

**Federal Voting Assistance Program**  
**Comparative Risk Analysis of the Current UOCAVA Voting System and an Electronic Alternative Report**  
**Risk Model Outputs**

**CURRENT UOCAVA VOTING SYSTEM**

VOTING STEP	THREAT VECTORS				RISK MODEL OUTPUTS							
	Level 1	Level 2	Level 3	Threat ID	Jack Cobb	Jay Aceto	Neil McClure	Joshua Franklin	Joel Rothschild	David Beirne	Paddy McGuire	Total
Registration	Attacks	Insider Attacks	Attacks Against VRDB	REG-INS-VRDB	0.266	0.518	0.018	0.024	0.012	0.070	0.153	1.061
Registration	Attacks	Insider Attacks	Attacks to Voter's Assistance	REG-INS-ASST	0.245	0.476	0.017	0.022	0.012	0.061	0.026	0.859
Registration	Attacks	Insider Attacks	Attacks to Voting Access	REG-INS-ACCS	0.259	0.569	0.019	0.037	0.015	0.084	0.061	1.045
Registration	Attacks	Insider Attacks	Attacks by Denial of Service	REG-INS-DOSV	0.191	0.475	0.016	0.025	0.012	0.071	0.025	0.814
Registration	Attacks	Insider Attacks	Attacks Against Registration Forms and Instructions	REG-INS-REGF	0.172	0.531	0.016	0.022	0.012	0.060	0.026	0.839
Registration	Attacks	Insider Attacks	Attacks During Transmission of Registration Forms and Instructions	REG-INS-TREG	0.168	0.538	0.016	0.021	0.008	0.059	0.027	0.838
Registration	Attacks	Insider Attacks	Attacks During Transmission of Completed Registration Packets	REG-INS-TCRP	0.258	0.606	0.023	0.040	0.009	0.070	0.036	1.042
Registration	Attacks	Insider Attacks	Attacks Against Processing of Completed Registration Packets	REG-INS-PCRP	0.260	0.656	0.021	0.022	0.008	0.068	0.072	1.108
Registration	Attacks	Insider Attacks	Attacks During Transmission of Registration Rejections	REG-INS-TRRP	0.160	0.544	0.018	0.020	0.009	0.058	0.016	0.826
Registration	Attacks	Outsider Attacks	Attacks Against Voter's Assistance	REG-OUT-ASST	0.289	0.573	0.030	0.022	0.009	0.045	0.071	1.039
Registration	Attacks	Outsider Attacks	Attacks Against Marking of Registration Forms	REG-OUT-MREG	0.256	0.528	0.064	0.026	0.008	0.069	0.521	1.471
Registration	Unintentional Disruptions	Error at the LEO	Errors in VRDB	REG-ERL-VRDB	0.329	0.498	0.026	0.114	0.013	0.074	0.078	1.131
Registration	Unintentional Disruptions	Error at the LEO	Errors in Voter's Assistance	REG-ERL-ASST	0.358	0.561	0.028	0.489	0.518	0.150	0.123	2.228
Registration	Unintentional Disruptions	Error at the LEO	Errors in Registration Forms and Instructions	REG-ERL-REGF	0.332	0.500	0.026	0.109	0.012	0.063	0.083	1.125
Registration	Unintentional Disruptions	Error at the LEO	Errors in Processing Completed Registration Packets	REG-ERL-PCRP	0.317	0.531	0.028	0.119	0.013	0.079	0.089	1.176
Registration	Unintentional Disruptions	Error in Transmission	Errors in Transmission of Registration Forms and Instructions	REG-ERT-TREG	0.357	0.602	0.032	0.132	0.058	0.047	0.161	1.389
Registration	Unintentional Disruptions	Error in Transmission	Errors in Transmission of Completed Registration Packets	REG-ERT-TCRP	0.231	0.537	0.028	0.132	0.053	0.043	0.147	1.171
Registration	Unintentional Disruptions	Error in Transmission	Errors in Transmission of Registration Rejections	REG-ERT-TRRP	0.223	0.548	0.029	0.072	0.054	0.045	0.066	1.036
Registration	Unintentional Disruptions	Error at the Voter's Location	Errors in Voting Access	REG-ERV-ACCS	0.613	0.549	0.030	1.357	0.034	0.031	0.370	2.985
Registration	Unintentional Disruptions	Error at the Voter's Location	Errors in Obtaining Voter's Assistance	REG-ERV-ASST	0.454	0.471	0.060	0.055	0.425	0.038	0.532	2.035
Registration	Unintentional Disruptions	Error at the Voter's Location	Errors in Registration Application	REG-ERV-REGF	0.491	0.528	0.119	0.717	0.451	0.040	0.612	2.959
Registration	Unintentional Disruptions	Accidental Disruptions	Disruptions by Natural Events	REG-DIS-NATL	0.415	0.009	0.014	0.047	0.035	0.030	0.809	1.360
Registration	Unintentional Disruptions	Accidental Disruptions	Disruptions by Environmental Events	REG-DIS-NVRO	0.404	0.009	0.014	0.102	0.017	0.031	0.220	0.797
Registration	Unintentional Disruptions	Accidental Disruptions	Disruptions by Human-Created Collateral Events	REG-DIS-HUMN	0.423	0.009	0.016	0.066	0.016	0.031	0.236	0.797
