SIMPLETRON TRUTH TABLE

Muhammed Hüsrev Cılasun

		PAST STATE										NEXT STATE									
Instruction		State Registers						Acc.	P.C.	A.B.	DataIn(8b)	State Registers						Acc.	P.C.	A.B.	DataOut (13bit)
Text	Binary	af	sf	ldf	stf	hlt	ovf				Ins.,addr.	af	sf	ldf	stf	hlt	ovf				w/r, (A.B.), Acc.
HALT	000	0	0	0	0	0	X	X	X	X	000xxxxx	0	0	0	0	1	-	-	00000	00000	-
Halt state		X	X	X	X	1	X	X	X	X	xxxxxxxx	-	-	-	-	-	-	-	-	-	-
BRANCH	001	0	0	0	0	0	X	X	X	X	001,y	0	0	0	0	0	-	-	y	y	0,(A.B.),Acc.
BRIFACC	010	0	0	0	0	0	X	m	pc	X	010,y	0	0	0	0	0	-	m	m'y +m(pc+1)	m'y +m(pc+1)	0,(A.B.),Acc.
BRIFOVF	011	0	0	0	0	0	m	X	pc	X	011,y	0	0	0	0	0	m	-	my+ m'(pc+1)	my+ m'(pc+1)	0,(A.B.),Acc.
ADD	100	0	0	0	0	0	X	X	pc	X	100,y	1	0	0	0	0	-	X	pc+1	y	0,(A.B.),Acc.
Add state		1	0	0	0	0	X	a	pc	X	z	0	0	0	0	0	az*	a+z	pc	pc	0,(A.B.),Acc.
SUBTRACT	101	0	0	0	0	0	X	X	pc	X	101,y	0	1	0	0	0	-	X	pc+1	y	0,(A.B.),Acc.
Subtract state		0	1	0	0	0	X	a	pc	X	z	0	0	0	0	0	az†	a-z	pc	pc	0,(A.B.),Acc.
LOAD	110	0	0	0	0	0	X	X	pc	X	110,y	0	0	1	0	0	-	X	pc+1	y	0,(A.B.),Acc.
Load state		0	0	1	0	0	X	X	pc	X	z	0	0	0	0	0	-	z	pc	pc	-
STORE	111	0	0	0	0	0	X	X	pc	X	111,y	0	0	0	1	0	-	data	pc+1	y	1,(A.B.),Acc.
Store state		0	0	0	1	0	X	X	pc	X	X	0	0	0	0	0	-	X	pc	pc	0,(A.B.),Acc.

Acc.: Accumulator

P.C.: Program Counter

A.B.: Address Buffer

az*: Overflow of the sum of 'a+z'

az†*: Overflow of the subtraction of 'a-z'

'X','-': Don't care

af: Add flag

sf: Subtract flag

ldf: Load flag

stf: Store flag

hlt: Halt state flag

ovf: Overflow flag

Finite State Diagram without transition conditions: