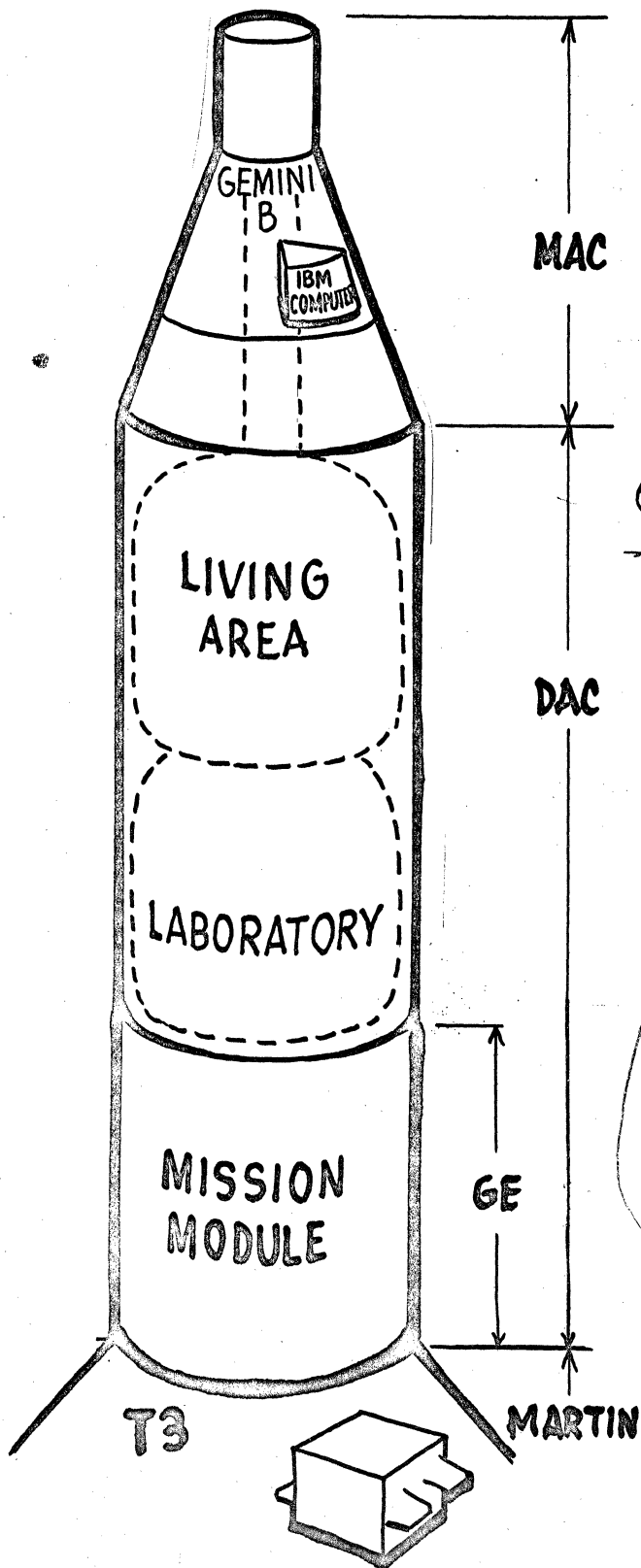


MOL PROGRAM

9-20-65

MOL PROGRAM



- IBM GEMINI COMPUTER SYSTEM

- DATA MGMT SYS

- MISSION INFO SYS (Comp system)

- NAV SYS

- MISSION SIMULATOR

- GRD SYS REQTS \$/u

- PROGRAM ANA

- IBM T-III COMPUTER

IBM LAB VEHICLE RESPONSIBILITIES (DAC)

• DATA MGMT SUBSYSTEM (DMS)

- ▷ TELEMETRY
- ▷ TAPE
- ▷ MULTIPLXRS
- ▷ DISPLAY
- ▷ SIG COND
- ▷ TELEVISION

• MISSION INFORMATION SYSTEM (MIS)

