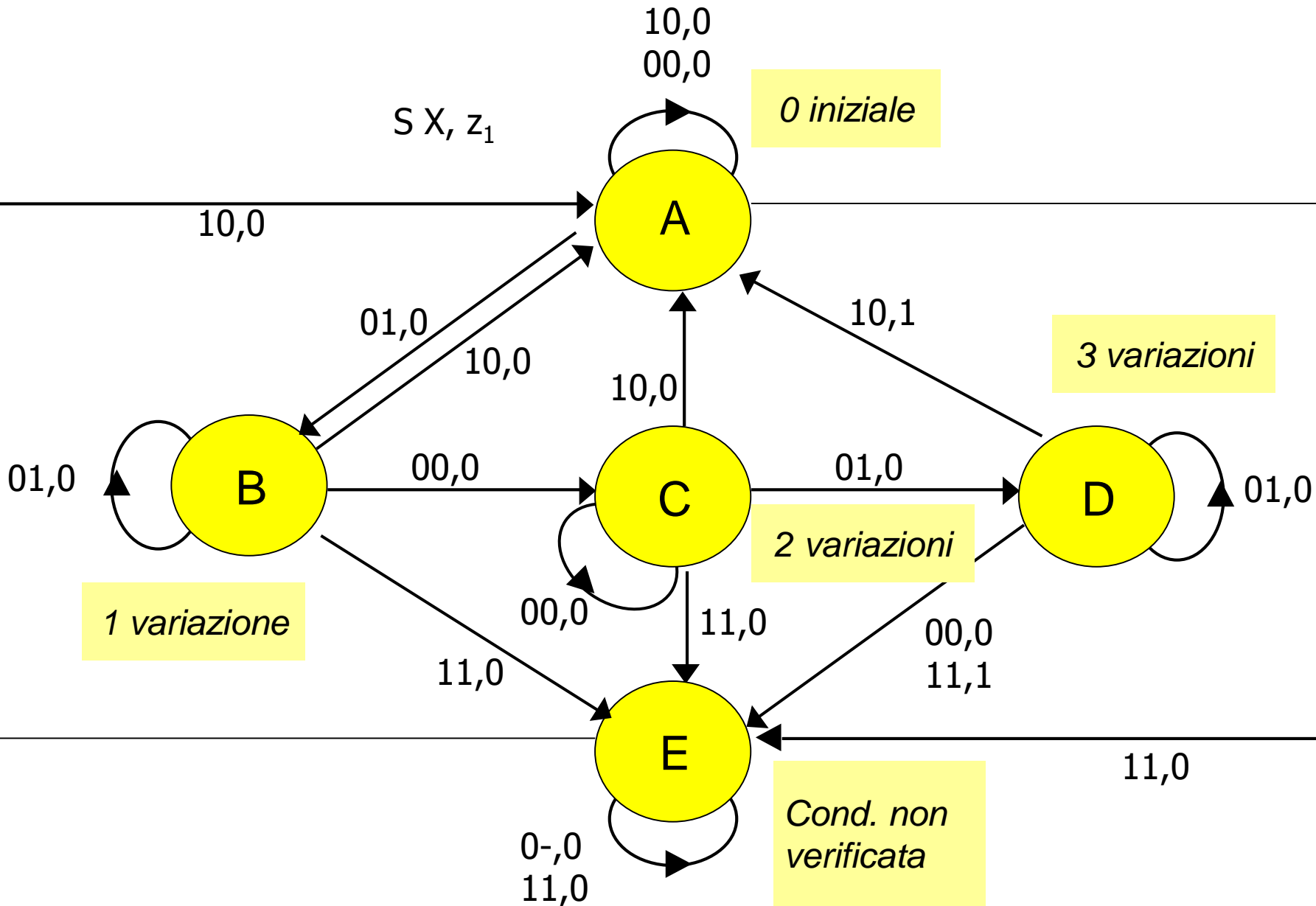


# Esercizio 1.1 – Automa minimo



# Esercizio 1.2 – TdF

		<b>S X</b>			
		<b>00</b>	<b>01</b>	<b>11</b>	<b>10</b>
<b>s.p.</b>	<b>A</b>	<b>A,0</b>	<b>B,0</b>	<b>E,0</b>	<b>A,0</b>
	<b>B</b>	<b>C,0</b>	<b>B,0</b>	<b>E,0</b>	<b>A,0</b>
	<b>C</b>	<b>C,0</b>	<b>D,0</b>	<b>E,0</b>	<b>A,0</b>
	<b>D</b>	<b>E,0</b>	<b>D,0</b>	<b>E,1</b>	<b>A,1</b>
	<b>E</b>	<b>E,0</b>	<b>E,0</b>	<b>E,0</b>	<b>A,0</b>

