Table 1: Rate of Occurance by Attack Combination(Ver 1)

Attack Likelihood	Typical Severity	Skills Required	Pi	Occurance	Percentage
low	high	high	0.57	22.00	27.85%
low	medium	low	0.66	5.00	6.33%
medium	high	n/a	0.5	5.00	6.33%
low	high	medium	0.65	4.00	5.06%
n/a	low	n/a	0.18	4.00	5.06%
n/a	n/a	n/a	0	4.00	5.06%
low	high	n/a	0.43	3.00	3.80%
medium	high	low	**0.82**	**2.00**	**2.53%**
medium	medium	low	**0.76**	**2.00**	**2.53%**
low	very high	high	0.6	2.00	2.53%
high	high	n/a	0.55	2.00	2.53%
n/a	very high	n/a	0.36	2.00	2.53%
n/a	medium	n/a	0.25	2.00	2.53%
high	very high	low	**1**	**1.00**	**1.27%**
high	high	low	**0.91**	**1.00**	**1.27%**
high	high	medium	**0.83**	**1.00**	**1.27%**
high	medium	low	**0.82**	**1.00**	**1.27%**
medium	high	medium	**0.76**	**1.00**	**1.27%**
low	very high	low	0.73	1.00	1.27%
medium	medium	medium	0.71	1.00	1.27%
high	low	medium	0.71	1.00	1.27%
low	high	low	0.7	1.00	1.27%
high	medium	high	0.68	1.00	1.27%
low	very high	medium	0.68	1.00	1.27%
medium	high	high	0.66	1.00	1.27%
medium	medium	high	0.62	1.00	1.27%
n/a	medium	low	0.5	1.00	1.27%
low	low	high	0.48	1.00	1.27%
n/a	high	medium	0.48	1.00	1.27%
n/a	low	low	0.47	1.00	1.27%
medium	medium	n/a	0.46	1.00	1.27%
n/a	medium	medium	0.44	1.00	1.27%

n/a	high	n/a	0.31	1.00	1.27%

Table 2: TOPSIS Pi Top Ten (Ver 2)

Vulnerability	Pi	Percentage
Leveraging/Manipulating Configuration File Search Paths	1	1.27%
WSDL Scanning (var. 1)	0.91	1.27%
WSDL Scanning (var. 2)	0.83	1.27%
Directory Indexing (var. 1)	0.82	1.27%
Bluetooth Impersonation AttackS (BIAS)	0.82	1.27%
Repo Jacking	0.82	1.27%
Collect Data from Registeries	0.76	1.27%
Collect Data from Screen Capture	0.76	1.27%
Metadata Spoofing	0.76	1.27%
Altered Component Firmware (var. 3)	0.73	1.27%
Total Attack Surface:		**12.66%**

Vulnerability Occurence by Category
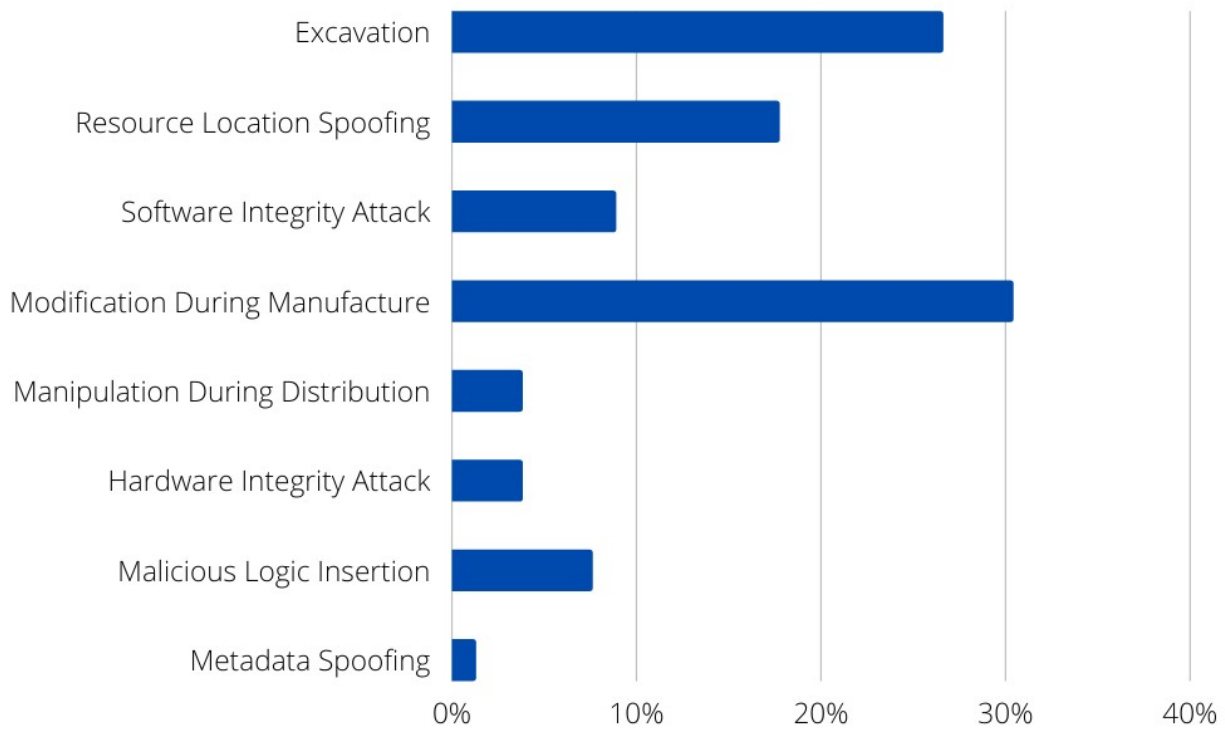
Table 3: Natural and Man-Made Disasters 1980-2021