- ▷ COMP
- ▷ PROGRAMMING
- ▷ TAPES
- ▷ DISPLAYS

• NAVIGATION SUBSYSTEM

- ▷ ACQ SCOPE
- ▷ STAR TRACKERS
- ▷ CONTROLS & DISPLAYS

• MISSION SIMULATOR

- ▷ FLT CREW TNG
- ▷ INSTRUCTORS CONSOLE
- ▷ PROGRAMMING
- ▷ 1800 & 360 COMPUTER COMPLEX
- ▷ LV REPLICA

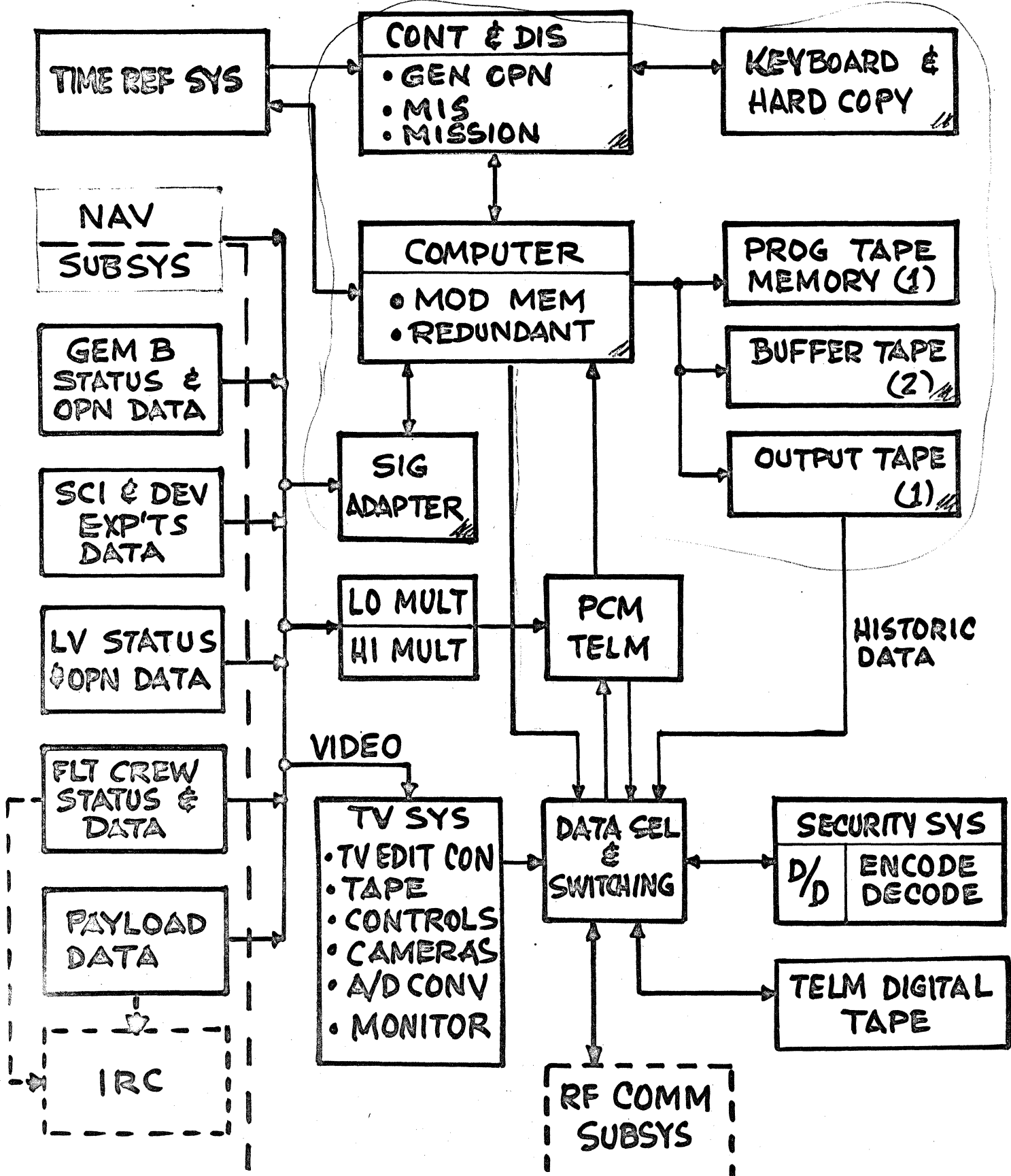
• GROUND SYSTEM REQUIREMENTS

- ▷ SYS INTEG REMOTE SITES, SCF, LCC, RECOVERY, MISS PAYLOAD SUPPORT CENTER

• PROGRAM ANALYSIS

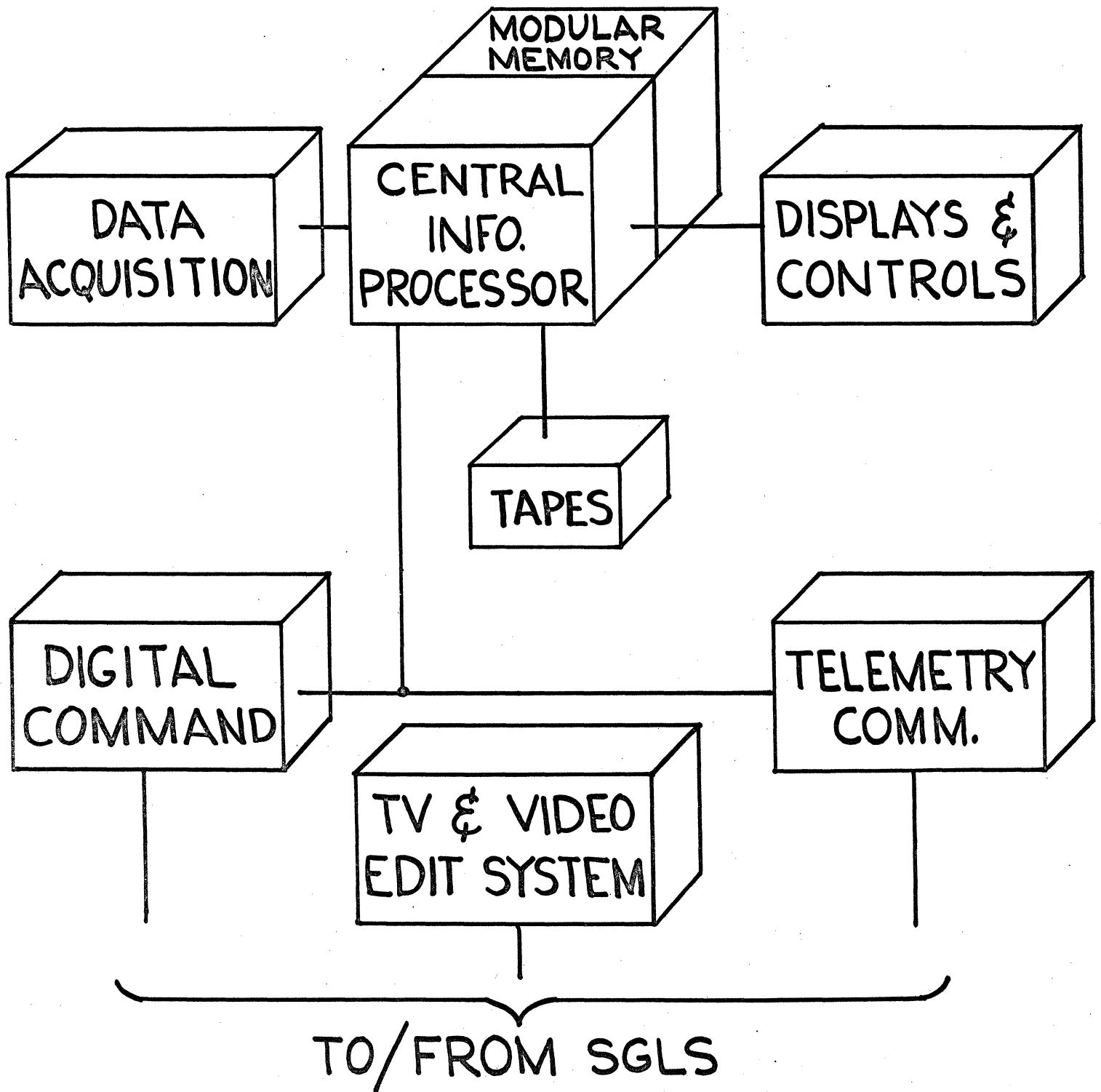
- ▷ EXPT. FLT GROUPINGS & SCH.

