PDP-1 COMPUTER
ELECTRICAL ENGINEERING DEPARTMENT
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CAMBRIDGE 39, MASSACHUSETTS

PDP-25

ADMINISTRATIVE ROUTINE

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The administrative routine program 10/15/64 was written to
handle requests for in-out facilities and for placement of
utility and conversion program at the user's service. When a
user turns his console switch on to indicate his desire to use
the facility, the administrative routine is placed at his
disposal so that he may obtain the services of a program editor,
assembly program, or debugger according to his needs. Turning
the switch off, indicates to the administrator that the user is
through so that input/output devices and fields assigned to him
become available to other users.

Infinite quantum is assigned to a user after he has run
one quantum and he is the only user running (active). If another
user becomes active while a user with infinite quantum is running,
the latter is deactivated immediately.

The administrative program handles the arg instructions.
The function of these instructions is to assign and deassign IO
equipment or additional fields to the user. [Note: assignment
or deassignment of fields does not affect the ddt or running fields.]
If the assignment or deassignment of fields is successful, the
instruction following the arq will be skipped. For other assign-
ments and deassignments, the instruction following the arq will
be skipped only on successful assignments. An assignment will be

successful if the field(s) or device requested is not already
assigned or if the assignment is already in effect. Mnemonic
codes are used to indicate the particular assignment or
deassignment requested. Concise codes for these mnemonics are
placed in the AC; note that the mnemonics for a deassignment is
the complement of the mnemonic for the assignment of that
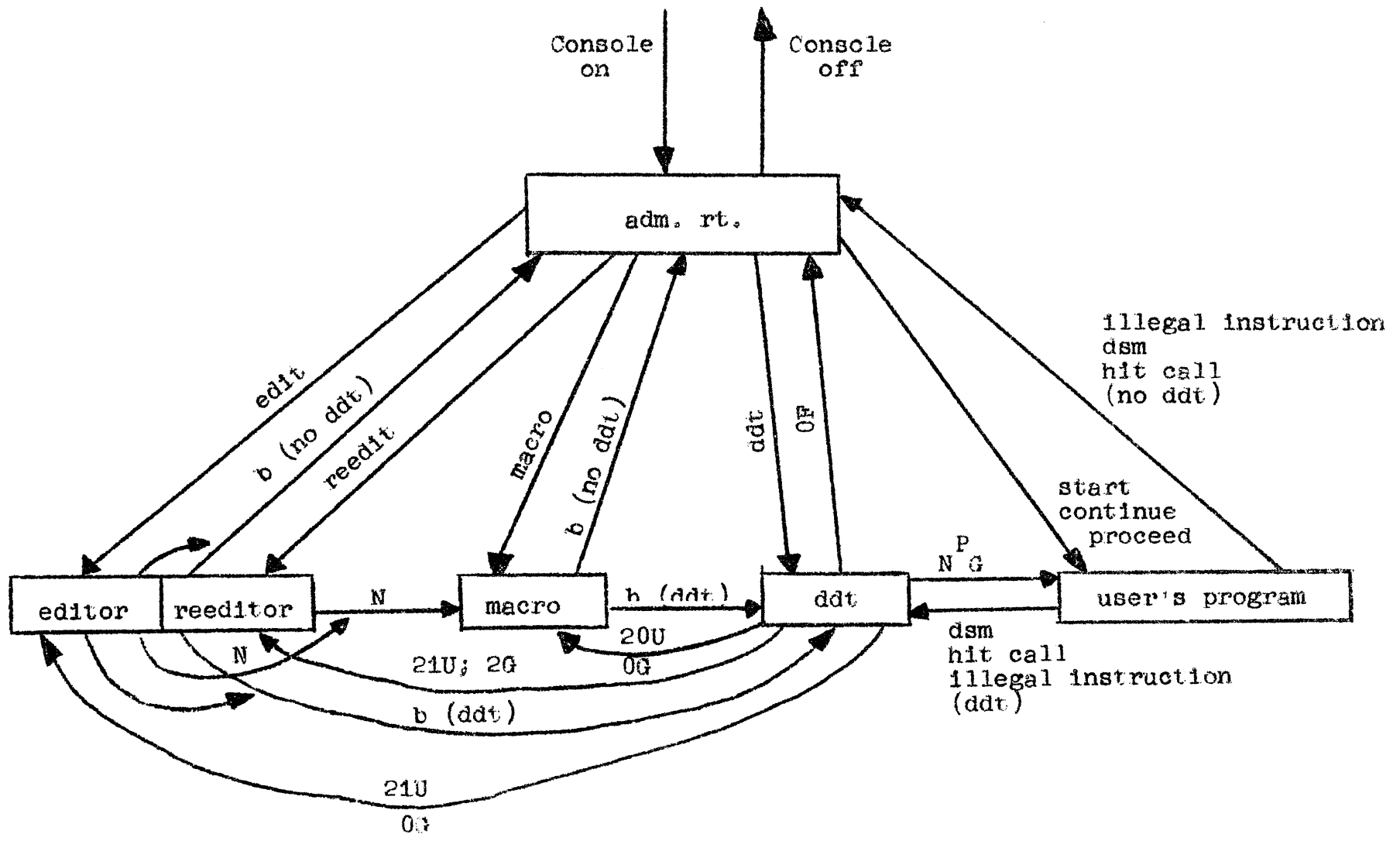facility. Below is the table of possible requests:

