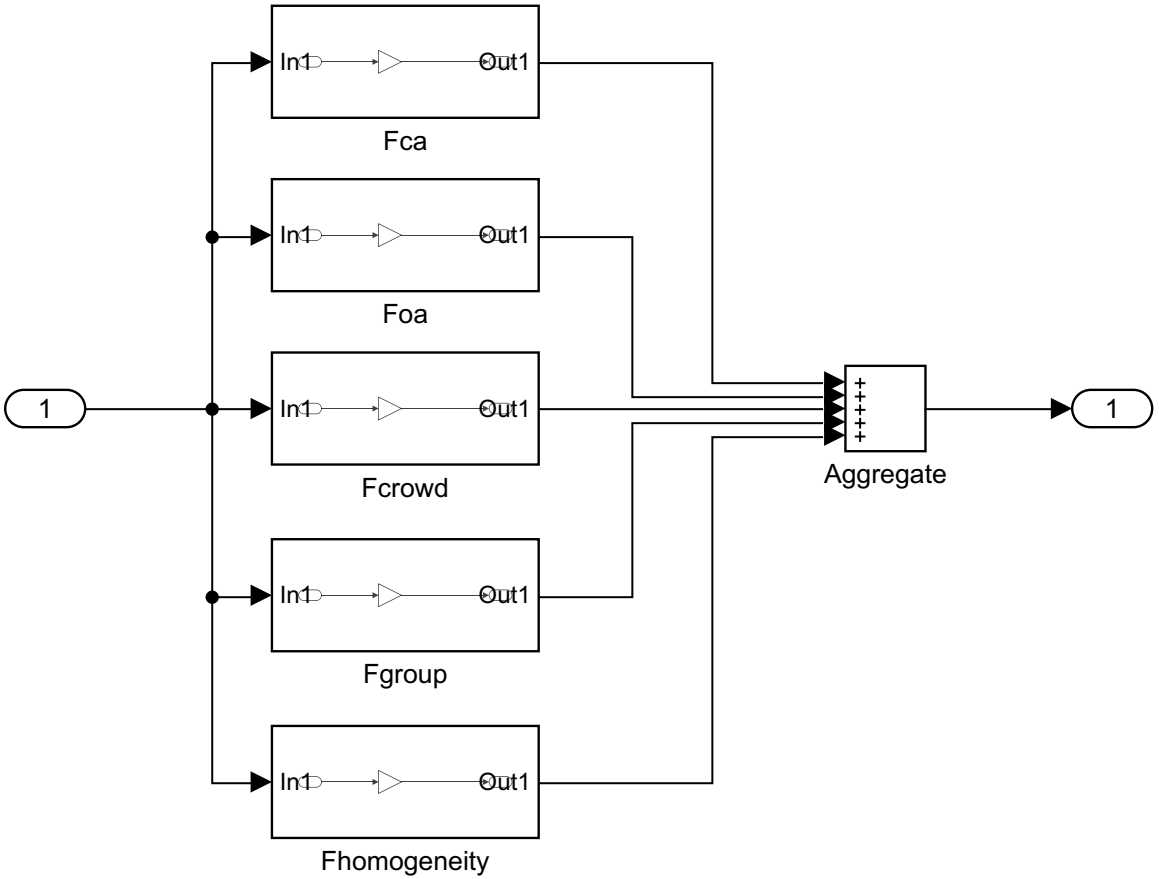
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Out1
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Aggregate
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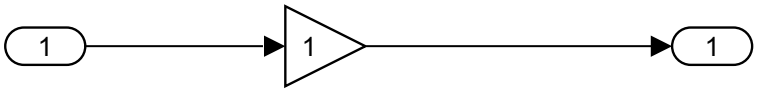
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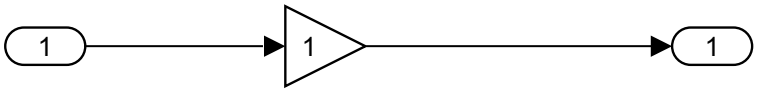
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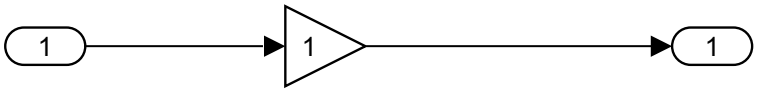
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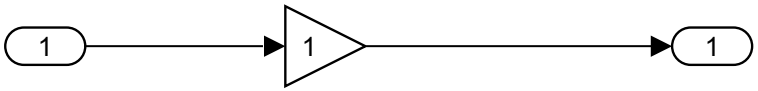
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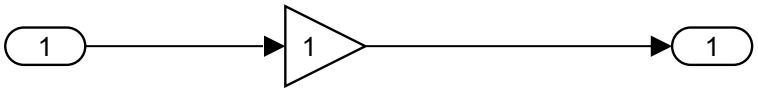
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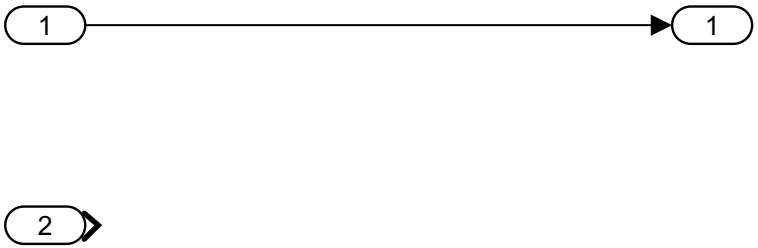
