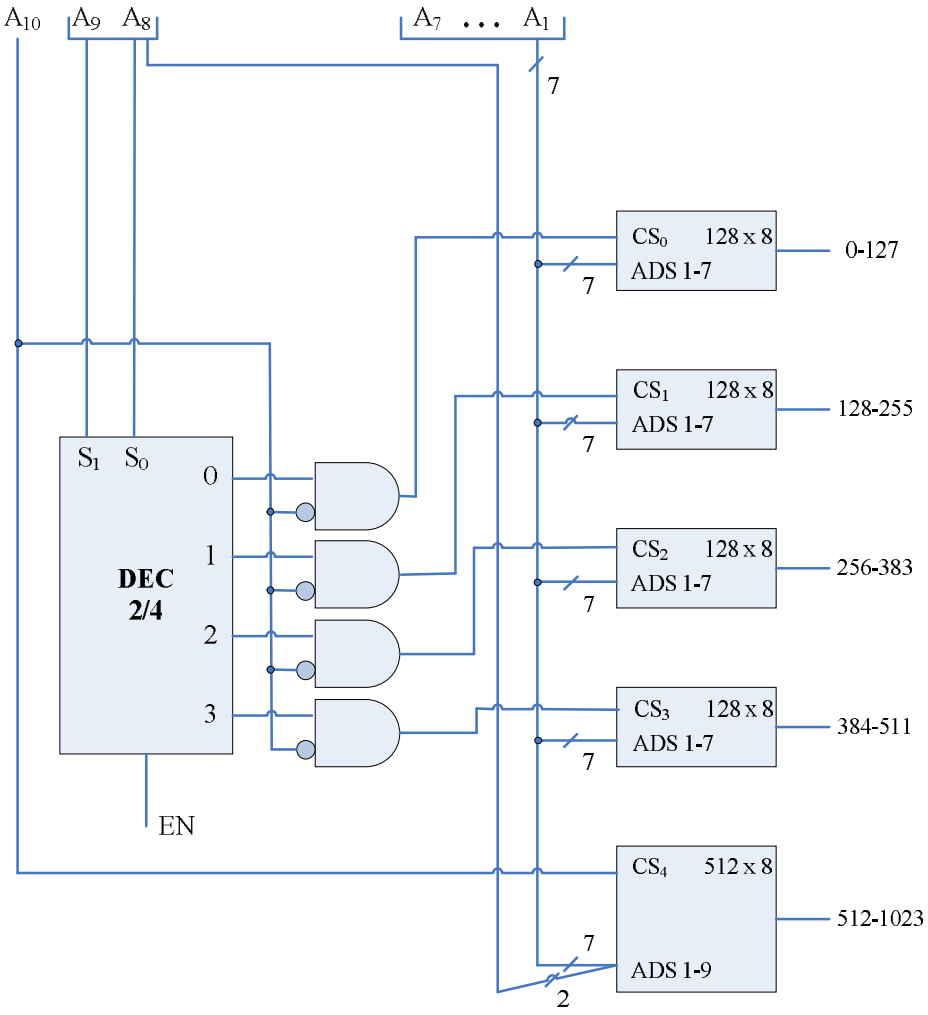
Vježbe VIII

Memorije velikog kapaciteta

1. Prikazati organizaciju memorije 1Kx8 koristeći memorijske čipove 128x8 (4 komada) i 512x8 (1 komad), dekoder DEC2/4 i potreban broj logičkih kola.



	A_{10}	A_9	A_8	A_7	A_6	A_5	A_4	A_3	A_2	A_1	
D_0	0	0	0	0	0	0	0	0	0	0	0-127
D_0	0	0	0	1	1	1	1	1	1	1	
D_1	0	0	1	0	0	0	0	0	0	0	128-255
D_1	0	0	1	1	1	1	1	1	1	1	
D_2	0	1	0	0	0	0	0	0	0	0	256-383
D_2	0	1	0	1	1	1	1	1	1	1	
D_3	0	1	1	0	0	0	0	0	0	0	384-511
D_3	0	1	1	1	1	1	1	1	1	1	
	1	0	0	0	0	0	0	0	0	0	512-1023
	1	1	1	1	1	1	1	1	1	1	