Absentee Ballot Request	Attacks	Insider Attacks	Attacks Against VRDB	ABR-INS-VRDB	0.426	0.518	0.018	0.024	0.012	0.070	0.060	1.128
Absentee Ballot Request	Attacks	Insider Attacks	Attacks to Voter's Assistance	ABR-INS-ASST	0.226	0.511	0.017	0.022	0.012	0.061	0.026	0.875
Absentee Ballot Request	Attacks	Insider Attacks	Attacks to Voting Access	ABR-INS-ACCS	0.159	0.569	0.019	0.037	0.015	0.084	0.030	0.914
Absentee Ballot Request	Attacks	Insider Attacks	Attacks by Denial of Service	ABR-INS-DOSV	0.173	0.475	0.016	0.025	0.012	0.071	0.025	0.796
Absentee Ballot Request	Attacks	Insider Attacks	Attacks Against Absentee Ballot Request Forms and Instructions	ABR-INS-ABRF	0.160	0.531	0.016	0.023	0.012	0.060	0.057	0.859
Absentee Ballot Request	Attacks	Insider Attacks	Attacks During Transmission of Absentee Ballot Request Forms and Instructions	ABR-INS-TABR	0.095	0.530	0.016	0.031	0.012	0.059	0.027	0.769
Absentee Ballot Request	Attacks	Insider Attacks	Attacks During Transmission of Completed Absentee Ballot Request Packets	ABR-INS-TCAP	0.102	0.606	0.035	0.041	0.016	0.080	0.075	0.954
Absentee Ballot Request	Attacks	Insider Attacks	Attacks Against Processing of Completed Absentee Ballot Request Packets	ABR-INS-PCAP	0.198	0.589	0.034	0.022	0.013	0.073	0.071	1.001
Absentee Ballot Request	Attacks	Insider Attacks	Attacks During Transmission of Rejections of Absentee Ballot Requests	ABR-INS-TRAP	0.164	0.535	0.018	0.020	0.013	0.067	0.025	0.843
Absentee Ballot Request	Attacks	Insider Attacks	Attacks Against Absentee Ballots and Instructions	ABR-INS-ABSF	0.148	0.573	0.020	0.022	0.014	0.030	0.020	0.826
Absentee Ballot Request	Attacks	Outsider Attacks	Attacks Against Voter's Assistance	ABR-OUT-ASST	0.221	0.528	0.052	0.022	0.165	0.102	0.102	1.192
Absentee Ballot Request	Attacks	Outsider Attacks	Attacks by Denial of Service	ABR-OUT-DOSV	0.224	0.482	0.048	0.024	0.013	0.097	0.015	0.901
Absentee Ballot Request	Attacks	Outsider Attacks	Attacks Against Marking of Absentee Ballot Requests	ABR-OUT-MABR	0.212	0.561	0.055	0.028	0.014	0.114	0.361	1.344
Absentee Ballot Request	Unintentional Disruptions	Error at the LEO	Errors in VRDB	ABR-ERL-VRDB	0.228	0.500	0.051	0.122	0.026	0.078	0.093	1.098
Absentee Ballot Request	Unintentional Disruptions	Error at the LEO	Errors in Voter's Assistance	ABR-ERL-ASST	0.283	0.531	0.054	0.411	0.180	0.078	0.347	1.884
Absentee Ballot Request	Unintentional Disruptions	Error at the LEO	Errors in Absentee Ballot Request Forms and Instructions	ABR-ERL-ABRF	0.206	0.602	0.068	0.093	0.014	0.086	0.079	1.149
Absentee Ballot Request	Unintentional Disruptions	Error at the LEO	Errors in Processing Completed Absentee Ballot Request Packets	ABR-ERL-PCAP	0.252	0.537	0.050	0.090	0.014	0.045	0.060	1.047
Absentee Ballot Request	Unintentional Disruptions	Error at the LEO	Errors in Absentee Ballots and Instructions	ABR-ERL-ABSF	0.193	0.548	0.079	0.125	0.014	0.046	0.361	1.365
Absentee Ballot Request	Unintentional Disruptions	Error in Transmission	Errors in Transmission of Absentee Ballot Request Forms and Instructions	ABR-ERT-TABR	0.130	0.533	0.021	0.153	0.232	0.030	0.059	1.157
Absentee Ballot Request	Unintentional Disruptions	Error in Transmission	Errors in Transmission of Completed Absentee Ballot Request Packets	ABR-ERT-TCAP	0.152	0.471	0.016	0.141	0.210	0.027	0.076	1.092
Absentee Ballot Request	Unintentional Disruptions	Error in Transmission	Errors in Transmission of Rejections of Absentee Ballot Requests	ABR-ERT-TRAP	0.149	0.509	0.017	0.079	0.219	0.017	0.035	1.025
Absentee Ballot Request	Unintentional Disruptions	Error at the Voter's Location	Errors in Voting Access	ABR-ERV-ACCS	0.336	0.590	0.028	1.413	0.054	0.032	0.452	2.905
Absentee Ballot Request	Unintentional Disruptions	Error at the Voter's Location	Errors in Obtaining Voter's Assistance	ABR-ERV-ASST	0.547	0.575	0.030	0.063	0.514	0.047	0.420	2.196
Absentee Ballot Request	Unintentional Disruptions	Error at the Voter's Location	Errors in Absentee Ballot Requests	ABR-ERV-ABRF	0.433	0.561	0.058	0.767	0.560	0.046	0.263	2.689