DATA MANAGEMENT & MISSION INFO. SUBSYSTEMS



MIS/DMS CONFIGURATION

replace with new text

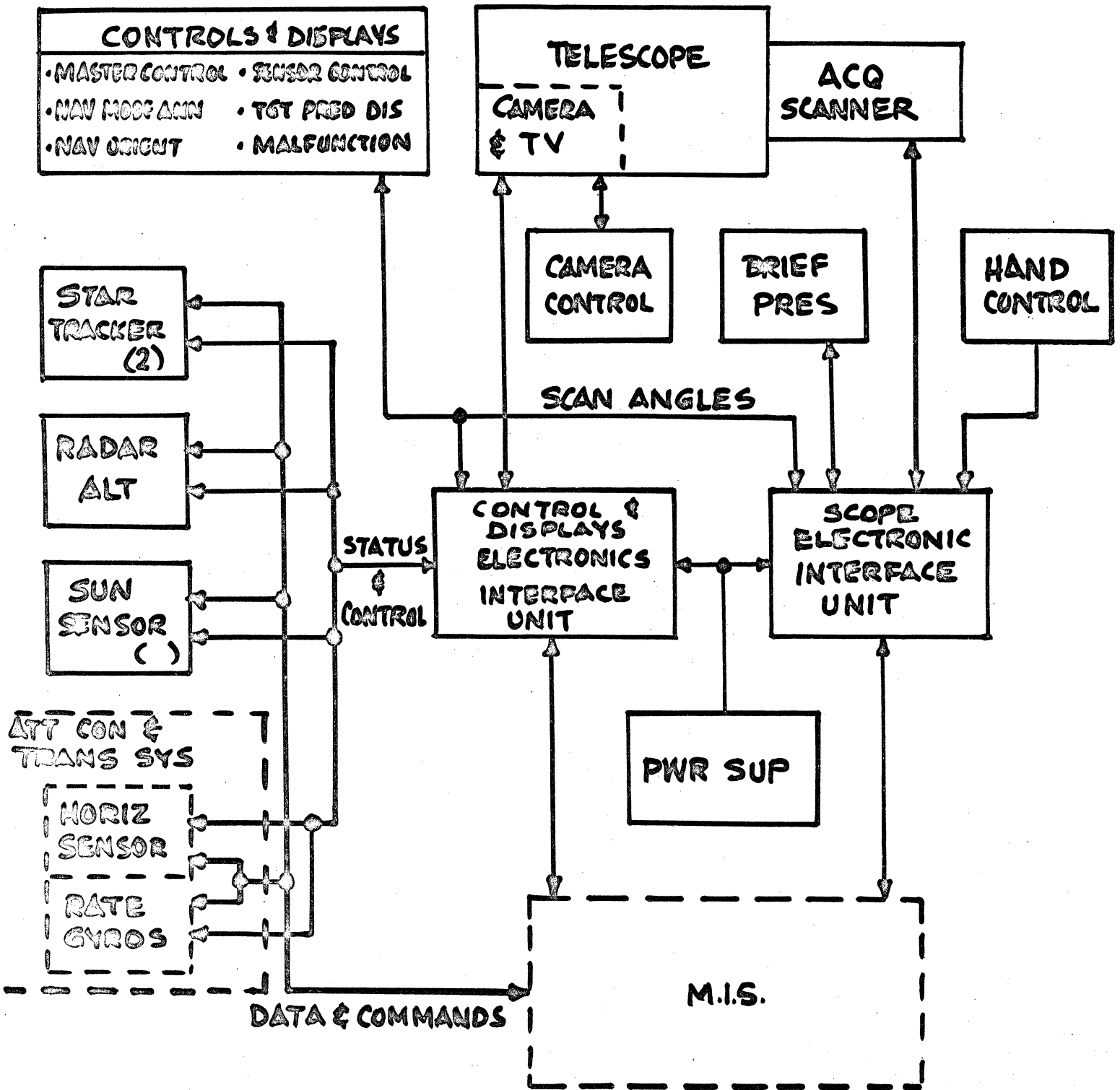


MIS/DMS FUNCTIONS

- UPDATE ORBITAL POSITIONS
- POINT SENSORS
- SEQUENCE MISSION AND VEHICLE SUBSYSTEMS
- SUBSYSTEM VALIDATION TESTING OF VEHICLE AND GEMINI
- DATA MANAGEMENT
- CONTROL AND DATA PROCESSING FOR MISSION-ORIENTED DISPLAYS