$CS_0 = D_0 \overline{A}_{10}$

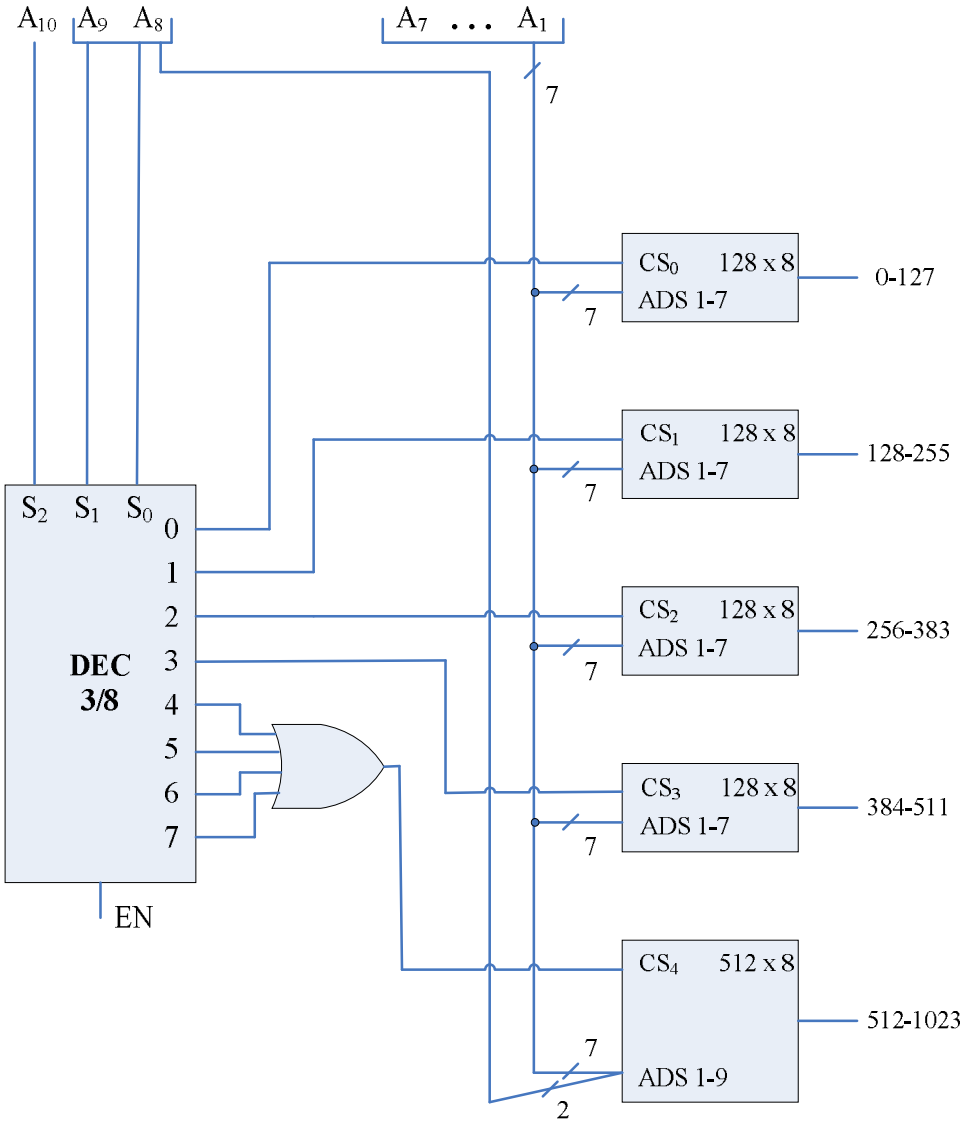
$CS_1 = D_1 \overline{A}_{10}$

$CS_2 = D_2 \overline{A}_{10}$

$CS_3 = D_3 \overline{A}_{10}$

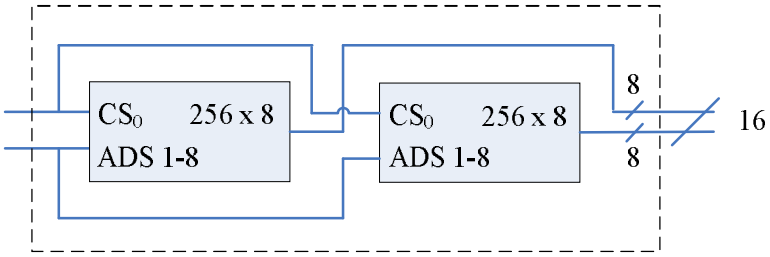