Disaster Category	Country					
	France	Germany	Greece	Italy	Netherlands	Romania
Climatological	17	1	17	12	0	2
Geophysical	1	2	26	26	1	3
Hydrological	63	22	26	54	4	51
Meteorilogical	94	69	15	35	33	29
Technological	61	45	47	83	16	21
Total (Country)	**236**	**139**	**131**	**210**	**54**	**106**

Disaster Category	Country			
	Poland	Portugal	Spain	UK	**Total (Category)**
Climatological	3	18	22	N/A	**92**
Geophysical	1	0	2	N/A	**62**
Hydrological	15	11	32	N/A	**278**

Meteorilogical	42	16	34	N/A	**367**
Technological	22	15	60	N/A	**370**
Total (Country)	**83**	**60**	**150**	**N/A**	**1169**

Table 4: Natural and Man-Made Disasters 1980-2021 by Probability

Disaster Category	Country					
	France	Germany	Greece	Italy	Netherlands	Romania
Climatological	1.45%	0.09%	1.45%	1.03%	0.00%	0.17%
Geophysical	0.09%	0.17%	2.22%	2.22%	0.09%	0.26%
Hydrological	5.39%	1.88%	2.22%	4.62%	0.34%	4.36%
Meteorilogical	8.04%	5.90%	1.28%	2.99%	2.82%	2.48%
Technological	5.22%	3.85%	4.02%	7.10%	1.37%	1.80%
Total % (Country)	**20.19%**	**11.89%**	**11.21%**	**17.96%**	**4.62%**	**9.07%**

Disaster Category	Country				
	Poland	Portugal	Spain	UK	**Total % (Category)**
Climatological	0.26%	1.54%	1.88%	N/A	**7.87%**
Geophysical	0.09%	0.00%	0.17%	N/A	**5.30%**
Hydrological	1.28%	0.94%	2.74%	N/A	**23.78%**
Meteorilogical	3.59%	1.37%	2.91%	N/A	**31.39%**
Technological	1.88%	1.28%	5.13%	N/A	**31.65%**
Total % (Country)	**7.10%**	**5.13%**	**12.83%**	**N/A**	**100.00%**

Table 5: SMART Calculation -- Supplier by Country

Supplier Country	Crop Output (€M)	Crop Price	Animal Output (€M)	Animal Price
France	**€47,973.66**	**€128.30**	**€26,847.40**	**€112.80**
Germany	€29,698.62	€129.30	€25,917.59	€116.50
Greece	€8,725.22	€156.10	€2,455.55	€125.80
Italy	**€34,283.10**	**€124.30**	**€16,353.91**	**€113.70**
Netherlands	€15,671.56	€118.70	€10,954.00	€113.50
Poland	€13,620.87	€131.10	€13,584.02	€117.20
Portugal	€6,072.62	€126.60	€3,053.82	€115.20
Romania	€15,028.32	€334.50	€4,245.42	€287.30
Spain	**€34,999.84**	**€121.40**	**€20,478.57**	**€116.10**
UK	€9,803.06	€164.40	€16,574.00	€150.10