(All mission)
checked
Can we get a better mission
to the

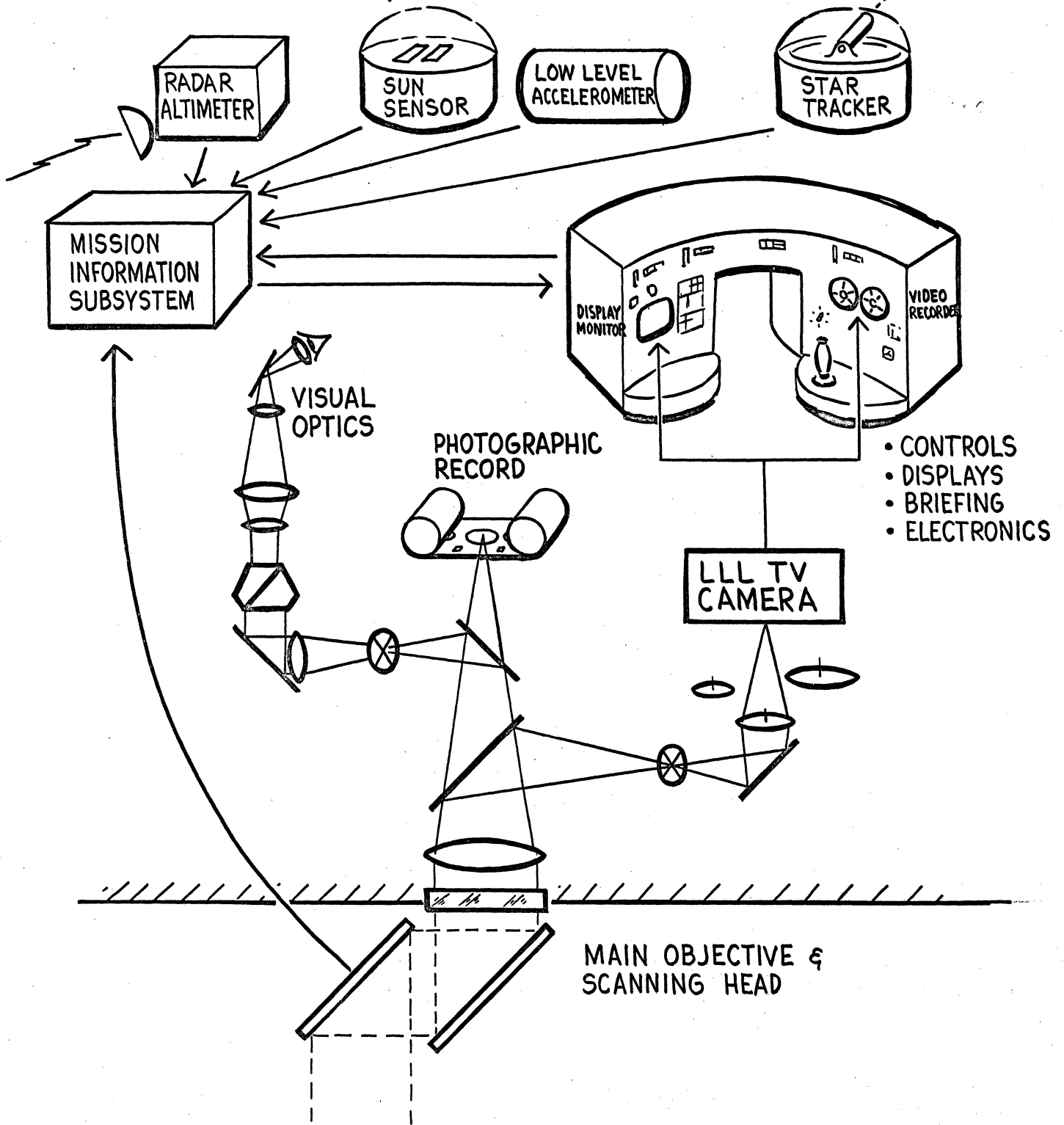
NAVIGATION SUBSYSTEM



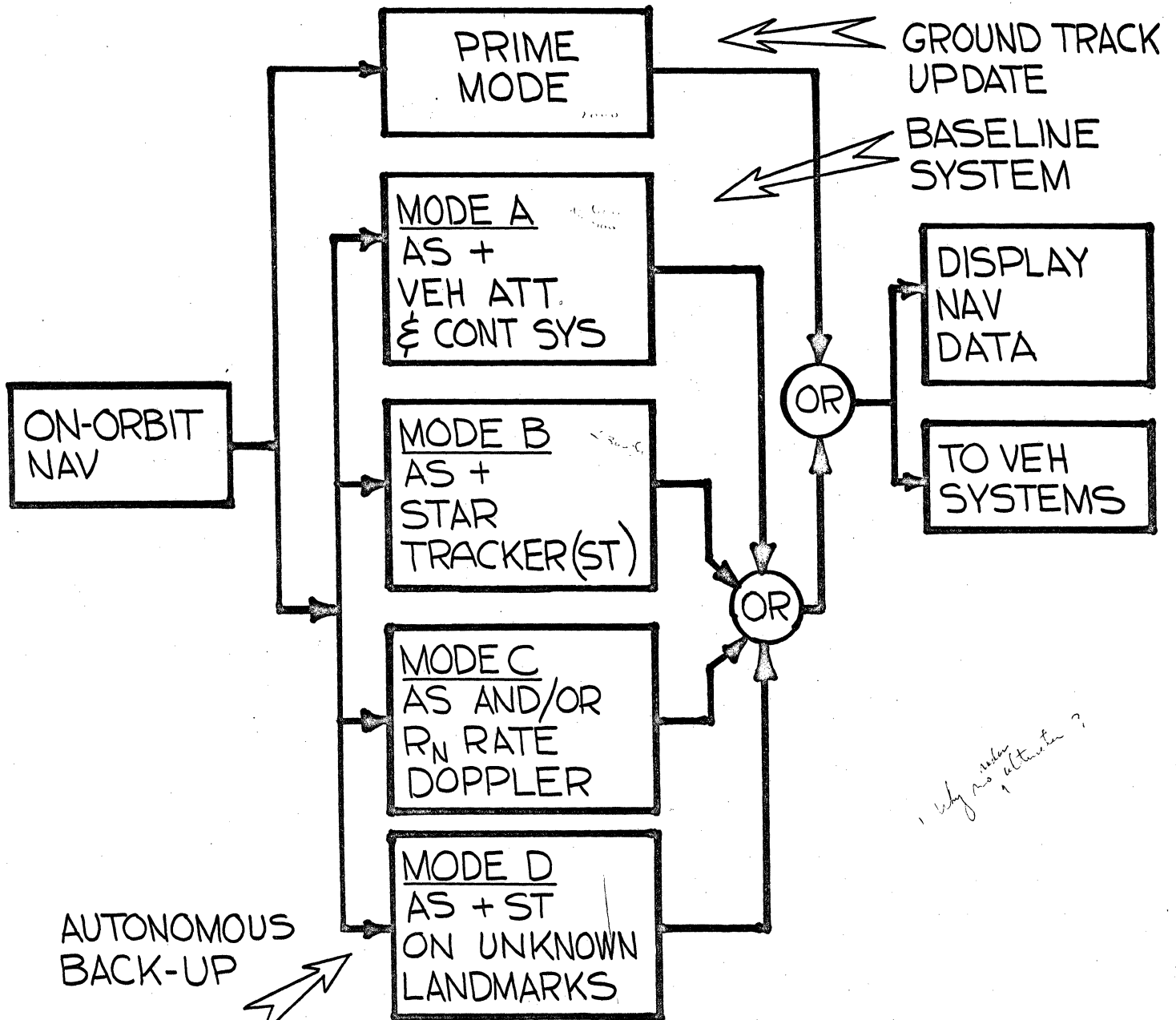
NAVIGATION FIX