$CS_4 = A_{10}$

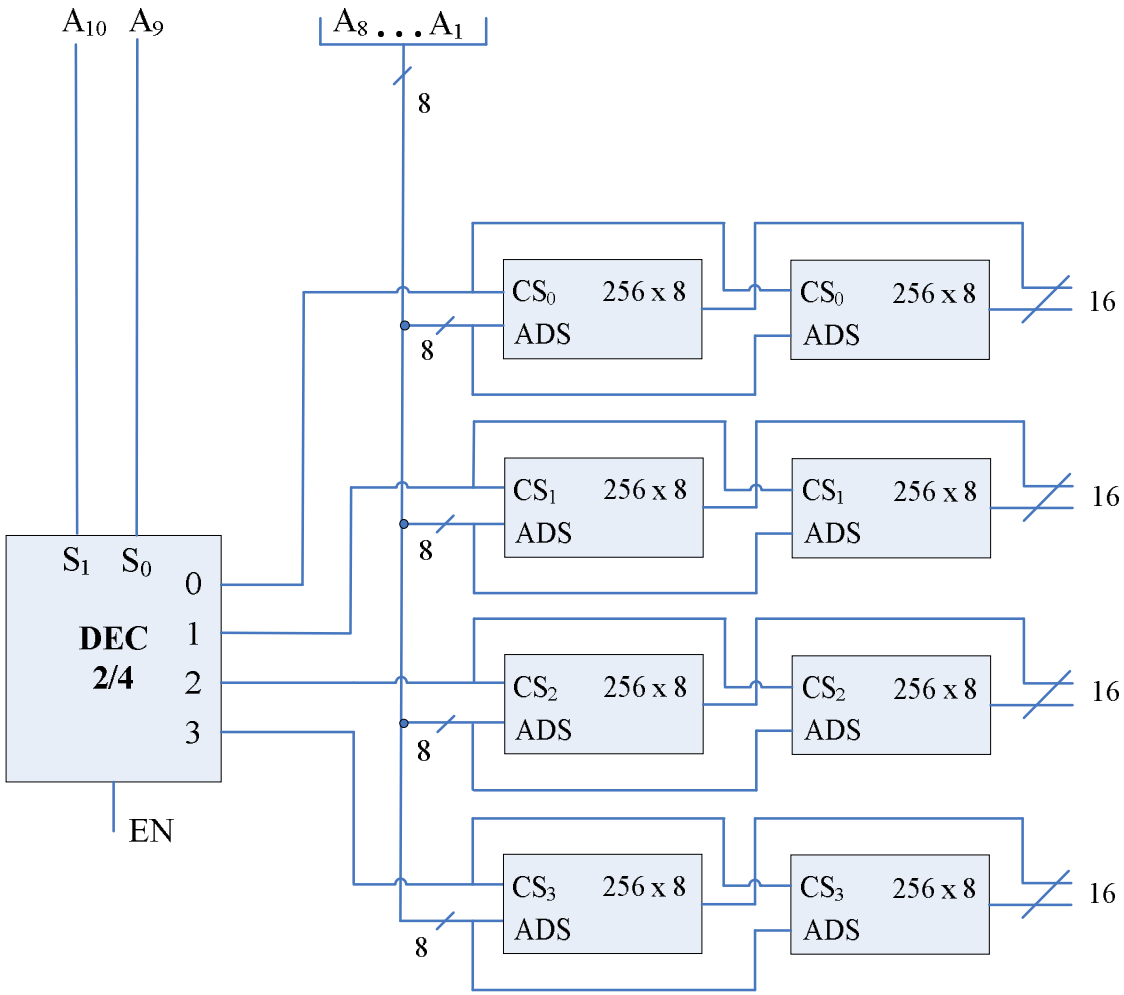
Realizovati prethodnu memoriju koristeći dekoder DEC 3/8. (tabela ostaje ista jer se nijesu mijenjali kapaciteti memorijskih čipova!)



