UAV Role Modeling and Verification

C-UAS

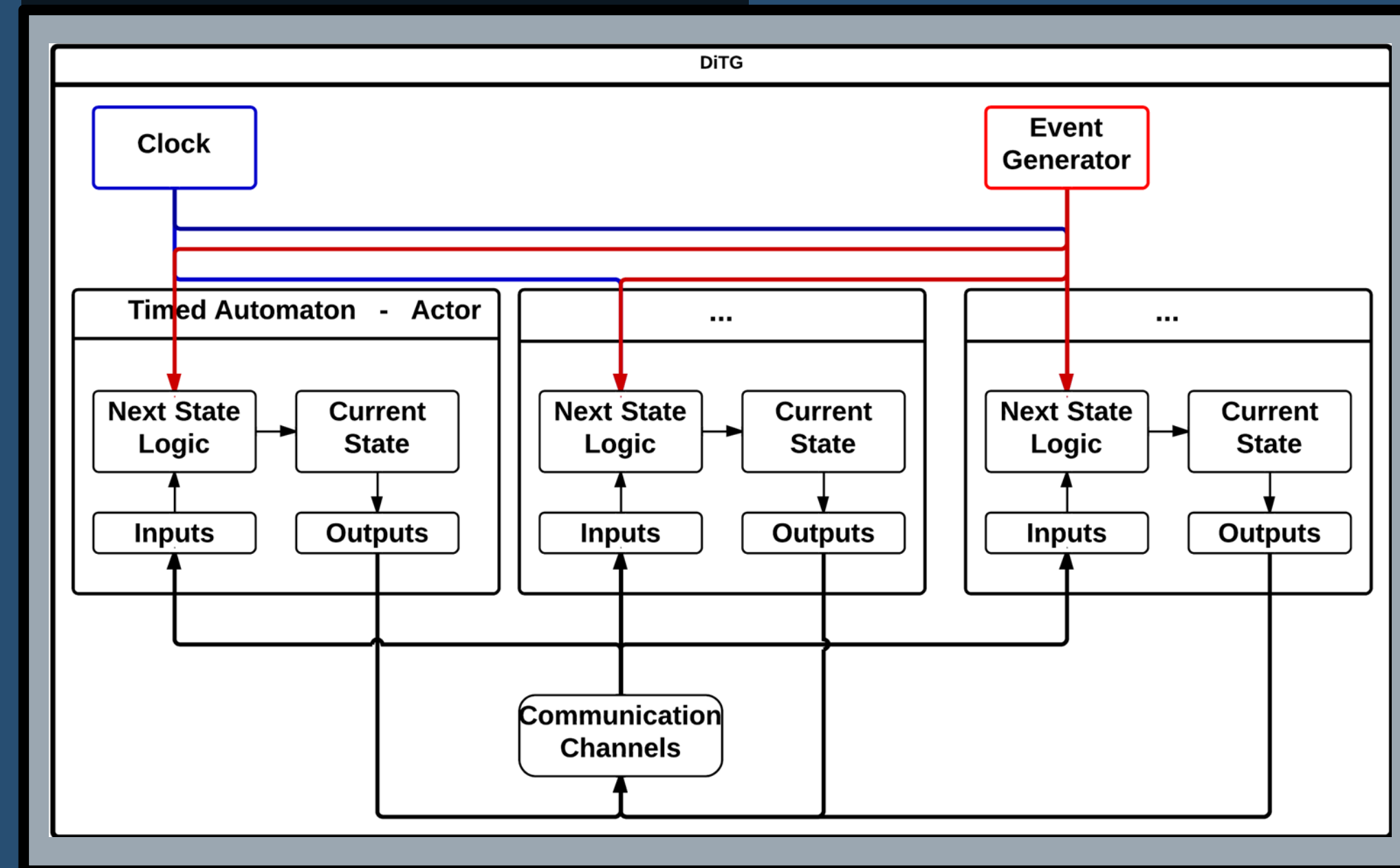Dr. Eric Mercer, Dr. Michael Goodrich, T.J. Gledhill, Robert Ivie, Jared Moore

Model the System

Create Verifiable Specifications

System Wide Invariants

Payload Operator Invariants

Mission Manager Invariants

UAV Operator Invariants

UAV Invariants

Invariant – An aspect of the model which must always be true.