Supplier Country	Organic Crops (tonne)	Organic Livestock (head)	SMART Score
France	**692,243.00**	**860,308.00**	**86.57**
Germany	0.00	861,272.00	65.34
Greece	152,118.00	163,066.00	31.85
Italy	**968,425.00**	**397,187.00**	**80.81**
Netherlands	19,591.00	76,069.00	48.20
Poland	315,269.00	31,102.00	43.03
Portugal	0.00	92,673.00	35.03
Romania	229,794.00	19,870.00	11.85
Spain	**382,153.00**	**219,769.00**	**65.82**
UK	129,297.00	300,788.00	32.98

JAMES MONTE CARLO

Table 6: Monte Carlo Simulation -- Supply Chain Risk

Risk Category	Target	Timeframe	Subjective Prob.	Quantitative Prob.
Cloud server breach	Inventory	>24 months	20%	5%
Supply chain disruption	Ingredients	<12 months	10%	7%
Warehouse disruption	Orders	<12 months	66%	5%
Warehouse disruption	Machine failure	<18 months	10%	1%
Cloud server breach	Supplier info	>24 months	5%	4%
Warehouse disruption	Power outage	< 24 months	3%	5%
Supply chain disruption	Flooding	>36 months	7%	5%
Supply chain disruption	Drought	>48 months	2%	4%

Risk Category	90% Confidence Interval		Std. Deviation	Financial Impact
	Lower Range	Upper Range		
Cloud server breach	$2,000,000	$3,000,000	0.1232417	$2,458,486.01
Supply chain disruption	$40,000	$60,000	0.1232417	$54,470.46
Warehouse disruption	$70,000	$105,000	0.1232417	$93,423.34
Warehouse disruption	$250,000	$380,000	0.1272676	$362,304.74
Cloud server breach	$70,000	$155,000	0.24162	$95,763.21
Warehouse disruption	$90,000	$150,000	0.1552661	$122,324.88
Supply chain disruption	$240,000	$500,000	0.2230909	$341,853.60
Supply chain disruption	$180,000	$260,000	.1117704	$231,815.70

Avg. Subjective Probability	Avg. Quantitative Probability	Potential Disruption Cost
15.3%	4.45%	$2,693,846.51

Table 7: Pamered Pets Inventory Simulation - Policies

Policy	Reorder Point	Order Quantity	Parameters for MCS Simulation	
1	5000	8000	Mean Unit Demand	4500
2	4000	8000	Fixed Order Cost	$50
3	5500	100	Unit Cost	$1
4	6000	9100	Sales Price	$5
5	800	300	Holding Cost	$1
6	6000	400	Salvage Value	$3
7	500	500		

Table 8: Monte Carlo Simulation – Inventory

Policy	Observation Count	Mean Profit	Std. Deviation	Minimum Profit	Maximum Profit
1	5000	$230,075.88	54397.63	$165,468	$318,210
2	5000	$230,599.23	54269.19	$166,105	$317,606
3	5000	$230,960.33	54432.20	$166,105	$317,606
4	**5000**	**$231,867.46**	**54401.95**	**$165,637**	**$318,210**
5	5000	$230,749.71	54342.21	$165,637	$318,210
6	5000	$230,837.02	54287.12	$165,217	$316,768
7	5000	$230,506.15	54371.16	$165,217	$316,768

Table 9: MC Simulation – Stock, 24 Months

Policy	Order Cost	Sales Revenue	Holding Cost	Out-of-Stock	O-of-S Prob.	Salvage Value
1	$104, 650	$432,268	$108,015	0	0%	$15,099
2	$104,650	$536,030	$84,496	2	8%	$17,682
3	$3,600	$57,000	$4,957	22	92%	$300
4	**$109,800**	**$540,335**	**$178,415**	**0**	**0%**	**$30,699**
5	$8,050	$78,500	$4,857	22	92%	$900
6	$10,800	$73,200	$5,257	22	92%	$1,200
7	$12,650	$100,500	$4857	22	92%	$1,500

CELINE MONTE CARLO

Table 10: Stock Simulation -- Risk of Loss

Policy	Revenue Rating	Risk of Loss
2	Middle	33%
3	Worst	200%
4	Best	0%

BALI QUALITY RISK TABLE

Table 11: Risks to Product Quality

Operational Risks	Hazardous Risks
Internal	External
Cyber Threats	Natural Disasters
Excavation	Earthquake
Hardware integrity attack	Flood
Malicious logic insertion	Snow/ice
Manipulation during distribution	Powergrid failure
Metadata Spoofing	Hurricane
Modification during manufacture	Landslide
Resource location spoofing	Storm
Software integrity attack	Climate Change
External	Drought
Product Quality	Extreme Heat
Raw materials	Wildfire
Regional standards	
Shipment time	