2. Prikazati organizaciju memorije 1Kx16 koristeći memorijske čipove 256x8 (8 komada), dekoder DEC 2/4 i potrebna logička kola.

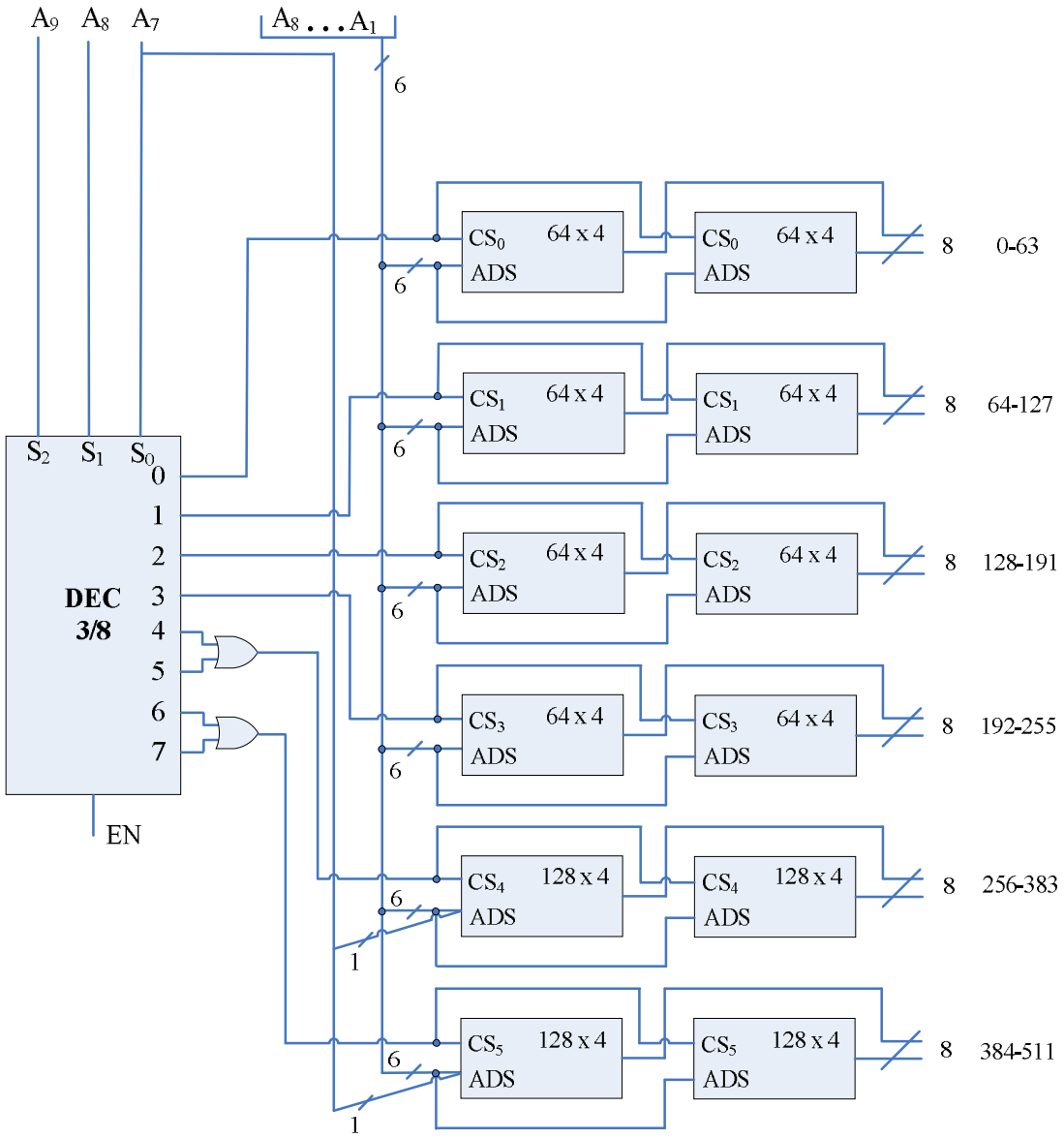
Formiranje memorijski čipova 256x16 od čipova 256x8 (kapacitet čipa se na ovaj način **NE** povećava!)