Verify the Model

System Specifications

Model

Java Pathfinder
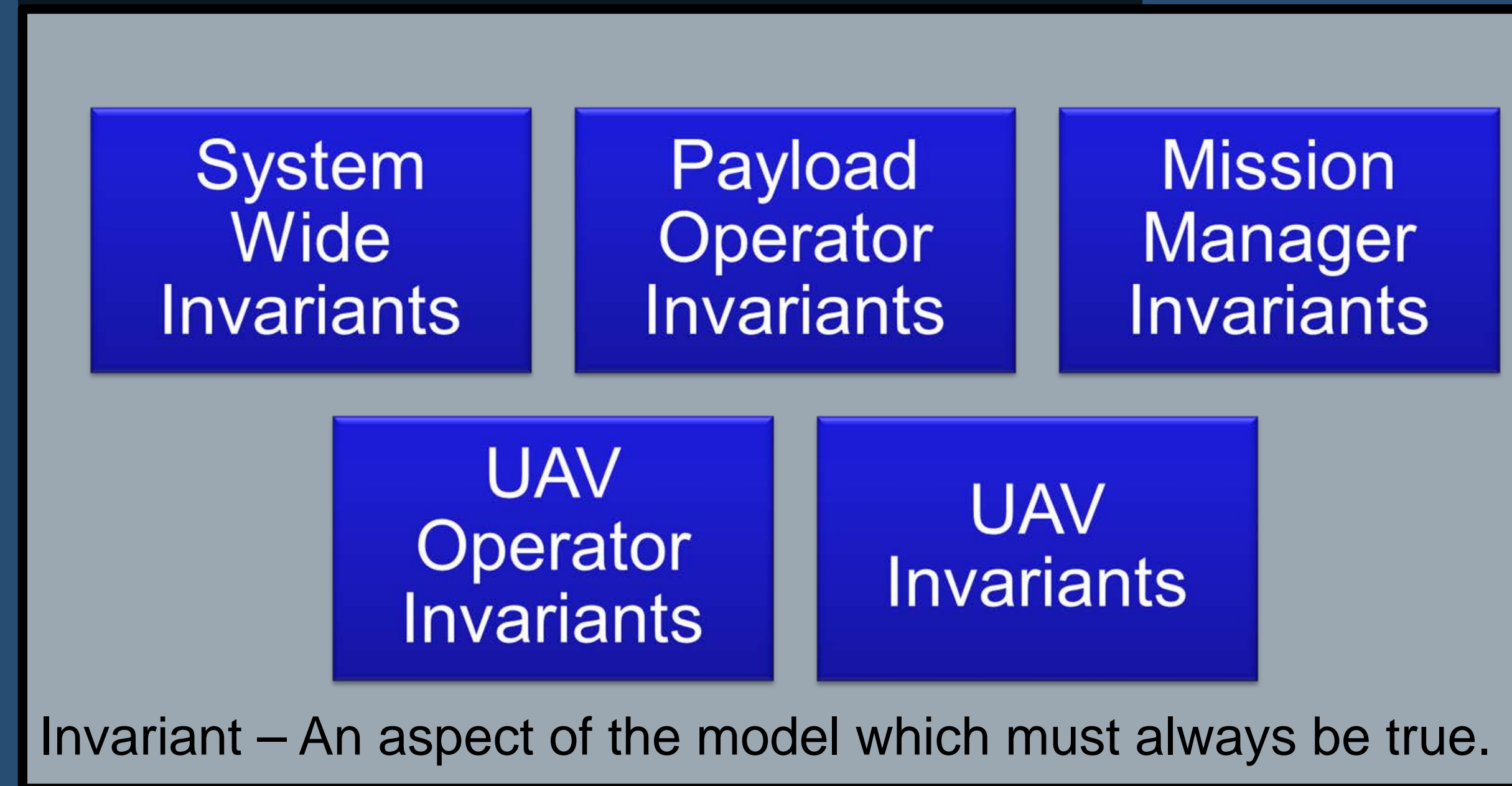