Absentee Ballot Request	Unintentional Disruptions	Accidental Disruptions	Disruptions by Natural Events	ABR-DIS-NATL	0.192	0.009	0.016	0.045	0.035	0.028	0.713	1.039
Absentee Ballot Request	Unintentional Disruptions	Accidental Disruptions	Disruptions by Environmental Events	ABR-DIS-NVRO	0.170	0.009	0.013	0.093	0.015	0.025	0.408	0.732
Absentee Ballot Request	Unintentional Disruptions	Accidental Disruptions	Disruptions by Human-Created Collateral Events	ABR-DIS-HUMN	0.334	0.009	0.014	0.065	0.016	0.031	0.645	1.113
Absentee Ballot Delivery	Attacks	Insider Attacks	Attacks by Denial of Service	ABD-INS-DOSV	0.245	0.518	0.017	0.016	0.017	0.070	0.040	0.924
Absentee Ballot Delivery	Attacks	Insider Attacks	Attacks During Transmission of Absentee Ballot and Instructions	ABD-INS-TABS	0.165	0.511	0.017	0.016	0.016	0.069	0.040	0.834
Absentee Ballot Delivery	Attacks	Outsider Attacks	Attacks by Denial of Service	ABD-OUT-DOSV	0.145	0.569	0.031	0.015	0.019	0.090	0.042	0.912
Absentee Ballot Delivery	Unintentional Disruptions	Error in Transmission	Errors in Transmission of Absentee Ballot and Instructions	ABD-ERT-TABS	0.143	0.475	0.016	0.703	0.218	0.070	0.076	1.700
Absentee Ballot Delivery	Unintentional Disruptions	Accidental Disruptions	Disruptions by Natural Events	ABD-DIS-NATL	0.220	0.008	0.016	0.045	0.034	0.029	0.218	0.570
Absentee Ballot Delivery	Unintentional Disruptions	Accidental Disruptions	Disruptions by Environmental Events	ABD-DIS-NVRO	0.216	0.009	0.016	0.096	0.015	0.026	0.229	0.607
Absentee Ballot Delivery	Unintentional Disruptions	Accidental Disruptions	Disruptions by Human-Created Collateral Events	ABD-DIS-HUMN	0.203	0.009	0.023	0.068	0.017	0.032	0.216	0.568
Ballot Marking	Attacks	Outsider Attacks	Attacks Against Marking Absentee Ballots and Forms	BMK-OUT-MABS	0.316	0.574	0.033	0.058	0.013	0.191	0.086	1.271
Ballot Marking	Unintentional Disruptions	Error at the Voter's Location	Errors in Voting Access	BMK-ERV-ACCS	0.321	0.535	0.028	1.327	0.034	0.036	0.226	2.507

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	Level 1	Level 2	Level 3	Threat ID	Jack Cobb	Jay Aceto	Neil McClure	Joshua Franklin	Joel Rothschild	David Beirne	Paddy McGuire	Total
Ballot Marking	Unintentional Disruptions	Error at the Voter's Location	Errors in Obtaining Voter's Assistance	BMK-ERV-ASST	0.528	0.610	0.056	0.069	0.497	0.518	0.165	<b>2.442</b>
Ballot Marking	Unintentional Disruptions	Error at the Voter's Location	Errors in Absentee Ballot Marking	BMK-ERV-MABS	0.605	0.528	0.064	0.782	0.512	0.167	0.217	<b>2.874</b>
Ballot Marking	Unintentional Disruptions	Accidental Disruptions	Disruptions by Natural Events	BMK-DIS-NATL	0.213	0.009	0.013	0.042	0.033	0.024	0.234	<b>0.568</b>
Ballot Marking	Unintentional Disruptions	Accidental Disruptions	Disruptions by Environmental Events	BMK-DIS-NVRO	0.206	0.009	0.014	0.099	0.016	0.032	0.187	<b>0.563</b>
Ballot Marking	Unintentional Disruptions	Accidental Disruptions	Disruptions by Human-Created Collateral Events	BMK-DIS-HUMN	0.215	0.009	0.012	0.055	0.015	0.026	0.202	<b>0.535</b>
Marked Ballot Return	Attacks	Insider Attacks	Attacks by Denial of Service	MBR-INS-DOSV	0.233	0.623	0.027	0.024	0.013	0.043	0.037	<b>1.001</b>
Marked Ballot Return	Attacks	Insider Attacks	Attacks During Transmission of Marked Ballot Packets	MBR-INS-TMBP	0.134	0.602	0.031	0.023	0.014	0.044	0.059	<b>0.907</b>
Marked Ballot Return	Attacks	Outsider Attacks	Attacks by Denial of Service	MBR-OUT-DOSV	0.185	0.615	0.035	0.022	0.014	0.042	0.059	<b>0.972</b>
Marked Ballot Return	Unintentional Disruptions	Error in Transmission	Errors in Transmission of Marked Ballot Packets	MBR-ERT-TMBP	0.217	0.548	0.066	1.161	0.237	0.043	0.100	<b>2.371</b>
Marked Ballot Return	Unintentional Disruptions	Accidental Disruptions	Disruptions by Natural Events	MBR-DIS-NATL	0.255	0.009	0.015	0.046	0.035	0.026	0.138	<b>0.525</b>
Marked Ballot Return	Unintentional Disruptions	Accidental Disruptions	Disruptions by Environmental Events	MBR-DIS-NVRO	0.237	0.008	0.011	0.092	0.014	0.024	0.125	<b>0.511</b>