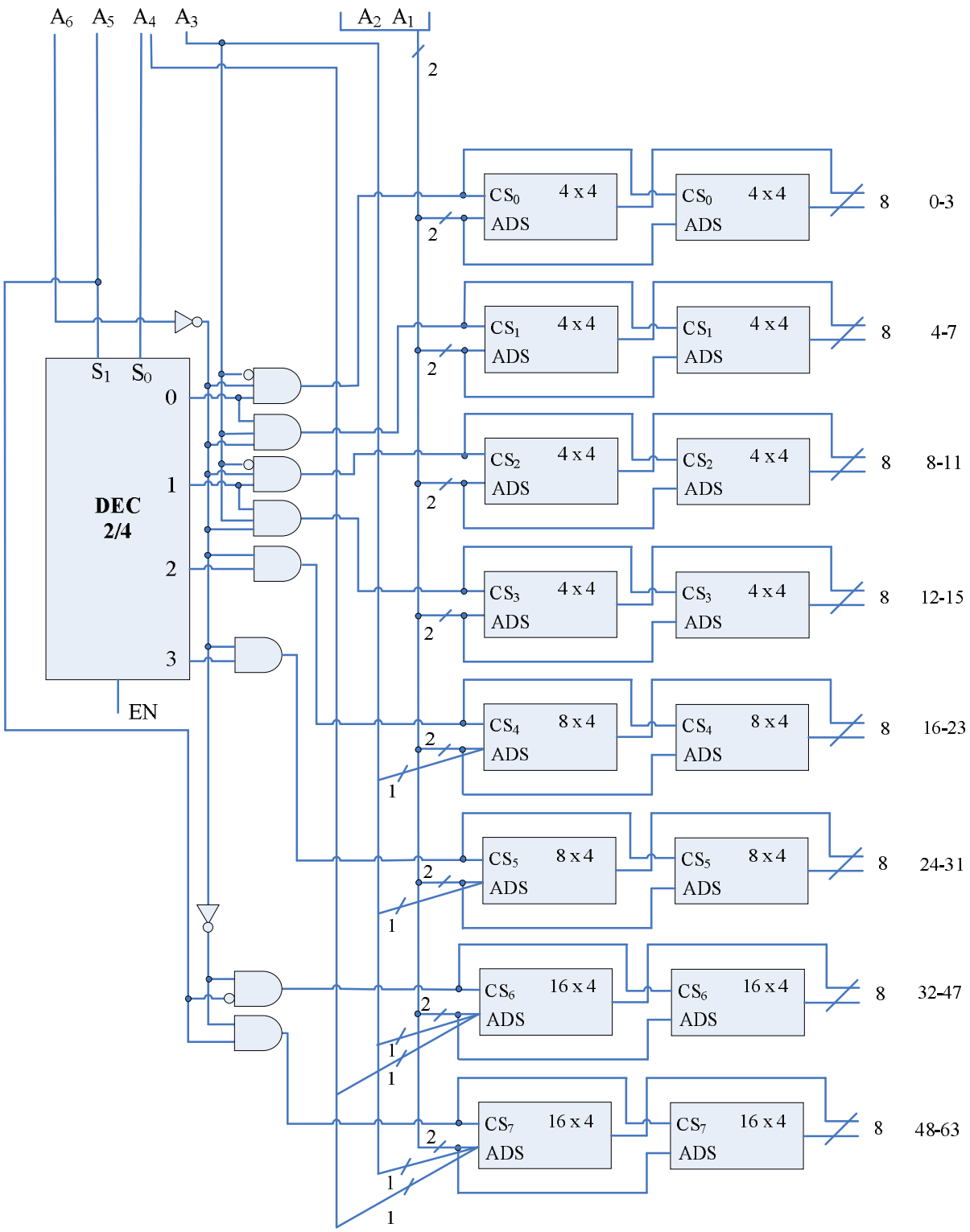
	A_{10}	A_9	A_8	A_7	A_6	A_5	A_4	A_3	A_2	A_1	
D_0	0	0	0	0	0	0	0	0	0	0	0-255
D_0	0	0	1	1	1	1	1	1	1	1	
D_1	0	1	0	0	0	0	0	0	0	0	256-511
D_1	0	1	1	1	1	1	1	1	1	1	
D_2	1	0	0	0	0	0	0	0	0	0	512-767
D_2	1	0	1	1	1	1	1	1	1	1	
D_3	1	1	0	0	0	0	0	0	0	0	768-1023
D_3	1	1	1	1	1	1	1	1	1	1	

3. Prikazati organizaciju memorije 512x8 koristeći memorijske čipove 64x4 (8 komada) i 128x4 (4 komada), dekoder 3/8 i potrebna logička kola.