**s.f., Z**

# Esercizio 1.2 – TdT

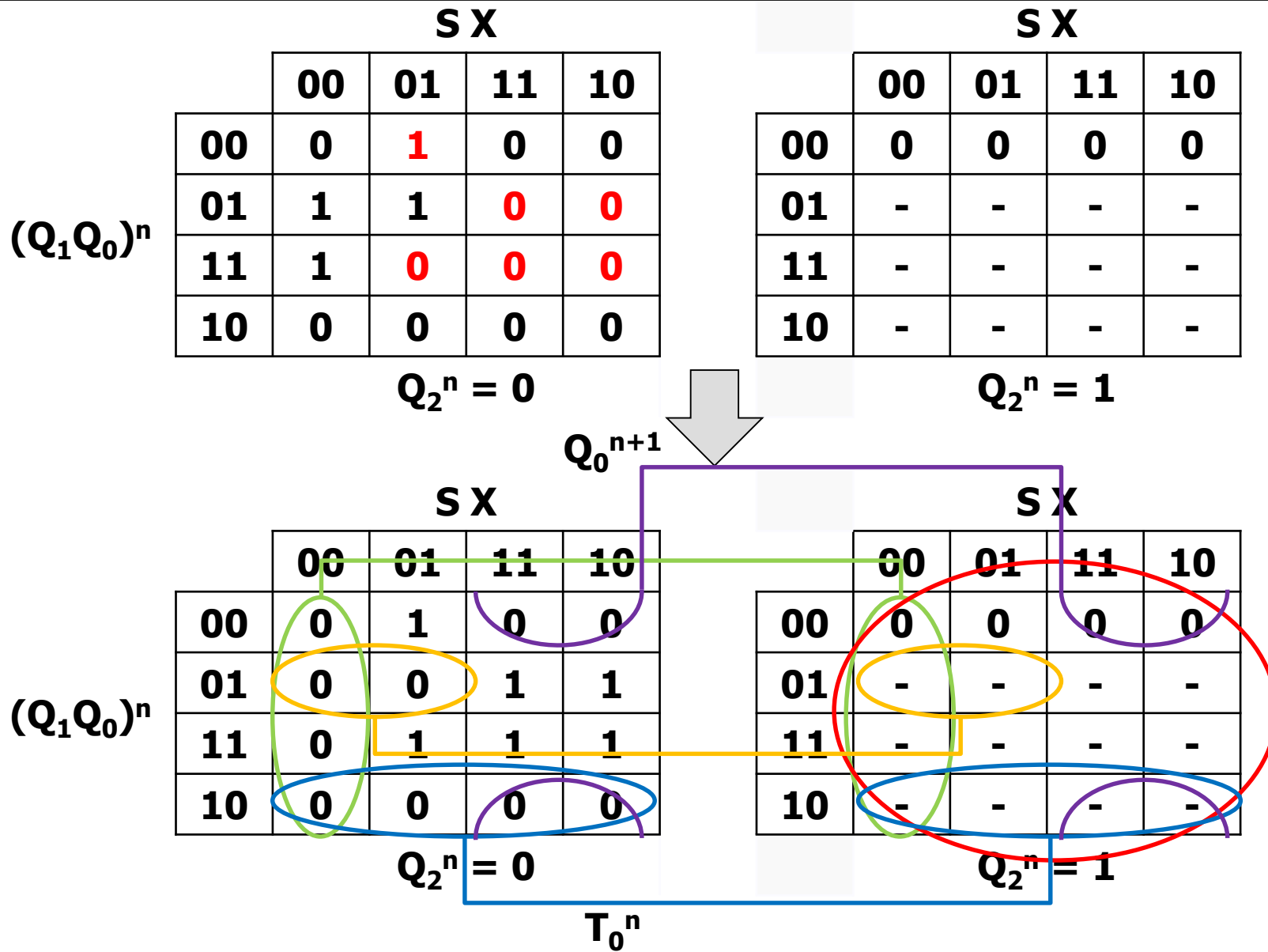
S X

	00	01	11	10
<b>A=000</b>	<b>000,0</b>	<b>001,0</b>	<b>010,0</b>	<b>000,0</b>
<b>B=001</b>	<b>011,0</b>	<b>001,0</b>	<b>010,0</b>	<b>000,0</b>
<b>C=011</b>	<b>011,0</b>	<b>100,0</b>	<b>010,0</b>	<b>000,0</b>
<b>D=010</b>	<b>100,0</b>	<b>010,0</b>	<b>100,1</b>	<b>000,1</b>
<b>E=100</b>	<b>100,0</b>	<b>100,0</b>	<b>100,0</b>	<b>000,0</b>
<b>101</b>	<b>---,-</b>	<b>---,-</b>	<b>---,-</b>	<b>---,-</b>
<b>111</b>	<b>---,-</b>	<b>---,-</b>	<b>---,-</b>	<b>---,-</b>
<b>110</b>	<b>---,-</b>	<b>---,-</b>	<b>---,-</b>	<b>---,-</b>