and accuracy for each orbit

EXTENDED CAPABILITIES



MOL NAVIGATION CONFIGURATION STUDIES

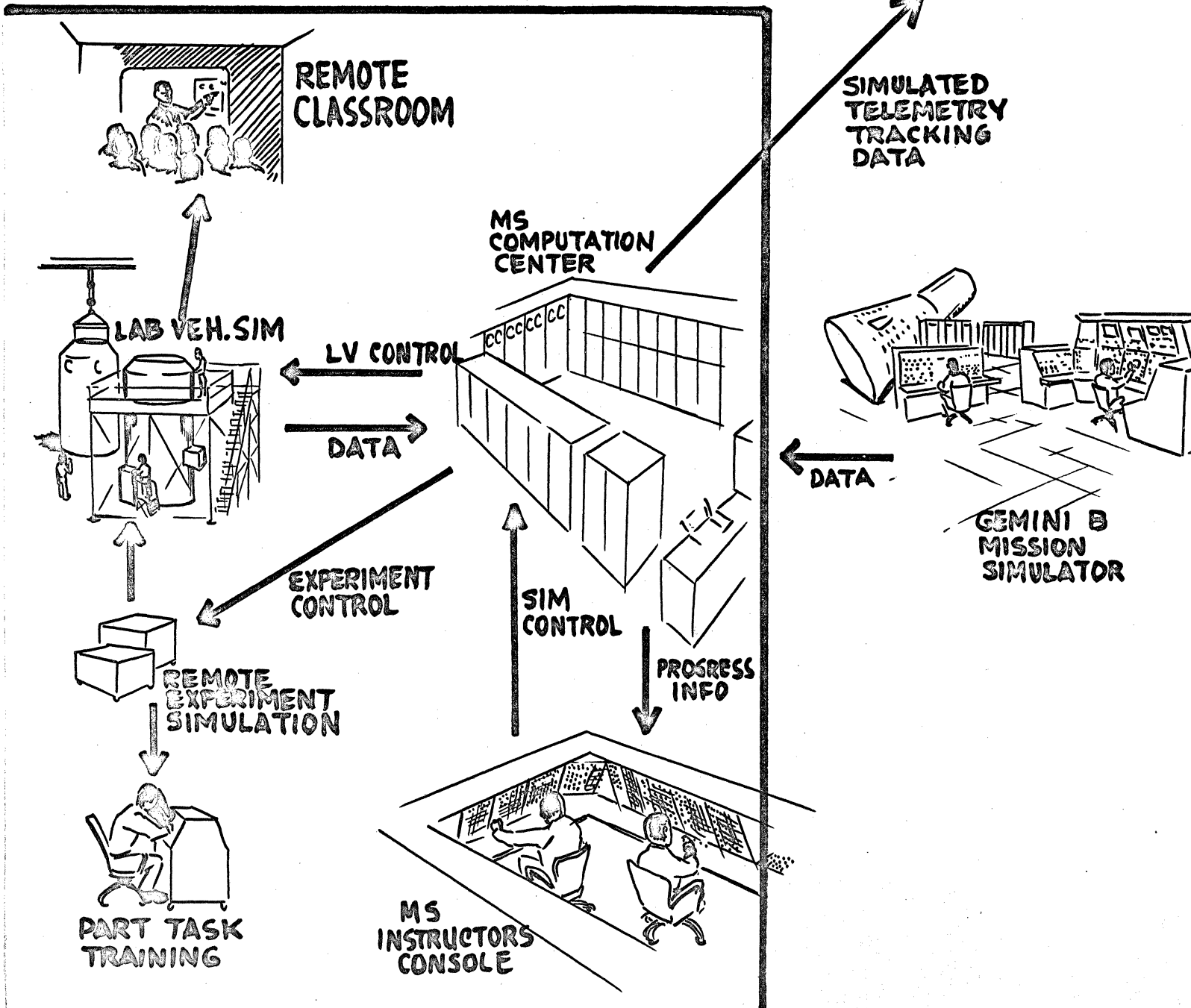
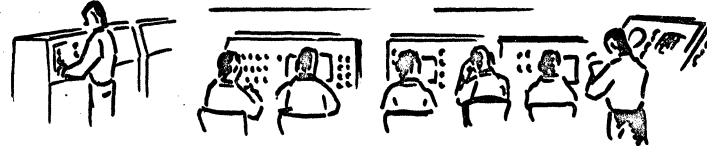


