Supplementary Material S4

Risk Chains - Cumulative Risk

Table S14 illustrates all the registered risk chains along with the associated Cumulative Risk.

Table S14: Cumulative Risk Contribution

	Pathway	Cumulative Risk
1	Environmental Conditions → High Susceptibility to Extreme Weather Conditions → Power Failure → Survivability	0,002521605
2	Environmental Conditions → High Susceptibility to Extreme Weather Conditions → Extreme Weather Conditions → Survivability	0,002376308
3	Environmental Conditions → High Susceptibility to Extreme Weather Conditions → Extreme Weather Conditions → Maintainability	0,00212265
4	Drone (Airborne Component) → Ineffective Power Source → Power Failure → Survivability	0,001683321
5	Drone (Airborne Component) → Ineffective Power Source → Extreme Weather Conditions → Survivability	0,001586327
6	Drone (Airborne Component) → Ineffective Power Source → Extreme Weather Conditions → Maintainability	0,001416995
7	Environmental Conditions → High Susceptibility to Extreme Weather Conditions → Power Failure → Availability	0,001344499
8	Environmental Conditions → High Susceptibility to Extreme Weather Conditions → Power Failure → Reliability	0,001344499
9	Communication Links → High Susceptibility to Extreme Weather Conditions → Power Failure → Survivability	0,001320708
10	Environmental Conditions → High Susceptibility to Extreme Weather Conditions → Extreme Weather Conditions → Reliability	0,001267028
11	Communication Links → High Susceptibility to Extreme Weather Conditions → Extreme Weather Conditions → Survivability	0,001244608
12	Environmental Conditions → High Susceptibility to Extreme Weather Conditions → Control Loss → Safety	0,001217698
13	Environmental Conditions → High Susceptibility to Extreme Weather Conditions → Unsuccessful Navigation → Safety	0,001195639
14	Communication Links → High Susceptibility to Extreme Weather Conditions → Extreme Weather Conditions → Maintainability	0,001111753
15	Environmental Conditions → High Power Consumption → Power Failure → Survivability	0,001048468
16	Drone (Airborne Component) → High Power Consumption → Power Failure → Survivability	0,001030318
17	Environmental Conditions → High Power Consumption → Extreme Weather Conditions → Survivability	0,000988055
18	Drone (Airborne Component) → High Power Consumption → Extreme Weather Conditions → Survivability	0,00097095
19	Drone (Airborne Component) → Ineffective Power Source → Power Failure → Availability	0,000897533
20	Drone (Airborne Component) → Ineffective Power Source → Power Failure → Reliability	0,000897533
21	Drone (Airborne Component) → Ineffective Power Source → Equipment Failure → Survivability	0,000886247
22	Environmental Conditions → High Power Consumption → Extreme Weather Conditions → Maintainability	0,000882585
23	Drone (Airborne Component) → High Power Consumption → Extreme Weather Conditions → Maintainability	0,000867307
24	Drone (Airborne Component) → Ineffective Power Source → Extreme Weather Conditions → Reliability	0,000845816
25	Drone (Airborne Component) → Defective Components → Equipment Failure → Survivability	0,000802574
26	Drone (Airborne Component) → Ineffective Power Source → Equipment Failure → Maintainability	0,000791645
27	Communication Links → High Susceptibility to Wireless Attacks → Collision w/ Objects → Safety	0,000752735
28	Drone (Airborne Component) → Defective Components → Equipment Failure → Maintainability	0,000716904
29	Communication Links → High Susceptibility to Extreme Weather Conditions → Power Failure → Availability	0,000704191
30	Communication Links → High Susceptibility to Extreme Weather Conditions → Power Failure → Reliability	0,000704191
31	Environmental Conditions → High Power Consumption → Wireless Attacks → Maintainability	0,000687616
