



Upward Momentum

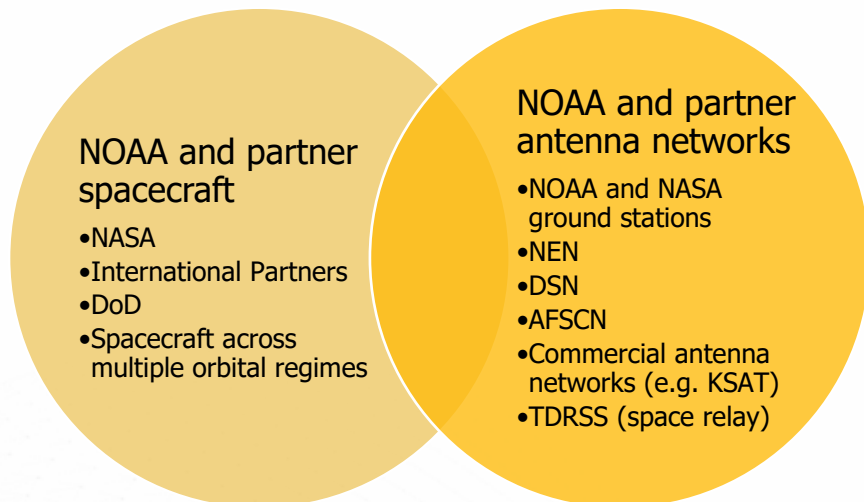
NOAA Enterprise Automated Scheduling Implementation (EASI)

