THREAT VECTORS VOTING SCENARIO: Electronic absentee voting system with balloting via Web interface, transmission via the Internet, and automated tabulation Completed by: Cyber Security Expert 4 Data extracted.	In the conte what percei think the th realized AN effect? Prov maximum v of values as be realized effect in [m the time bu low as [min	ext of a Federa ntage of the tir reat would be D have an obs- vide minimum values. Interpre "I think this th AND have an o ost likely] pero t this estimate mum] % and a %." (numbers n to 100)	I election, me do you most likely ervable and et this range hreat would observeable cent (%) of could be as as high as	assuming the what perce it have a lo	IMPACT ext of a Feder ne threat is re ntage of the i w, medium, a umbers shou	ealized, time would and high
Voting Step: REGISTRATION	Minimum	Most Likely	Maximum	Low	Medium	High
ATTACKS						
INSIDER ATTACKS						
Attacks Against VRDB	3	5	10	95	5	0
Types of threat vectors: Intentional modification of registration records; Intentional destruction of registration records; Intentional addition of fake registration records; VRDB intentional crash;					-	-
Attacks to Voter's Assistance	2	4	10	99	1	0
Types of threat vectors: Intentional corruption by malicious insiders of information provided to voters (omission, false or incomplete statement, outdated information);				33	1	U
Attacks to Voting Access	0	0	5	99	1	0
Types of threat vectors: Intentional failure at LEO to send or misaddress registration form and instructions; Intentional failure at LEO to send or misaddress registration rejections; Intentional addition of confusing language on registration form and instructions; Intentional failure to provide login credentials and instructions to voters; Intentional corruption of login credentials and instructions provided to voters; Intentional addition of confusing information on voting interface;						
Attacks by Denial of Service	33	50	80	99	1	0
Types of threat vectors: Intentional disruption of registration activities at LEO; Intentional disruption of transmission of registration materials; Intentional disruption of voter's ability to register;						
Attacks Against Registration Forms and Instructions	0	0	3	99	1	0
Types of threat vectors: Intentional modification at LEO of registration forms and instructions; Intentional destruction at LEO of registration forms and instructions; Intentional addition at LEO of fake registration forms and instructions;						

REAT VECTORS		LIKELIHOC		IMPACT				
VOTING SCENARIO: Electronic absentee voting system with balloting via Web interface, transmission via the Internet, and automated tabulation	what perce think the th realized AN effect? Pro	ext of a rederantage of the tight reat would be D have an ob- vide minimum ralues. Interpr	ime do you e most likely servable a and	assuming the threat is realized, what percentage of the time would it have a low, medium, and high impact? (numbers should sum to 100)				
ompleted by: Cyber Security Expert 4 ata extracted.	of values as be realized effect in [m the time bu low as [min	"I think this t AND have an ost likely] per t this estimate mum] % and %." (numbers	chreat would observeable cent (%) of e could be as as high as					
Voting Step: REGISTRATION	Minimum	Most Likely	Maximum	Low	Medium	High		
Attacks During Transmission of Registration Forms and Instructions	3	5	10	99	1	0		
Types of threat vectors: Intentional modification of registration forms and instructions during their transmission from LEO to the voters; Intentional destruction of registration forms and instructions during their transmission from LEO to the voters; Intentional addition of fake registration forms and instructions during transmission from LEO to the voters;								
Attacks Against Marking of Registration Forms	3	5	10	99	1	0		
Types of threat vectors: Phishing attack; Election webserver tampering; Coerced registration; Masqueraded registration; Vote buying; Pay voter not to vote; Ineligible registration;								
Attacks During Transmission of Completed Registration Packets	0	1	5	100	0	0		
Types of threat vectors: Intentional modification of completed registration packets during their transmission from the voters to the LEO; Intentional destruction of completed registration packets during their transmission from the voters to the LEO; Intentional addition of fake completed registration packets during transmission from the voters to the LEO;								
Attacks Against Processing of Completed Registration Packets	0	0	1	100	0	0		
Types of threat vectors: Intentional modification of completed registration packets at the LEO; Intentional destruction of completed registration packets at the LEO; Intentional addition of fake completed registration packets at the LEO;								
Attacks During Transmission of Registration Rejections	0	0	1	100	0	0		
Types of threat vectors: Intentional modification of registration rejections during their transmission from LEO to the voters; Intentional destruction of registration rejections during their transmission from LEO to the voters; Intentional addition of fake registration rejections during transmission from LEO to the voters;								
UTSIDER ATTACKS								
Attacks Against Voter's Assistance	1	3	25	99	1	0		
Types of threat vectors: Intentional corruption by malicious outsiders of information provided to voters (omission, false or incomplete statement, outdated information);								
Attacks Against Voting Access	0	2	10	99	1	0		
Types of threat vectors: Phishing attack;								