Marked Ballot Return	Unintentional Disruptions	Accidental Disruptions	Disruptions by Human-Created Collateral Events	MBR-DIS-HUMN	0.227	0.009	0.013	0.061	0.014	0.026	0.119	<b>0.469</b>
Returned Ballot Processing and Tabulation	Attacks	Insider Attacks	Attacks Against VRDB	RBP-INS-VRDB	0.203	0.517	0.018	0.018	0.012	0.048	0.027	<b>0.843</b>
Returned Ballot Processing and Tabulation	Attacks	Insider Attacks	Attacks by Denial of Service	RBP-INS-DOSV	0.223	0.511	0.017	0.014	0.012	0.020	0.026	<b>0.823</b>
Returned Ballot Processing and Tabulation	Attacks	Insider Attacks	Attacks Against Processing of Returned Ballots	RBP-INS-PRBT	0.210	0.569	0.019	0.027	0.015	0.035	0.063	<b>0.938</b>
Returned Ballot Processing and Tabulation	Attacks	Insider Attacks	Attacks Against Tabulation	RBP-INS-TABN	0.167	0.479	0.016	0.025	0.012	0.031	0.082	<b>0.812</b>
Returned Ballot Processing and Tabulation	Attacks	Insider Attacks	Attacks Against Adjudication	RBP-INS-ADJN	0.211	0.536	0.016	0.111	0.012	0.083	0.158	<b>1.127</b>
Returned Ballot Processing and Tabulation	Attacks	Outsider Attacks	Attacks by Denial of Service	RBP-OUT-DOSV	0.224	0.522	0.009	0.014	0.012	0.019	0.037	<b>0.836</b>
Returned Ballot Processing and Tabulation	Unintentional Disruptions	Error at the LEO	Errors in VRDB	RBP-ERL-VRDB	0.245	0.565	0.032	0.136	0.016	0.023	0.091	<b>1.108</b>
Returned Ballot Processing and Tabulation	Unintentional Disruptions	Error at the LEO	Errors in Processing of Returned Ballots	RBP-ERL-PRBT	0.245	0.589	0.073	0.075	0.013	0.025	0.090	<b>1.110</b>
Returned Ballot Processing and Tabulation	Unintentional Disruptions	Error at the LEO	Errors in Tabulation	RBP-ERL-TABN	0.234	0.544	0.065	0.041	0.013	0.067	0.038	<b>1.002</b>
Returned Ballot Processing and Tabulation	Unintentional Disruptions	Error at the LEO	Errors in Adjudication	RBP-ERL-ADJN	0.330	0.573	0.069	0.062	0.014	0.078	0.248	<b>1.373</b>
Returned Ballot Processing and Tabulation	Unintentional Disruptions	Accidental Disruptions	Disruptions by Natural Events	RBP-DIS-NATL	0.237	0.008	0.013	0.046	0.034	0.012	0.124	<b>0.473</b>
Returned Ballot Processing and Tabulation	Unintentional Disruptions	Accidental Disruptions	Disruptions by Environmental Events	RBP-DIS-NVRO	0.251	0.009	0.013	0.092	0.014	0.020	0.131	<b>0.529</b>
Returned Ballot Processing and Tabulation	Unintentional Disruptions	Accidental Disruptions	Disruptions by Human-Created Collateral Events	RBP-DIS-HUMN	0.232	0.009	0.014	0.061	0.016	0.021	0.143	<b>0.495</b>
Post-Election Audit	Attacks	Insider Attacks	Attacks Against VRDB	ADT-INS-VRDB	0.482	0.500	0.017	0.017	0.012	0.010	0.035	<b>1.073</b>
Post-Election Audit	Attacks	Insider Attacks	Attacks Against Post-Election Audit	ADT-INS-PADT	0.470	0.531	0.018	0.017	0.013	0.025	0.037	<b>1.113</b>
Post-Election Audit	Unintentional Disruptions	Error at the LEO	Errors in VRDB	ADT-ERL-VRDB	0.354	0.627	0.022	0.132	0.014	0.012	0.079	<b>1.239</b>
Post-Election Audit	Unintentional Disruptions	Error at the LEO	Errors in Post-Election Audit	ADT-ERL-PADT	0.382	0.561	0.018	0.021	0.014	0.026	0.072	<b>1.094</b>
Post-Election Audit	Unintentional Disruptions	Accidental Disruptions	Disruptions by Natural Events	ADT-DIS-NATL	0.192	0.009	0.018	0.048	0.034	0.013	0.038	<b>0.352</b>
Post-Election Audit	Unintentional Disruptions	Accidental Disruptions	Disruptions by Environmental Events	ADT-DIS-NVRO	0.211	0.009	0.021	0.095	0.016	0.013	0.039	<b>0.404</b>
Post-Election Audit	Unintentional Disruptions	Accidental Disruptions	Disruptions by Human-Created Collateral Events	ADT-DIS-HUMN	0.220	0.008	0.016	0.055	0.014	0.011	0.034	<b>0.356</b>

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**Risk Model Outputs**

**REMOTE ELECTRONIC ABSENTEE VOTING SYSTEM**

VOTING STEP	THREAT VECTORS			RISK MODEL OUTPUTS								
	Level 1	Level 2	Level 3	Threat ID	Jack Cobb	Jay Aceto	Neil McClure	Joshua Franklin	Joel Rothschild	David Beirne	Paddy McGuire	Total
Registration	Attacks	Insider Attacks	Attacks Against VRDB	REG-INS-VRDB	0.266	0.551	0.018	0.024	0.066	0.065	0.123	1.114
