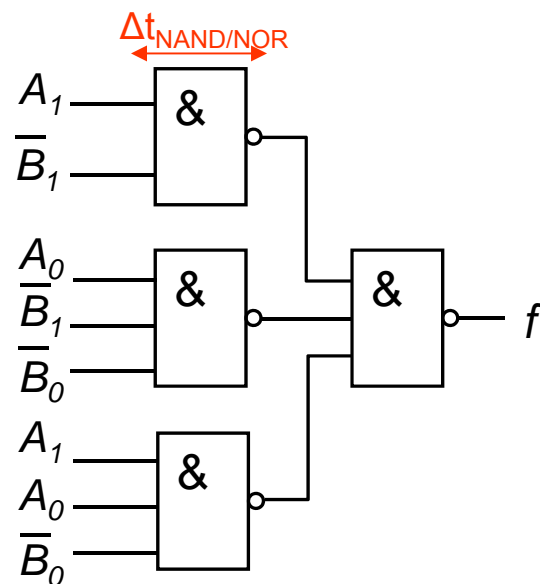


Digitalna tehnika

3. Vaja

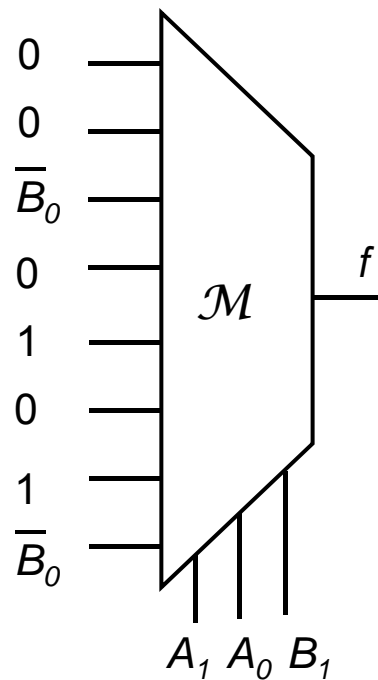
Simulacija delovanja kombinacijskih vezij (P-SPICE)

Naloga 3a: Simulacija dvobitnega primerjalnika z NAND/NOR:



Naloga 3b: Zakasnitev ("propagation delay") vrat NAND/NOR - $\Delta t_{\text{NAND/NOR}}$

Naloga 3c: Simulacija dvobitnega primerjalnika z multipleksorjem 74HC151:



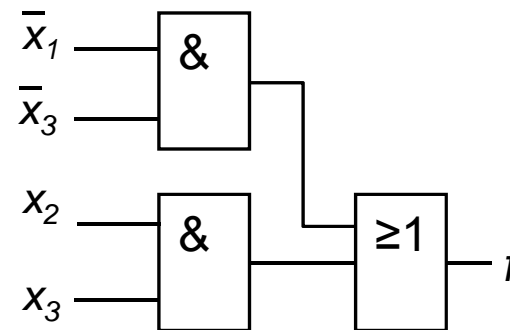
Naloga 3d: Statični hazard v vezjih AND-OR oz. OR-AND:

$$f(x_1, x_2, x_3) = \sum 0, 2, 3, 7$$

Naloga 3d: Statični hazard v vezjih AND-OR oz. OR-AND:

$$f(x_1, x_2, x_3) = \sum 0, 2, 3, 7$$

		$x_1 x_2$			
		00	01	11	10
x_3	0	1	1		
	1		1	1	

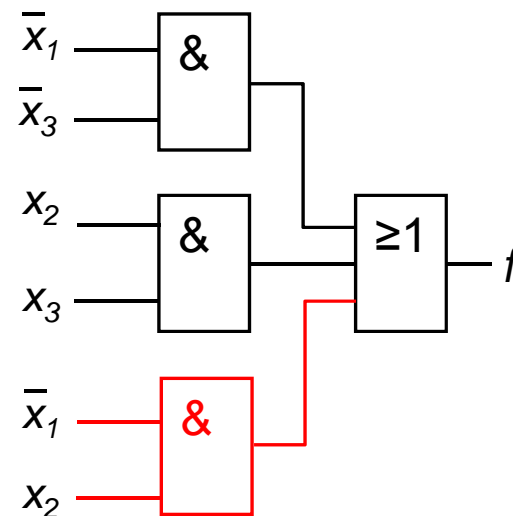


Časovni diagram: pri kateri spremembi vhodov se pojavi hazard?

