

## PREFACE

This paper discusses the historical development of OT including: when each element was formed, the motivation behind its formation and in relation to the overall OT development; the size of each element; the basic function each element was to fulfill, and the formal definition of these functions.

## HISTORICAL SUMMARY OF OT ORGANIZATION

The present structure of OT is as shown in Attachment 1, with the three primary Divisions (Frequency, Policy, and Analysis), and the Institute (ITS) with its three Divisions (Spectrum, Systems, and Electromagnetics). The current DOC Departmental Order 30-5B of July 11, 1972, lists the functions of the four basic organizational entities; Frequency Management Support Division, Telecommunications Analysis Division, Institute for Telecommunication Sciences, and Policy Support Division (see Attachment 2). The current staff sizes and FY74 allocations are:

	Staff	Allocations
FMSD	48	\$1,782 K
PSD	45	1,747
TAD	10	150
ITS	73	1,335
OH	<u>30</u>	<u>-----</u>
	206	\$5,014 K
OA(ITS)*	<u>74</u>	<u>\$ 4.3 M</u>
Total Resources	280	\$5,9.3 M

\* This allocation is reimbursable for work done for other agencies. The total 147 personnel allocation in ITS is actually assigned according to the fiscal resources available for direct and other agency activities in ITS, and not as indicated above.

On September 20, 1970, when OT was reorganized in response to E.O. 11556 (Attachment 3), the resultant Departmental Order discussed three organizational entities; FMSD, TAD, and ITS, and in addition a Special Projects Staff (which is not included in the current structure). These entities did not actually exist then (since there was no Frequency Management or Analysis Division at that time).

In order to understand the historical evolution of the OT elements, it is necessary to look behind the formal documentation. This paper, therefore, presents a brief but fairly comprehensive view of organization development and philosophy. The fiscal and personnel allocation figures are contained in Attachment 4.

The establishment of a Telecommunications Advisor to the President dates back 20 years to the October 1951 Executive Order 10297. The roots of ITS, however, have an origin some 10 years earlier, during World War II when the Interservice Radio Propagation Laboratory (IRPL) established to assist the military with propagation research and services (Jordan, 1971). From 1927 up to 1935, the frequency management function for the Federal Government, and the IRAC was located within the Department of Commerce. In 1947, IRPL became the Central Radio Propagation Laboratory (CRPL) as a unit of NBS in 1948; moved to Boulder, Colorado in 1954; became the Institute for Telecommunication Sciences and Aeronomy as a unit of NOAA in 1965; dropped its atmospheric physics function and became ITS in 1968; and became the largest part of OT after the September 1970 reorganization of OT. The Washington based staff of about 15 people performed mainly administrative functions at this time. Through this 20-year period, the primary function of ITS was propagation research and services, with orientation in the 1960s toward engineering instead of physics.

The September 1970 activity is termed as a reorganization since there already was a telecommunications office within the DOC Office of the Assistant Secretary for Science and Technology. The people in this office became the Washington headquarters staff of OT.

Here, then, lies the initial framework of the DOC Office of Telecommunications. On September 20, 1970, about 15 people in Washington, and 225 in Boulder (ITS) mainly operating under the ITS resources which had grown to about \$2.1 M direct appropriation annually by 1970. (In addition, about \$4.7 M was used by ITS from other agency reimbursable funds.)

The greatest force on OT was to move the IRAC Secretariat and associated activities from OTP to OT. Therefore, in October 1970, the IRAC Secretariat staff of 21 people (in Washington and Frostburg, VA.) organizationally moved to OT to start the Frequency Management Support Division. The annualized resource for operation of this group was about \$1 M.

At the end of December 1970, 6 other OTP personnel (5 associated with the frequency management function) were transferred to OT, and by February 1971 were established as the Frequency Management Support Group within the Special Project Staff (i.e., not within FMSD).

Also in September of 1970, reorganization of OT (primarily ITS) had begun (Salaman, 1971). This had a threefold purpose: to begin attacking problems other than propagation and radio systems; to provide frequency management and policy support to OTP; and to satisfy, in part, a requirement attached to obtaining a FY71 supplemental appropriation. By the end of December, ITS was beginning to provide technical analysis of problems relevant to IRAC requirements.

The feeling of OT management from its start to the present time is that ITS is a resource for studying telecommunications science and technology, and the need existed for a broad base of research. Although the small Special Project Staff had undertaken a few such tasks, it was not until Spring of 1971 that the Telecommunications Analysis Division was established to perform broader research and analysis. (As is evident by the resource allocation presented in Attachment 4, TAD never did live up to its expectation.)