$(Q_2Q_1Q_0)^n$

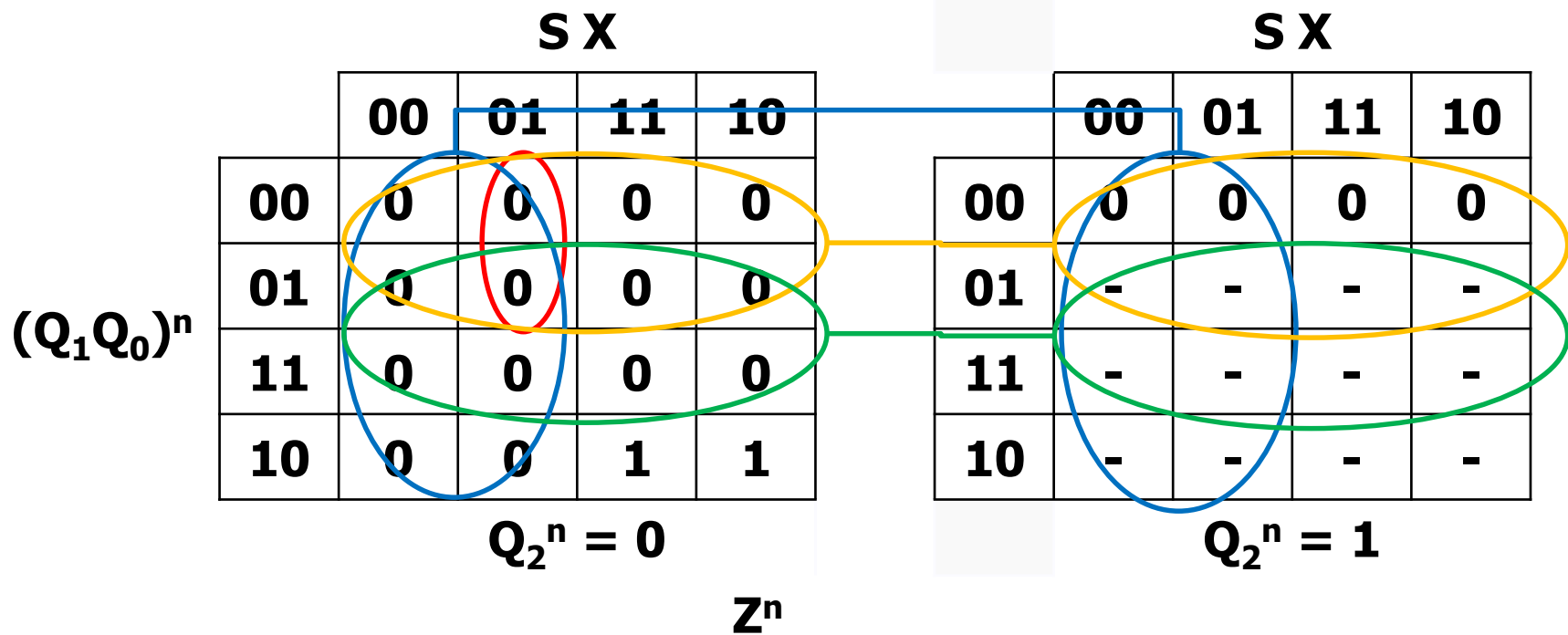
$(Q_2Q_1Q_0)^{n+1}, Z^n$

# Esercizio 1.3 – Sintesi PS con FF