

ITN 0972  
121217 PP YKY RUXPDAA0930 2382220 00045-XXXX--RUXPDAA  
ZNY XXXXX YKY ZNM  
P 252219Z  
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CHANNELS ONLY

PASS BISON  
PASS DITTO

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DISTRIBUTION		
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SAPOS		
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STN	✓	
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RF		✓

~~TOP SECRET~~ 252219Z AUG 80 CITE [REDACTED] 1134  
PRIORITY BISON, DITTO.  
HANDLE VIA BYEMAN CONTROL CHANNELS ONLY  
GAMBIT/HEXAGON  
BISON FOR COL MCHRISTIAN [REDACTED] DITTO

SUBJECT: REQUEST FOR DATA ON GAMBIT AND HEXAGON PERFORMANCE CAPABILITIES  
REFERENCE: A. [REDACTED] 0980, 25 JULY 1980  
B. [REDACTED] 7195, 26 APRIL 1980  
C. [REDACTED] 1001, 30 JULY 1980

1. THE INTENT OF THIS MESSAGE IS TO PROVIDE CLARIFICATION OF THE NEEDS LISTED IN REFERENCE A. IT MIGHT BE HELPFUL TO, FIRST, POINT OUT THAT THE NEEDS FOR SYSTEM PERFORMANCE DATA ARE ASSOCIATED WITH THREE SEPARABLE BUT INTER-RELATED ANALYTICAL EFFORTS:

A. PROVISION TO THE INTELLIGENCE COMMUNITY OF DATA NEEDED TO DETERMINE THE CAPABILITIES, UTILITIES, AND LIMITATIONS OF IMAGERY COLLECTED BY THE DUAL MODE GAMBIT SYSTEM. REFERENCE B IS AN EXAMPLE OF A REQUEST FOR DATA TO SATISFY THIS NEED.

B. RESPONSE TO THE REQUEST OF THE CHAIRMAN, SENATE SELECT COMMITTEE, FOR AN ANALYSIS OF THE NRP'S OVERALL PROCUREMENT AND LAUNCH STRATEGY. OUR NEED FOR SUPPORT RELATIVE TO THIS IS SPELLED OUT IN REFERENCE C.

C. AN NRO-INITIATED REQUEST FOR DATA NEEDED TO SUPPORT DEVELOPMENT OF STRATEGIES AND SCHEDULES FOR FLYING OUT THE REMAINING GAMBIT AND HEXAGON SATELLITES. THIS REQUEST WAS MADE IN REFERENCE A.

2. WITH THE CHANGES AND IMPROVEMENTS BEING MADE TO THE SATELLITE SYSTEMS AND WITH THE AVAILABILITY OF A RANGE OF ACQUISITION MATERIALS, IDENTIFYING THE COMBINATION OF VARIABLES THAT BEST SATISFIES REQUIREMENTS IS NOT STRAIGHTFORWARD. WHAT IS NEEDED ARE THE RESULTS OF ANALYSES AND/OR SIMULATIONS THAT SHED LIGHT ON THE CONSEQUENCES OF TRADE-OFFS AMONG FILM TYPES, VEHICLE ALTITUDES, MISSION DURATIONS, OBLIQUITY LIMITS, AND ATMOSPHERIC AND LIGHTING CONDITIONS. PLEASE PROVIDE A SERIES OF BAR CHARTS (NIIRS PLOTTED ON THE ABSCISSA AND SQUARE MILES OF CLOUDFREE COVERAGE ON THE ORDINATE) SHOWING THE RESULTS OF GAMBIT MISSIONS TASKED AGAINST THE STANDING STEREO AREA COVERAGE REQUIREMENTS AND OPERATING UNDER PERMUTATIONS OF THE FOLLOWING CONDITIONS:

- ALTITUDES IN 50 NM INCREMENTS FROM 300 TO 450 NM
- SO-112 AND SO-409 FILMS OR THEIR EQUIVALENTS
- LAUNCHES DURING EACH OF THE FOUR SEASONS

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3. FOR HEXAGON, ASSUME THE COMBINATION OF STANDING AND SPECIAL

REQUIREMENTS USED TO SIMULATE THE PERFORMANCE OF MISSION 1216.  
EACH OF THE FOLLOWING VARIABLES IS TO BE CONSIDERED:

- LAUNCH IN SPRING AND LAUNCH IN FALL
- ALTITUDES IN 15 NM INCREMENTS FROM 90 TO 135 MILES
- SO-345 AND SO-112 FILMS OR THEIR EQUIVALENTS
- OBLIQUITY CONSTRAINTS OF PLUS OR MINUS 45 DEGREES AND PLUS OR MINUS 30 DEGREES

FOR HEXAGON, GENERATE SEPARATE CHARTS FOR MONO AND STEREO COVERAGE. THERE IS NO NEED FOR BREAKOUT OF RESULTS BY COUNTRY.

4. IN LIGHT OF THE QUESTIONS AND CONFUSION SURROUNDING THE CONFIDENCE TO BE GIVEN TO GRD PREDICTIONS AND GRD-TO-NIIRS

CONVERSIONS, DESCRIBE HOW ATMOSPHERIC VARIABILITY AND LIGHTING CONDITIONS ARE HANDLED IN THE GRD PREDICTION MODELS AND HOW THE GRD TO NIIRS TRANSFORMS HAVE BEEN DEVELOPED.

5. PLEASE INDICATE BY COB 29 AUGUST WHEN RESULTS WILL BE

AVAILABLE.

REVW: AUG 2000

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