AC	IO	Meaning
-r"	--	dismiss reader
r"	--	assign reader
-p"	--	dismiss punch
p"	--	assign punch
-x"	--	dismiss external register
x"	--	assign external register
-f"	--	dismiss all fields
f"	Nx10000	get a total of N fields
-1f"	--	dismiss one field. Instruction is unsuccessful if no fields are assigned.
1f"	--	assign one field; returns with pseudo field in low part of AC.
af"	Ax10000+p	assign absolute field A (or the first available field if A=0) to pseudo field p (or the first unassigned pseudo field if P=0).
-af"	Ax10000+p	case 1: P=x, A=0. Deassigns pseudo field x and the absolute field assigned to it. case 2: P=0, A=y. Deassigns absolute field y and the pseudo field assigned to it. case 3: P=x, A=y. Deassigns pseudo field x and the corresponding absolute field y. If x does not correspond to y, the deassignment is unsuccessful. case 4: P=0, A=0. No deassignment is done.

AC	IO	Meaning
tf"	p	translates your relative field p and returns with its absolute field number in bits 0-5 of the AC.
k"	M	M is a 4-bit mask for knob consoles to be assigned to the user (e.g. M=12 means consoles 0 and 2): these will be addressable by iot cn 27, where c is the console and n is the knob (only console at present is 0, i.e. M=10).
b"	M	like K", for buttons: addressable as iot c237.
0	--	dismiss to the administrative routine.

Commands are available in the administrative routine to simplify running a program that has already been debugged and to call the utility programs. The administrative routine has been written so that the entire command need not be typed by the user; only enough to uniquely define the command must be typed. If the letters typed are not enough to uniquely define the command, "amb" (for ambiguous) is typed out; if the letters typed are not the beginning of any command, "ind" (indefinite) is typed out. Errors in typing a command may be deleted by typing a "x" (multiplication sign) before the carriage return. The commands are:

COMMAND	MEANING
ddt	places an ID program at the services of the user; if it is not possible to assign an ID program because of lack of an available field, "Sorry,no room." is typed out. If a user is assigned an ID field, call button illegal instruction, dsm instruction will trap to ID, not the adm. rt. To dismiss ID program and return to adm. rt., type "OF".
noddt	deassigns from the user the ID field. Call button, illegal instruction dsm instruction will trap to the administrative routine.

COMMAND	MEANING
macro	places a copy of ts macro at the services of the user. To dismiss macro, type "b" which will return the user to ID if the user has an ID field assigned or to the administrative routine.
edit	places a copy of expensive typewriter at the services of the user. To dismiss the ET program see macro command.
reedit	places at the services of the user a copy of expensive typewriter and all the fields previously assigned to the user which contains the editing of his source program.
yank	causes the administrative routine to yank a standard block format tape into memory. This is equivalent to "Y" in ID.
start N	causes the user's program to start running at location N. This command is equivalent to "NG" in ID.
examine N	causes the contents of location N to be typed out. This is equivalent to "N/" in ID.
deposit N, M	causes M to be placed in register N. This is equivalent to modifying a register in ID.
proceed	after leaving a program by the call button, this instruction is used to continue operation of the user's program from the point where the call button was pressed.
continue	continues operation of the user's program with the instruction following the break (used after illegal and halt instructions).
status	types out the status of the user's program including flags, ac, pc, io, and the next instruction.

Console
on

Console
off

adm. rt.

-5-

edit

b (no ddt)

reedit

macro

b (no ddt)

ddt

OF

illegal instruction
dsm
hit call
(no ddt)

start
continue
proceed

editor | reeditor

N

macro

b (ddt)

ddt

N P G

user's program

20U

dsm
hit call
illegal instruction
(ddt)

N

21U; 2G

OG

b (ddt)

21U

OG

BLOCK DIAGRAM OF SYSTEM