32	Communication Links → High Susceptibility to Wireless Attacks → Power Failure → Survivability	0,000675912
33	Drone (Airborne Component) → High Power Consumption → Wireless Attacks → Maintainability	0,000675712
34	Communication Links → High Susceptibility to Extreme Weather Conditions → Extreme Weather Conditions → Reliability	0,000663615
35	Communication Links → High Susceptibility to Extreme Weather Conditions → Control Loss → Safety	0,000637778
36	Communication Links → High Susceptibility to Extreme Weather Conditions → Unsuccessful Navigation → Safety	0,000626224
37	Environmental Conditions → High Power Consumption → Power Failure → Availability	0,000559035
38	Environmental Conditions → High Power Consumption → Power Failure → Reliability	0,000559035
39	Drone (Airborne Component) → High Power Consumption → Power Failure → Availability	0,000549357
40	Drone (Airborne Component) → High Power Consumption → Power Failure → Reliability	0,000549357
41	Environmental Conditions → High Power Consumption → Extreme Weather Conditions → Reliability	0,000526823
42	Drone (Airborne Component) → High Power Consumption → Extreme Weather Conditions → Reliability	0,000517703
43	Environmental Conditions → High Power Consumption → Control Loss → Safety	0,000506312
44	Drone (Airborne Component) → High Power Consumption → Control Loss → Safety	0,000497547
45	Environmental Conditions → High Power Consumption → Unsuccessful Navigation → Safety	0,000497139
46	Drone (Airborne Component) → High Power Consumption → Unsuccessful Navigation → Safety	0,000488533
47	Drone (Airborne Component) → Ineffective Power Source → Equipment Failure → Availability	0,000472539
48	Communication Links → High Susceptibility to Wireless Attacks → Wireless Attacks → Maintainability	0,000443283
49	Drone (Airborne Component) → Defective Components → Equipment Failure → Availability	0,000427926
50	Communication Links → Defective Components → Equipment Failure → Survivability	0,000427759

	Pathway	Cumulative Risk
51	Environmental Conditions → High Power Consumption → Wireless Attacks → Availability	0,000410444
52	Drone (Airborne Component) → Wrong Handling → Wireless Attacks → Maintainability	0,000408405
53	Drone (Airborne Component) → High Power Consumption → Wireless Attacks → Availability	0,000403338
54	Communication Links → Defective Components → Equipment Failure → Maintainability	0,000382098
55	Communication Links → High Susceptibility to Wireless Attacks → Power Failure → Reliability	0,000360391
56	Communication Links → High Susceptibility to Wireless Attacks → Power Failure → Availability	0,000360391
57	Communication Links → High Susceptibility to Wireless Attacks → Collision w/ Objects → Maintainability	0,000357151
58	Drone Controller → Defective Components → Equipment Failure → Survivability	0,000347742
59	Environmental Conditions → High Susceptibility to Extreme Weather Conditions → Control Loss → Availability	0,000344871
60	Environmental Conditions → High Susceptibility to Extreme Weather Conditions → Unsuccessful Navigation → Availability	0,000338624
61	Environmental Conditions → High Susceptibility to Extreme Weather Conditions → Unsuccessful Navigation → Reliability	0,000338624
62	Communication Links → High Susceptibility to Wireless Attacks → Control Loss → Safety	0,000326402
63	Communication Links → High Susceptibility to Wireless Attacks → Unsuccessful Navigation → Safety	0,000320489
64	Drone Controller → Defective Components → Equipment Failure → Maintainability	0,000310622
65	Drone (Airborne Component) → Wrong Handling → Control Loss → Safety	0,000300721
66	Drone (Airborne Component) → Wrong Handling → Unsuccessful Navigation → Safety	0,000295273
67	Communication Links → High Susceptibility to Wireless Attacks → Wireless Attacks → Availability	0,000264599
68	Drone (Airborne Component) → Wrong Handling → Wireless Attacks → Availability	0,000243781