By July of 1971, OT was providing assistance to OTP in the frequency management area, continued research in propagation and radio systems evolution, maintained support to other agencies, and was still struggling to establish a viable internal program broader than technology. The policy support to OTP was still non-existent because of differences between OT and OTP on how this support should be managed. (These differences even today have not been resolved.) To overcome this problem, at the suggestion of OT, a Policy Support Division was established. The agreement between Drs. Whitehead and Wakelin assigned 4 people in Washington and 5 people in Boulder to this Division. The 4 in Washington were derived primarily from TAD, the 5 in Boulder from ITS.

By September 1971, after one year of existence, the Washington staff had grown to:

OT Office	25
FMSD	22
PSD	9
TAD	<u>13</u>
	69

The Boulder ITS and PSD staffs remained essentially constant at 225 and 5.

The last major organizational change occurred in July 1972 when the functions of the Frequency Management Support Division were expanded to include not only the IRAC Secretariat, but the computer and analysis support previously provided by TAD. ITS continued to provide research support for frequency management, but now directly to FMSD activities.

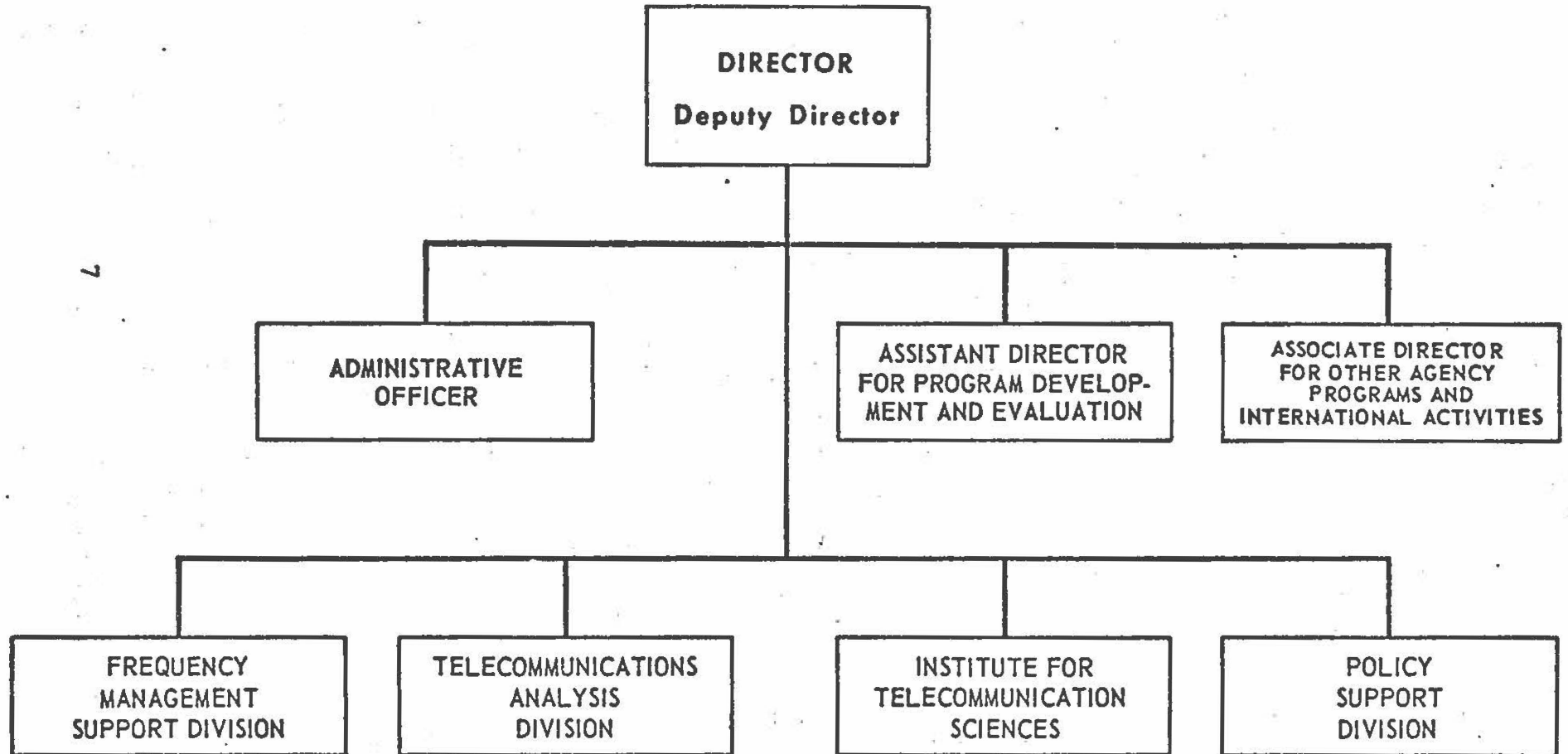
## REFERENCES

Jordan, E.C., 1971, Telecommunications Issue Study, Appendix B,  
November 1971.