February 2025

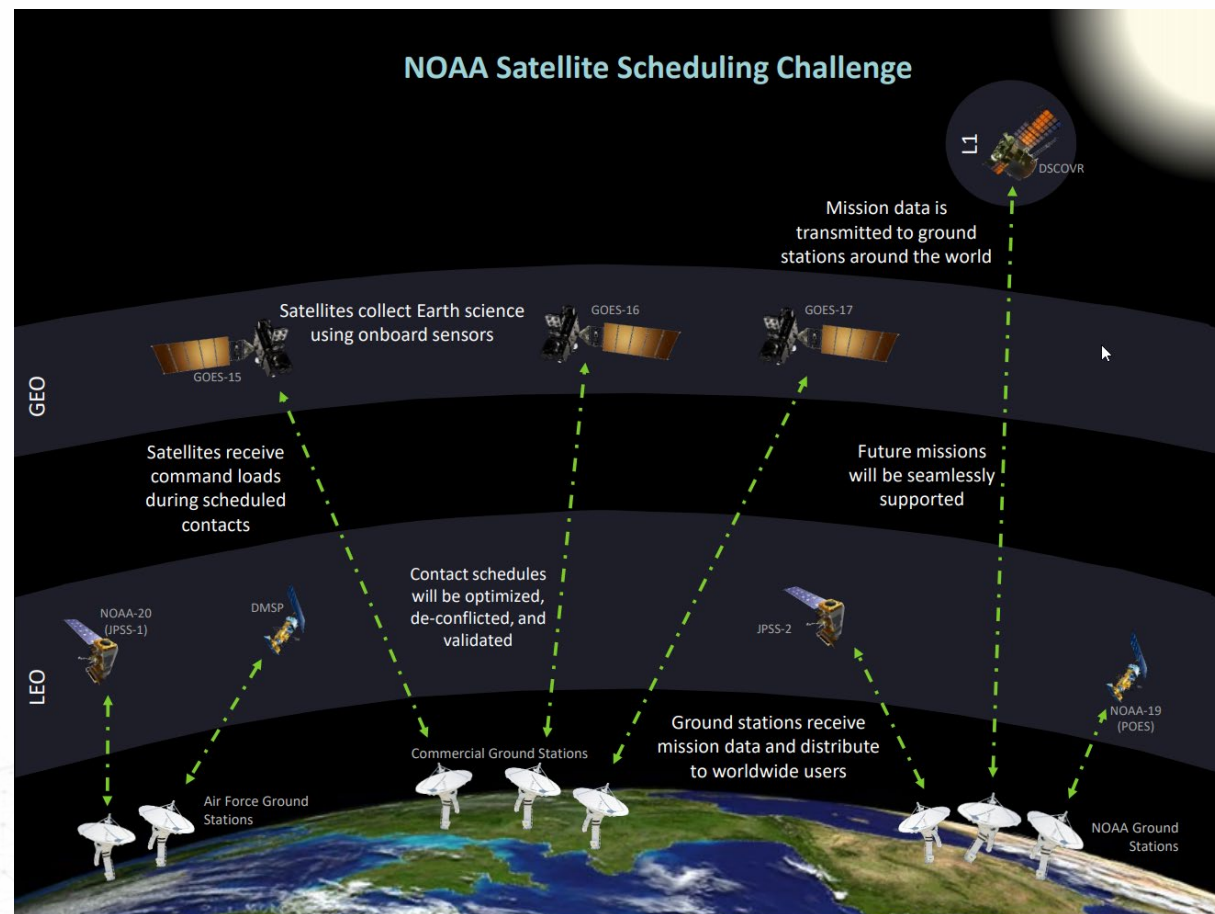


NOAA Satellite Scheduling Challenge

- Multiple ground and space assets to schedule



- Extensible to support future missions, networks, and scheduling requirements
- Desire to move NOAA away from multiple parallel stove-piped systems to a single integrated enterprise solution



Legacy Approach

Manual

Development
of schedules

Deconfliction

Validation

Stovepiped

Each mission
plans
independently

Expensive to
maintain
multiple
systems

Old

Manual file
exchange

Sneakernet
and floppy
disks

Slow

Multi-hour
scheduling

Multi-day
planning
coordination

Related Recent Projects

Landsat 8/9

- STK Scheduler for contact scheduling (TDRSS and ground networks)

BridgeComm

- Laser communication scheduling
- STK Pro, STK Scheduler, Scheduler Online

SDA Tranche 2 Tracking Layer

- Collection Planning plus Contact Scheduling
- Space-to-ground, ground-to-space, and space-to-space communication

Commercial Constellation

- Integrated scheduling of multiple commercial communication networks

AFSCN

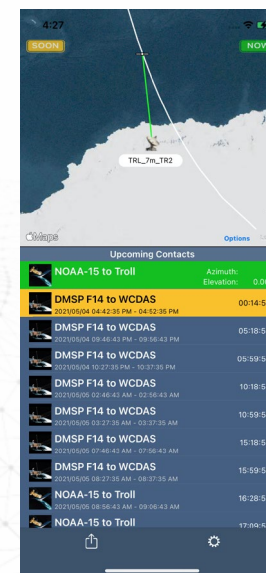
- STK Scheduler for AFSCN load forecasting and ground network performance analysis

- STK Scheduler core scheduling engine and web application
- STK Pro flight dynamics computations
- SpyMeSat Mobile App