THREAT VECTORS VOTING SCENARIO: Electronic absentee voting system with balloting via Web interface, transmission via the Internet, and automated tabulation Completed by: Cyber Security Expert 4 Data extracted.	In the conte what percei think the th realized AN effect? Prov maximum v of values as be realized effect in [m the time bu low as [min	ext of a Federa ntage of the ti reat would be D have an obside minimum ralues. Interpr i"I think this t AND have an ost likely] per t this estimat imum] % and %." (numbers n to 100)	al election, ime do you e most likely servable a and et this range threat would observeable ccent (%) of e could be as as high as	IMPACT In the context of a Federal election, assuming the threat is realized, what percentage of the time would it have a low, medium, and high impact? (numbers should sum to 100)				
Voting Step: REGISTRATION	Minimum	Most Likely	Maximum	Low	Medium	High		
Attacks Against Marking of Registration Forms	15	25	50	97	3	0		
Types of threat vectors: Phishing attack; Election webserver tampering; Coerced registration; Masqueraded registration; Vote buying; Pay voter not to vote; Ineligible registration;								
UNINTENTIONAL DISRUPTIONS								
ERRORS AT LOCAL ELECTION OFFICE								
Errors in VRDB	3	5	10	99	1	0		
Types of threat vectors: Accidental modification of registration records; Accidental loss of registration records; Accidental destruction of registration records; Accidental addition of erroneous registration records; VRDB accidental crash;					•			
Errors in Voter's Assistance	1	3	10	100	0	0		
Types of threat vectors: Erroneous information provided to voters (omission, false or incomplete statement, outdated information);						-		
Errors in Registration Forms and Instructions	25	33	50	100	0	0		
Types of threat vectors: Accidental modification at LEO of registration forms and instructions; Accidental loss at LEO of registration forms and instructions; Accidental destruction at LEO of registration forms and instructions; Accidental addition at LEO of erroneous registration forms and instructions;								
Errors in Processing Completed Registration Packets	5	10	25	100	0	0		
Types of threat vectors: Accidental modification of completed registration packets at the LEO; Accidental loss of completed registration packets at the LEO; Accidental destruction of completed registration packets at the LEO;								

VOTING SCENARIO: Electronic absentee voting system with balloting via Web interface, transmission via the Internet, and automated tabulation Completed by: Cyber Security Expert 4 Data extracted.	LIKELIHOOD In the context of a Federal election, what percentage of the time do you think the threat would be most likely realized AND have an observable effect? Provide minimum and maximum values. Interpret this range of values as "I think this threat would be realized AND have an observable effect in [most likely] percent (%) of the time but this estimate could be as low as [minimum] % and as high as [maximum] %." (numbers DO NOT need to sum to 100)					ealized, time would and high
Voting Step: REGISTRATION	Minimum	Most Likely	Maximum	Low	Medium	High
ERRORS DURING TRANSMISSION OF ELECTION MATERIALS						
Errors in Transmission of Registration Forms and Instructions	25	50	75	100	0	0
Types of threat vectors: Accidental modification of registration forms and instructions during their transmission from LEO to the voters; Accidental loss of registration forms and instructions during their transmission from LEO to the voters; Accidental destruction of registration forms and instructions during their transmission from LEO to the voters;						
Errors in Transmission of Completed Registration Packets	25	50	75	100	0	0
Types of threat vectors: Accidental modification of completed registration packets during their transmission from the voters to the LEO; Accidental loss of completed registration packets during their transmission from the voters to the LEO; Accidental destruction of completed registration packets during their transmission from the voters to the LEO;						
Errors in Transmission of Registration Rejections	5	10	15	100	0	0
Types of threat vectors: Accidental modification of registration rejections during their transmission from LEO to the voters; Accidental loss of registration rejections during their transmission from LEO to the voters; Accidental destruction of registration rejections during their transmission from LEO to the voters;						
ERRORS AT VOTER'S LOCATION						
Errors in Voting Access	0	3	10	100	0	0
Types of threat vectors: Online access nonexistent, irregular and/or unreliable; Difficulties with finding or logging in the election website; Election website ease-of-use and clarity;						
Errors in Obtaining Voter's Assistance	100	100	100	100	0	0
Types of threat vectors: Contact wrong LEO; Being unaware of voter's assistance resources; Putting trust in unvetted third-party resources;						
Errors in Registration Application	100	100	100	100	0	0
Types of threat vectors: Incorrect contact information provided to LEO; Registration packet incorrectly completed/signed; Registration packet incorrectly transmitted to LEO;						
ACCIDENTAL DISRUPTIONS						
Disruptions by Natural Events	0	1	2	99	1	0
Types of threat vectors: Weather-related; Earthquake; Outbreak;						