Salaman, R.K., 1971 Programs of the Office of Telecommunications  
September 20, 1970-December 31, 1970 (including Reprogramming).

**U.S. DEPARTMENT OF COMMERCE**  
**Office of Telecommunications**

Attachment to DDO 30-5B



JULY 11, 1972

ATTACHMENT 1

**OFFICE OF TELECOMMUNICATIONS**  
**OFFICE OF THE DIRECTOR**  
 1325 G STREET NW (202) 967 + EXTENSION  
 WASHINGTON, D.C. 20005  
 DR. JOHN M. RICHARDSON, ACTING DIRECTOR (X5171)  
 DR. PAUL POLISHUK, ACTING DEPUTY DIRECTOR (X5171)

**ADMINISTRATIVE OFFICE**  
 JAMES J. RITA (X5507)

**POLICY SUPPORT DIVISION**  
 SCOTT LOTHROP, CHIEF (X5195)

**PROGRAM DEVELOPMENT AND EVALUATION**  
 ALBERT L. HEDRICH, ACTING ASST. DIRECTOR (X4888)

**FREQUENCY MANAGEMENT SUPPORT DIVISION**  
 STANLEY I. COHEN, CHIEF (X5012)

**OTHER AGENCY PROGRAM AND INTERNATIONAL ACTIVITIES**  
 RICHARD C. KIRBY, ASSOCIATE DIRECTOR, OT (X4451)

**TELECOMMUNICATIONS ANALYSIS DIVISION**  
 CHARLES E. LATHEY, ACTING CHIEF (X4451)

**INSTITUTE FOR TELECOMMUNICATION SCIENCES**  
 325 SOUTH BROADWAY (303) 499-1000 OR EXTENSION  
 BOULDER, COLORADO 80302  
 DOUGLASS D. CROMBIE, DIRECTOR (X4215)  
 DR. WILLIAM F. UTLAUT, DEPUTY DIRECTOR (X3500)

**ADMINISTRATIVE OFFICE**  
 FRANK W. SMITH (X4414)

**ASSISTANTS TO THE DIRECTOR**  
 DR. ERNEST K. SMITH, EXPERT (X3177)  
 DR. JAMES R. WAIT, EXPERT (X6471)

**SPECTRUM UTILIZATION DIVISION**  
 JOHN P. MURRAY, ASSOCIATE DIRECTOR (X4102)

**SYSTEMS TECHNOLOGY AND STANDARDS DIVISION**  
 JOSEPH A. HULL, ASSOCIATE DIRECTOR (X4138)

**APPLIED ELECTROMAGNETIC SCIENCE DIVISION**  
 DONALD L. LUCAS, ASSOCIATE DIRECTOR (X3021)

- J. E. ADAMS 4301
- A. F. BARGHAUSEN 3584
- G. E. CHILDS 4162
- R. C. FITZGERRELL 3737
- DR. G. A. HUFFORD 3457
- DR. M. KESCHBERGS 3337

- A. P. BARSIS 3588
- T. DEHAAS 3728
- DR. R. L. GALLAYA 3784
- J. M. HANNAH 3655
- DR. W. J. HARTMAN 3608
- R. W. HUBBARD 3414
- W. E. JOHNSON 3501
- DR. P. M. McMARAKON 3570
- G. C. WATTERSON 3538
- P. I. WELLS 4368

- L. A. BERRY 4474
- J. C. CARROLL 3513
- DR. H. T. DOUGHERTY 3913
- W. B. GRANT 3598
- G. W. HAYDON 3583
- J. R. JONLER 3667
- DR. H. J. LIENE 3310
- E. L. MORRISON 4473
- DR. R. M. OTT 3353
- DR. M. C. THOMPSON 3588
- L. H. TEVETEN 3621
- DR. B. WIEGER 3660
- DR. L. E. WOOD 3728

DOO 30-5B

FREQUENCY MANAGEMENT SUPPORT DIVISION

The Frequency Management Support Division shall provide centralized technical and administrative support for coordination of Federal frequency uses and assignments and such other services and administrative functions, including the maintenance of necessary files and data bases, responsive to the needs of the Director of the Office of Telecommunications Policy in the Executive Office of the President, in the performance of his responsibilities for the management of the radio spectrum.

