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77-10177
CR-153275

FOREIGN LANDSAT STATION CHARGE STUDY

Contract No. NASW-3033

Charles Sheffield
etc

Monthly Progress Report: 1-30 April 1977
Report Date: 2 May 1977

Prepared for: NASA Headquarters
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Code I

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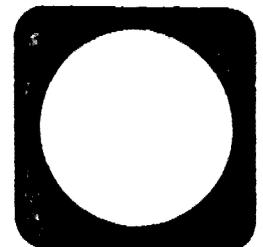
EARTH SATELLITE CORPORATION (EarthSat)

7222 47th St. (Chevy Chase), Washington, D. C. 20015

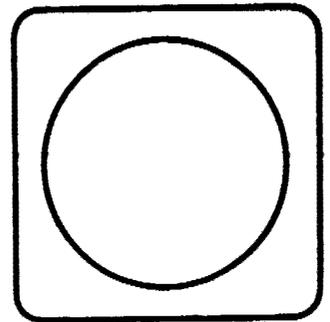
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May 2, 1977.

NASA Headquarters
Office of International Affairs
Washington D.C. 20546

Attention: Mr. C. Jackson Pfeffer

Reference: Contract #NASW-3033

Dear Mr. Pfeffer:

PROGRESS REPORT FOR THE PERIOD APRIL 1 TO MAY 1, 1977.

During this contract period, emphasis has been placed on four main work areas, as follows:

1. Evaluation of available cost data and economic factors affecting fee policy.
2. Continued assessment of the potential of the TDRS system, and its possible impact on foreign ground stations.
3. Completion of the description of current and projected technical factors that impact station fee policy.
4. Continued review of the available policy and technical documents that are relevant to setting of fees for foreign ground stations.

In addressing 1. above, it has become increasingly evident that it is very difficult to obtain hard cost figures or market projection figures for foreign ground stations. This is true for two reasons: the data are poorly determined, particularly in terms of market projections; and there is sensitivity in probing too closely on the cost side. As a result, a number of surrogate economic factors that can be justified in economic terms are being developed. These will be used to evaluate the combinations of possible fee structures described in the previous Contract Progress Report. It is appropriate to point out here that these economic factors may or may not be the basis for the final fee recommendations.

The major technical factors that are being assumed in this study are listed in Attachment 1, together with a small number of cost-related items. It is apparent that the policy that NASA and the U.S. Government adopts on the use of the TDRS system is profoundly important to the future development of foreign ground stations, and to the fees that can be charged such stations for access to LANDSAT data. We therefore regard it as important that the assumptions made here should be reviewed by NASA, and any necessary corrections to them made as soon as possible.

Attachment 2 updates the file of materials that have been reviewed, for both technical and policy guidance, in performance of this contract. It would be desirable if any additional NASA studies, resembling the recent one performed at NASA Ames, could be made available as soon as possible. In addition, any written discussions on station costs, resulting from the recent station operators' meeting, are requested.

In the coming month, the key analytical work for contract performance will be largely completed. Any new factors that may affect the study should therefore be communicated to us not later than the middle of the month.

Yours sincerely,



Charles Sheffield.
Project Manager.

April 29, 1977

TECHNICAL ASSUMPTIONS FOR STUDY

1. LANDSAT-D launch in 1981.
2. TDRSS works, but used for U.S. coverage only.
3. Ten foreign ground stations operating post-1980.
Capital cost per station \$6M.
Annual operating cost per station \$1M/year.
4. No commercial organization will compete with foreign ground stations for the sale of LANDSAT data.
5. NASA continues to accept MOU's, even when overlap with another station exists.
6. 1979-80 LANDSAT-C has limited foreign tape recorder capability.
7. LANDSAT-C dies upon LANDSAT-D launch.
8. Countries will request data out to 200 miles from their shores.
9. Foreign resource satellites or other U.S. satellites will not compete with LANDSAT systems.
10. LANDSAT-D may have an MSS or emulator.
11. No breakthrough in ground station technology (costs, schedule).
12. Portable recording ground stations for MSS at \$2M capital cost will be available.
13. EROS will continue its present policy of restraining competition, i.e., U.S. images and foreign images not within range of a foreign ground station are sold to all requestors. Images within range of foreign ground station are sold to all requestors, if a specific frame number is requested, and if that frame is in the EROS file. Requests for images within range of a foreign ground station specified by geographic location only are referred to that ground station for servicing.

14. NASA will continue its open skies policy, i.e., foreign station is obliged to sell to all requesters, except where agreements exist to limit competition.

