OFFICE NOTE 232

Proposed Changes to the Facsimile System

Harold A. Bedient
Automation Division

APRIL 1981

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The facsimile receiver can decode a standard facsimile signal, detect the start tone, phase, and digitize the incoming signal line-by-line. It can store in computer memory through micro-code an entire digitized line which the computer program can pack and buffer out the output queue.

Figure 1 shows the present configuration. There are three ID50's F1, F2 and G1 acting as control boxes on the computer's selector channel 2. F1 and F2 each have six transmit boards some of which have computer controlled outboard switches that can go into one circuit or another as required. Two device addresses are assigned to the driver for each port so that a two-panel chart can be created on-the-fly where the product on the left is different from that on the right. Also there are two devices for a virtual console so that the control program can be commanded to start or stop a line and to pass parameters. G1 contains the digitizer board which has an outboard switch enabling it to digitize charts from either Montreal (MOCAN) or Miami (TROPAN). It also has a bi-synchronous driver which enables it to transmit to other mini-computers. It drives four ports: two high-speed to the World Weather Building (WWB), one to Offut to input to AFDIGS, and one shared by two FAA destinations. It also has a virtual console. The World Weather Building has two ID50's each equipped with a Varian electro-graphic printer and an Alden flat-bed digitizer.

The control program is in the IBM computer. It handles 18 schedules for transmitting or receiving. It queues traffic from the digitizers. A separate
mechanism enqueues traffic from the 360-195. When a line is free it examines
the schedule for a new entry. If the next entry is marked for a fixed time
and is not yet due the line is put to sleep until a time interrupt causes
a new test. If the event is scheduled and available, the start up program
will send a command with the parameters to the correct line to commence
initialization and find the beginning (or beginnings) of the product and
fill the first buffers.

The so-called floating schedule is used on Difax, Offut, HONO, Alaska,
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The window is approximately one-hour early to one-hour late but is adjustable.
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circuit can carry. Charts are scheduled by priority. Highest priority are
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of the deadline of the North American Surface Chart. It is necessary for the
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Some other changes show in this configuration. WEFAAX (Central) will have a full schedule intended to replace the broadcast. WEFAAX (West) will have a broadcast schedule for Guam, Wake Island, Philippine Islands, and Australia to replace the radio fax broadcast from Honolulu. WEFAAX (East) will carry some products required in Europe and the Mediterranean. Namfax disappears.
Glossary of Acronyms

AFDIGS - Air Force Digital Graphics System. A compressed digital graphics system delivered to the Air Force by the Alden and Rapifax companies and operates out of computers based at Offut (originally procured and configured by NMC).

AFOS - Automated Field Operations System.

APT - Automatic Picture Taking system. This was a system for taking pictures of the earth from the first weather satellite. It set a standard for the satellite facsimile signal different from the WMO standard. Although the method of forming the picture on the satellite has changed, the ground system is very widely used in satellite work.

DACOM - A patented data compression digital facsimile system used in the DIFAX circuit. It is currently marked by Rapifax.

MOMS - Mode and Map Selection. This is a signal sent before a chart in certain fax circuits to set certain terminal conditions and to label the event to follow so as to allow user rejection of unwanted charts.

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