Registration	Attacks	Insider Attacks	Attacks to Voter's Assistance	REG-INS-ASST	0.245	0.526	0.017	0.022	0.057	0.041	0.037	0.944
Registration	Attacks	Insider Attacks	Attacks to Voting Access	REG-INS-ACCS	0.259	0.667	0.019	0.037	0.031	0.015	0.039	1.067
Registration	Attacks	Insider Attacks	Attacks by Denial of Service	REG-INS-DOSV	0.191	0.624	0.016	0.022	0.582	0.015	0.068	1.517
Registration	Attacks	Insider Attacks	Attacks Against Registration Forms and Instructions	REG-INS-REGF	0.172	0.592	0.016	0.022	0.016	0.032	0.071	0.921
Registration	Attacks	Insider Attacks	Attacks During Transmission of Registration Forms and Instructions	REG-INS-TREG	0.168	0.580	0.026	0.021	0.064	0.011	0.037	0.908
Registration	Attacks	Insider Attacks	Attacks Against Marking of Registration Forms	REG-INS-MREG	0.255	0.762	0.023	0.022	0.069	0.017	0.129	1.276
Registration	Attacks	Insider Attacks	Attacks During Transmission of Completed Registration Packets	REG-INS-TCRP	0.267	0.767	0.021	0.036	0.026	0.013	0.043	1.174
Registration	Attacks	Insider Attacks	Attacks Against Processing of Completed Registration Packets	REG-INS-PCRP	0.160	0.593	0.015	0.023	0.009	0.028	0.038	0.867
Registration	Attacks	Insider Attacks	Attacks During Transmission of Registration Rejections	REG-INS-TRRP	0.183	0.671	0.017	0.022	0.009	0.013	0.031	0.945
Registration	Attacks	Outsider Attacks	Attacks Against Voter's Assistance	REG-OUT-ASST	0.265	0.528	0.018	0.515	0.131	0.043	0.138	1.638
Registration	Attacks	Outsider Attacks	Attacks Against Voting Access	REG-OUT-ACCS	0.256	0.577	0.024	0.442	0.048	0.016	0.112	1.476
Registration	Attacks	Outsider Attacks	Attacks Against Marking of Registration Forms	REG-OUT-MREG	0.393	0.652	0.065	0.354	0.332	0.032	0.188	2.016
Registration	Unintentional Disruptions	Error at the LEO	Errors in VRDB	REG-ERL-VRDB	0.332	0.500	0.027	0.122	0.061	0.051	0.040	1.134
Registration	Unintentional Disruptions	Error at the LEO	Errors in Voter's Assistance	REG-ERL-ASST	0.317	0.531	0.029	0.411	0.052	0.037	0.070	1.447
Registration	Unintentional Disruptions	Error at the LEO	Errors in Registration Forms and Instructions	REG-ERL-REGF	0.357	0.602	0.034	0.116	0.400	0.022	0.185	1.718
Registration	Unintentional Disruptions	Error at the LEO	Errors in Processing Completed Registration Packets	REG-ERL-PCRP	0.334	0.537	0.026	0.132	0.148	0.023	0.147	1.347
Registration	Unintentional Disruptions	Error in Transmission	Errors in Transmission of Registration Forms and Instructions	REG-ERT-TREG	0.009	0.539	0.029	0.026	0.584	0.039	0.086	1.311
Registration	Unintentional Disruptions	Error in Transmission	Errors in Transmission of Completed Registration Packets	REG-ERT-TCRP	0.328	0.513	0.032	0.027	0.580	0.036	0.089	1.605
Registration	Unintentional Disruptions	Error in Transmission	Errors in Transmission of Registration Rejections	REG-ERT-TRRP	0.208	0.471	0.016	0.027	0.110	0.019	0.074	0.925
Registration	Unintentional Disruptions	Error at the Voter's Location	Errors in Voting Access	REG-ERV-ACCS	0.935	0.509	0.028	0.513	0.049	0.035	0.108	2.177
Registration	Unintentional Disruptions	Error at the Voter's Location	Errors in Obtaining Voter's Assistance	REG-ERV-ASST	0.525	0.576	0.070	0.066	0.496	0.014	0.077	1.824
Registration	Unintentional Disruptions	Error at the Voter's Location	Errors in Registration Application	REG-ERV-REGF	0.504	0.586	0.063	0.177	0.514	0.013	0.250	2.108
Registration	Unintentional Disruptions	Accidental Disruptions	Disruptions by Natural Events	REG-DIS-NATL	0.250	0.009	0.016	0.048	0.011	0.011	0.161	0.507
Registration	Unintentional Disruptions	Accidental Disruptions	Disruptions by Environmental Events	REG-DIS-NVRO	0.251	0.009	0.016	0.097	0.011	0.011	0.156	0.552
Registration	Unintentional Disruptions	Accidental Disruptions	Disruptions by Human-Created Collateral Events	REG-DIS-HUMN	0.462	0.009	0.013	0.070	0.010	0.013	0.162	0.739
Absentee Ballot Request	Attacks	Insider Attacks	Attacks Against VRDB	ABR-INS-VRDB	0.223	0.536	0.018	0.024	0.259	0.026	0.038	1.125
Absentee Ballot Request	Attacks	Insider Attacks	Attacks to Voter's Assistance	ABR-INS-ASST	0.169	0.520	0.017	0.022	0.014	0.009	0.043	0.793