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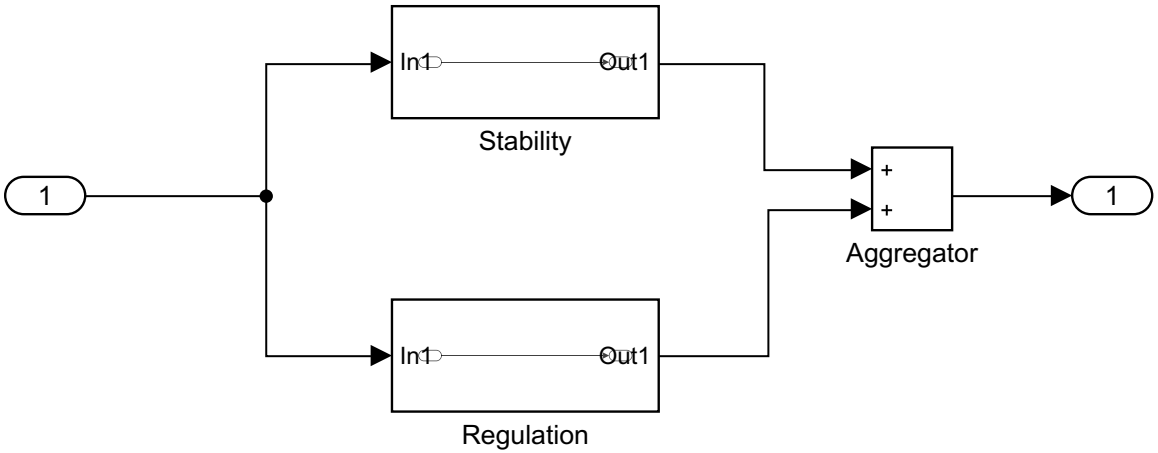
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Out1
Stability
In1
Out1
Regulation
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+
Aggregator
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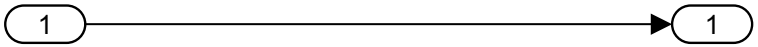
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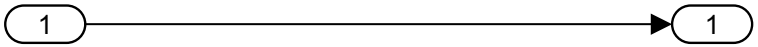
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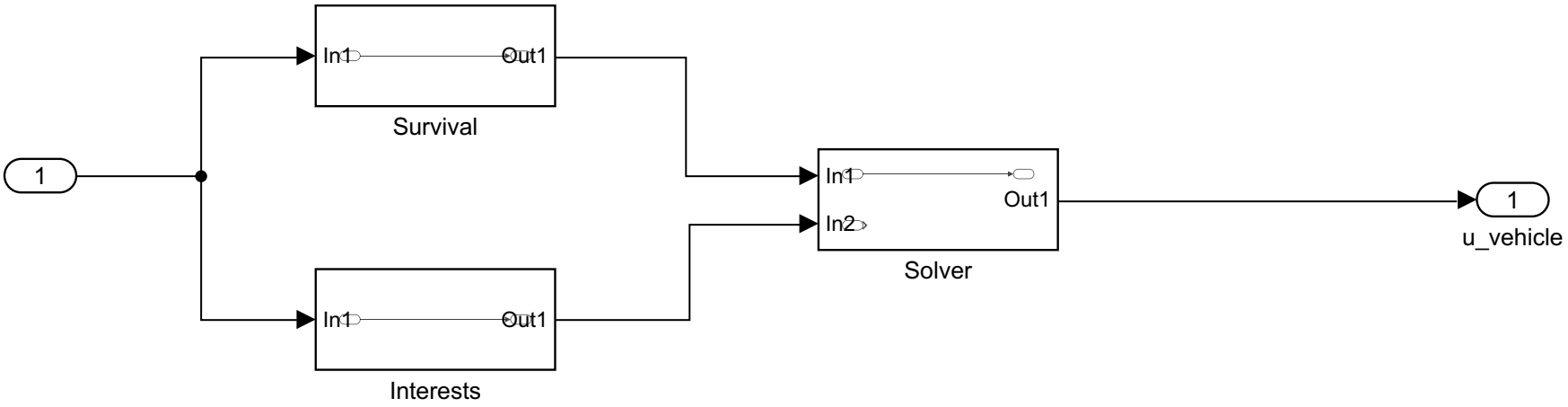
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Out1
Survival
In1
Out1
Interests
In1
In2
Out1
Solver
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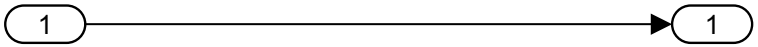
u_vehicle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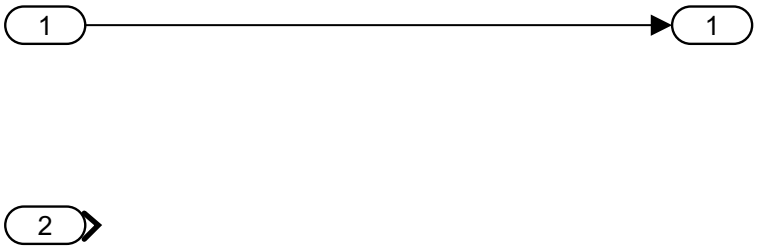
