

## Annex

### Karnaugh's maps for Task 1

For the Moore's state machine implementation:

		y2y1			
		00	01	11	10
SI	00	X	1	1	1
	01	1	1	0	0
	11	0	0	X	0
	10	X	X	X	X

		y2y1			
		00	01	11	10
SI	00	X	1	1	1
	01	1	1	0	0
	11	0	0	X	0
	10	X	X	X	X

Figure 1: Maps for  $Y_2$  (left) and  $Y_1$  (right) functions.

Where from the left table  $Y_2 = \bar{I} + \bar{S} \cdot \bar{y}_2$ , and from the right  $Y_1 = \bar{I} + \bar{S} \cdot y_2$ . And for the outputs,  $B_1 = y_2$  and  $B_2 = y_1$ .

For the Mealy's state machine implementation:

		SI			
		00	01	11	10
y	0	0	1	0	X
	1	1	0	1	X

		SI			
		00	01	11	10
y	0	1	1	0	X
	1	1	0	0	X

		SI			
		00	01	11	10
y	0	1	0	0	X
	1	1	1	0	X

Figure 2: Maps for  $Y$  (left),  $B_1$  (center) and  $B_2$  (right) functions.

Where from the left table  $Y = \bar{y} \cdot \bar{S} \cdot I + y \cdot \bar{I} + y \cdot S$ . From the center table  $B_1 = \bar{y} \cdot \bar{S} + \bar{S} \cdot \bar{I}$ , and from the right table  $B_2 = \bar{S} \cdot \bar{I} + y \cdot \bar{S}$ .