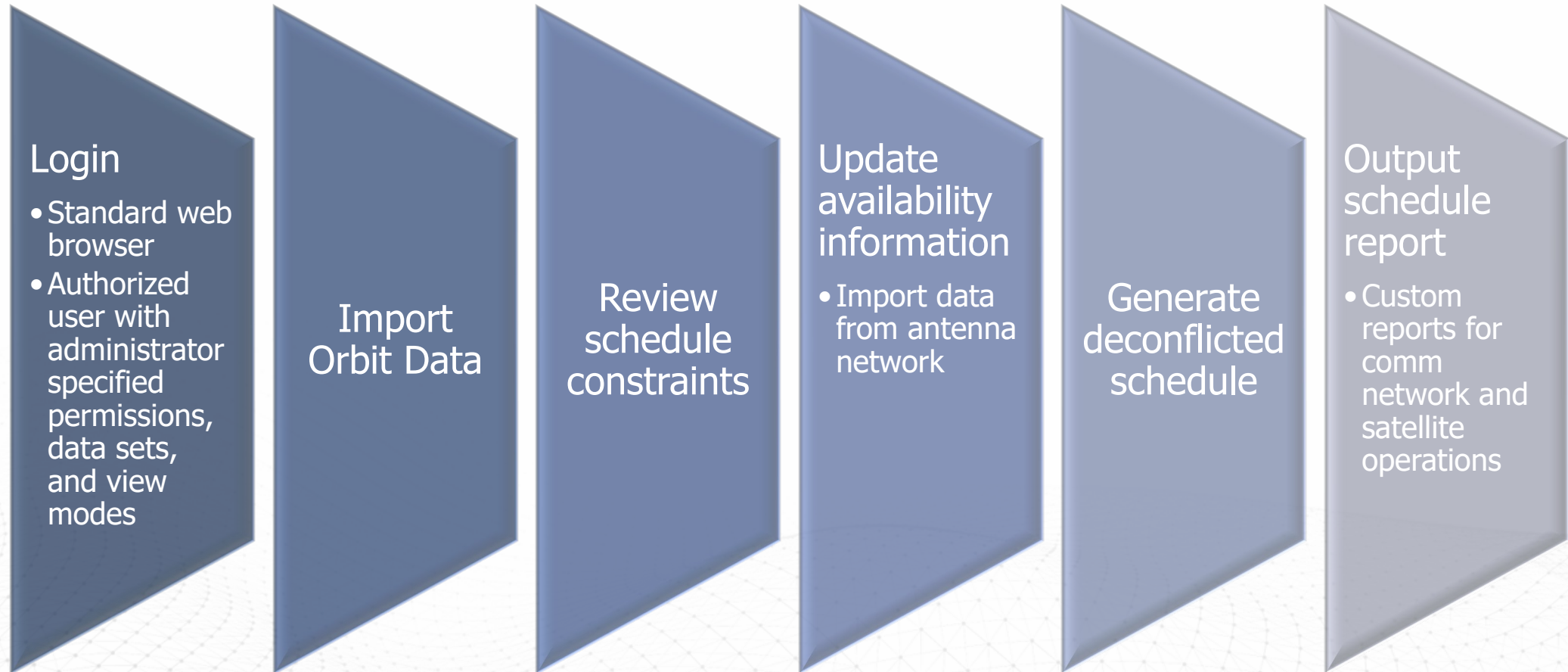
- Any type of task
- Any type of resource
- No software development needed for new satellites, ground stations, physical constraints
- Controlled web access management

- Single application for all missions
- Cross-mission deconfliction
- Automation
- Modernized interfaces
 - Web
 - Mobile
 - API

