

Ampel  $S_1$

2 vars

Nr	x2	x1	y
0	0	0	
1	0	1	
2	1	0	
3	1	1	

y:

	x2	x2'
x1		
x1'		

3 vars

Nr	x3	x2	x1	y
0	0	0	0	
1	0	0	1	
2	0	1	0	
3	0	1	1	
4	1	0	0	
5	1	0	1	
6	1	1	0	
7	1	1	1	

y:

	x3		x3'
x2			
x2'			
	x1'	x1	x1'

mapping :  $S_1 = x_4$  ,  $S_0 = x_3$  ,  $T_a = x_2$  ,  $T_b = x_1$

4 vars

Nr	x4	x3	x2	x1	y
0	0	0	0	0	
1	0	0	0	1	
2	0	0	1	0	
3	0	0	1	1	
4	0	1	0	0	
5	0	1	0	1	
6	0	1	1	0	
7	0	1	1	1	
8	1	0	0	0	
9	1	0	0	1	
10	1	0	1	0	
11	1	0	1	1	
12	1	1	0	0	
13	1	1	0	1	
14	1	1	1	0	
15	1	1	1	1	

y:

	x4		x4'	
x3			1	1
			1	1
x3'	1	1		
	x2'	x2	x2'	

$x_4 x_3'$

$x_4' x_3$

$$\rightarrow S_1' = S_1 \cdot S_0 + !S_1 S_0 = S_1 \text{ xor } S_0$$

Ampele  $S_0'$

2 vars

Nr	x2	x1	y
0	0	0	
1	0	1	
2	1	0	
3	1	1	

y:

	x2	x2'
x1		
x1'		

3 vars

Nr	x3	x2	x1	y
0	0	0	0	
1	0	0	1	
2	0	1	0	
3	0	1	1	
4	1	0	0	
5	1	0	1	
6	1	1	0	
7	1	1	1	

y:

	x3		x3'
x2			
x2'			
	x1'	x1	x1'

mapping:  $S_1 = x_4$ ;  $S_0 = x_3$ ,  $T_9 = x_2$ ,  $T_6 = x_1$

4 vars

Nr	x4	x3	x2	x1	y
0	0	0	0	0	
1	0	0	0	1	
2	0	0	1	0	
3	0	0	1	1	
4	0	1	0	0	
5	0	1	0	1	
6	0	1	1	0	
7	0	1	1	1	
8	1	0	0	0	
9	1	0	0	1	
10	1	0	1	0	
11	1	0	1	1	
12	1	1	0	0	
13	1	1	0	1	
14	1	1	1	0	
15	1	1	1	1	

y:

	x4		x4'
x3			
	x2'	x2	
x3'			
	x2'	x2	

$x_4 x_3' x_1'$

$x_4' x_3' x_2'$

$$\rightarrow S_0' = S_1!S_0!T_6 + !S_1!S_0!T_9$$

Ampel LA1

$$S_1 = x_2, S_0 = x_1$$

2 vars

Nr	x2	x1	y
0	0	0	
1	0	1	
2	1	0	
3	1	1	

y:

	x2	x2'
x1	1	
x1'	1	

$\rightarrow LA1 = S_1$

3 vars

Nr	x3	x2	x1	y
0	0	0	0	
1	0	0	1	
2	0	1	0	
3	0	1	1	
4	1	0	0	
5	1	0	1	
6	1	1	0	
7	1	1	1	

y:

	x3		x3'
x2			
x2'			
	x1'	x1	x1'

4 vars

Nr	x4	x3	x2	x1	y
0	0	0	0	0	
1	0	0	0	1	
2	0	0	1	0	
3	0	0	1	1	
4	0	1	0	0	
5	0	1	0	1	
6	0	1	1	0	
7	0	1	1	1	
8	1	0	0	0	
9	1	0	0	1	
10	1	0	1	0	
11	1	0	1	1	
12	1	1	0	0	
13	1	1	0	1	
14	1	1	1	0	
15	1	1	1	1	

y:

	x4		x4'	
x3				x1'
				x1
x3'				x1'
	x2'	x2	x2'	