Naloga 3d: Statični hazard v vezjih AND-OR oz. OR-AND:

$$f(x_1, x_2, x_3) = \sum 0, 2, 3, 7$$

		$x_1 x_2$			
		00	01	11	10
x_3	0	1	1		
	1		1	1	



Naloga 3e: Odprava hazarda:

		$x_1 x_2$			
		00	01	11	10
x_3	0	1	1		
	1		1	1	

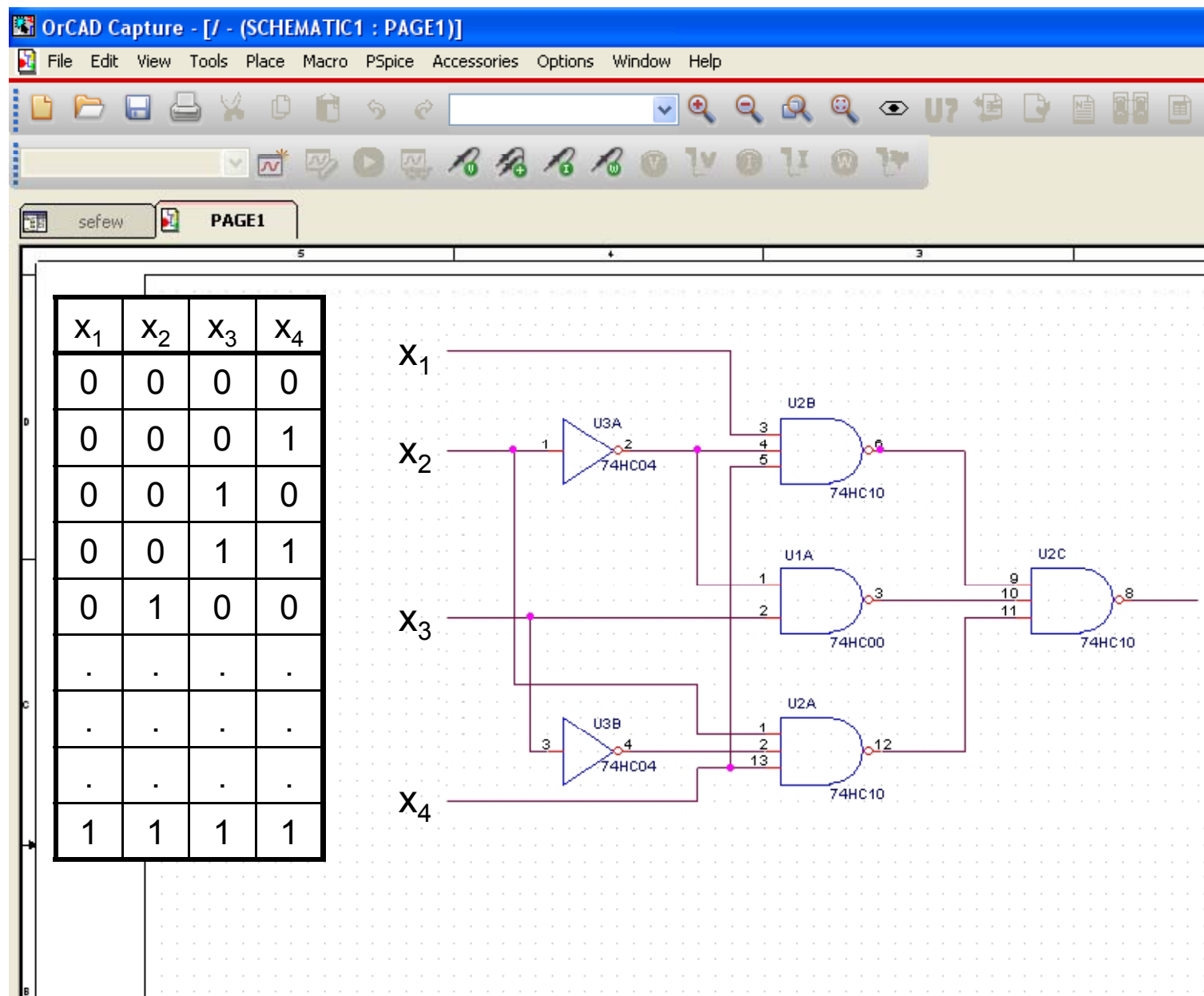
OrCAD (PSpice)