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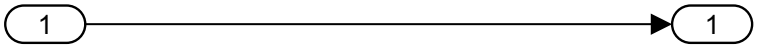
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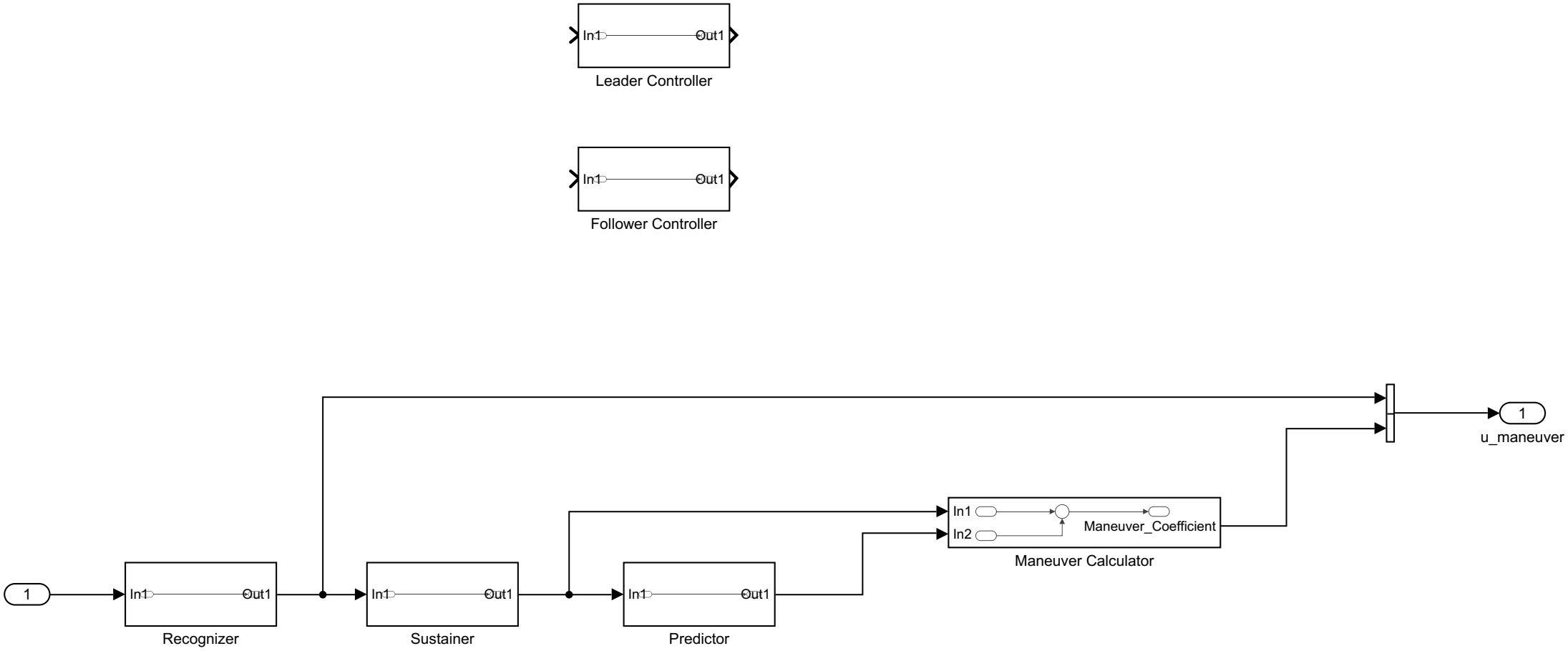
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Out1
Leader Controller
In1
Out1
Follower Controller
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In1
Out1
Recognizer
In1
Out1
Sustainer
In1
Out1
Predictor
In1
In2
Maneuver_Coefficient
Maneuver Calculator
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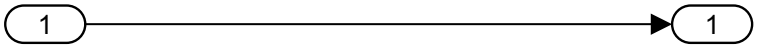
u_maneuver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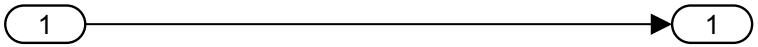
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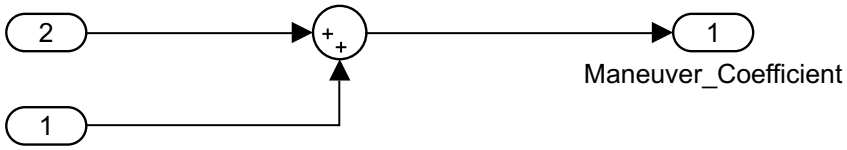
