PHILCO 2000 FACT SHEET

Number 17A, January 1963

SPADATS CAD
COMPUTER ACCESS DEVICE

A device for linking the Philco 2000 to numerous teletype lines

SPADATS, the Space Detection and Tracking System, maintains continuously updated records describing and locating man-made objects in space. Stations around the world transmit observations over a communications system terminating in a number of teletype lines at the USAF SPACETRACK Center in Colorado Springs. The information is processed and stored by a Philco 2000 Electronic Data Processing System. CAD arranges the data in a format acceptable to the Real-Time System of the Philco 2000. It also organizes processed data from the Philco 2000 for transmission by teletype lines to the tracking stations.

The input portion of CAD is called CADI, the output portion CADO. Both can handle 24 teletype lines.

CADI

The input from the tracking stations is punched on paper tape by Teletype Model 28RT sets at 100 words per minute. CADI reads these tapes one at a time at 200 words per minute. The characters are converted from Baudot code to Philco 2000 code and assembled into 48-bit words for the Philco 2000. The most significant six bits of the word identify the teletype lines; the remainder furnish the data.

Input Programming

The order to read data from CADI is similar to orders for other Philco 2000 input-output devices. It specifies the number of words to be transmitted - up to 1024 - and the starting address where the data is to be stored in memory. The order can specify priority for one of the lines. That line will then be checked before any of the others. If no priority is specified, each channel is scanned until data is sensed on a line. Scanning then stops, and the message is read from the paper tape.

If the number of words requested by the input order exceeds the number of words in the message, scanning resumes and another message is read until the number of words requested has been forwarded. Scanning and transmission then cease.

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CADO

Data to be transmitted from the computer to various teletype lines is transmitted through CADO. The data is stored in memory, one Baudot-code data character and a line identifier per word. Data for various lines may be intermingled; the speed of transmission through CADO permits simultaneous transmission over all lines.

Output Programming

Data is transferred to the CADO by a standard input-output order, the program giving the starting location in memory and the number of words to be transferred.

The SPADATS CAD is an example of the multiplexers developed by the Philco Computer Division for connecting the Philco 2000 simultaneously to large numbers of communications lines.