T



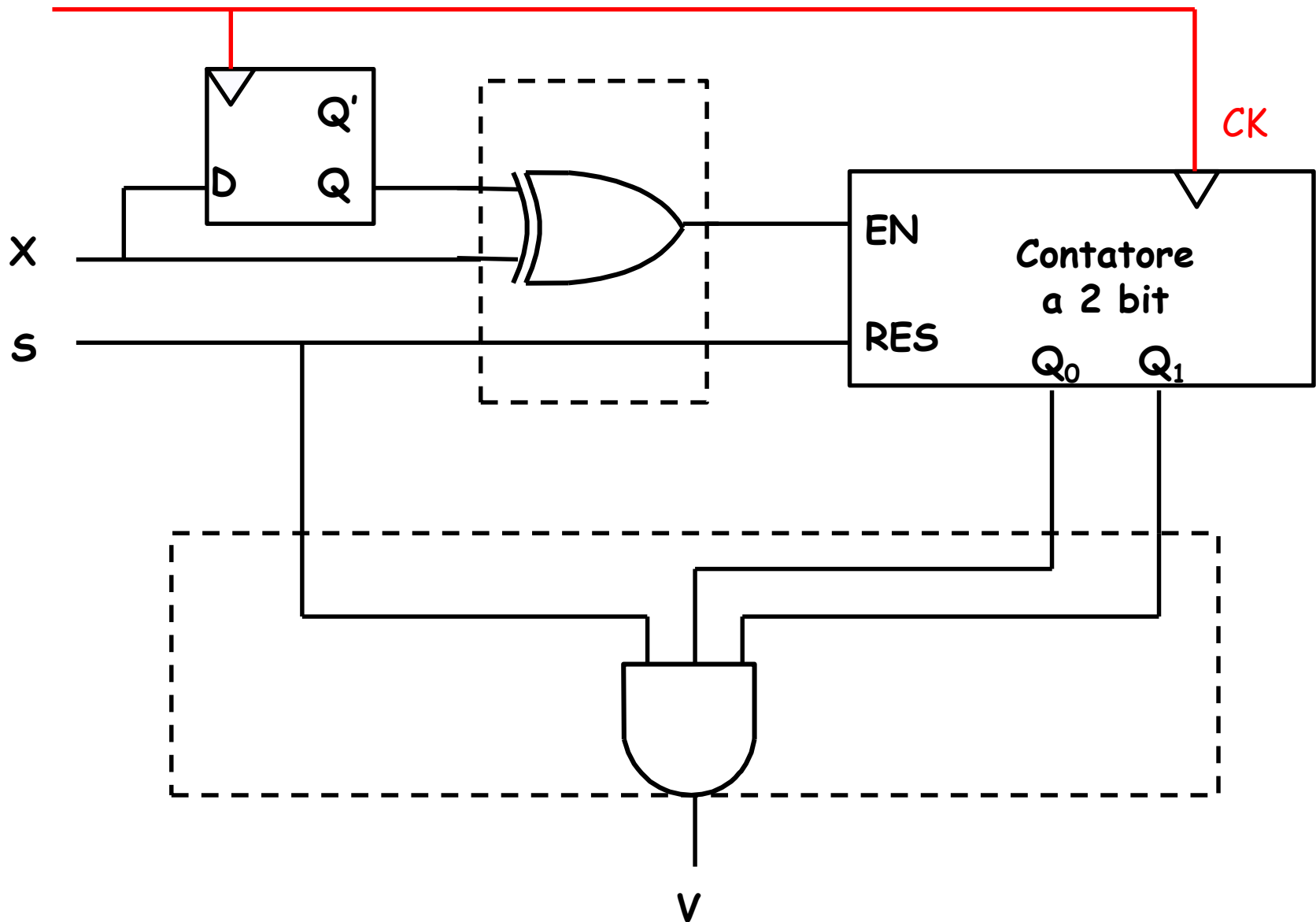
$$T_0(\text{PS}) = Q_2' (S + X) (Q_1' + Q_0) (S' + Q_0) (S + Q_1 + Q_0')$$

