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111-NASA

24 NOV 1978

Honorable Robert A. Frosch
Administrator
National Aeronautics and Space Administration
Headquarters
Washington, DC 20546

Dear Dr. Frosch:

Your draft paper to Frank Press describing the National Oceanic Satellite System (NOSS) has been received and, apart from several minor points, I believe it does reflect the basic agreed upon elements of this proposal. I am returning a marked-up copy of the draft with suggested revisions and explanatory notes.

With regard to management of the ground segment, it is our understanding that NOAA and DoD would be the principal managers once the system is in operation, with NASA providing the technical assistance. This concept is consistent with the last sentence of the Ground Segment paragraph on page 5 of the draft. Other changes in this paragraph are merely to identify more clearly the principal users.

I appreciate the opportunity to comment on the paper.

William J. Perry

Attachment

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DUSD(SSS) Tom D. Williams 11/13/78

cc: Hon. Frank Press

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AUTHOR

NASA Equities DECLASSIFIED
E.O 13526, Sec 3.3 (a)
NASA Declassification Guide
September 2009
Reviewer: 15797 Date: 4/20/2013

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D R A F T

National Oceanic Satellite System (NOSS)

Background

In October, 1977, the interagency Program Review Board initiated a study of the appropriate next steps beyond Seasat-A in space-oceanography, with emphasis on defining an approach that would meet the foreseeable operational requirements of both the military and civil communities. This study, carried out under a steering committee of senior DoD, NOAA, and NASA officials, has progressed sufficiently to warrant the inclusion of the NOSS program in the FY 1980 budget submissions of all the three agencies.

Objectives

NOSS is a joint, tri-agency limited operational demonstration project intended to prove the utility of a routine, repetitive set of related and synoptic ocean measurements from space from which to extract global information on surface wind speeds and directions, sea surface temperatures, wave ^{heights} spectra, ice and water conditions, and currents. Presuming a five-year demonstration period

*measure can only
be measured with SAR*

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as the program commitment, a decision as to whether to continue indefinitely with routine operations should be made after three years experience; the remaining two years of the initial commitment would provide an appropriate transition either to a routine national operational program without interruption, or to graceful termination of the demonstration. The key characteristics required for

this demonstration are:

- A greater than 95% assurance of spacecraft operation for the full five-year period.
- An all-up ground data processing, handling, and redistribution system in a fully operational configuration.
- A capability of moving to operational status after three years without program hiatus or significant immediate capital investment requirements.
- Centralized data control through use of the TDRSS and onboard encryption.
- Initial Shuttle launch in early 1984, with subsequent Shuttle retrieval and refurbishment.

Description

The joint NOSS program elements include a space segment, a ground segment, and an interagency management approach:

Space segment: The space segment includes one satellite operating in a near-polar, 700-kilometer orbit and a fully equipped spare to assure the desired 5-year continuity of data service. The satellites will use the NASA multimission spacecraft, designed for Shuttle launch, retrieval, refurbishment, and relaunch. The operational demonstration instrument complement, based on hardware already tested or proven in flight by Seasat, Nimbus, and Tiros, includes a scatterometer, a radar altimeter, a four-meter scanning multichannel microwave radiometer, a coastal zone color scanner, and the advanced very high resolution radiometer. Weight, volume, and power will also be reserved for an experimental or developmental sensor that can take advantage of the NOSS spacecraft without interference with the principal mission. The command up-links and data down-links will operate only through the commercial TDRS; these links will be securely protected to meet the objectives of USCSB 3-12.

There is no requirement for direct readout capabilities. The operational demonstration will begin upon initial launch in 1984 and will continue through 1989. Within the joint management structure, NASA will be responsible for development and launch of the spacecraft and will participate with NOAA and DoD in on-orbit satellite operations.

Ground segment. The ground segment will be developed as a national facility and will include system control, processing, and data distribution functions, which may or may not be colocated. Overall, the ground segment will have a civil "open" character (although military facilities may comprise some parts of it) and will be jointly managed by NOAA, DoD, ~~and NASA~~ and will be responsible for all satellite commands, data reception, command and data encryption/decryption, initial data processing, and redistribution of ^{processed} ~~geophysical data records and information~~ to Federal and other users. Current assumptions are that the geophysical data products derived from NOSS data will be unclassified and therefore normally available in near-real time to the ^{user agencies} scientific community, private enterprise, and cooperating

operational users are principal managers

these are principal users →

foreign and international organizations such as the World Meteorological Organization. Redistribution to ^{agency and other} ~~end~~ users is envisaged as being via commercial telecommunication satellite services. The design, development, procurement, and operation will be the joint responsibility of NOAA and DoD, the two operational organizations, in collaboration with NASA.

Amplifies statement on page 4

Management approach: The initial joint studies in 1977 indicated that the data inputs required for both civil and military operational ocean observations and predictions were remarkably parallel in terms of measurements, accuracies, and priorities. A jointly managed and operated system seemed not only feasible but eminently sensible in light of the high costs of separate space systems. The tri-agency management approach being followed in the NOSS study phase will extend into the procurement and operational phases as well, with all major decisions including contractor selection being made jointly. This approach is deemed to be the first major exemplar in the implementation of PD-37 and PD-42:

- It represents a useful space application.
- It forwards the development of global remote sensing for civil and military objectives without compromise of security.
- It maintains the approved separation between civil and military responsibilities.
- It avoids duplication and is predicated upon the principle of cross-utilization of hardware and data.
- It takes full advantage of the Space Shuttle to reduce cost and increase efficiency.
- It increases benefits to both the civil and military communities through a joint project.
- It is a first step in the practical evolution of multiuser space platforms and integrated remote sensing systems.

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