AUTONOMOUS BACK-UP
FIXES ON LANDMARK WITH ACQUISITION SCOPE (AS)

Why no other alternatives?

MOL MISSION SIMULATOR

MISSION CONTROL CENTER



MISSION SIMULATOR SYSTEM FUNCTIONS

- FLIGHT CREW TRAINING (MISSION LEVEL)
 - ▶ LABORATORY VEHICLE } TOTAL
 - ▶ GEMINI "B" } MISSION
 - ▶ MISSION PAYLOADS }
 - ▶ BASELINE DATA DEVELOPMENT
 - ▶ PROCEDURES REFINEMENT

- MOL GROUND SYSTEMS TRAINING
 - ▶ MISSION REHEARSAL
 - ▶ TAPE GENERATION

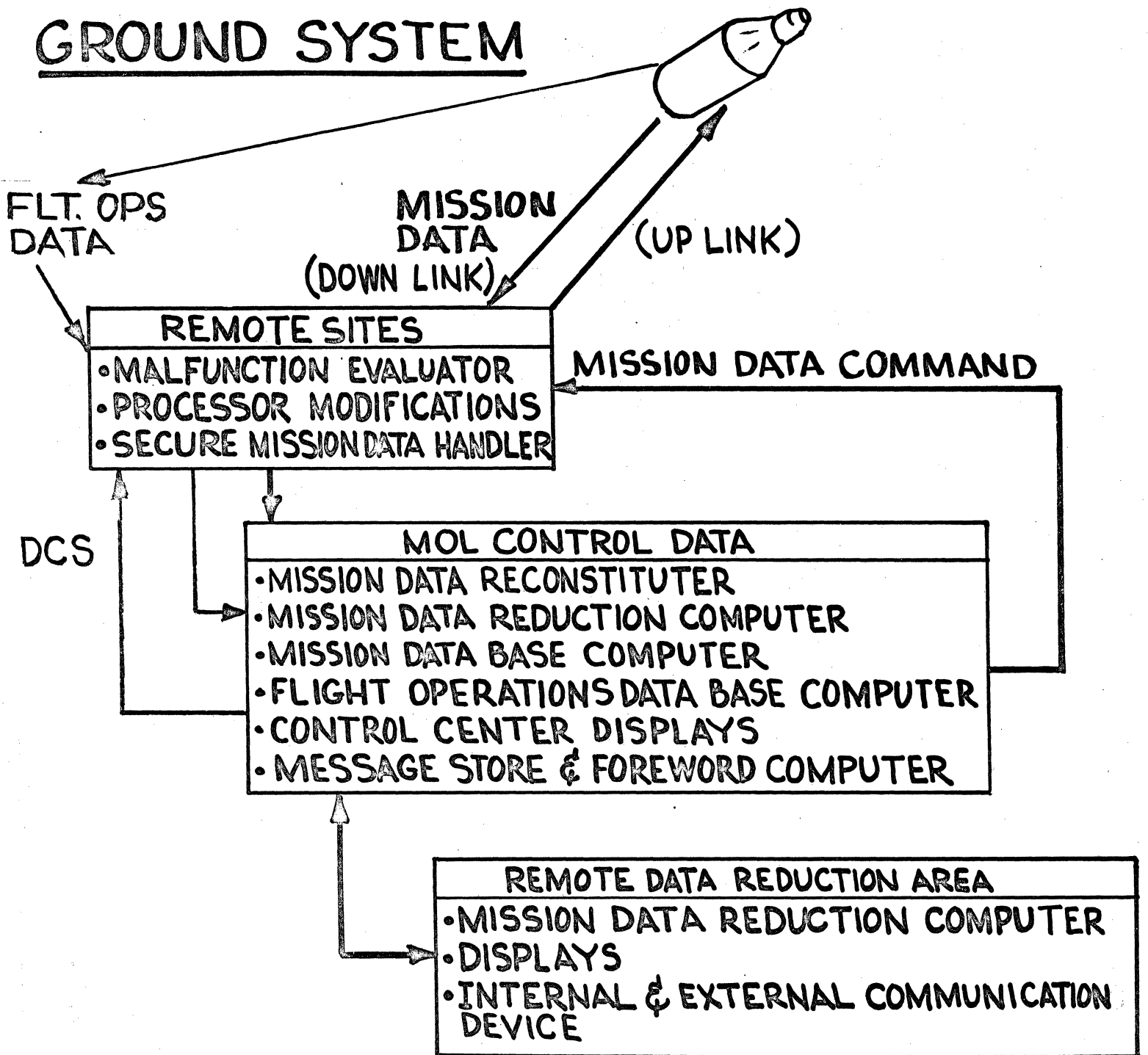
- ON-ORBIT SUPPORT
 - ▶ MAINTENANCE SUPPORT
 - ▶ SCHEDULE REVISION
 - ▶ SYSTEM ACTIVATION AND TEST
 - ▶ BASELINE DATA REVISION