Absentee Ballot Request	Attacks	Insider Attacks	Attacks to Voting Access	ABR-INS-ACCS	0.160	0.639	0.019	0.037	0.017	0.013	0.048	0.933
Absentee Ballot Request	Attacks	Insider Attacks	Attacks by Denial of Service	ABR-INS-DOSV	0.246	0.527	0.016	0.022	0.589	0.025	0.068	1.491
Absentee Ballot Request	Attacks	Insider Attacks	Attacks Against Absentee Ballot Request Forms and Instructions	ABR-INS-ABRF	0.216	0.536	0.016	0.022	0.015	0.024	0.038	0.868
Absentee Ballot Request	Attacks	Insider Attacks	Attacks During Transmission of Absentee Ballot Request Forms and Instructions	ABR-INS-TABR	0.210	0.538	0.009	0.021	0.016	0.012	0.044	0.850
Absentee Ballot Request	Attacks	Insider Attacks	Attacks Against Marking of Absentee Ballot Requests	ABR-INS-MABR	0.295	0.565	0.010	0.027	0.600	0.019	0.083	1.599
Absentee Ballot Request	Attacks	Insider Attacks	Attacks During Transmission of Completed Absentee Ballot Request Packets	ABR-INS-TCAP	0.181	0.656	0.009	0.036	0.018	0.035	0.043	0.978
Absentee Ballot Request	Attacks	Insider Attacks	Attacks Against Processing of Completed Absentee Ballot Request Packets	ABR-INS-PCAP	0.160	0.544	0.018	0.023	0.027	0.026	0.038	0.837
Absentee Ballot Request	Attacks	Insider Attacks	Attacks During Transmission of Rejections of Absentee Ballot Requests	ABR-INS-TRAP	0.178	0.573	0.010	0.024	0.029	0.013	0.037	0.863
Absentee Ballot Request	Attacks	Insider Attacks	Attacks Against Absentee Ballots and Instructions	ABR-INS-ABSF	0.226	0.528	0.018	0.019	0.040	0.023	0.070	0.924
Absentee Ballot Request	Attacks	Outsider Attacks	Attacks Against Voter's Assistance	ABR-OUT-ASST	0.162	0.498	0.018	0.442	0.023	0.036	0.064	1.245
Absentee Ballot Request	Attacks	Outsider Attacks	Attacks Against Voting Access	ABR-OUT-ACCS	0.332	0.561	0.016	0.591	0.365	0.020	0.214	2.100
Absentee Ballot Request	Attacks	Outsider Attacks	Attacks by Denial of Service	ABR-OUT-DOSV	0.365	0.500	0.015	0.644	0.563	0.017	0.208	2.312
Absentee Ballot Request	Attacks	Outsider Attacks	Attacks Against Marking of Absentee Ballot Requests	ABR-OUT-MABR	0.282	0.531	0.017	0.308	0.028	0.017	0.070	1.254
Absentee Ballot Request	Unintentional Disruptions	Error at the LEO	Errors in VRDB	ABR-ERL-VRDB	0.251	0.602	0.022	0.132	0.036	0.045	0.041	1.129
Absentee Ballot Request	Unintentional Disruptions	Error at the LEO	Errors in Voter's Assistance	ABR-ERL-ASST	0.302	0.537	0.015	0.477	0.025	0.038	0.072	1.466
Absentee Ballot Request	Unintentional Disruptions	Error at the LEO	Errors in Absentee Ballot Request Forms and Instructions	ABR-ERL-ABRF	0.223	0.548	0.018	0.105	0.034	0.027	0.071	1.026
Absentee Ballot Request	Unintentional Disruptions	Error at the LEO	Errors in Processing Completed Absentee Ballot Request Packets	ABR-ERL-PCAP	0.297	0.533	0.010	0.120	0.015	0.025	0.149	1.150
Absentee Ballot Request	Unintentional Disruptions	Error at the LEO	Errors in Absentee Ballots and Instructions	ABR-ERL-ABSF	0.208	0.471	0.008	0.087	0.014	0.023	0.145	0.956
Absentee Ballot Request	Unintentional Disruptions	Error in Transmission	Errors in Transmission of Absentee Ballot Request Forms and Instructions	ABR-ERT-TABR	0.168	0.487	0.009	0.025	0.014	0.009	0.070	0.782
Absentee Ballot Request	Unintentional Disruptions	Error in Transmission	Errors in Transmission of Completed Absentee Ballot Request Packets	ABR-ERT-TCAP	0.182	0.532	0.009	0.030	0.016	0.026	0.077	0.871
Absentee Ballot Request	Unintentional Disruptions	Error in Transmission	Errors in Transmission of Rejections of Absentee Ballot Requests	ABR-ERT-TRAP	0.176	0.555	0.009	0.033	0.016	0.009	0.071	0.869
Absentee Ballot Request	Unintentional Disruptions	Error at the Voter's Location	Errors in Voting Access	ABR-ERV-ACCS	0.433	0.561	0.028	0.672	0.016	0.059	0.263	2.032
Absentee Ballot Request	Unintentional Disruptions	Error at the Voter's Location	Errors in Obtaining Voter's Assistance	ABR-ERV-ASST	0.432	0.555	0.031	0.064	0.511	0.009	0.076	1.678
Absentee Ballot Request	Unintentional Disruptions	Error at the Voter's Location	Errors in Absentee Ballot Requests	ABR-ERV-ABRF	0.138	0.502	0.024	0.668	0.464	0.011	0.071	1.878