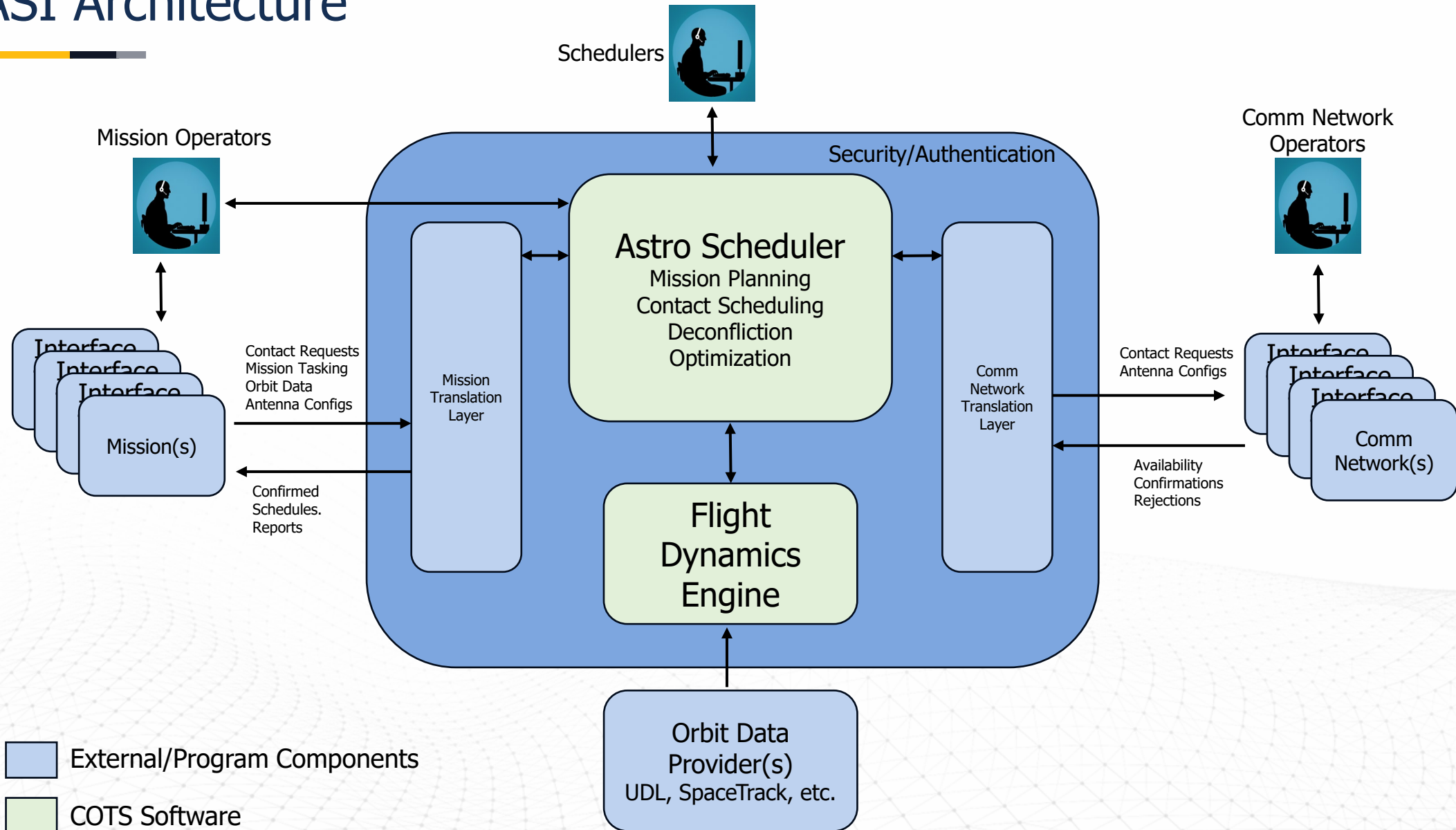
- Custom inputs, outputs, and schedule constraint values
- Uses standard COTS API's



Example Scheduling Workflow



EASI Architecture



EASI Roadmap

Started in
August 2020

- Generated requirements
- Demos to mission teams
- Release 1: Scheduler Desktop and DSCOVr in December 2020
- Release 2: Scheduler Online added GOES and DMSP, March 2021
- Release 3: JPSS, mobile app, enterprise functionality, June 2021
- Release 4: Inbound workflow automation, RFI, November 2021
- Release 5: Outbound workflow automation, CAC, February 2022
- Release 6: Email workflow, KSAT integration, May 2022
- ...
- Replace JPSS MM scheduling
- USSF FAS support
- Containerization
- Optimized scheduling to reduce Radio Frequency Interference
- Transition to operations

Moving
forward

- Mission improvements
- Increased enterprise functionality and automation

EASI at Auria - Astro CRM

Make EASI easier

Broaden to include more of the ecosystem/cloud

Integrate more government and commercial communication networks

More detailed monitor and control of antennas via TeRMS

Improve user experience

Further generalize API's

Improve cyber security

Enhance optimization

Continue ability to broker communication for any type of mission in any domain

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