Amper LAO

$$S_1 = x_2, S_0 = x_1$$

2 vars

Nr	x2	x1	y
0	0	0	
1	0	1	
2	1	0	
3	1	1	

y:

	x2	x2'
x1		①
x1'		

→  $x_2' x_1$

$$\rightarrow LAO = S_1 S_0$$

3 vars

Nr	x3	x2	x1	y
0	0	0	0	
1	0	0	1	
2	0	1	0	
3	0	1	1	
4	1	0	0	
5	1	0	1	
6	1	1	0	
7	1	1	1	

y:

	x3		x3'
x2			
x2'			
	x1'	x1	x1'

4 vars

Nr	x4	x3	x2	x1	y
0	0	0	0	0	
1	0	0	0	1	
2	0	0	1	0	
3	0	0	1	1	
4	0	1	0	0	
5	0	1	0	1	
6	0	1	1	0	
7	0	1	1	1	
8	1	0	0	0	
9	1	0	0	1	
10	1	0	1	0	
11	1	0	1	1	
12	1	1	0	0	
13	1	1	0	1	
14	1	1	1	0	
15	1	1	1	1	

y:

	x4		x4'
x3			
x3'			
	x2'	x2	x2'

x1' x1 x1'

Ampe1 L31

$$s_1 = x_2, s_0 = x_1$$

2 vars

Nr	x2	x1	y
0	0	0	
1	0	1	
2	1	0	
3	1	1	

y:

	x2	x2'
x1		1
x1'		1

x2'

$$L_{B1} = !s_1$$

3 vars

Nr	x3	x2	x1	y
0	0	0	0	
1	0	0	1	
2	0	1	0	
3	0	1	1	
4	1	0	0	
5	1	0	1	
6	1	1	0	
7	1	1	1	

y:

	x3		x3'
x2			
x2'			
	x1'	x1	x1'

4 vars

Nr	x4	x3	x2	x1	y
0	0	0	0	0	
1	0	0	0	1	
2	0	0	1	0	
3	0	0	1	1	
4	0	1	0	0	
5	0	1	0	1	
6	0	1	1	0	
7	0	1	1	1	
8	1	0	0	0	
9	1	0	0	1	
10	1	0	1	0	
11	1	0	1	1	
12	1	1	0	0	
13	1	1	0	1	
14	1	1	1	0	
15	1	1	1	1	

y:

	x4		x4'
x3			
x3'			
	x2'	x2	x2'

x1'

x1

x1'

Ampele LB0

$$S_1 = x_2, \quad B_0 = x_1$$

2 vars

Nr	x2	x1	y
0	0	0	
1	0	1	
2	1	0	
3	1	1	

y:

	x2	x2'
x1	1	
x1'		

x2 x1

$$LB_0 = S_1 S_0$$

3 vars

Nr	x3	x2	x1	y
0	0	0	0	
1	0	0	1	
2	0	1	0	
3	0	1	1	
4	1	0	0	
5	1	0	1	
6	1	1	0	
7	1	1	1	

y:

	x3		x3'
x2			
x2'			
	x1'	x1	x1'

4 vars

Nr	x4	x3	x2	x1	y
0	0	0	0	0	
1	0	0	0	1	
2	0	0	1	0	
3	0	0	1	1	
4	0	1	0	0	
5	0	1	0	1	
6	0	1	1	0	
7	0	1	1	1	
8	1	0	0	0	
9	1	0	0	1	
10	1	0	1	0	
11	1	0	1	1	
12	1	1	0	0	
13	1	1	0	1	
14	1	1	1	0	
15	1	1	1	1	

y:

	x4		x4'	
x3				x1'
				x1
x3'				x1'
	x2'	x2	x2'	