Absentee Ballot Request	Unintentional Disruptions	Accidental Disruptions	Disruptions by Natural Events	ABR-DIS-NATL	0.227	0.009	0.014	0.047	0.011	0.011	0.162	0.481
Absentee Ballot Request	Unintentional Disruptions	Accidental Disruptions	Disruptions by Environmental Events	ABR-DIS-NVRO	0.227	0.009	0.013	0.093	0.011	0.010	0.149	0.511
Absentee Ballot Request	Unintentional Disruptions	Accidental Disruptions	Disruptions by Human-Created Collateral Events	ABR-DIS-HUMN	0.211	0.009	0.014	0.064	0.011	0.009	0.142	0.459
Absentee Ballot Delivery	Attacks	Insider Attacks	Attacks by Denial of Service	ABD-INS-DOSV	0.442	0.536	0.010	0.019	0.265	0.000	0.055	1.327
Absentee Ballot Delivery	Attacks	Insider Attacks	Attacks During Transmission of Absentee Ballot and Instructions	ABD-INS-TABS	0.179	0.476	0.009	0.022	0.016	0.000	0.055	0.758
Absentee Ballot Delivery	Attacks	Outsider Attacks	Attacks Against Voting Access	ABD-OUT-ACCS	0.393	0.639	0.028	0.532	0.360	0.000	0.247	2.199

**Federal Voting Assistance Program**  
**Comparative Risk Analysis of the Current UOCAVA Voting System and an Electronic Alternative Report**  
**Risk Model Outputs**

**REMOTE ELECTRONIC ABSENTEE VOTING SYSTEM**

VOTING STEP	THREAT VECTORS			Threat ID	RISK MODEL OUTPUTS							
	Level 1	Level 2	Level 3		Jack Cobb	Jay Aceto	Neil McClure	Joshua Franklin	Joel Rothschild	David Beirne	Paddy McGuire	Total
Absentee Ballot Delivery	Attacks	Outsider Attacks	Attacks by Denial of Service	ABD-OUT-DOSV	0.240	0.595	0.024	0.702	0.596	0.000	0.337	2.494
Absentee Ballot Delivery	Unintentional Disruptions	Error in Transmission	Errors in Transmission of Absentee Ballot and Instructions	ABD-ERT-TABS	0.049	0.531	0.009	0.028	0.018	0.000	0.111	0.747
Absentee Ballot Delivery	Unintentional Disruptions	Accidental Disruptions	Disruptions by Natural Events	ABD-DIS-NATL	0.199	0.009	0.012	0.052	0.012	0.000	0.049	0.332
Absentee Ballot Delivery	Unintentional Disruptions	Accidental Disruptions	Disruptions by Environmental Events	ABD-DIS-NVRO	0.198	0.009	0.017	0.093	0.011	0.000	0.055	0.383
Absentee Ballot Delivery	Unintentional Disruptions	Accidental Disruptions	Disruptions by Human-Created Collateral Events	ABD-DIS-HUMN	0.193	0.009	0.015	0.066	0.011	0.000	0.055	0.351
Ballot Marking	Attacks	Insider Attacks	Attacks Against Marking Absentee Ballots and Forms	BMK-INS-MABS	0.437	0.544	0.009	0.025	0.035	0.000	0.038	1.088
Ballot Marking	Attacks	Outsider Attacks	Attacks Against Marking Absentee Ballots and Forms	BMK-OUT-MABS	0.245	0.614	0.009	0.514	0.014	0.000	0.098	1.493
Ballot Marking	Unintentional Disruptions	Error at the Voter's Location	Errors in Voting Access	BMK-ERV-ACCS	0.376	0.528	0.027	0.632	0.035	0.000	0.143	1.740
Ballot Marking	Unintentional Disruptions	Error at the Voter's Location	Errors in Obtaining Voter's Assistance	BMK-ERV-ASST	0.132	0.482	0.024	0.061	0.423	0.000	0.064	1.185
Ballot Marking	Unintentional Disruptions	Error at the Voter's Location	Errors in Absentee Ballot Marking	BMK-ERV-MABS	0.039	0.561	0.027	0.348	0.443	0.000	0.263	1.681
Ballot Marking	Unintentional Disruptions	Accidental Disruptions	Disruptions by Natural Events	BMK-DIS-NATL	0.435	0.009	0.023	0.041	0.010	0.000	0.045	0.564
Ballot Marking	Unintentional Disruptions	Accidental Disruptions	Disruptions by Environmental Events	BMK-DIS-NVRO	0.436	0.009	0.009	0.094	0.010	0.000	0.049	0.607
Ballot Marking	Unintentional Disruptions	Accidental Disruptions	Disruptions by Human-Created Collateral Events	BMK-DIS-HUMN	0.437	0.009	0.015	0.073	0.011	0.000	0.052	0.598
Marked Ballot Return	Attacks	Insider Attacks	Attacks by Denial of Service	MBR-INS-DOSV	0.380	0.608	0.009	0.020	0.008	0.000	0.075	1.101
Marked Ballot Return	Attacks	Insider Attacks	Attacks During Transmission of Marked Ballot Packets	MBR-INS-TMBP	0.257	0.593	0.009	0.026	0.009	0.000	0.072	0.966
Marked Ballot Return	Attacks	Outsider Attacks	Attacks Against Voting Access	MBR-OUT-ACCS	0.272	0.591	0.012	0.492	0.054	0.000	0.320	1.740
Marked Ballot Return	Attacks	Outsider Attacks	Attacks by Denial of Service	MBR-OUT-DOSV	0.159	0.490	0.010	0.409	0.565	0.000	0.272	1.907
