

$$\begin{aligned}
KnownWorld &:= SensorFusion(t) \forall point \in KnownWorld(t) \\
&= Free(t) \cup Occupied(t) \cup Unknown(t) \\
Mission &:= \forall waypoint \in Mission \text{ are reachable} \\
Sensors &:= \{LiDAR\} \\
SensorFusion &:= \{\text{Clasificaiton function}\} \\
HFlightConstraints &:= \{\text{vehicle dynamic}\}
\end{aligned} \tag{1}$$

$$\begin{aligned}
KnownWorld &:= SensorFusion(t) \forall point \in KnownWorld(t) \\
&= Free(t) \cup Occupied(t) \cup Unknown(t) \\
Mission &:= \forall waypoint \in Mission \text{ are reachable} \\
Sensors &:= \{LiDAR, ADS - B\} \\
SensorFusion &:= \{\text{Advanced joint sets}\} \\
HFlightConstraints &:= \{\text{vehicle dynamic}\} \\
HardConstraints &:= \{\text{intruder corridors}\}
\end{aligned} \tag{2}$$

$$\begin{aligned}
KnownWorld &:= DataFusion(t) \forall point \in KnownWorld(t) \\
&= Free(t) \cup Occupied(t) \cup Unknown(t) \cup Restricted(t) \\
Mission &:= \forall waypoint \in Mission \text{ are reachable} \\
Sensors &:= \{LiDAR, ADS - B\} \\
SensorFusion &:= \{\text{Advanced joint sets}\} \\
InformationSources &:= \{TerrainMap, ObstacleMap, FlightRestriction\} \\
DataFusion &:= \{\text{Advanced data fusion}\} \\
HFlightConstraints &:= \{\text{vehicle dynamic}\} \\
HardConstraints &:= \{\text{intruder corridors, terrain, obstacles}\} \\
Softconstraints &:= \{\text{protection zones}\}
\end{aligned} \tag{3}$$

$$\begin{aligned}
KnownWorld &:= DataFusion(t) \forall point \in KnownWorld(t) \\
&= Free(t) \cup Occupied(t) \cup Unknown(t) \cup Restricted(t) \\
Mission &:= \forall waypoint \in Mission \text{ are reachable} \\
Sensors &:= \{LiDAR, ADS - B\} \\
SensorFusion &:= \{\text{Advanced joint sets}\} \\
InformationSources &:= \{TerrainMap, ObstacleDatabase, \\
&\quad FlightRestriction, Weather\} \\
DataFusion &:= \{Advanceddatafusion\} \\
HFlightConstraints &:= \{\text{vehicle dynamic}\} \\
HardConstraints &:= \{\text{intruder corridors, terrain, obstacles, protection zones}\} \\
Softconstraints &:= \{\text{protection zones}\}
\end{aligned} \tag{4}$$

$$\begin{aligned}
KnownWorld &:= DataFusion(t) \forall point \in KnownWorld(t) \\
&= Free(t) \cup Occupied(t) \cup Unknown(t) \cup Restricted(t) \\
Mission &:= \forall waypoint \in Mission \text{ are reachable} \\
Sensors &:= \{LiDAR, ADS - B\} \\
SensorFusion &:= \{\text{Advanced joint sets}\} \\
InformationSources &:= \{TerrainMap, ObstacleDatabase, \\
&\quad FlightRestriction, Weather\} \\
DataFusion &:= \{Advanceddatafusion\} \\
HFlightConstraints &:= \{\text{vehicle dynamic}\} \\
SFlightConstratins &:= \{\text{airspace, rules of the air}\} \\
HardConstraints &:= \{\text{intruder corridors, terrain, obstacles, protection zones}\} \\
Softconstraints &:= \{\text{protection zones}\}
\end{aligned} \tag{5}$$