	A_9	A_8	A_7	A_6	A_5	A_4	A_3	A_2	A_1	
D_0	0	0	0	0	0	0	0	0	0	0-63
D_0	0	0	0	1	1	1	1	1	1	
D_1	0	0	1	0	0	0	0	0	0	64-127
D_1	0	0	1	1	1	1	1	1	1	
D_2	0	1	0	0	0	0	0	0	0	128-191
D_2	0	1	0	1	1	1	1	1	1	
D_3	0	1	1	0	0	0	0	0	0	192-255
D_3	0	1	1	1	1	1	1	1	1	
D_4	1	0	0	0	0	0	0	0	0	256-383
D_5	1	0	1	1	1	1	1	1	1	
D_6	1	1	0	0	0	0	0	0	0	384-511
D_7	1	1	1	1	1	1	1	1	1	

4. Prikazati organizaciju memorije 64x8 koristeći memorijske čipove 16x4 (4 komada), 8x4 (5 komada) i 4x4 (10 komada), dekoder 2/4 i potrebna logička kola.



Realizacija korišćenjem prve tabele

	A_6	A_5	A_4	A_3	A_2	A_1		
D_0	0	0	0	0	0	0	0-3	$CS_0=\overline{A}_6 D_0 \overline{A}_3$
D_0	0	0	0	0	1	1		
D_0	0	0	0	1	0	0	4-17	$CS_1=\overline{A}_6 D_0 A_3$
D_0	0	0	0	1	1	1		
D_1	0	0	1	0	0	0	8-11	$CS_2=\overline{A}_6 D_1 \overline{A}_3$
D_1	0	0	1	0	1	1		
D_1	0	0	1	1	0	0	12-15	$CS_3=\overline{A}_6 D_1 A_3$
D_1	0	0	1	1	1	1		
D_2	0	1	0	0	0	0	16-23	$CS_4=\overline{A}_6 D_2$
D_2	0	1	0	1	1	1		
D_3	0	1	1	0	0	0	24-31	$CS_5=\overline{A}_6 D_3$
D_3	0	1	1	1	1	1		
	1	0	0	0	0	0	32-47	$CS_6=A_6 \overline{A}_5$
	1	0	1	1	1	1		
	1	1	0	0	0	0	48-63	$CS_7=A_6 A_5$
	1	1	1	1	1	1		

Moguće je izvršiti i ovakvo grupisanje:

	A_6	A_5	A_4	A_3	A_2	A_1		
D_0	0	0	0	0	0	0	0-3	$CS_0=D_0 \overline{A}_4 \overline{A}_3$
D_0	0	0	0	0	1	1		
D_0	0	0	0	1	0	0	4-17	$CS_1=D_0 \overline{A}_4 A_3$
D_0	0	0	0	1	1	1		
D_0	0	0	1	0	0	0	8-11	$CS_2=D_0 A_4 \overline{A}_3$
D_0	0	0	1	0	1	1		
D_0	0	0	1	1	0	0	12-15	$CS_3=D_0 A_4 A_3$
D_0	0	0	1	1	1	1		
D_1	0	1	0	0	0	0	16-23	$CS_4=D_1 \overline{A}_4$
D_1	0	1	0	1	1	1		
D_1	0	1	1	0	0	0	24-31	$CS_5=D_1 A_4$
D_1	0	1	1	1	1	1		
D_2	1	0	0	0	0	0	32-47	$CS_6=D_2$
D_2	1	0	1	1	1	1		
D_3	1	1	0	0	0	0	48-63	$CS_7=D_3$
D_3	1	1	1	1	1	1		