Marked Ballot Return	Unintentional Disruptions	Error in Transmission	Errors in Transmission of Marked Ballot Packets	MBR-ERT-TMBP	0.233	0.487	0.009	0.035	0.014	0.000	0.070	0.848
Marked Ballot Return	Unintentional Disruptions	Accidental Disruptions	Disruptions by Natural Events	MBR-DIS-NATL	0.241	0.009	0.014	0.040	0.010	0.000	0.052	0.365
Marked Ballot Return	Unintentional Disruptions	Accidental Disruptions	Disruptions by Environmental Events	MBR-DIS-NVRO	0.245	0.009	0.014	0.099	0.011	0.000	0.051	0.430
Marked Ballot Return	Unintentional Disruptions	Accidental Disruptions	Disruptions by Human-Created Collateral Events	MBR-DIS-HUMN	0.246	0.009	0.016	0.071	0.012	0.000	0.054	0.409
Returned Ballot Processing and Tabulation	Attacks	Insider Attacks	Attacks Against VRDB	RBP-INS-VRDB	0.154	0.518	0.010	0.016	0.013	0.024	0.086	0.820
Returned Ballot Processing and Tabulation	Attacks	Insider Attacks	Attacks by Denial of Service	RBP-INS-DOSV	0.046	0.511	0.009	0.013	0.008	0.024	0.085	0.697
Returned Ballot Processing and Tabulation	Attacks	Insider Attacks	Attacks Against Processing of Returned Ballots	RBP-INS-PRBT	0.088	0.569	0.009	0.026	0.009	0.024	0.042	0.767
Returned Ballot Processing and Tabulation	Attacks	Insider Attacks	Attacks Against Tabulation	RBP-INS-TABN	0.092	0.475	0.009	0.025	0.008	0.027	0.120	0.755
Returned Ballot Processing and Tabulation	Attacks	Insider Attacks	Attacks Against Adjudication	RBP-INS-ADJN	0.070	0.536	0.009	0.119	0.009	0.026	0.063	0.831
Returned Ballot Processing and Tabulation	Attacks	Outsider Attacks	Attacks by Denial of Service	RBP-OUT-DOSV	0.205	0.522	0.009	0.014	0.578	0.019	0.795	2.141
Returned Ballot Processing and Tabulation	Unintentional Disruptions	Error at the LEO	Errors in VRDB	RBP-ERL-VRDB	0.262	0.565	0.010	0.142	0.013	0.018	0.043	1.053
Returned Ballot Processing and Tabulation	Unintentional Disruptions	Error at the LEO	Errors in Processing of Returned Ballots	RBP-ERL-PRBT	0.184	0.589	0.009	0.071	0.012	0.027	0.043	0.937
Returned Ballot Processing and Tabulation	Unintentional Disruptions	Error at the LEO	Errors in Tabulation	RBP-ERL-TABN	0.174	0.544	0.009	0.043	0.014	0.075	0.130	0.991
Returned Ballot Processing and Tabulation	Unintentional Disruptions	Error at the LEO	Errors in Adjudication	RBP-ERL-ADJN	0.052	0.573	0.010	0.063	0.014	0.090	0.043	0.845
Returned Ballot Processing and Tabulation	Unintentional Disruptions	Accidental Disruptions	Disruptions by Natural Events	RBP-DIS-NATL	0.330	0.008	0.013	0.042	0.010	0.014	0.048	0.464
Returned Ballot Processing and Tabulation	Unintentional Disruptions	Accidental Disruptions	Disruptions by Environmental Events	RBP-DIS-NVRO	0.336	0.009	0.013	0.097	0.011	0.010	0.045	0.521
Returned Ballot Processing and Tabulation	Unintentional Disruptions	Accidental Disruptions	Disruptions by Human-Created Collateral Events	RBP-DIS-HUMN	0.308	0.009	0.014	0.062	0.011	0.014	0.048	0.465
Post-Election Audit	Attacks	Insider Attacks	Attacks Against VRDB	ADT-INS-VRDB	0.170	0.500	0.017	0.018	0.014	0.027	0.009	0.754
Post-Election Audit	Attacks	Insider Attacks	Attacks Against Post-Election Audit	ADT-INS-PADT	0.165	0.531	0.018	0.017	0.014	0.033	0.009	0.788
Post-Election Audit	Unintentional Disruptions	Error at the LEO	Errors in VRDB	ADT-ERL-VRDB	0.174	0.602	0.022	0.129	0.013	0.020	0.009	0.968
Post-Election Audit	Unintentional Disruptions	Error at the LEO	Errors in Post-Election Audit	ADT-ERL-PADT	0.193	0.537	0.018	0.025	0.015	0.018	0.009	0.815
Post-Election Audit	Unintentional Disruptions	Accidental Disruptions	Disruptions by Natural Events	ADT-DIS-NATL	0.211	0.009	0.014	0.040	0.010	0.013	0.009	0.307
Post-Election Audit	Unintentional Disruptions	Accidental Disruptions	Disruptions by Environmental Events	ADT-DIS-NVRO	0.213	0.009	0.015	0.100	0.011	0.012	0.009	0.369
Post-Election Audit	Unintentional Disruptions	Accidental Disruptions	Disruptions by Human-Created Collateral Events	ADT-DIS-HUMN	0.203	0.008	0.011	0.071	0.011	0.008	0.008	0.321

Specific to a remote absentee electronic voting environment