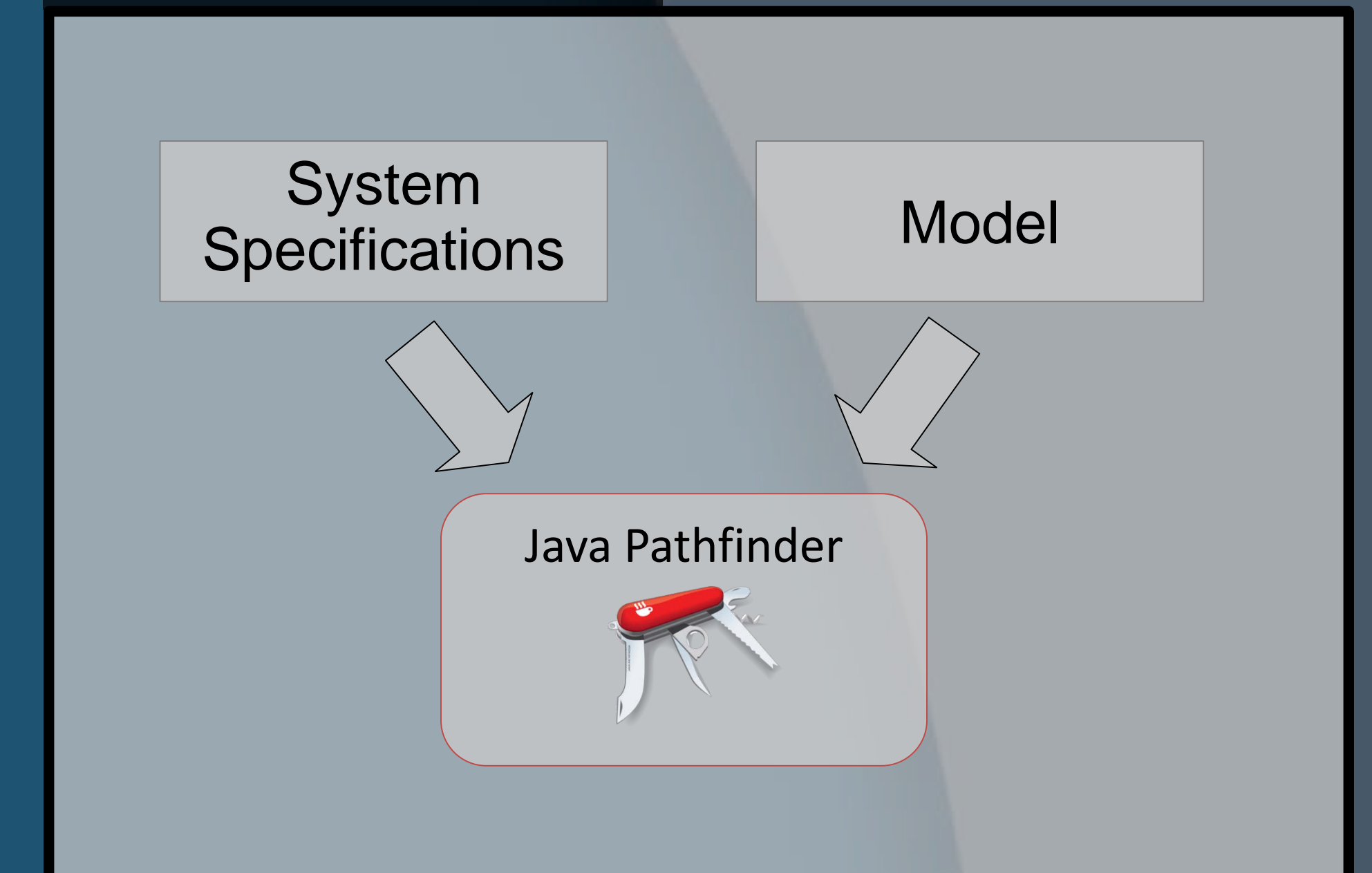
Implement Workload Metrics

