Table 1: Testing cases and results on Testbeds 2∼4

	Type	Attribute/Device	#Inst	HAWatcher		HAWatcher(Apps Only)		HAWatcher(Mining Only)		OCSVM		ARM		ID
				Precision	Recall	Precision	Recall	Precision	Recall	Precision	Recall	Precision	Recall	
Testbed2	Faulty/Fake Events	motion(MS3)	50	0.91	0.78	0	0	0.91	0.78	0.08	0.44	0.09	0.22	**2.1**
		contact(C1)	50	0.96	1.00	0	0	0.96	1.00	0.16	0.28	0.09	0.14	**2.2**
		presence(PS1,PS2)	50	1.00	1.00	0	0	0.96	1.00	0.69	0.72	0	0	**2.3**
	Event Losses/Interceptions	motion(MS3)	50	0.91	0.84	0	0	0.90	0.76	0.04	0.20	0.11	0.28	**2.4**
		contact(C1)	8	0.80	1.00	0	0	0.80	1.00	0.04	0.38	0.04	0.35	**2.5**
		presence(PS1,PS2)	6	1.00	1.00	0	0	0.75	1.00	0	0	0	0	**2.6**
	Ghost Command	switch(L4):light	50	1.00	1.00	0	0	0.92	0.94	0.05	0.46	0.08	0.20	**2.7**
		switch(P1):lamp	50	0.96	0.94	0	0	0.96	0.94	0.13	0.30	0	0	**2.8**
	Stealthy Command	switch(L4):light	50	1.00	1.00	0	0	0.93	1.00	0.03	0.22	0	0	**2.9**
		switch(P1):lamp	50	0.96	1.00	0	0	0.96	1.00	0.07	0.16	0	0	**2.10**
	Command Interceptions/ Failures(cyber)	switch(L4):light	67	1.00	1.00	1.00	1.00	0.94	1.00	0.08	0.58	0.10	0.17	**2.11**
		switch(P1):lamp	16	0.89	1.00	1.00	1.00	0.89	1.00	0.08	0.56	0	0	**2.12**
	Command Failures(physical)/ Denial of Executions	switch(L4):light	67	1.00	1.00	0	0	0.94	1.00	0.04	0.28	0	0	**2.13**
		switch(P1):lamp	16	0.89	1.00	0	0	0.89	1.00	0.06	0.38	0	0	**2.14**
Testbed3	Faulty/Fake Events	motion(MS1)	50	0.88	0.84	0	0	0.88	0.84	0.21	0.56	0.26	0.32	**3.1**
		contact(C1)	50	0.96	1.00	0	0	0.96	1.00	0.44	0.58	0.24	0.20	**3.2**
		presence(PS)	50	0.96	1.00	0	0	0.96	1.00	0.79	0.44	0	0	**3.3**
	Event Losses/Interceptions	motion(MS1)	50	0.86	0.72	0	0	0.86	0.72	0.07	0.16	0.22	0.26	**3.4**
		contact(C1)	15	0.88	1.00	0	0	0.88	1.00	0.12	0.33	0.14	0.33	**3.5**
		presence(PS)	9	0.82	1.00	0	0	0.69	1.00	0.54	0.78	0	0	**3.6**
	Ghost Command	switch(L1):light	50	0.98	1.00	0	0	0.96	1.00	0.53	0.42	0.23	0.06	**3.7**
		switch(P1):computer	50	1.00	1.00	0	0	1.00	1.00	0.61	0.44	0	0	**3.8**
	Stealthy Command	switch(L1):light	50	0.98	1.00	0	0	0.96	1.00	0.21	0.10	0	0	**3.9**
		switch(P1):computer	50	1.00	0.76	0	0	1.00	0.76	0.42	0.20	0	0	**3.10**
	Command Interceptions/ Failures(cyber)	switch(L1):light	5	0.83	1.00	1.00	1.00	0.71	1.00	0.14	0.60	0.29	0.80	**3.11**
		switch(P1):computer	3	1.00	1.00	1.00	1.00	1.00	1.00	0.13	0.67	0	0	**3.12**
	Command Failures(physical)/ Denial of Executions	switch(L1):light	5	0.83	1.00	0	0	0.71	1.00	0.10	0.40	0	0	**3.13**
		switch(P1):computer	4	1.00	0.75	0	0	1.00	0.75	0.07	0.25	0	0	**3.14**
Testbed4	Faulty/Fake Events	motion(MS1)	50	0.94	1.00	0	0	0.94	1.00	0.28	0.62	0.19	0.28	**4.1**
		contact(C1)	50	0.96	1.00	0	0	0.94	1.00	0.30	0.28	0	0	**4.2**
		presence(PS)	50	1.00	1.00	0	0	1.00	1.00	0.69	0.22	0	0	**4.3**
	Event Losses/Interceptions	motion(MS1)	24	0.88	1.00	0	0	0.89	1.00	0.18	0.75	0.16	0.46	**4.4**
		contact(C1)	17	0.88	1.00	0	0	0.85	1.00	0.25	0.65	0	0	**4.5**
		presence(PS)	5	1.00	1.00	0	0	1.00	1.00	0.29	0.40	0	0	**4.6**
	Ghost Command	switch(P1):lamp	50	1.00	1.00	0	0	1.00	1.00	0.54	0.68	0	0	**4.7**
	Stealthy Command	switch(P1):lamp	50	1.00	1.00	0	0	1.00	1.00	0.29	0.24	0	0	**4.7**
	Command Interceptions/ Failures(cyber)	switch(P1):lamp	5	1.00	1.00	1.00	1.00	1.00	1.00	0.06	0.40	0	0	**4.9**
	Command Failures(physical)/ Denial of Executions	switch(P1):lamp	5	1.00	1.00	0	0	1.00	1.00	0	0	0	0	**4.10**