Detailed tables with results

Detailed results for the scenario with non-artificial model and standard requirements is shown in Table 1. Similar extended results are available for artificial model and standard requirements in Table 2, and for artificial model with artificial requirements in Table 3.

Table 1: Detailed results for non-artificial model, standard requirements. In each cell, first the number of successful falsifications out of the total attempts is shown. In the parentheses, the first number is the average falsification index for the falsified runs, and it is colored green only if all successful falsifications happened in the (adaptive) corners phase. The second (red) number inside parentheses is the average robustness for the non-falsified runs.

	Base		Hard	
	Corners-R	MRF	Corners-R	MRF
Avg. $False(T, R)$	14.9 / 16	**15.5 / 16**	12.8 / 16	**13.1 / 16**
Avg. $Cover(T, R)$	**19.0 / 19**	**19.0 / 19**	**16.9 / 19**	16.8 / 19
Avg. $HitRate(T, R)$	29.9 / 35	**30.4 / 35**	26.8 / 35	**27.0 / 35**
Avg. #sim	**546.0**	575.2	**829.9**	891.9
Avg. #sim (successful)	**137.0**	262.3	**186.9**	267.3
ADA_act	0/10 (-, 0.042996)	0/10 (-, 0.042996)	0/10 (-, 0.0072267)	0/10 (-, 0.010327)
ADA_req	10/10 (34.0, -)	10/10 (34.0, -)	9/10 (944.0, 2.963e-05)	9/10 (1020.3, 0.00012172)
ADI_act1	0/10 (-, 0.0051787)	0/10 (-, 0.0051787)	0/10 (-, 0.0051787)	0/10 (-, 0.021548)
ADI_act2	10/10 (5.0, -)	10/10 (5.0, -)	10/10 (5.0, -)	10/10 (5.0, -)
ADI_act3	10/10 (6.0, -)	10/10 (6.0, -)	10/10 (6.0, -)	10/10 (6.0, -)
ADI_req	10/10 (6.0, -)	10/10 (6.0, -)	10/10 (6.0, -)	10/10 (6.0, -)
AFE_act	10/10 (161.4, -)	9/10 (86.4, 0.093985)	10/10 (319.1, -)	10/10 (151.1, -)
AFE_req	10/10 (158.4, -)	10/10 (86.3, -)	10/10 (409.3, -)	10/10 (302.0, -)
AOT_act	10/10 (5.0, -)	10/10 (5.0, -)	10/10 (5.0, -)	10/10 (5.0, -)
AOT_req	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (3.0, -)	10/10 (3.0, -)
ARCH_AT1_act	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)
ARCH_AT1_req	10/10 (3.0, -)	10/10 (3.0, -)	0/10 (-, 0.011515)	0/10 (-, 0.011515)
ARCH_AT2_act	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)
ARCH_AT2_req	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)
ARCH_AT51_act	10/10 (1264.6, -)	10/10 (1367.3, -)	10/10 (1264.6, -)	9/10 (1140.6, 0.033333)
ARCH_AT51_req	1/10 (2709.0, 0.0072117)	5/10 (1732.4, 0.0072116)	1/10 (2709.0, 0.0072117)	4/10 (1569.0, 0.0072116)
ARCH_AT52_act	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)
ARCH_AT52_req	10/10 (5.0, -)	10/10 (5.0, -)	10/10 (5.0, -)	10/10 (5.0, -)
ARCH_AT53_act	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)
ARCH_AT53_req	10/10 (5.0, -)	10/10 (5.0, -)	10/10 (5.0, -)	10/10 (5.0, -)
ARCH_AT54_act	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)
ARCH_AT54_req	10/10 (872.6, -)	10/10 (607.0, -)	10/10 (872.6, -)	10/10 (700.2, -)
ARCH_AT6a_act	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)
ARCH_AT6a_req	10/10 (537.1, -)	10/10 (451.1, -)	10/10 (537.1, -)	10/10 (423.1, -)
ARCH_AT6b_act	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)
ARCH_AT6b_req	8/10 (1151.6, 0.0039796)	10/10 (1294.0, -)	8/10 (1151.6, 0.0039796)	8/10 (841.3, 0.0024379)
ARCH_AT6c_act	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)
ARCH_AT6c_req	10/10 (596.6, -)	10/10 (653.2, -)	10/10 (596.6, -)	10/10 (779.9, -)
ASL_act	0/10 (-, 0)	0/10 (-, 0)	0/10 (-, 0)	0/10 (-, 0)
ASL_req	10/10 (3.0, -)	10/10 (3.0, -)	10/10 (3.0, -)	10/10 (3.0, -)
BTL_act1	0/10 (-, 0.002218)	0/10 (-, 0.002218)	0/10 (-, 0.0018417)	0/10 (-, 0.0015919)
BTL_act2	10/10 (1.0, -)	10/10 (1.0, -)	0/10 (-, 0.027852)	0/10 (-, 0.027074)
BTL_req	10/10 (1.0, -)	10/10 (1.0, -)	0/10 (-, 0.00012464)	0/10 (-, 8.7268e-05)
RFC_act	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)
RFC_req	10/10 (318.3, -)	10/10 (368.0, -)	10/10 (318.3, -)	10/10 (340.0, -)