69	Communication Links → Defective Components → Equipment Failure → Availability	0,000228077
70	Operator → Lack of Expertise/Training/Skills → Collision w/ Objects → Safety	0,000220913
71	Operator → Faulty Operation → Collision w/ Objects → Safety	0,000216267
72	Communication Links → High Susceptibility to Wireless Attacks → Collision w/ Objects → Availability	0,000213187
73	Environmental Conditions → High Power Consumption → Wireless Attacks → Integrity	0,000212172
74	Drone (Airborne Component) → High Power Consumption → Wireless Attacks → Integrity	0,000208499
75	Drone Controller → Defective Components → Equipment Failure → Availability	0,000185413
76	Communication Links → High Susceptibility to Extreme Weather Conditions → Control Loss → Availability	0,000180629
77	Communication Links → High Susceptibility to Extreme Weather Conditions → Unsuccessful Navigation → Availability	0,000177357
78	Communication Links → High Susceptibility to Extreme Weather Conditions → Unsuccessful Navigation → Reliability	0,000177357
79	Drone Controller → Wrong Handling → Wireless Attacks → Maintainability	0,000176955
80	Environmental Conditions → High Power Consumption → Wireless Attacks → Confidentiality	0,000147989
81	Drone (Airborne Component) → High Power Consumption → Wireless Attacks → Confidentiality	0,000145427
82	Environmental Conditions → High Power Consumption → Control Loss → Availability	0,000143396
83	Operator → Wrong Handling → Wireless Attacks → Maintainability	0,000143279
84	Area of Operations → Adversarial Actions → Collision w/ Objects → Safety	0,000143205
85	Drone (Airborne Component) → High Power Consumption → Control Loss → Availability	0,000140913
86	Environmental Conditions → High Power Consumption → Unsuccessful Navigation → Availability	0,000140798
87	Environmental Conditions → High Power Consumption → Unsuccessful Navigation → Reliability	0,000140798
88	Drone (Airborne Component) → High Power Consumption → Unsuccessful Navigation → Availability	0,00013836
89	Drone (Airborne Component) → High Power Consumption → Unsuccessful Navigation → Reliability	0,00013836
90	Communication Links → High Susceptibility to Wireless Attacks → Wireless Attacks → Integrity	0,00013678
91	Drone Controller → Wrong Handling → Control Loss → Safety	0,000130297
92	Drone Controller → Wrong Handling → Unsuccessful Navigation → Safety	0,000127937
93	Drone (Airborne Component) → Wrong Handling → Wireless Attacks → Integrity	0,000126018
94	Drone Controller → Wrong Handling → Wireless Attacks → Availability	0,000105626
95	Operator → Wrong Handling → Control Loss → Safety	0,0001055
96	Operator → Lack of Expertise/Training/Skills → Collision w/ Objects → Maintainability	0,000104817
97	Operator → Wrong Handling → Unsuccessful Navigation → Safety	0,000103589
98	Operator → Faulty Operation → Collision w/ Objects → Maintainability	0,000102612
99	Regulations/Policies → Lack or Violation of Policies/Regulations → Collision w/ Objects → Safety	9,70881E-05
100	Operator → Lack of Expertise/Training/Skills → Control Loss → Safety	9,57928E-05
101	Communication Links → High Susceptibility to Wireless Attacks → Wireless Attacks → Confidentiality	9,54033E-05
102	Operator → Lack of Expertise/Training/Skills → Unsuccessful Navigation → Safety	9,40574E-05
103	Operator → Faulty Operation → Control Loss → Safety	9,3778E-05
104	Communication Links → High Susceptibility to Wireless Attacks → Control Loss → Availability	9,24422E-05
105	Operator → Faulty Operation → Unsuccessful Navigation → Safety	9,20792E-05
106	Communication Links → High Susceptibility to Wireless Attacks → Unsuccessful Navigation → Availability	9,07675E-05
107	Communication Links → High Susceptibility to Wireless Attacks → Unsuccessful Navigation → Reliability	9,07675E-05
