

## Appendix

### A Test cases

There are six test cases of increasing sizes and based on four different NoC topologies, respectively named N1, N2, N3, N4. The problems were proposed by Dafali [7] as representatives of concrete real-life applications. The instances are detailed by Figures 2-7. Four parameters characterize each instance. They are the cycle T, the number N of routers, the number P of IP components, and the number K of messages.

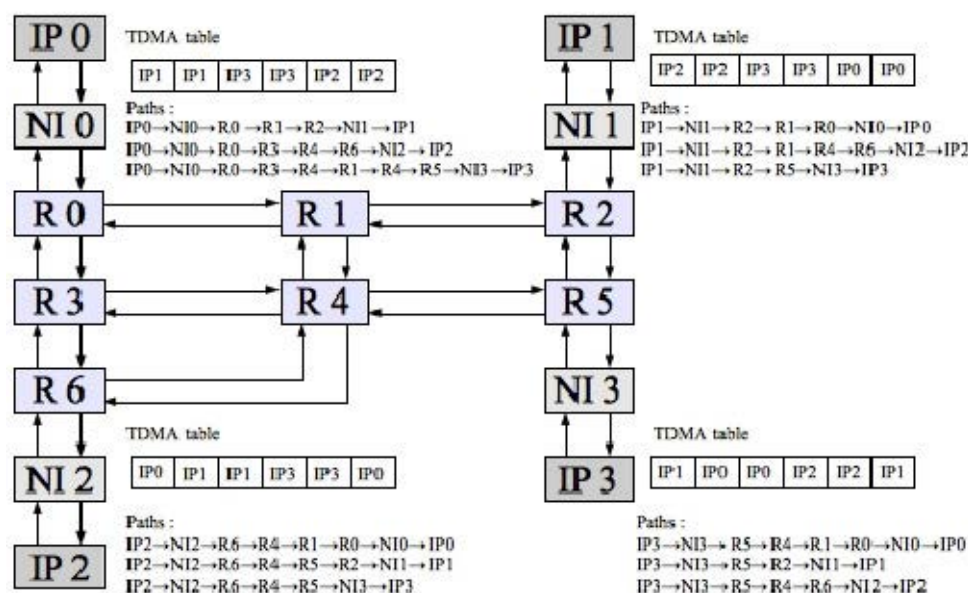


Figure 2: Test case N1, with T = 6, N = 7, P = 4, K = 12

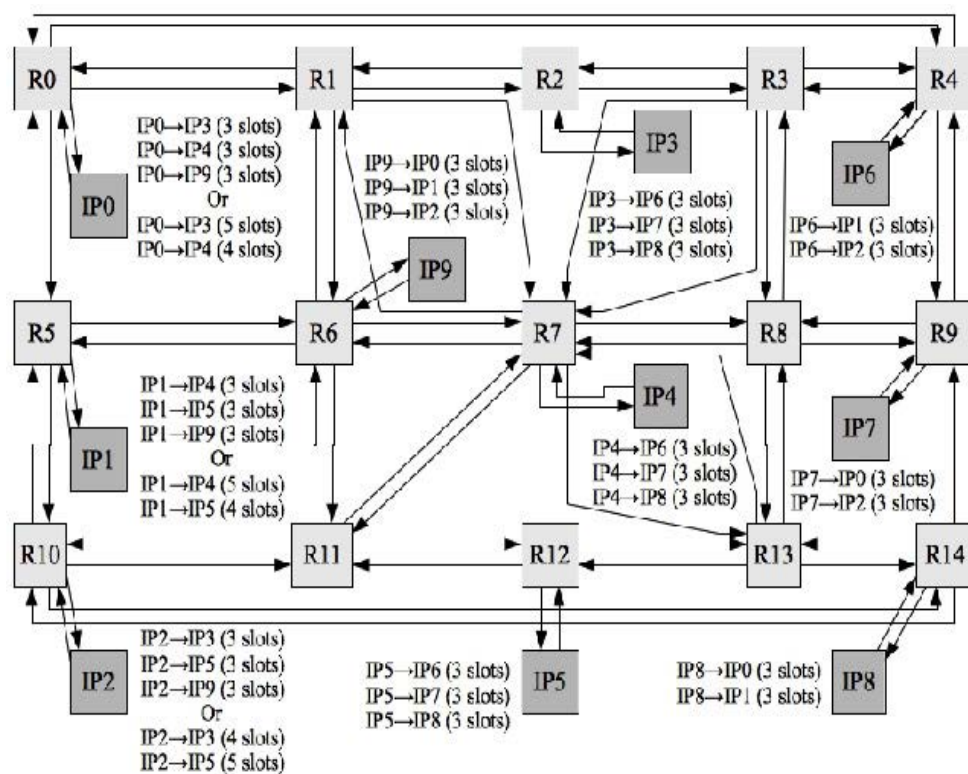
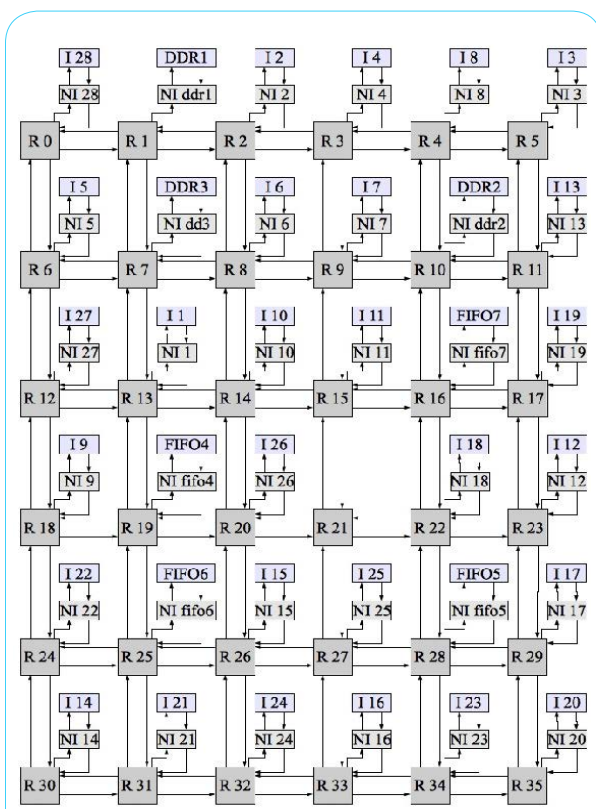
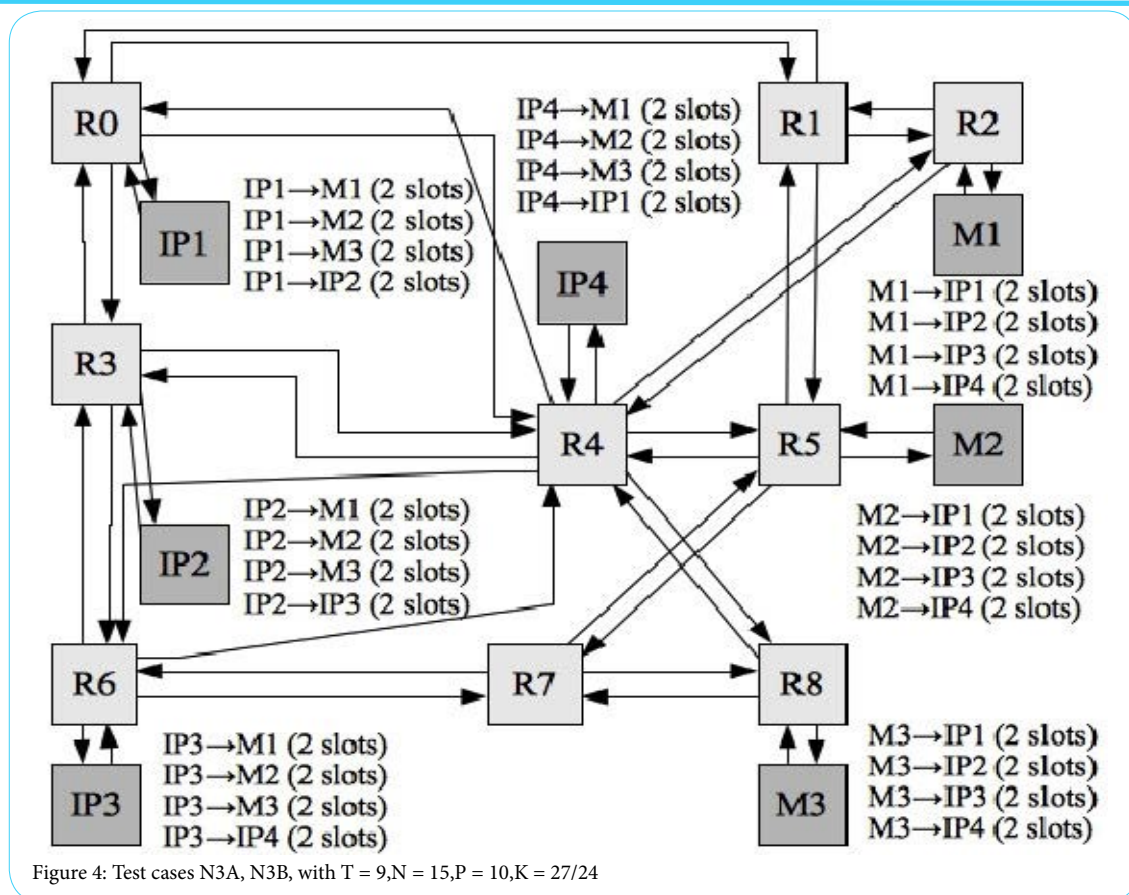