Table 2: Detailed results for artificial model, standard requirements. In each cell, first the number of successful falsifications out of the total attempts is shown. In the parentheses, the first number is the average falsification index for the falsified runs, and it is colored green only if all successful falsifications happened in the (adaptive) corners phase. The second (red) number inside parentheses is the average robustness for the non-falsified runs.

	Base		Hard	
	Corners-R	MRF	Corners-R	MRF
Avg. $False(T, R)$	**23.9 / 32**	**23.9 / 32**	18.3 / 32	**19.3 / 32**
Avg. $Cover(T, R)$	**32.7 / 38**	32.4 / 38	26.5 / 38	**27.1 / 38**
Avg. $HitRate(T, R)$	**52.2 / 70**	50.7 / 70	41.7 / 70	**42.2 / 70**
Avg. #sim	**1091.1**	1199.9	**1426.6**	1510.0
Avg. #sim (successful)	**478.9**	622.6	**377.6**	732.7
ADA_act	10/10 (269.7, -)	7/10 (106.7, 0.004314)	0/10 (-, 0.008227)	0/10 (-, 0.0092525)
ADA_req	10/10 (270.3, -)	10/10 (218.2, -)	9/10 (1468.8, 2.8948e-05)	7/10 (1180.4, 4.6214e-05)
ADI_act1	10/10 (267.6, -)	7/10 (101.1, 0.01843)	10/10 (267.6, -)	7/10 (101.1, 0.01843)
ADI_act2	10/10 (331.7, -)	0/10 (-, 0.041899)	10/10 (331.7, -)	0/10 (-, 0.041899)
ADI_act3	10/10 (264.6, -)	10/10 (84.7, -)	10/10 (264.6, -)	10/10 (84.7, -)
ADI_req	10/10 (266.3, -)	10/10 (92.1, -)	10/10 (266.3, -)	10/10 (92.1, -)
AFE_act	10/10 (277.9, -)	9/10 (144.6, 0.201)	10/10 (355.3, -)	10/10 (906.6, -)
AFE_req	10/10 (271.7, -)	10/10 (137.1, -)	10/10 (467.3, -)	10/10 (1004.0, -)
AOT_act	0/10 (-, 4.2627)	0/10 (-, 4.2627)	0/10 (-, 4.2627)	0/10 (-, 4.2627)
AOT_req	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (3.0, -)	10/10 (3.0, -)
ARCH_AT1_act	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)
ARCH_AT1_req	10/10 (3.0, -)	10/10 (3.0, -)	0/10 (-, 0.011515)	0/10 (-, 0.011515)
ARCH_AT2_act	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)
ARCH_AT2_req	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)
ARCH_AT51_act	7/10 (1125.0, 0.033333)	8/10 (1407.4, 0.033333)	7/10 (1125.0, 0.033333)	10/10 (1669.2, -)
ARCH_AT51_req	0/10 (-, 0.0072117)	6/10 (1813.2, 0.0072116)	0/10 (-, 0.0072117)	6/10 (1899.2, 0.0072117)
ARCH_AT52_act	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)
ARCH_AT52_req	10/10 (263.4, -)	10/10 (126.7, -)	10/10 (263.4, -)	10/10 (126.7, -)
ARCH_AT53_act	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)
ARCH_AT53_req	10/10 (264.7, -)	10/10 (84.8, -)	10/10 (264.7, -)	10/10 (84.8, -)
ARCH_AT54_act	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)
ARCH_AT54_req	10/10 (958.1, -)	10/10 (1295.5, -)	10/10 (958.1, -)	10/10 (1241.9, -)
ARCH_AT6a_act	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)
ARCH_AT6a_req	10/10 (652.3, -)	10/10 (1003.7, -)	10/10 (652.3, -)	10/10 (946.9, -)
ARCH_AT6b_act	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)
ARCH_AT6b_req	8/10 (1283.6, 0.0026747)	9/10 (1785.6, 0.00028875)	8/10 (1283.6, 0.0026747)	9/10 (1662.7, 0.0001614)
ARCH_AT6c_act	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)
ARCH_AT6c_req	10/10 (771.0, -)	10/10 (1162.1, -)	10/10 (771.0, -)	10/10 (1215.5, -)
ASL_act	0/10 (-, 0.00019197)	0/10 (-, 0.00019197)	0/10 (-, 0.00019197)	0/10 (-, 0.00019197)
ASL_req	10/10 (3.0, -)	10/10 (3.0, -)	10/10 (3.0, -)	10/10 (3.0, -)
BTL_act1	0/10 (-, 0.0035134)	0/10 (-, 0.0035134)	0/10 (-, 0.001887)	0/10 (-, 0.0017339)
BTL_act2	10/10 (1.0, -)	10/10 (1.0, -)	0/10 (-, 0.03386)	0/10 (-, 0.027305)
BTL_req	10/10 (1.0, -)	10/10 (1.0, -)	0/10 (-, 8.1277e-05)	0/10 (-, 0.0001162)
RFC_act	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)	10/10 (2.0, -)
RFC_req	10/10 (485.9, -)	10/10 (855.8, -)	10/10 (485.9, -)	10/10 (855.8, -)

