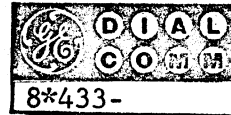


# GENERAL ELECTRIC

Computer Department  
Phoenix, Arizona



SUBJECT

- CU Format

G0046

COPIES:

TO: Multics Distribution List

FROM: G. S. Stoller, CISL, Cambridge, Massachusetts

DATE: December 5, 1966

The CU format contained in G0042 was intended as a convenient, one-page chart for programmers, not a detailed explanation of the CU, which can be found in GE Specification No. M50EB00107. However, the covering memorandum did not clarify this point, and in Xeroxing, the squares representing octal digits and bits did not reproduce. As a result G0042 is not clear.

Please discard the chart of G0042 and replace it with the one on the following page.

G. S. STOLLER

/cr





TO: Multics Distribution List  
FROM: G. S. Stoller, CISL, Cambridge, Mass.  
SUBJ: SCU Instruction Format  
DATE: November 22, 1966

The page following exhibits the format of the six words stored by the scu instruction. On the left are the six words as stored, where each square represents an octal digit. On the right are the lower halves of the first four of these words; each square here represents a bit.

The key to IR codes on the right is as follows:

IR

Z - zero  
N - negative  
C - carry  
O - overflow  
EO - exponent overflow  
EU - exponent underflow  
OM - overflow mask  
T - tally runout  
PE - parity error  
PM - parity mode  
AM - absolute mode

S C U F O R M A T

0	18	35
	APPENDING UNIT STATUS	
Y	TBR	
Y+1	COMPUTED ADDRESS	CONTROL FRAME STATUS
Y+2	PBR	FAULT DATA
Y+3	ICT	IR STATUS
Y+4	EVEN INSTRUCTION	
Y+5	ODD INSTRUCTION	

- ILLEGAL PROCEDURE
- A. 645 PRIVILEGED INSTRUCTION  
LDBR, SDBR, STAM, STAZ, CIAM, SCU, TSS, RCU, LACL
  - B. LOCKED BASE, SLAVE MODE EXECUTE OF  
EAPn, EABn, TSBn, LDGF, ADBn, LBRn
  - C. OP CODE NOT DEFINED
  - D. EA OR POINTER OUT OF BOUNDS
  - E. ACCESS - ACCESS, WRITE PERMIT  
OR CLASS CONVENTIONS

18	35			
OS:TR +UF	ES:TR +UF	TTS:TTB	PEO ITR	CONTROL TAG REGISTER
PI PN	XDE XDO IQSF EA	MA M/S	PA PZ PT	
0				
PROCESSOR TILLEGAL PROCEDURE				
NUMBER	A B C D E	FAULT CODE		
Z N C	EO EU OM T PE	PM AM	RF FT FL	FD
		0	0	0

CONTROL FRAME STATUS

- PI - INSTRUCTION FETCH (1) ADDR. MOD.
- PN - INDIRECT ADDR., FORCED R/N MOD.
- XDE - EXECUTE DOUBLE FROM EVEN
- XDO - EXECUTE DOUBLE FROM ODD
- RF - INITIAL REPEATED INSTRUCTION
- FL - REPEAT LINK
- FT - REPEAT
- FD - REPEAT DOUBLE
- PA - INITIAL ADDR. PREP.
- PZ - INDIRECT ADDR. PREP. (RI OR IR)
- PT - INDIRECT ADDR. PREP. (IT)
- IC - ODD(1)/EVEN INSTRUCTION (O/E)
- MASF - TEMPORARY ABSOLUTE MODE
- EA - FINAL EFFECTIVE ADDRESS (1)
- M/S - MASTER (1)/SLAVE

FAULT CODES

- 00 - SHUTDOWN
- 01 - MME1
- 02 - DERAIL
- 03 - TIMER RUNOUT
- 04 - MME2
- 05 - MME3
- 06 - CONNECT
- 07 - MME4
- 10 - F1
- 11 - 635 COMPAT.
- 12 - ILLEGAL PROC.
- 13 - ILLEGAL DESC.
- 14 - PARITY
- 15 - ILL.MEM.CMD.
- 16 - F2
- 17 - F3
- 20 - DE0
- 21 - DF1
- 22 - DF2
- 23 - DF3
- 24 - DF4
- 25 - DF5
- 26 - DF6
- 27 - DF7
- 30 - 635/645
- 31 - OVERFLOW
- 32 - DVD CHECK
- 33 - EXECUTE
- 34 - LOCKUP
- 35 - OP NOT CMP
- 36 - STARTUP
- 37 - TROUBLE