Figure 3: Test case N2, with T = 8, N = 9, P = 7, K = 28



	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10	I11	I12	I13	I14	I15	I16	I17	I18	I19	I20	I21	I22	I23	I24	I25
I1																									
I2																									
I3																									
I4																									
I5																									
I6																									
I7																									
I8																									
I9																									
I10																									
I11																									
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I19																									
I20																									
I21																									
I22																									
I23																									
I24																									
I25																									
I26																									
I27																									
I28																									
DDR1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
DDR2	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
DDR3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
FIFO4	2																								
FIFO5																									
FIFO6																									
FIFO7	2																								
	10	6	7	6	6	4	5	14	8	10	8	10	6	12	12	12	12	12	12	4	4	6	6	8	6

Figure 6: Message specifications for test case N4.

I26	I27	I28	DDR1	DDR2	DDR3	FIFO4	FIFO5	FIFO6	FIFO7	
			2	2	2	2			2	10
			2	2	2					6
			2	2	2					6
			2	2	2					6
			2	2	2					6
			2		2					4
			2	2	2					6
			2	2	2					6
			2	2	2	2				8
			2	2	2	2			2	10
			2	2	2				2	8
			2	2	2	2			2	10
			2	2	2					6
			2	2	2	2		2	2	12
			2	2	2	2		2	2	12
			2	2	2	2	2		2	12
			2	2	2	2	2		2	12
			2	2	2	2		2	2	12
			2	2	2	2	2		2	12
							2		2	4
								2	2	4
						2		2	2	6
						2	2		2	6
						2		2	2	6
						2	2		2	6
						2			2	4
						2			2	4
			2	2	2					6
		2								38
		2								41
		2								41
2	2									32
										12
										12
2	2									36
4	4	6	40	38	40	32	12	12	36	

Figure 7: Message specifications for test case N4 (end)