Table 3: Detailed results for non-artificial model, standard requirements. In each cell, first the number of successful falsifications out of the total attempts is shown. In the parentheses, the first number is the average falsification index for the falsified runs, and it is colored green only if all successful falsifications happened in the (adaptive) corners phase. The second (red) number inside parentheses is the average robustness for the non-falsified runs. Note that infinite (Inf) robustness values show up in some cases where there are requirements with discrete-valued signals inside predicates, and these requirements are never falsified. The "truth" value of a discrete-valued predicate is defined as infinite in our implementation, and this infinite value can in certain cases propagate to the top-level robustness value of the entire requirement.

	Base		Hard	
	Corners-R	MRF	Corners-R	MRF
Avg. $False(T,R)$	**23.9 / 32**	**23.9 / 32**	18.3 / 32	**19.3 / 32**
Avg. $Cover(T,R)$	**32.7 / 38**	32.4 / 38	26.5 / 38	**27.1 / 38**
Avg. $HitRate(T,R)$	**52.2 / 70**	50.7 / 70	41.7 / 70	**42.2 / 70**
Avg. #sim	**1091.1**	1199.9	**1426.6**	1510.0
Avg. #sim (successful)	**478.9**	622.6	**377.6**	732.7
ADA_act_art	7/10 (996.1, 0.014876)	9/10 (1327.6, 0.046301)	0/10 (-, 0.021191)	0/10 (-, 0.016632)
ADA_req_art	9/10 (1370.4, 1.3491e-05)	7/10 (1200.6, 0.010297)	0/10 (-, 0.0013309)	0/10 (-, 0.0015528)
ADI_act1_art	0/10 (-, 1.2465)	2/10 (1903.5, 1.0076)	0/10 (-, 1.2465)	1/10 (1125.0, 1.4805)
ADI_act2_art	0/10 (-, 0.61825)	0/10 (-, 0.82725)	0/10 (-, 0.61825)	0/10 (-, 0.80138)
ADI_act3_art	0/10 (-, 1.0927)	2/10 (1127.5, 2.5751)	0/10 (-, 1.0927)	3/10 (1581.7, 2.4997)
ADI_req_art	0/10 (-, 0.85637)	0/10 (-, 0.80127)	0/10 (-, 0.85637)	0/10 (-, 0.82475)
AFE_act_art	6/10 (944.3, 0.074134)	7/10 (1531.1, 0.16513)	0/10 (-, 0.12028)	3/10 (1937.7, 0.10819)
AFE_req_art	8/10 (1177.4, 0.0052903)	8/10 (1462.5, 0.0058938)	0/10 (-, 0.0016005)	2/10 (1641.0, 0.0020288)
AOT_act_art	5/10 (1826.6, 0.37302)	6/10 (1928.8, 3.4127)	5/10 (1826.6, 0.37302)	5/10 (1976.0, 0.52909)
AOT_req_art	10/10 (1135.6, -)	10/10 (1181.0, -)	0/10 (-, 0.073831)	0/10 (-, 0.077408)
ARCH_AT1_act_art	7/10 (1491.9, 0.0051079)	5/10 (1127.8, 0.0037754)	7/10 (1491.9, 0.0051079)	6/10 (1326.8, 0.010124)
