

UNITED STATES GOVERNMENT

# Memorandum

TO : Chief, Engineering Support Group

DATE: 15 January 1987

FROM : Chief, Field Engineering Division

SUBJECT: IBS INTERNET Study

Attached is the Work Statement for a study which I believe will answer the question raised in your 6 January memo. If you agree, I will forward it to the Contracting Officer and work out a procurement schedule.



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Attachment:  
Statement of Work



5010-108

*Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan*

15 January 1987

STATEMENT OF WORK

BACKGROUND

The Foreign Broadcast Information Service operates monitoring sites at many locations worldwide. These sites are referred to as Bureaus and monitor public media transmissions and publications for items of relevance to the U.S. Government. Items so identified are analyzed and forwarded to the Washington FBIS Headquarters for distribution.

In support of this mission, FBIS has leased a full transponder on an INTELSAT located at 332.5 degrees east. The transponder is utilized as the relay point for an emerging communications system designated INTERNET. The function of INTERNET is to provide connectivity between the designated Bureaus and to carry specific types of traffic ranging from high quality audio to full motion television. At present the transponder carries one 24MHz television carrier, one 800KHz FM carrier and 13 - 75KHz FM carriers.

The satellite radiates, from the leased transponder, on a global beam; thus, because of the satellite position over the Atlantic Ocean the FBIS sites listed below are in the footprint:

Asuncion, Paraguay  
Fort Clayton, Panama  
Key West, Florida  
Washington, D. C.  
Caversham, England  
Nicosia, Cyprus  
Vienna, Austria  
Tel Aviv, Israel  
Amman, Jordan  
Mbabane, Swaziland  
Abidjan, Ivory Coast

Washington, Ft. Clayton, and Caversham currently have INTERNET

earth terminal nodes. Each having a minimum G/T of 34.7 db/degree K on receive and a 56 db transmit gain.

Requirement: FBIS would like to conduct a feasibility study addressing the issue of placing limited International Business Service (IBS) terminals at the Bureaus not now part of the INTERNET System. "Limited" IBS service is defined to be a data rate of 9600 bits per second (BPS) and the minimum sized antenna consistent with a ten to the minus 6 bit error rate. It is the intent to establish full duplex service between each node and Washington. The contractor is to analyze the issue from a technical and implementation point of view. Results of this effort will be presented to FBIS in a detailed final report and an in-depth presentation.

TASKS TO BE COMPLETED

I. A comprehensive analysis of link performance (connectivity between U.S.-Panama-U.K. may be excluded) including EIRP required, look angle degradation, transponder intermod C/N impact, and projected availability will be performed for each Bureau site.

II. A comprehensive analysis of anticipated antenna requirements including antenna size trade-offs, expected side lobe suppression requirements, and mounting methods is to be conducted.

III. Conduct an analysis of regulatory considerations in each of the potential INTERNET sites. To be explicitly addressed, as a minimum, are station licensing requirements/procedures, frequency clearing requirements (RFI suppression), local zoning, if any, restrictions, building construction permits, and expected processing time for all of the above.

IV. Perform an on-site survey to verify the analysis performed in Tasks I, II, and III. The survey will, for each site, identify the exact location of actual equipment, establish the impact of this determination on antenna size, RFI suppression, and erection methods. Sufficient frequency surveying must be completed to support the licensing application. In addition, a complete set of the needed application forms should be collected from each potential site during the visit.

#### SATELLITE DETAILS

Location	332.5 degrees
Beam	Global
Saturation flux density	-77.6 dbw per square meter
G/T	-16 db per degree K
Transponder number	87
Available E.I.R.P	23.5 dbw