THREAT VECTORS VOTING SCENARIO: Electronic absentee voting system with balloting via Web interface, transmission via the Internet, and automated tabulation Completed by: Cyber Security Expert 4 Data extracted.	In the conte what percer think the th realized ANI effect? Prov maximum v of values as be realized effect in [m the time bu low as [mini	LIKELIHOOD IMPACT In the context of a Federal election, tage of the time do you reat would be most likely to have an observable ide minimum and alues. Interpret this range "I think this threat would hand have an observeable ost likely] percent (%) of a this estimate could be as mum] % and as high as %." (numbers DO NOT to 100)				
Voting Step: REGISTRATION	Minimum	Most Likely	Maximum	Low	Medium	High
Disruptions by Environmental Events	0	1	2	100	0	0
Types of threat vectors: Fire; Spill; Flooding;						
Disruptions by Human-Created Collateral Events	0	1	2	100	0	0
Types of threat vectors: Technical failure; Labor-related; Terrorism;		•				

VOTING SCENARIO: Electronic absentee voting system with balloting via Web interface, transmission via the Internet, and automated tabulation Completed by: Cyber Security Expert 4 Data extracted.	In the conte what percei think the th realized AN effect? Prov maximum v of values as be realized effect in [m the time bu low as [min [maximum]	LIKELIHOOD e context of a Federal election, percentage of the time do you the threat would be most likely ted AND have an observable t? Provide minimum and mum values. Interpret this range lues as "I think this threat would alized AND have an observeable t in [most likely] percent (%) of ime but: this estimate could be as is [minimum] % and as high as imum] %." (numbers DO NOT to sum to 100)				ealized, time would and high
Voting Step: ABSENTEE BALLOT REQUEST	Minimum	Most Likely	Maximum	Low	Medium	High
TTACKS INSIDER ATTACKS						
	_					
Attacks Against VRDB	5	20	40	99	1	0
Types of threat vectors: Intentional modification of registration records; Intentional destruction of registration records; Intentional addition of fake registration records; VRDB intentional crash;						
Attacks to Voter's Assistance	0	1	3	100	0	0
Types of threat vectors: Intentional corruption by malicious insiders of information provided to voters (omission, false or incomplete statement, outdated information);						
Attacks to Voting Access	0	1	3	100	0	0
Types of threat vectors: Intentional failure at LEO to send or misaddress absentee ballot request form and instructions; Intentional failure at LEO to send or misaddress absentee ballot request rejections; Intentional failure at LEO to mail or misaddress absentee ballots; Intentional addition of confusing language on absentee ballot request form and instructions; Intentional addition of confusing language on instructions for marked ballot return; Intentional failure to provide login credentials and instructions to voters; Intentional corruption of login credentials and instructions provided to voters; Intentional addition of confusing information on voting interface;						
Attacks by Denial of Service	25	50	75	95	5	0
Types of threat vectors: Election webserver tampering; Intentional disruption of absentee ballot request activities at LEO; Intentional disruption of transmission of absentee ballot request materials; Intentional disruption of voter's ability to request an absentee ballot;						
Attacks Against Absentee Ballot Request Forms and Instructions	0	1	3	100	0	0
Types of threat vectors: Intentional modification at LEO of absentee ballot request forms and instructions; Intentional destruction at LEO of absentee ballot request forms and instructions; Intentional addition at LEO of fake absentee ballot request forms and instructions;						