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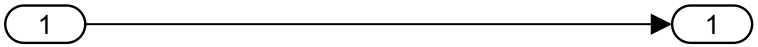
Maneuver_Coefficient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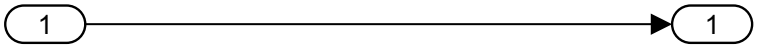
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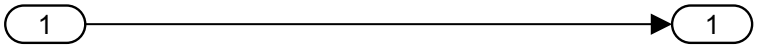
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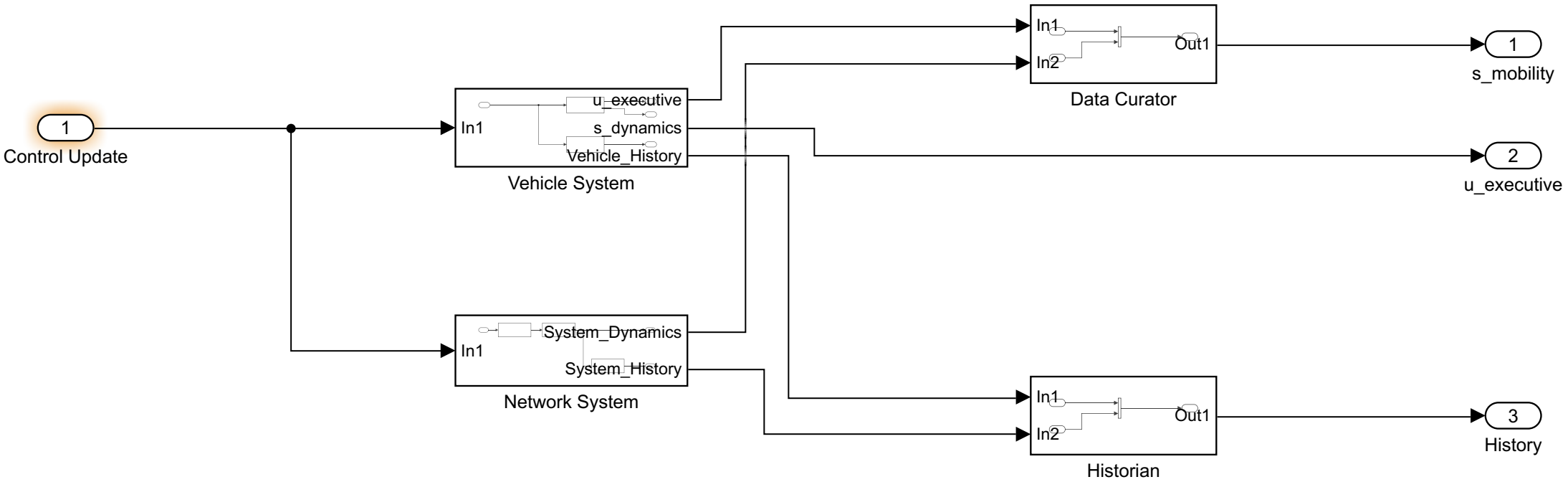
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Control Update
In1
u_executive
s_dynamics
Vehicle_History
Vehicle System
In1
System_Dynamics
System_History
Network System
In1
In2
Out1
Data Curator
In1
In2
Out1
Historian
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s_mobility
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u_executive