The screenshot displays the OrCAD Capture software interface. The main workspace is a grid with a vertical toolbar on the left containing various symbols and connection tools. Three arrows point from Slovenian text to specific icons in this toolbar: 'povezave' (connections) points to the top icon, 'imena povezav' (connection names) points to the 'abc' icon, and 'stičišče' (junction) points to the junction symbol icon. To the right of the toolbar, the text 'knjižnica elementov' (element library) is present. On the right side of the interface, the 'Place Part' dialog box is open, showing a search for '74HC00'. The 'Part List' contains several entries, with '74HC00' selected. Below the list, a small schematic diagram of a 74HC00 NAND gate is shown with inputs labeled '1' and '2', and output '3'. The 'Packaging' section shows 'Parts per Pkg: 4' and 'Part: A'. At the bottom right, a title block contains the following information:

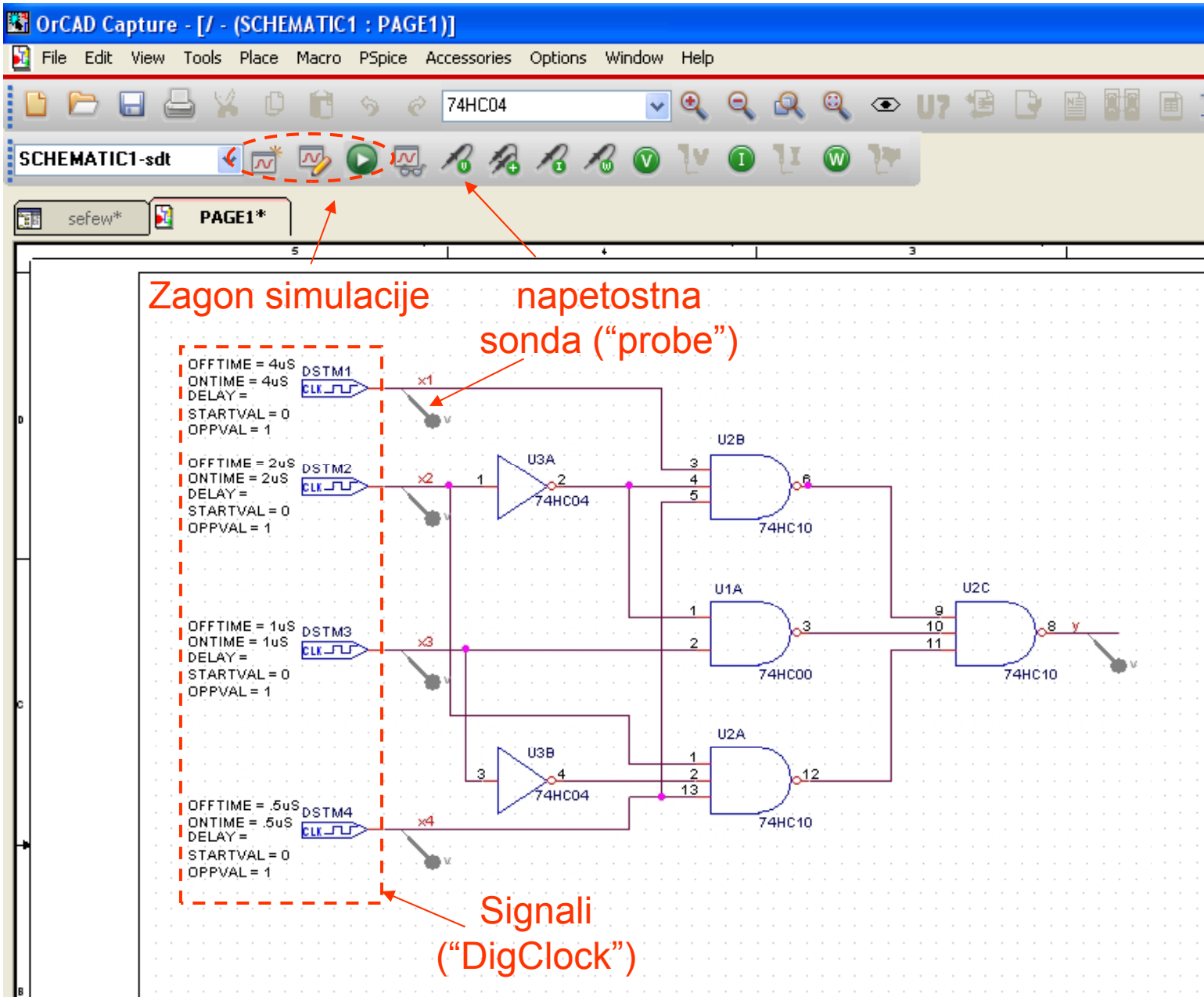
Title	<Title>	
Size	Document Number	Rev <Rev Code>
A	<Doc>	
Date:	Sunday, October 17, 2010	Sheet 1 of 1