ARCH_AT1_req_art	0/10 (-, 0.015041)	0/10 (-, 0.015092)	0/10 (-, 0.018536)	0/10 (-, 0.020338)
ARCH_AT2_act_art	10/10 (552.6, -)	10/10 (1225.4, -)	10/10 (552.6, -)	10/10 (1187.2, -)
ARCH_AT2_req_art	10/10 (1291.3, -)	4/10 (1528.5, 0.017043)	10/10 (1291.3, -)	8/10 (1966.6, 0.024951)
ARCH_AT51_act_art	0/10 (-, Inf)	0/10 (-, Inf)	0/10 (-, Inf)	1/10 (1846.0, 6.3492)
ARCH_AT51_req_art	0/10 (-, Inf)	0/10 (-, Inf)	0/10 (-, Inf)	0/10 (-, Inf)
ARCH_AT52_act_art	10/10 (336.8, -)	10/10 (992.3, -)	10/10 (336.8, -)	10/10 (980.2, -)
ARCH_AT52_req_art	10/10 (693.8, -)	10/10 (1209.3, -)	10/10 (693.8, -)	10/10 (1126.0, -)
ARCH_AT53_act_art	10/10 (336.8, -)	10/10 (992.3, -)	10/10 (336.8, -)	10/10 (980.2, -)
ARCH_AT53_req_art	10/10 (485.3, -)	10/10 (992.8, -)	10/10 (485.3, -)	10/10 (980.7, -)
ARCH_AT54_act_art	10/10 (336.8, -)	10/10 (992.3, -)	10/10 (336.8, -)	10/10 (980.2, -)
ARCH_AT54_req_art	10/10 (838.0, -)	10/10 (1068.2, -)	10/10 (838.0, -)	10/10 (1077.3, -)
ARCH_AT6a_act_art	10/10 (388.1, -)	10/10 (223.9, -)	10/10 (388.1, -)	10/10 (223.9, -)
ARCH_AT6a_req_art	0/10 (-, 0.063671)	0/10 (-, 0.044303)	0/10 (-, 0.063671)	1/10 (1395.0, 0.043261)
ARCH_AT6b_act_art	10/10 (388.1, -)	10/10 (223.9, -)	10/10 (388.1, -)	10/10 (223.9, -)
ARCH_AT6b_req_art	0/10 (-, 0.058687)	0/10 (-, 0.034714)	0/10 (-, 0.058687)	1/10 (1442.0, 0.033577)
ARCH_AT6c_act_art	10/10 (388.1, -)	10/10 (223.9, -)	10/10 (388.1, -)	10/10 (223.9, -)
ARCH_AT6c_req_art	1/10 (2900.0, 0.027154)	3/10 (2057.0, 0.015172)	1/10 (2900.0, 0.027154)	4/10 (1553.3, 0.015886)
ASL_act_art	5/10 (1289.4, 6.8786e-05)	3/10 (1943.0, 1.4409e-05)	5/10 (1289.4, 6.8786e-05)	3/10 (1416.3, 7.5436e-05)
ASL_req_art	6/10 (961.5, 0.00030132)	5/10 (1739.8, 0)	6/10 (961.5, 0.00030132)	5/10 (1563.2, 0.00071773)
BTL_act1_art	10/10 (1394.0, -)	6/10 (1808.3, 0.003547)	0/10 (-, 0.0041954)	0/10 (-, 0.0031945)
BTL_act2_art	6/10 (1477.3, 1.5475)	7/10 (1766.7, 1.0652)	0/10 (-, 0.9674)	0/10 (-, 0.5164)
BTL_req_art	8/10 (1532.9, 0.0017836)	7/10 (1766.7, 0.0014763)	0/10 (-, 0.001997)	0/10 (-, 0.0014152)
RFC_act_art	10/10 (360.5, -)	10/10 (936.2, -)	10/10 (360.5, -)	10/10 (930.0, -)
RFC_req_art	9/10 (562.9, 0)	10/10 (1267.0, -)	9/10 (562.9, 0)	10/10 (1214.4, -)