108	Drone (Airborne Component) → Wrong Handling → Wireless Attacks → Confidentiality	8,7897E-05
109	Operator → Wrong Handling → Wireless Attacks → Availability	8,55242E-05
110	Drone (Airborne Component) → Wrong Handling → Control Loss → Availability	8,51689E-05
111	Drone (Airborne Component) → Wrong Handling → Unsuccessful Navigation → Availability	8,3626E-05
112	Drone (Airborne Component) → Wrong Handling → Unsuccessful Navigation → Reliability	8,3626E-05

	Pathway	Cumulative Risk
113	Area of Operations → Adversarial Actions → Collision w/ Objects → Maintainability	6,79465E-05
114	Operator → Lack of Expertise/Training/Skills → Collision w/ Objects → Availability	6,25662E-05
115	Operator → Faulty Operation → Collision w/ Objects → Availability	6,12503E-05
116	Area of Operations → Adversarial Actions → Unsuccessful Navigation → Safety	6,09717E-05
117	Drone Controller → Wrong Handling → Wireless Attacks → Integrity	5,46015E-05
118	Regulations/Policies → Lack or Violation of Policies/Regulations → Collision w/ Objects → Maintainability	4,60655E-05
119	Operator → Wrong Handling → Wireless Attacks → Integrity	4,42102E-05
120	Regulations/Policies → Lack or Violation of Policies/Regulations → Control Loss → Safety	4,20995E-05
121	Area of Operations → Adversarial Actions → Collision w/ Objects → Availability	4,05578E-05
122	Area of Operations → Adversarial Actions → Unauthorised Access → Maintainability	3,94976E-05
123	Drone Controller → Wrong Handling → Wireless Attacks → Confidentiality	3,80843E-05
124	Drone Controller → Wrong Handling → Control Loss → Availability	3,69023E-05
125	Drone Controller → Wrong Handling → Unsuccessful Navigation → Availability	3,62338E-05
126	Drone Controller → Wrong Handling → Unsuccessful Navigation → Reliability	3,62338E-05
127	Operator → Wrong Handling → Wireless Attacks → Confidentiality	3,08364E-05
128	Operator → Wrong Handling → Control Loss → Availability	2,98793E-05
129	Operator → Wrong Handling → Unsuccessful Navigation → Availability	2,93381E-05
130	Operator → Wrong Handling → Unsuccessful Navigation → Reliability	2,93381E-05
131	Regulations/Policies → Lack or Violation of Policies/Regulations → Collision w/ Objects → Availability	2,74969E-05
132	Operator → Lack of Expertise/Training/Skills → Control Loss → Availability	2,713E-05
133	Regulations/Policies → Lack or Violation of Policies/Regulations → Unauthorised Access → Maintainability	2,6778E-05
134	Operator → Lack of Expertise/Training/Skills → Unsuccessful Navigation → Availability	2,66385E-05
135	Operator → Lack of Expertise/Training/Skills → Unsuccessful Navigation → Reliability	2,66385E-05
136	Operator → Faulty Operation → Control Loss → Availability	2,65594E-05
137	Operator → Faulty Operation → Unsuccessful Navigation → Availability	2,60783E-05
138	Operator → Faulty Operation → Unsuccessful Navigation → Reliability	2,60783E-05
139	Area of Operations → Adversarial Actions → Unauthorised Access → Availability	2,35764E-05
140	Area of Operations → Adversarial Actions → Unsuccessful Navigation → Availability	1,72681E-05
141	Area of Operations → Adversarial Actions → Unsuccessful Navigation → Reliability	1,72681E-05
142	Regulations/Policies → Lack or Violation of Policies/Regulations → Unauthorised Access → Availability	1,5984E-05
143	Area of Operations → Adversarial Actions → Unauthorised Access → Integrity	1,21874E-05
144	Regulations/Policies → Lack or Violation of Policies/Regulations → Control Loss → Availability	1,19232E-05
145	Area of Operations → Adversarial Actions → Unauthorised Access → Confidentiality	8,50066E-06
146	Regulations/Policies → Lack or Violation of Policies/Regulations → Unauthorised Access → Integrity	8,26267E-06
147	Regulations/Policies → Lack or Violation of Policies/Regulations → Unauthorised Access → Confidentiality	5,76317E-06