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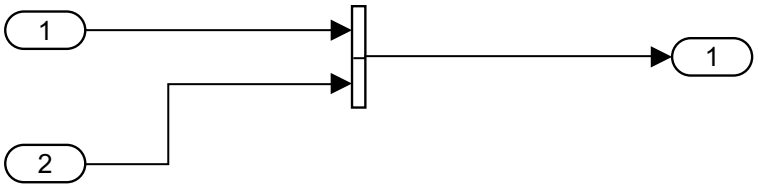
History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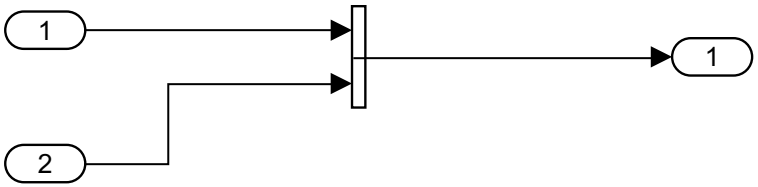
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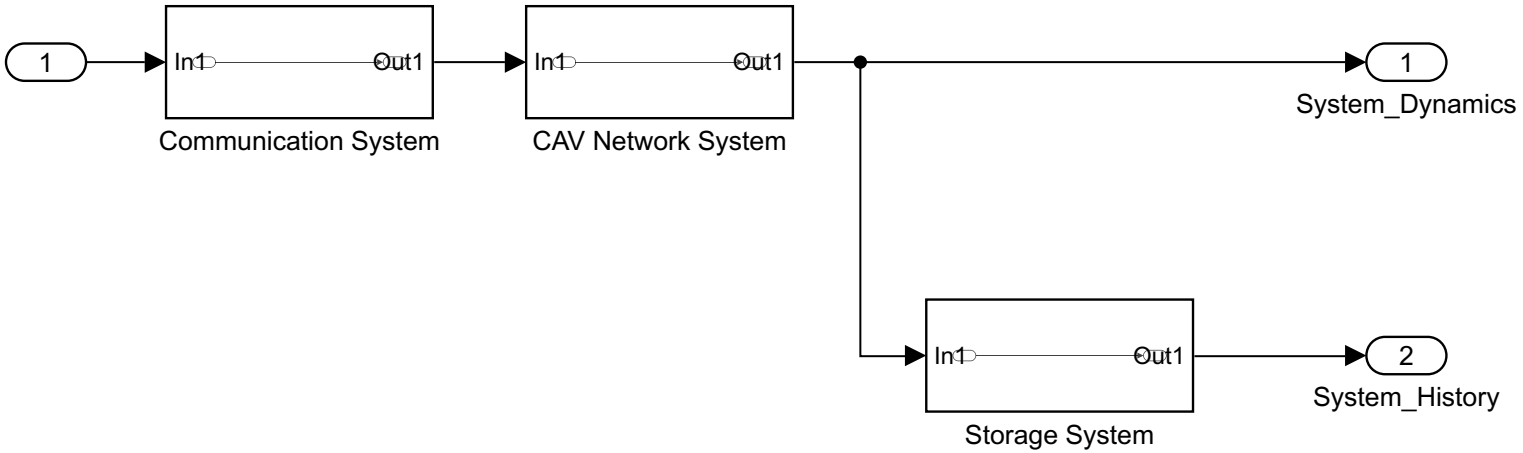
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Out1
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In1
Out1
CAV Network System
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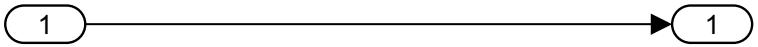
System_Dynamics
In1
Out1
Storage System
2
System_History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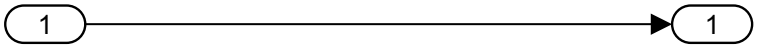
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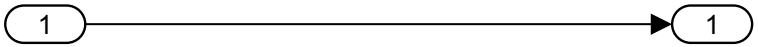
