TRUST
TDRSS Resource User Support Tool

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DEVELOPMENT CYCLE

Software tools:
- SME
- TIGS
- OASIS
- TOPS
- TRUST
- SURFASS
- SURFASS V2
- OASIS V3

Projects:
- UARS/SOLSTICE
- TOPEX
- LDBP
- EOS/SOLSTICE
- TIGS

Operations, Plan, & Sched.

TDRSS

1980s

Today

1990s
TRUST DEVELOPMENT

Flight Projects
- Solar Mesosphere Explorer (SME): Realtime Control and Monitoring; Science Planning and Scheduling; TDRSS Scheduling and Ground Control
- Solar/Stellar Irradiance Comparison Experiment (SOLSTICE): Science and Mission Planning; Instrument Monitoring, Command and Control
- Ocean Topography Experiment (TOPEX - JPL): LASP Involvement Includes TDRSS Scheduling
- Long Duration Balloon Project (LDBP - GSFC/WFF): LASP Involvement Includes TDRSS Scheduling and Ground Control

Study Projects
- Telescience Implications on Ground Systems, Scheduling Architectures Concepts and Networks (TIGS SCAN Testbed - GSFC): LASP Involvement Includes Planning and Scheduling; Instrument Operations
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**Scheduling Window**

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Orbit events

S/C events

12:20:00 12:30:00 12:40:00 12:50:00

**ODM/GCMR Window**

Forward Link

Return Link

PBK

Tracking

Interference

Orbit Events

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TRUST Architecture

OASIS

SURPASS

SURPASS

SCIENCE-ORIENTED | RESOURCE-ORIENTED

USER INTERFACE

INTERACTIVE PLANNING/SCHEDULING
- SCIENCE EXPERIMENT
- INTERVALS
- TIMELINES
- DISPLAYS

DATA MANAGEMENT

RELATIONAL DATABASE
- GENERIC DATA
- APPLICATION DATA

DATA PRODUCTS
- PLANNING AID DATA
- INSTRUMENT DATA
- SCHEDULE DATA

SCIENCE USER RESOURCE EXPERT (SURE)

SCIENCE PLAN REQUEST

SCHEDULE GENERATION
- CONSTRAINT CHECKING
- KNOWLEDGE BASE
- INSTRUMENT RESOURCES
- SPACECRAFT RESOURCES
- ACTIVITY REQUESTS

PLANNING AND SCHEDULING SYSTEM MANAGER

USER INTERFACE

INTERACTIVE PLANNING/SCHEDULING
- EXPERIMENT REQUESTS
- INSTRUMENT REQUESTS
- SCHEDULE REQUESTS

DATA MANAGEMENT

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SUMMARY

- Generic TDRSS Scheduling with use of the Expert System
- Automatic Re-scheduling, for conflict resolution, with Expert System
- ODM/QDM Processing and Constraint Checking
- Trend analysis of TDRSS link, as an aid to TDRSS Operations
- Capable of formatting schedule messages, to allow scheduling of multiple networks (TDRSS, DSN, etc.)
- Receives and processes Spacecraft PSAT & Orbital Information
- Capable of handling several communications protocols (NASCOM, SPAN/DECNET, TCPIP, etc.)
- Supplies planner/scheduler/operator a view of possible activities, in the Scientific/Mission Context (X Window Based)
- Menu driven GCMR, Schedule Requests & Processing, if desired
- Multi Spacecraft Capability
- Written Entirely In Ada