Audio Channel Conflicts

Visual Channel Conflicts

Between Channel Conflicts

Identify Low Workloads

UAV Operator Workload

- ObservingGUI
- ObservingUAV
- Post Flight
- Communication
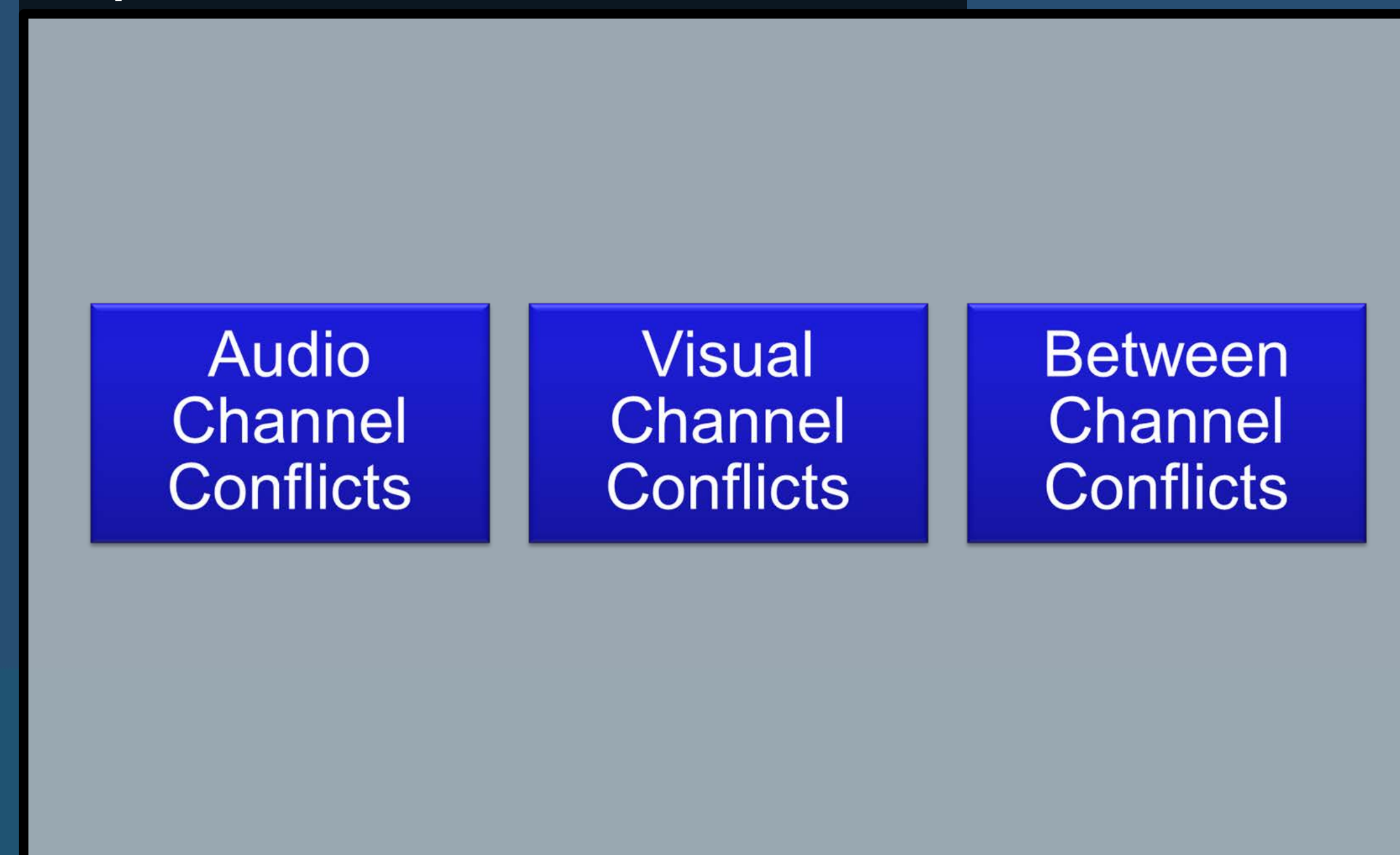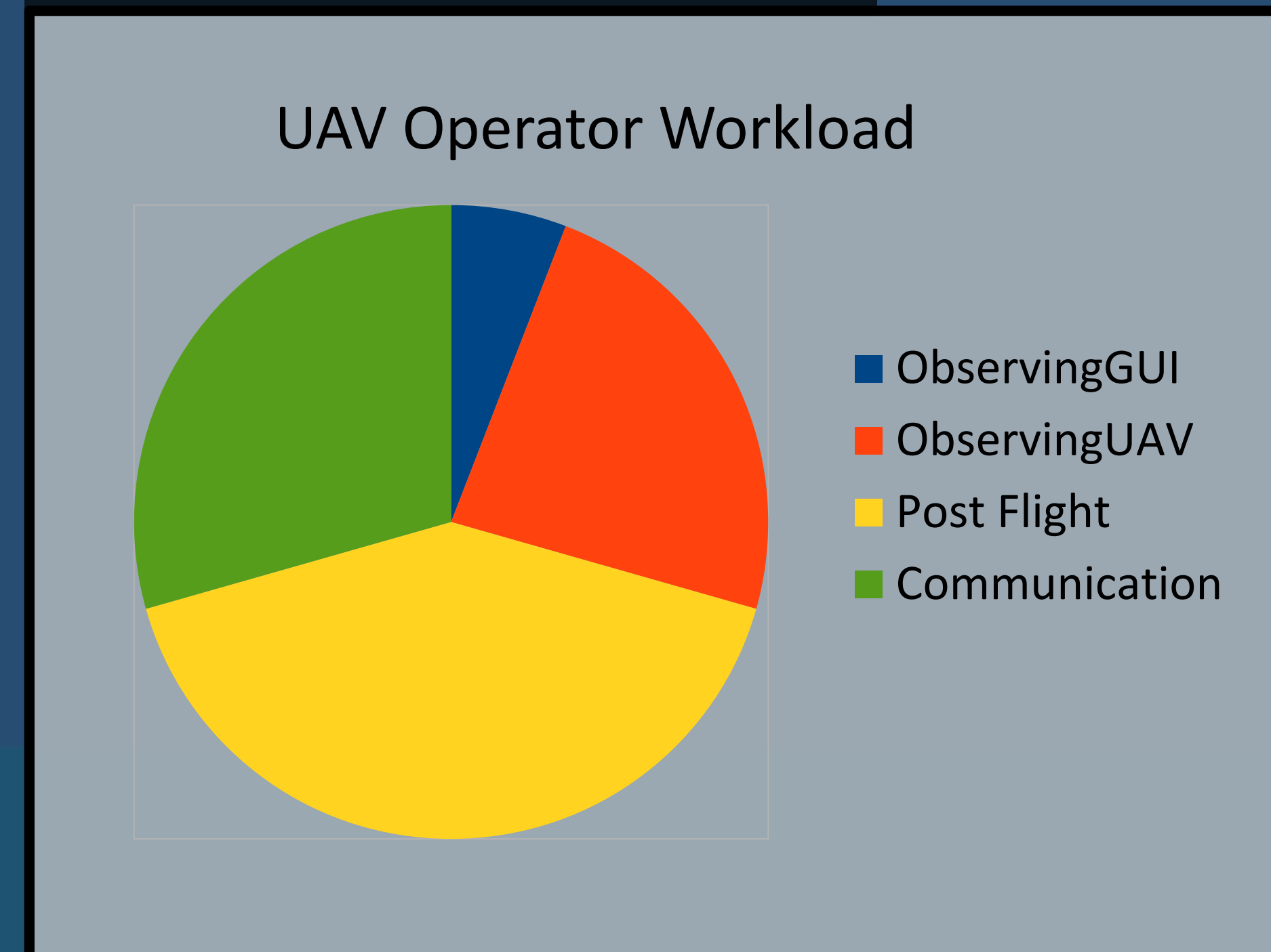
Anomaly Detection Swim-lanes