- POST FLIGHT EVALUATION
 - ▶ DATA COMPARISON
 - ▶ DEBRIEFING SUPPORT

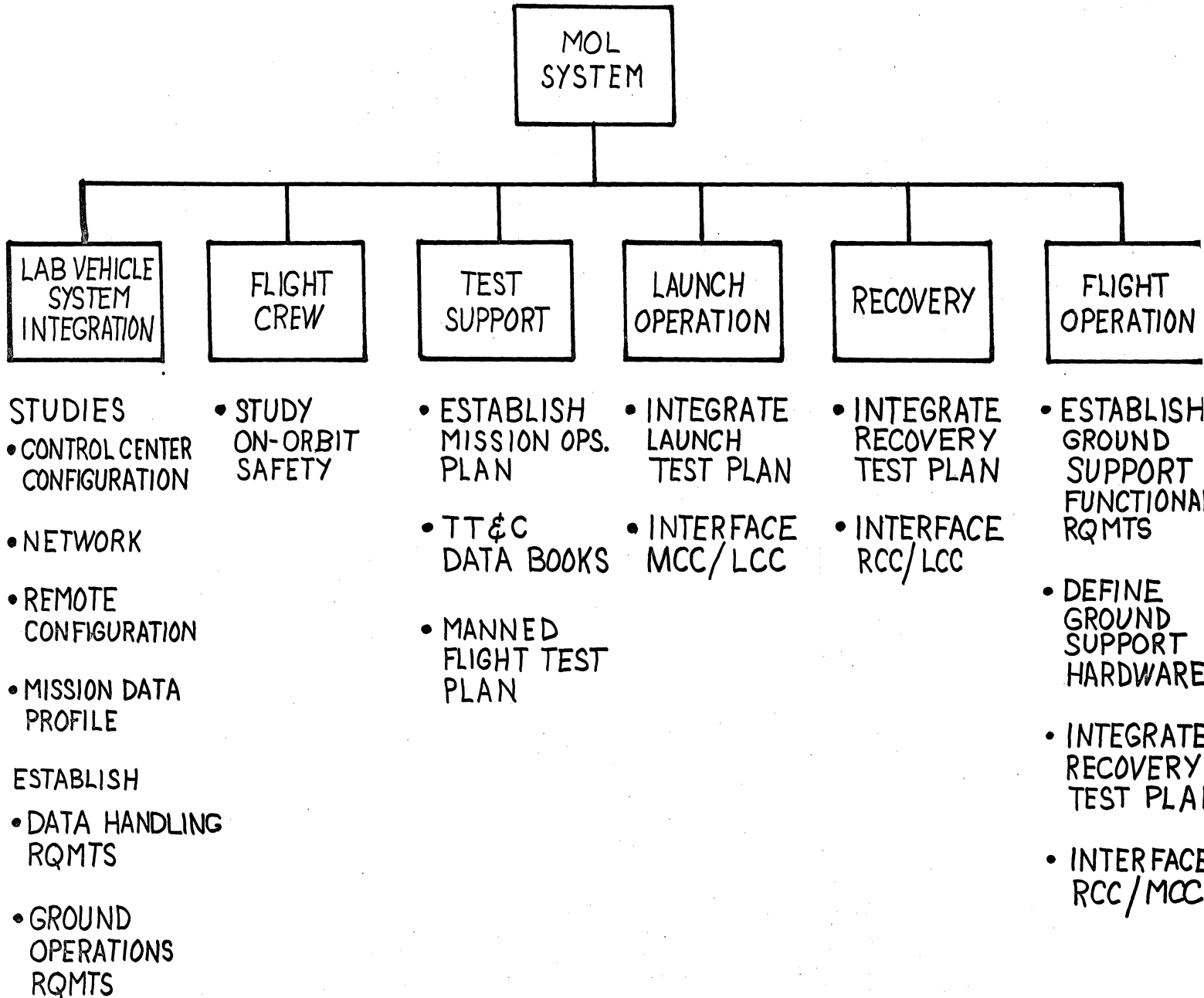
MISSION SIMULATOR SYSTEM FEATURES

- SSD & VANDENBURG
- CAPABLE OF RAPID TRANSITION & FLEXIBLE USAGE
- MUST ACCOMMODATE AVE SOFTWARE
- SHOULD BE COMPATIBLE WITH 360 TO FACILITATE FLEXIBILITY, RELIABLE OPERATION
- MUST BE COMPATIBLE WITH MOL MCC

