Range Scheduling Aid (RSA)

J. R. Logan and M. K. Pulvermacher
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Satellite Control Network

COMMUNICATIONS SATELLITE

MISSION SATELLITE

TT&C

REMOTE TRACKING STATIONS

FALCON AFB, CO

ONIZUKA AFB, CA

MITRE

217

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MITRE Tasking

- "Investigate the feasibility and utility of developing a knowledge-based scheduling aid..."

- Approach:
  - Replicate current scheduling in automated environment
  - Develop prototype with user interaction
  - Create user-friendly, graphical interface
Range Scheduling - New Approach

RSA Features

- Graphical User Interface
  - Similar look and feel to paper based approach
  - Real-time response to schedulers

- Constraint Based Analytical Capability
  - Provides scheduling tools
  - Automates scheduler heuristics

- Multi-user
  - Architecture supports real-time multi-user capability

- Portable
  - Sun, Symbolics, TI Explorer, and Mac II
### Range Scheduling Aid Display

#### SCHEDULE AREA

<table>
<thead>
<tr>
<th>Station</th>
<th>MAY 2</th>
<th>MAY 3</th>
<th>MAY 4</th>
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<tr>
<td>POGO</td>
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<td>GUAM</td>
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</table>

#### TIMELINE

- SETUP: 0000
- START: 0000

#### REMOTE TRACKING STATIONS

- POGO
- BOSS
- COOK
- HULA

#### DOCUMENTATION

- MAY 2
- MAY 3
- MAY 4

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### Additional Content

- "mitre"
- "5-7"

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### Recap

- "mitre"
- "5-8"
Constraint Based Analytic Capability

- Conflict Identification
  - Oversubscribed resources?
    - At local Remote Tracking Station
    - Across AFSCN
    - Adequate turnaround time

- Conflict Explanation
  - Type of conflict
  - Specific resources and times associated with conflict
Constraint Based Analytic Capability (concluded)

- Conflict Resolution
  - For single task (list of possible solutions)
  - Globally across time slice

- Error Checking
  - Satellite visible?
  - In requested time window?
  - At proper RTS?

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RSA Architecture
Range Scheduling Aid Benefits

- Automated scheduling
- Electronic schedule dissemination
- Simultaneous scheduling
- Extensible system
- Reduced training time