April 29, 1977

SPECIFIC COST INFORMATION

1. LANDSAT images sales from EROS Data Center were approximately \$2M in FY76 (view-graph briefing boards "LANDSAT status" in Zimmerman file).
2. 1976 operating budget for Brazil station was \$1.2M. Sales for 1976 were "7,564 photo products" (INPE-LANDSAT System Results Obtained During 1976 dated April 1977).
3. 1976 sales dollar volume for Canadian station was \$151K.

DOCUMENTS FOR E/S READING FILE 1977

<u>Doc. #</u>	<u>Title</u>	<u>File #</u>
1.	Congressional Record, 2/7/77. Earth Resources and Environmental Information System	9
2.	EROS Data Center price list: 1/7/77	2
3.	Significant foreign LANDSAT results	8
4.	Arnold Frutkin's statement to House Committee on Science and Technology, Subcommittee of Space Science and Applications	8
5.	LANDSAT Ground Station Costs	1
6.	Estimated costs of thematic mapper ground station (Memo of 2/10/77)	1
7.	Price list of Canada (Prince Albert) facility, June 1976	2
8.	Old EROS Data Center price list (8/1/75)	2
9.	Mathews' report on LANDSAT future and GRIS, 8/10/76	7
10.	Minutes of 12/20/76 meeting on LANDSAT-D options - Interagency Decision Team Working Group	6
11.	Minutes of Interagency Coordinating Committee on LANDSAT ground systems, November 16, 1976	6
12.	Miscellaneous cost data - out-of-date	1
13.	LANDSAT fees study - data list and station coverage	8
14.	M.o.U. - standardized draft form of 7/1/76	3
15.	M.o.U. - with Chile	3
16.	M.o.U. - with Brazil	3
17.	M.o.U. - with Telespazio	3
18.	M.o.U. - with Iran	3
19.	Renewed M.o.U. with Canada	3
20.	M.o.U. with Zaire	3
21.	Price list of Brazil, for 9/76	2
22.	Letter from Brazil, agreeing to \$200,000/yr. station fee (July 31, 1975) + effect on prices	4

23. Letters to Chile, and from Chile, regarding \$200,000 fee	4
24. Letters to and from Iran regarding \$200,000 fee	4
25. Letter to Morley - reducing the Shoe Cove fee to \$50,000 per year	4
26. Minutes of LANDSAT Station Operators Meeting (March 24-26, 1976)	6
27. Luncheon speech by Frutkin, June 11, 1975, ERS Symposium	8
28. April, 1976, Report for the U.N. General Assembly, On uses of Remote Sensing	5
29. U.N. General Assembly: International Cooperation in the Peaceful Uses of Outer Space	5
30. May 1975: Report for U.N. General Assembly, On Uses of Outer Space	5
31. Proposed LANDSAT User Charges: Preliminary Briefing	1
32. Systems Costs (No Id. as to where this came from)	1
33. U.S. Dept. Interior Budget Justifications FY 1978 for U.S.G.S. EROS Program	1
34. Memorandum 2/15/77 re Statutory and Administrative Standards Governing Prices Charged by NASA to non-U.S. Gov't Users of NASA Equipment and Services - W. Gill Carter, Law Offices	9
35. Memo to NASA - Estimate for Ground Station	1
36. Letter to deMendoca - Brazil from NASA	4
37. Letter to Viera - Chile	4
38. Memo from Sheffield re Fees	11
39. State Telegram re Argentine Station	4
40. GE Memo re LANDSAT Performance Changes	7
41. Memo to Sheffield re User's Mtg.	12
42. INPE-LANDSAT System results obtained during 1976 (up to October)	8
43. Remote Sensing Technology, Its Transfer and Use - A NASA Perspective	7
44. Draft letter to LANDSAT Ground Station Operators from CJP	
45. Management Instruction: NASA Reimbursement Policy	2

REVIEWED BUT NOT IN E/S READING FILE

1. Minutes of the LANDSAT Ground Station Working Group Meeting in Ottawa, Canada, Oct. 27-29, 1976
2. Canadian LANDSAT Reception and Processing, 1976 Report by E.S. Shaw
3. INPE-LANDSAT System Results obtained during 1976 (up to October), October 1976
4. "Feasibility Study for a Chilean LANDSAT Station." U. of Chile, AID Contract #AID 513-255
5. LANDSAT Ground Station Operators Working Group Meeting June 13, 1975. "Cost Sharing Discussion," NASA
6. STDN No. 1012 "Tracking and Data Relay Satellite System Users" Guide, Rev. 2 (May 1975)
7. S-805-1 - "Performance Specification for Services via the Tracking and Data Relay Satellite System" (Nov. 1976)
8. Ford Aerospace and Communications Corporation: "User Data Dissemination Concepts for Earth Resources"
9. NASA, Ames Research Center: "User Data Dissemination Concepts for Earth Resources" - Final Report and Appendices