# Esercizio 1.3 – Sintesi PS uscita



$$Z(\text{PS}) = Q_0'Q_1S$$

# Esercizio 1.4 – Sintesi con contatore



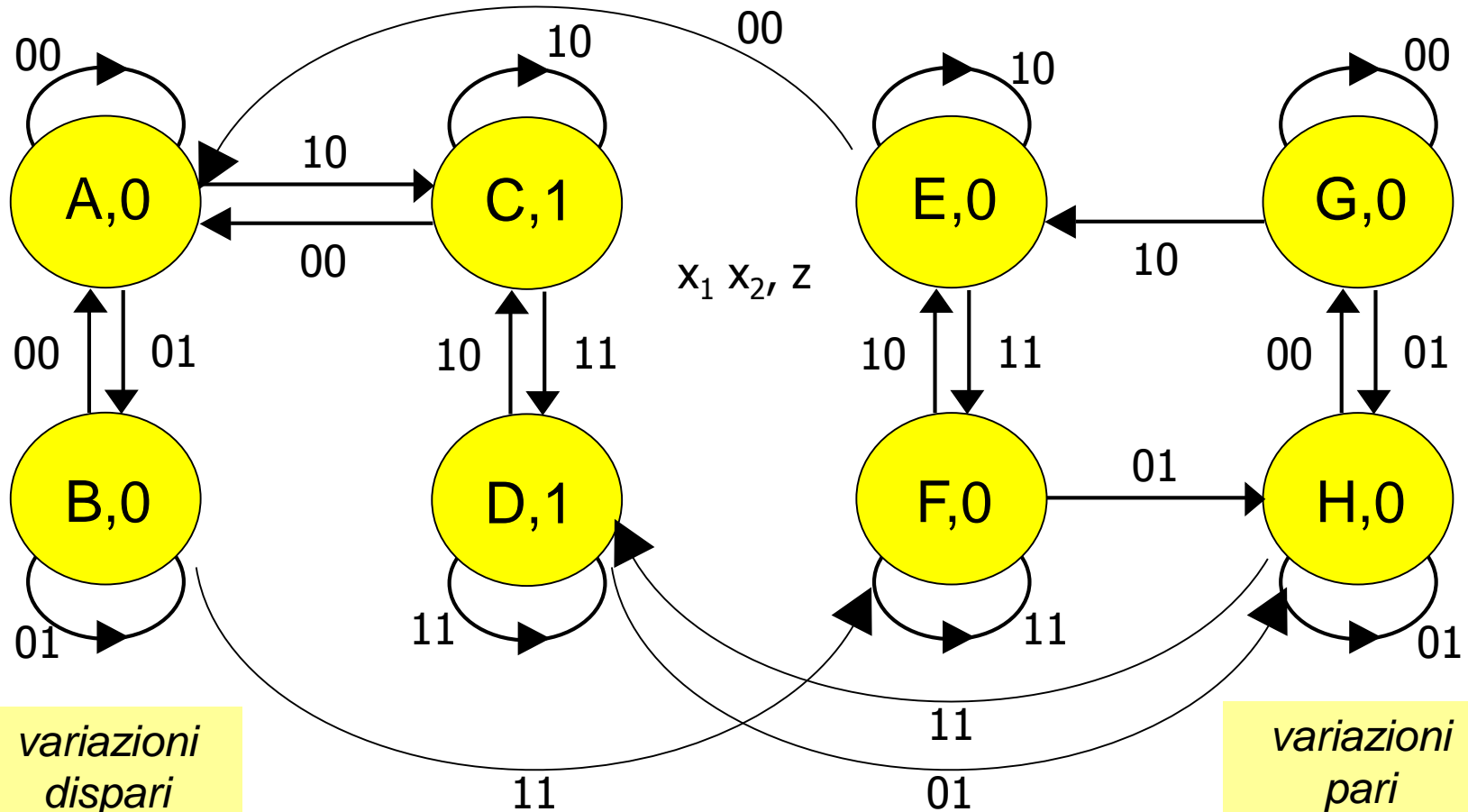
# Esercizio 2.1

variazioni  
pari  
iniziate con  
 $x_2 = 0$

periodo  $x_1=1$ ,  
variazioni  
precedenti  
pari

periodo  $x_1=1$ ,  
variazioni  
precedenti  
dispari

variazioni  
dispari  
iniziate con  
 $x_2 = 1$



variazioni  
dispari  
iniziate con  
 $x_2 = 0$

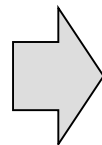
variazioni  
pari  
iniziate con  
 $x_2 = 1$

# Esercizio 2.2 – Tabella triangolare e CMC

		$x_1 x_2$			
		00	01	11	10
s.p.	A	A,0	B,0	-, -	C, -
	B	A,0	B,0	F,0	-, -
	C	A, -	-, -	D,1	C,1
	D	-, -	H, -	D,1	C,1
	E	A,0	-, -	F,0	E,0
	F	-, -	H,0	F,0	E,0
	G	G,0	H,0	-, -	E,0
	H	G,0	H,0	D, -	-, -
		s.f., z			

B							
C							
D	BH						
E	CE						
F	CE BH	BH					
G	BH CE	AG BH			AG		
H	AG BH	AG FD	AG		AG FD	FD	
	A	B	C	D	E	F	G

CMC: {AB}, {AC},  
{BE}, {CD}, {DH},  
{EF}, {FG} {GH}



a1={AB}, b1={CD},  
c1={EF}, d1={GH}

*oppure*

a2={AC}, b2={BE},  
c2={DH}, d2={FG}



# Esercizio 2.2 – TdF automa minimo

		$x_1 x_2$			
		00	01	11	10
s.p.	a1	a1,0	a1,0	c1,0	b1,-
	b1	a1,-	d1,-	b1,1	b1,1