At the bottom of the window, the status bar shows '0 items selected' and 'Scale=106% X=3.50 Y=3.00'.

Vezje

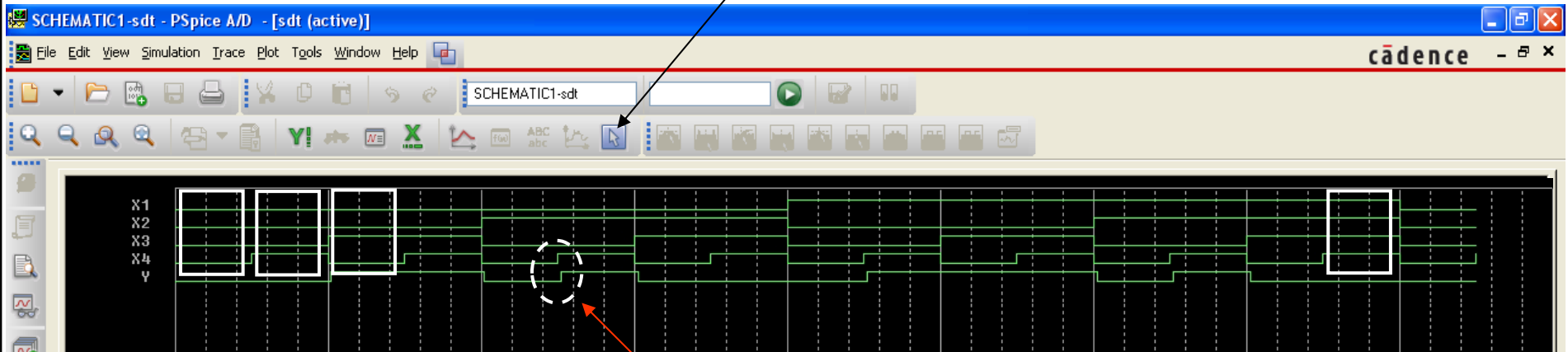


Vhodni signali in sonde



Rezultati simulacije (časovni diagram)

kurzorji



zakasnitev

X ₁	X ₂	X ₃	X ₄	y
0	0	0	0	0
0	0	0	1	0
0	0	1	0	1
.	.	.	.	
.	.	.	.	
.	.	.	.	
1	1	1	1	0

Poročilo

- ❑ Besedilo vaje
- ❑ Časovni diagram vhodnih in izhodne spremenljivke (*primerjalnik*)
- ❑ Zakasnitev na vratih NAND/NOR
- ❑ Časovni diagram izhodne funkcije vezja s hazardom