Action sequence in response to detecting an anomaly
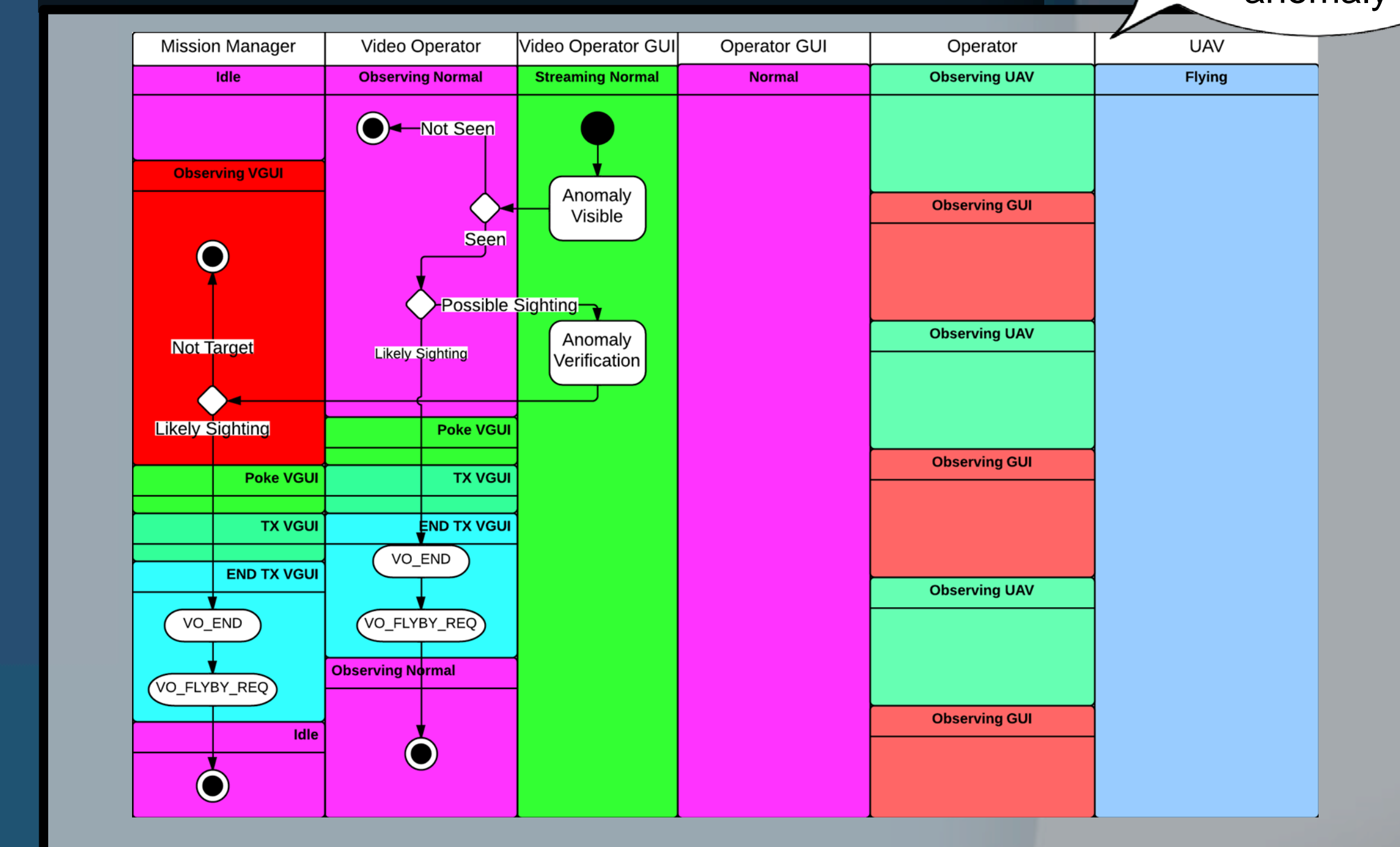
Directed Role Graph – UAV Operator