	c1	a1,0	d1,0	c1,0	c1,0
	d1	d1,0	d1,0	b1,-	c1,0

s.f., z

# Esercizio 2.3 – TdT automa minimo

y1\y0	0		1
0	<b>c1</b>	↔	<b>a1</b>
	↕		↕
1	<b>d1</b>	↔	<b>b1</b>

		<b>x<sub>1</sub> x<sub>0</sub></b>			
		<b>00</b>	<b>01</b>	<b>11</b>	<b>10</b>
<b>y<sub>1</sub> y<sub>0</sub></b>	<b>c1=00</b>	<b>01,0</b>	<b>10,0</b>	<b>00,0</b>	<b>00,0</b>
	<b>a1=01</b>	<b>01,0</b>	<b>01,0</b>	<b>00,0</b>	<b>11,-</b>
	<b>b1=11</b>	<b>01,-</b>	<b>10,-</b>	<b>11,1</b>	<b>11,1</b>
	<b>d1=10</b>	<b>10,0</b>	<b>10,0</b>	<b>11,-</b>	<b>00,0</b>
		<b>y<sub>1</sub> y<sub>0</sub>, z</b>			

# Esercizio 2.4 – Sintesi combinatoria

		$X_1 X_2$			
		00	01	11	10
$Y_1 Y_0$	00	1	0	0	0
	01	1	1	0	1
	11	1	0	1	1
	10	0	0	1	0

$Y_0$

$$\begin{aligned}
 Y_0 \text{ (SP)} = & \\
 & Y_1' X_1' X_2' + \\
 & Y_1' Y_0 X_1' + \\
 & Y_1 X_2' + \\
 & Y_1 X_1 X_2 + \\
 & Y_1 Y_0 X_1
 \end{aligned}$$

		$X_1 X_2$			
		00	01	11	10
$Y_1 Y_0$	00	0	1	0	0
	01	0	0	0	1
	11	0	1	1	1
	10	1	1	1	0

$Y_1$

$$\begin{aligned}
 Y_1 \text{ (SP)} = & \\
 & Y_0 X_1 X_2' + \\
 & Y_0' X_1' X_2 + \\
 & Y_1 Y_0' X_1' + \\
 & Y_1 X_2 + \\
 & Y_1 Y_0 X_1
 \end{aligned}$$

# Esercizio 2.5 – Sintesi con MUX