GROUND SYSTEM



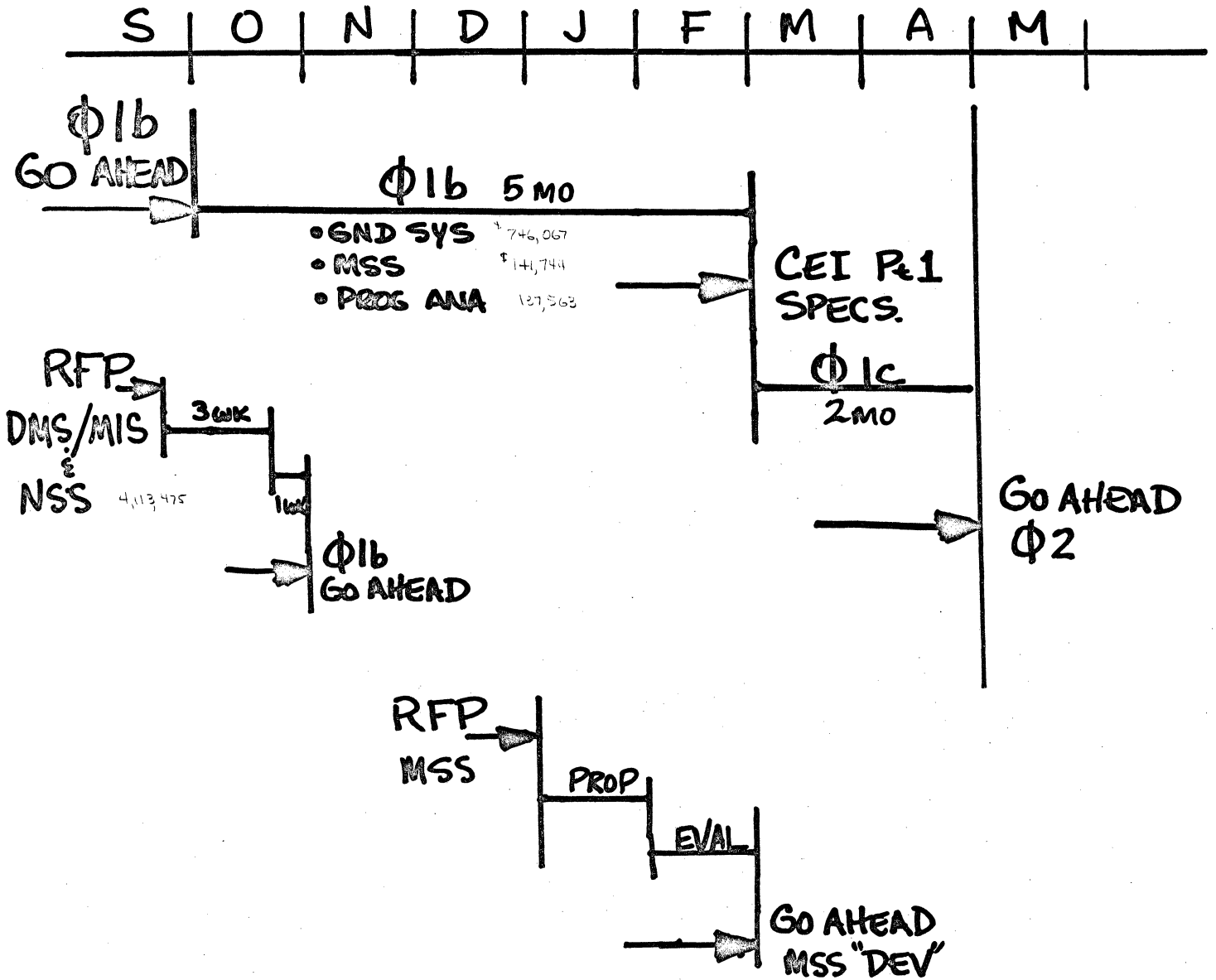
GROUND SYSTEM - CDP TASKS



PROBLEMS

1. GE'S ROLE & RESPONSIBILITY
 - MISSION PAYLOAD REQTS UNKNOWN
 - PTS RELATION TO PAYLOAD SENSORS
2. MOL (4π) COMPUTER STATUS
 - SCHEDULE -
 - TECHNOLOGY (FLATPACK VS NGT)
 - OFF SHELF QUALIFICATION
 - PRICING
3. MANPOWER AVAILABILITY
4. FIXED PRICE PROPOSAL φ2 with poor definition of equipment etc.
5. RELIABILITY VS INFLT MAINTENANCE

CONTRACT DEFINITION PHASE SCHEDULE



204,000
 75%
 Go Ahead
 - 8 mos 11m 2 SIL
 12 mos
 - 16 mos FET

MAJOR MOL PROGRAM ACTIVITIES

1. PROPOSAL ON DMS/MIS RFP 25 SEPT
2. PROPOSAL ON NSS RFP 25 SEPT
3. STAFF & PERFORM WORK ON
GND SYSTEMS, MSS, & PROG. ANA.
1 OCT GO AHEAD!
4. PROPOSAL ON MSS RFP 1 JAN '66
5. STUDY & PROPOSAL ON
GEMINI B 16S.

6. PLAN FOR 1966

BASIC STRATEGY

1. DON'T REINVENT THE SYSTEM IBM/DAC
DEFINED & PROPOSED (AF DIRECTION
TO DAC)
2. PLACE EMPHASIS ON $\phi 2$ NOT $\phi 1b$
 - TIME/SCHEDULE
 - COST
 - ORGANIZATION
3. STRESS ABILITY TO RECOVER TIME LOST
BY COMPETITION UNIQUE TO IBM
4. SYSTEMS APPROACH TO AIR ^{SPACE} AND GND
DATA MANAGEMENT ONE COMPANY IBM.
5. BID LOWEST COST COMPUTER TO MEET SPEC
BUT HIGHLIGHT $4\uparrow$ GROWTH & PERF. NEED.
VIA SUPPLEMENTARY PROPOSAL.
6. SHOW TECH, MGMT & COST SAVING FROM
ONE COMP. RESP FOR DMS/MIS & NSS.
7. STRESS KNOWLEDGE OF GEMINI & T-III
EQUIPMENT & INTERFACES
8. EXPLOIT OUR EXISTING CONTRACTS ON
MSS, PROG ANA & GND SYS

THE COMPETITION

DMS/MIS

- STL - SGLS
- HUGHES - BAC MOL TEAMMATE
- GE (?) - MOL PRIME COMPET. & ASSOC. NOW
- LOCKHEED - " " "
- LITTON - COMPUTER L304, 5 & 6
- SPERRY -

NSS

- AUTONETICS - SSGS WORK & APOLLO NAV.
- HUGHES - P-8 AF CONTRACT
- STL - SSGS WORK
- SPERRY - " "
- GE - MOL PRIME & ASSOC. NOW

MSS

- LINK - DAC CONTRACT # IN ϕ 16.