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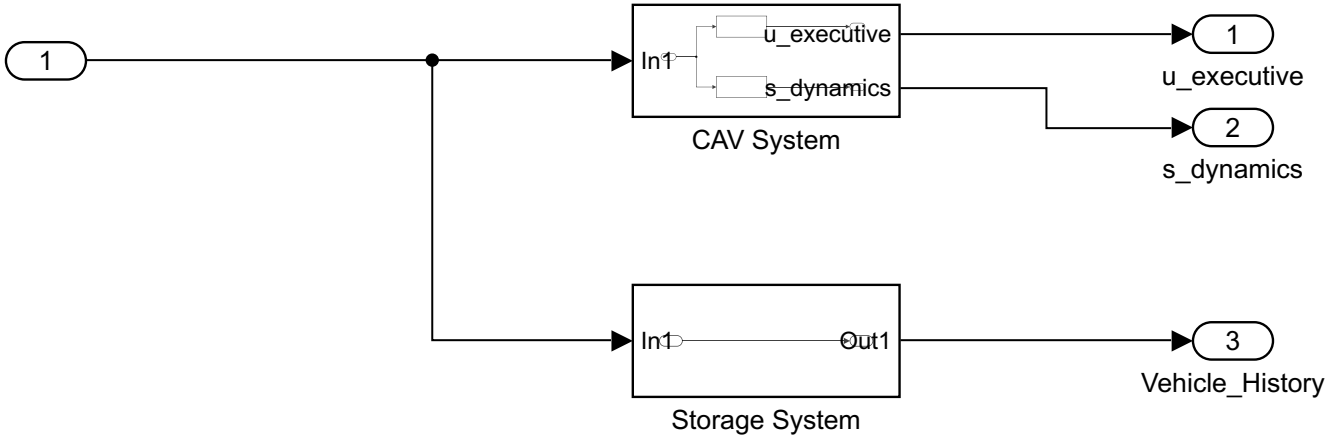
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s_dynamics
CAV System
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In1
Out1
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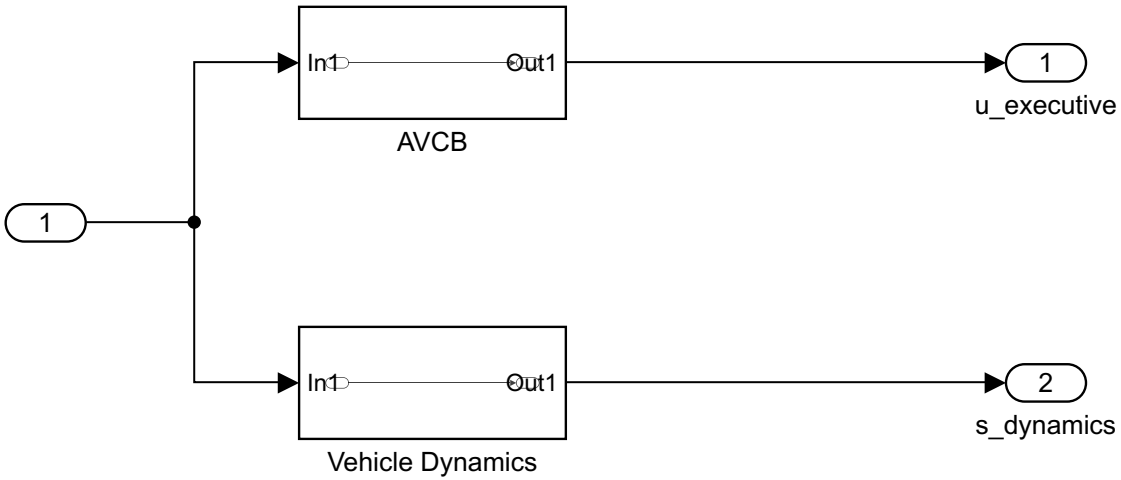
Vehicle_History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AVCB
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Out1
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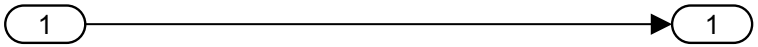
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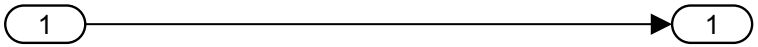
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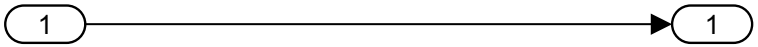
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