TELECOMMUNICATIONS ANALYSIS DIVISION

The Telecommunications Analysis Division shall:

- a. Conduct technical and economic research and analysis of a long-term, continuing nature to provide information and alternatives for the resolution of policy questions, including studies leading to the more efficient allocation and utilization of telecommunications resources;
- b. Provide forecasts of technological developments affecting telecommunications and estimate their significance; and
- c. Provide advisory services in telecommunications to agencies of Federal, State and local governments.

INSTITUTE FOR TELECOMMUNICATION SCIENCES

The Institute for Telecommunication Sciences shall provide the scientific, engineering, and technological competence necessary to the functions of the Office of Telecommunications. As such, it shall:

- a. Serve as the central Federal agency for research on the transmission of radio waves;
- b. Acquire, analyze, synthesize, and disseminate data and perform research in general on the description and prediction of electromagnetic wave propagation, on the nature of electromagnetic noise and interference, and on methods for the more efficient use of the electromagnetic spectrum for telecommunication purposes;
- c. Prepare and issue predictions of electromagnetic wave propagation conditions and warnings of disturbances in those conditions;
- d. Conduct research and analysis on radio propagation, radio systems characteristics, and operating techniques affecting the utilization of the radio spectrum in coordination with specialized, related research and analysis performed by other Federal agencies in their areas of responsibility;
- e. Conduct research, engineering, and analysis in the general field of telecommunications science in support of other Government agencies as required; and
- f. Develop methods of measurement of system performance and standards of practice for telecommunication systems.

POLICY SUPPORT DIVISION

The Policy Support Division shall:

- a. Provide economic and policy studies in support of the Office of Telecommunications Policy; and
- b. Perform such other analysis as is required to support Office of Telecommunications Policy.

UNITED STATES DEPARTMENT OF  
**COMMERCE**  
**NEWS**  
WASHINGTON, D.C. 20230

OFFICE  
OF THE  
SECRETARY

G 70-112

FOR IMMEDIATE RELEASE  
Monday, September 28, 1970  
Phone (202) 967-3914

SECRETARY STANS REORGANIZES  
OFFICE OF TELECOMMUNICATIONS  
FOR LARGER NATIONAL ROLE

The Office of Telecommunications of the U.S. Department of Commerce has been reorganized to undertake a larger role in guiding the development of the Nation's telecommunications, Secretary Maurice H. Stans announced today.

The Secretary said that the office, under the general supervision of Dr. Myron Tribus, Assistant Secretary for Science and Technology, will be responsible for a wide range of economic and policy analyses as well as technical research in telecommunications.

"We could not function as a modern society without telecommunications, for example, telephones, radio and television, microwave links, and satellite systems," Secretary Stans said. "Business, industry, defense,

-more-

-2-

safety and emergency services, news, information, and entertainment--all these rest upon an underlying technology which has been developing rapidly in recent years. We must find ways to make these new developments bear fruit."

The Secretary said that the new office will undertake not only technical and economic studies on its own, but will serve, as well, as a primary source of technical and analytic support for the new Office of Telecommunications Policy in the Executive Office of the President.

A small headquarters staff, under a Director yet to be appointed, will be located in Washington. When the reorganization is completed, there will be about 30 employees in Washington. The Institute for Telecommunication Sciences, with its staff of 225, all located in Boulder, Colorado, has been transferred to the new Office of Telecommunications and will continue to be located in Boulder. The Institute was formerly a part of the Department's Environmental Science Services Administration.

Dr. Tribus has designated Dr. John M. Richardson, of Bethesda, Md., to be Acting Director and Deputy Director of the Office of Telecommunications. Richard C. Kirby, of Boulder, will continue to serve as Director of the Institute of Telecommunication Sciences.

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## PERSONNEL AND FISCAL ALLOCATIONS

Personnel:

Organization	Fiscal Year			
	71	72	73	74
FMSD	22	21	33	48
PSD		(58)*	49	45
TAD	19	29	11	10
ITS	116	112	73	73
OH	21	18	33	30
	<u>178</u>	<u>180</u>	<u>199</u>	<u>206</u>
OT(ITS)	110	113	72	74
TOTAL	<u>288</u>	<u>293</u>	<u>271</u>	<u>280</u>

\* PSD personnel obtained from other Division allocations.

Fiscal:

Organization	Fiscal Year			
	71**	72	73	74
FMSD	\$1.0 M	1.0	1.6	1.8
PSD	---	1.4	1.5	1.7
TAD	.4	.6	.3	.2
ITS	2.5	2.2	1.9	1.3
	<u>3.9</u>	<u>5.2</u>	<u>5.3</u>	<u>5.0</u>
OA	4.7	4.2	4.3	4.3
TOTAL	<u>\$8.6 M</u>	<u>9.4</u>	<u>9.6</u>	<u>9.3</u>

\*\*Annualized

Numbers are approximate  
Overhead extracted from Division allocations