

# AUTOMATIC INTELLIGENT SPACE OPERATIONS SCHEDULING

## Automatic Satellite Communication Scheduling:

- Air Force Satellite Control Network (AFSCN)
- Managed Intelligent Deconfliction and Scheduling (MIDAS)
- Maximizes number and minutes of supports
- Hundreds of Satellites, 1000s of supports and other tasks
- Dozens of Separate, Competing Constellations/SOCs
- 24-hour schedule generated in minutes
- Both hard and soft constraints

## Launch Operations Scheduling:

- Used by KSC for Space Shuttle and Space Launch System (SLS) Scheduling
- Thousands of highly interconnected activities scheduled in seconds
- Temporal, Spatial, and Hazardous Operations Constraints
- Schedules Manpower, Equipment, and Facilities
- Real-time rescheduling in response to problems and other events

## Space-Based Sensor Scheduling:

- Maximizes Number of Collections and their Quality
- Line of Sight, Range, and Angle Constraints
- Combines Location, Timing, and Mode Compatible Observations
- Optimizes across multiple satellites and constellations
- Thousands of collections scheduled in seconds

## Ballistic Missile Intercept Scheduling:

- Maximizes Kill Probabilities and Minimizes Total Expected Leakage
- Maximizes Interceptor and Sensor Performance
- Handles all sensor phenomenologies/covariances
- Able to utilize complex interceptor flyout and kill probability functions
- Minimizes interceptor use while minimizing expected leakage
- Easily handles raids of dozens of incoming ballistic missiles in seconds
- Intelligently Considers Follow-On Attacks

