## TRADE SPACE ISSUES FOR POST AM-1 MODIS MISSIONS

- 0 MISSIONS INCLUDE MORE THAN THE INSTRUMENTS
  - 0 SPACE HARDWARE AND SOFTWARE
    - 0 SPACECRAFT FUNCTIONS
    - 0 INSTRUMENT FUNCTIONS
  - 0 ALGORITHMS --- MISSION SPECIFIC
    - 0 SCIENCE PRODUCTS
    - 0 OPERATIONAL PRODUCTS (?)
  - 0 GROUND COLLECTION AND PROCESSING HARDWARE AND SOFTWARE

## SPACECRAFT ISSUES INFLUENCING FUTURE MISSIONS

- SMALLER LAUNCH VEHICLES
  - DELTA
  - TAURUS
- REDUCE FLIGHT HARDWARE & SOFTWARE (INCLUDING INSTRUMENTS)
  - MECHANISMS & THEIR CONTROL
    - SOLAR ARRAYS
    - ANTENNAE
    - GYROS
  - PARTS/COMPONENTS COUNT
  - MASS
  - POWER
  - ASSEMBLY TIME
  - TEST TIME

# AM-2 CONCEPTS & COMPARISON WITH AM-1 (MAJOR SUBSYSTEMS)

## GN&C HARDWARE & SOFTWARE

STAR TRACKERS -- SMALLER
WHEELS -- SMALLER
MAGNETOMETER -- SAME OR SMALLER
TORQUE RODS -- SMALLER

EARTH SENSOR -- NOT ON AM-2
SUN SENSORS -- ? (PROBABLY NOT ON AM-2)
GYROS -- NOT ON AM-2
ATTITUDE CONTROL ELECTRONICS -- NOT ON AM-2

GPS ELECTRONICS & ANTENNAE (NEW FOR AM-2)

## COMMUNICATIONS

S-BAND EQUIPMENT -- SAME OR SMALLER

Ku-BAND EQUIPMENT & ARTICULATING ANTENNA -- NOT ON AM-2
X-BAND EQUIPMENT & FIXED ANTENNA -- NOT ON AM-2
MASTER OSCILLATOR -- NOT ON AM-2

Ka-BAND EQUIPMENT & FIXED ARRAY (NEW FOR AM-2)

AM-2 CONCEPTS & COMPARISON WITH AM-1 (MAJOR SUBSYSTEMS) (CONT)

COMMAND & DATA HANDLING

ARRAY DRIVE ELECTRONICS -- SMALLER
SOLID STATE RECORDER -- SMALLER

SCIENCE FORMAT EQUIPMENT -- NOT ON AM-2
COMMAND/TELEMETRY INTERFACE UNIT -- NOT ON AM-2
SPACECRAFT CONCTROLS COMPUTER -- REPLACED BY GPS
BUS DATA UNITS -- REPLACED BY 'CHIP SET'

STRUCTURE

PRIMARY -- SMALLER
SECONDARY -- SMALLER

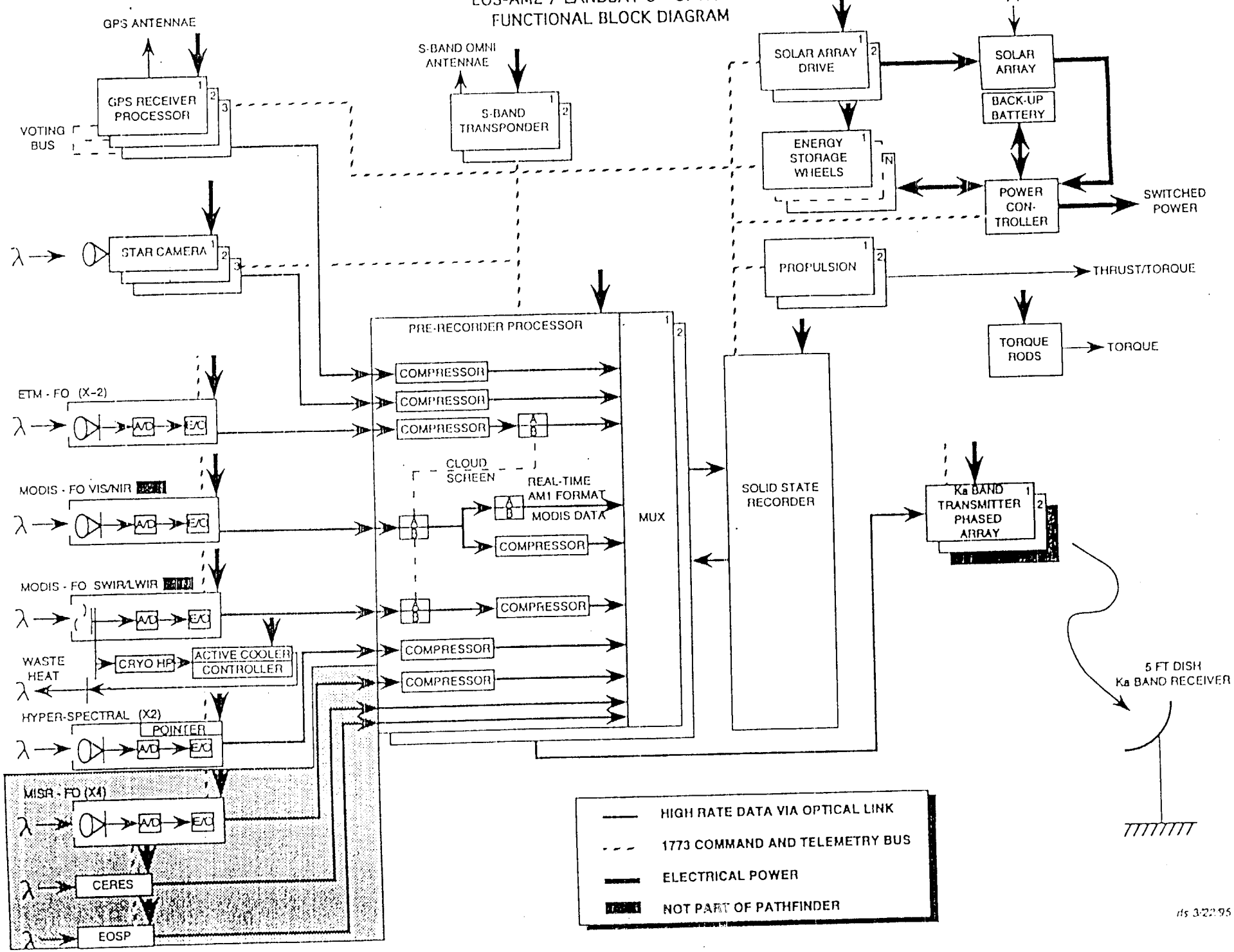
THERMAL

RADIATORS -- SMALLER
ACTIVE COOLERS -- MORE OF THEM
CAPL -- MORE OF THEM

POWER

SOLAR ARRAY -- SMALLER
BATTERY -- SMALLER

PR. INARY
EOS-AM2 / LANDSAT 8 - OPTION 4
FUNCTIONAL BLOCK DIAGRAM

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