Supplementary Material S5

Pair-wise Comparison Matrices

Tables S15 to S18 illustrate the pairwise comparison matrices for the site-monitoring scenario.

Table S15. 2nd Layer – Pairwise Comparison Matrix

ASSETS	Airborne Component	Ground Control Station	Communication Links	Regulations/ Policies	Environmental Conditions	Operator	Area of Operations
Airborne Component	1,00	3,00	2,00	4,00	2,00	2,00	4,00
Ground Control Station	0,33	1,00	1,00	3,00	3,00	0,50	3,00
Communication Links	0,50	1,00	1,00	3,00	2,00	0,50	3,00
Regulations Policies	0,25	0,33	0,33	1,00	0,33	0,33	1,00
Environmental Conditions	0,50	0,33	0,50	3,00	1,00	0,33	3,00
Operator	0,50	2,00	2,00	3,00	3,00	1,00	3,00
Area of Operations	0,25	0,33	0,33	1,00	0,33	0,33	1,00

Table S16. 3rd Layer – Pairwise Comparison Matrix

VULNERABILITITES	Ineffective power source	High power consumption	Defective components	Wrong Handling	Susceptibility to wireless attacks	Susceptibility to Weather Conditions	Lack or Violation policies/regulations	Faulty Operation	Lack of Expertise/Training/Skills	Susceptibility to Adversarial Actions
Ineffective power source	1,00	3,00	1,00	3,00	3,00	2,00	3,00	3,00	1,00	3,00
High power consumption	0,33	1,00	2,00	3,00	3,00	2,00	3,00	3,00	2,00	4,00
Defective components	1,00	0,50	1,00	3,00	2,00	2,00	3,00	3,00	0,50	3,00
Wrong Handling	0,33	0,33	0,33	1,00	2,00	2,00	3,00	1,00	1,00	2,00
Susceptibility to wireless attacks	0,33	0,33	0,50	0,50	1,00	0,50	1,00	0,33	0,33	1,00
Susceptibility to Weather Conditions	0,50	0,50	0,50	0,50	2,00	1,00	3,00	0,50	0,33	2,00
Lack or Violation policies/regulations	0,33	0,33	0,33	0,33	1,00	0,33	1,00	0,33	0,33	1,00
Faulty Operation	0,33	0,33	0,33	1,00	3,00	2,00	3,00	1,00	1,00	3,00
Lack of Expertise/Training/Skills	1,00	0,50	2,00	1,00	3,00	3,00	3,00	1,00	1,00	3,00
Susceptibility to Adversarial Actions	0,33	0,25	0,33	0,50	1,00	0,50	1,00	0,33	0,33	1,00

Table S17. 4th Layer – Pairwise Comparison Matrix

THREATS	Power Failure	Equipment Failure	Control Loss	Wireless Attack	Extreme Weather Conditions	Collision w/ Objects	Unsuccessful Navigation	Physical Attacks
Power Failure	1	1,00	3,00	3,00	3,00	2,00	1,00	4,00
Equipment Failure	1,00	1	0,50	3,00	2,00	1,00	0,50	2,00
Control Loss	0,33	2,00	1	3,00	3,00	0,50	0,50	3,00
Wireless Attack	0,33	0,33	0,33	1	2,00	0,50	0,33	1,00
Extreme Weather Conditions	0,33	0,50	0,33	0,50	1	0,50	0,33	2,00
Collision w/ Objects	0,50	1,00	2,00	2,00	2,00	1	0,50	3,00
Unsuccessful Navigation	1,00	2,00	2,00	3,00	3,00	2,00	1	2,00
Physical Attacks	0,25	0,50	0,33	1,00	0,50	0,33	0,50	1

Table S18. 5th Layer – Pairwise Comparison Matrix

REQUIREMENTS	Confidentiality	Integrity	Availability	Safety	Reliability	Maintainability	Survivability
Confidentiality	1	0,50	0,25	0,25	0,33	0,25	0,25
Integrity	2,00	1	0,33	0,25	0,25	0,25	0,33
Availability	4,00	3,00	1	0,50	1,00	0,50	0,33
Safety	4,00	4,00	2,00	1	3,00	3,00	2,00
Reliability	3,00	4,00	1,00	0,33	1	0,33	0,33
Maintainability	4,00	4,00	2,00	0,33	3,00	1	0,50
Survivability	4,00	3,00	3,00	0,50	3,00	2,00	1

Table S19. Calculated local and global weights

ELEMENT	LOCAL WEIGHT	GLOBAL WEIGHT
ASSETS LAYER		
Environmental Conditions		0.1067
Airborne Component		0.2814
Communication Link		0.1456
Ground Control Station		0.1507
Operator		0.2099
Regulations/Policies		0.0528
Area of Operation		0.0528
VULNERABILITIES LAYER		
Susceptibility to Weather Conditions	0.071	0.0179
Defective Components	0.136	0.0790
High Power Consumption	0.171	0.0663
Ineffective Power Source	0.182	0.0509
Wrong Handling	0.086	0.0552
Susceptibility to wireless attacks	0.044	0.0064
Lack of Expertise/Training/Skills	0.136	0.0285
Faulty Operation	0.095	0.0199
Susceptibility to Adversarial Actions	0.040	0.0021
Lack or Violation of policies and regulations	0.039	0.0021
THREATS LAYER		
Power Failure	0.213	0.0301
Extreme Weather Conditions	0.063	0.0085
Wireless Attacks	0.065	0.0083
Equipment Failure	0.129	0.0167
Control Loss	0.140	0.0275
Unsuccessful Navigation	0.201	0.0395
Collision w/ Objects	0.135	0.0080
Physical Attacks	0.055	0.0003
REQUIREMENTS LAYER		
Survivability	0.221	0.0122
Maintainability	0.172	0.0071
Availability	0.108	0.0141
Safety	0.286	0.0214
Reliability	0.118	0.0092
Integrity	0.055	0.0005
Confidentiality	0.042	0.0004