VOTING SCENARIO: Electronic absentee voting system with balloting via Web interface, transmission via the Internet, and automated tabulation Completed by: Cyber Security Expert 4 Data extracted.	In the conte what percei think the th realized ANI effect? Prov maximum v of values as be realized effect in [m the time bu low as [mini	In the context of a Federal election, centage of the time do you threat would be most likely aND have an observable ovide minimum and navalues. Interpret this range as "I think this threat would ad AND have an observeable (most likely) percent (%) of but this estimate could be as inimimum] % and as high as mi] %." (numbers DO NOT				IMPACT kt of a Federal election, e threat is realized, stage of the time would to, medium, and high mbers should sum to			
Voting Step: ABSENTEE BALLOT REQUEST	Minimum	Most Likely	Maximum	Low	Medium	High			
Attacks During Transmission of Absentee Ballot Request Forms and Instructions	0	0	3	100	0	0			
Types of threat vectors: Intentional modification of absentee ballot request forms and instructions during their transmission from LEO to the voters; Intentional destruction of absentee ballot request forms and instructions during their transmission from LEO to the voters; Intentional addition of fake absentee ballot request forms and instructions during transmission from LEO to the voters;									
Attacks Against Marking of Absentee Ballot Requests	25	50	75	100	0	0			
Types of threat vectors: Election webserver tampering;									
Attacks During Transmission of Completed Absentee Ballot Request Packets	0	0	3	100	0	0			
Types of threat vectors: Intentional modification of completed absentee ballot request packets during their transmission from the voters to the LEO; Intentional destruction of completed absentee ballot request packets during their transmission from the voters to the LEO; Intentional addition of fake completed absentee ballot request packets during transmission from the voters to the LEO;									
Attacks Against Processing of Completed Absentee Ballot Request Packets	0	0	5	100	0	0			
Types of threat vectors: Intentional modification of completed absentee ballot request packets at the LEO; Intentional destruction of completed absentee ballot request packets at the LEO; Intentional addition of fake completed absentee ballot request packets at the LEO;									
Attacks During Transmission of Rejections of Absentee Ballot Requests	0	0	5	100	0	0			
Types of threat vectors: Intentional modification of rejections of absentee ballot requests during their transmission from LEO to the voters; Intentional destruction of rejections of absentee ballot requests during their transmission from LEO to the voters; Intentional addition of fake rejections of absentee ballot requests during transmission from LEO to the voters;									
Attacks Against Absentee Ballots and Instructions	0	3	7	98	2	0			
Types of threat vectors: Intentional modification at LEO of absentee ballots and instructions; Intentional destruction at LEO of absentee ballots and instructions; Intentional addition at LEO of fake absentee ballots and instructions;									

THREAT VECTORS VOTING SCENARIO: Electronic absentee voting system with balloting via Web interface, transmission via the Internet, and automated tabulation Completed by: Cyber Security Expert 4 Data extracted.	In the conte what percei think the th realized AN effect? Prov maximum v of values as be realized effect in [m the time bu low as [min	ext of a Federa ntage of the ti reat would be D have an obs ide minimum alues. Interpre "I think this tl AND have an o sost likely] pero this estimate imum] % and d %." (numbers n to 100)	I election, me do you most likely ervable and et this range hreat would observeable cent (%) of e could be as as high as	IMPACT In the context of a Federal election, assuming the threat is realized, what percentage of the time would it have a low, medium, and high impact? (numbers should sum to 100)			
Voting Step: ABSENTEE BALLOT REQUEST	Minimum	Most Likely	Maximum	Low	Medium	High	
OUTSIDER ATTACKS							
Attacks Against Voter's Assistance	0	1	5	100	0	0	
Types of threat vectors: Intentional corruption by malicious outsiders of information provided to voters (omission, false or incomplete statement, outdated information);						-	
Attacks Against Voting Access	10	30	50	99	1	0	
Types of threat vectors: Phishing attack;				33			
Attacks by Denial of Service	25	50	75	99	1	0	
Types of threat vectors: Election webserver tampering; Intentional disruption of absentee ballot request activities at LEO; Intentional disruption of transmission of absentee ballot request materials; Intentional disruption of voter's ability to request an absentee ballot;							
Attacks Against Marking of Absentee Ballot Requests	0	0	5	100	0	0	
Types of threat vectors: Phishing attack; Coerced absentee ballot request; Masqueraded absentee ballot request; Vote buying; Pay voter not to vote; Ineligible absentee ballot request;							
UNINTENTIONAL DISRUPTIONS							
ERRORS AT LOCAL ELECTION OFFICE							
Errors in VRDB	1	3	5	100	0	0	
Types of threat vectors: Accidental modification of registration records; Accidental loss of registration records; Accidental destruction of registration records; Accidental addition of erroneous registration records; VRDB accidental crash;							
Errors in Voter's Assistance	0	1	5	100	0	0	
Types of threat vectors: Erroneous information provided to voters (omission, false or incomplete statement, outdated information);							

THREAT VECTORS VOTING SCENARIO: Electronic absentee voting system with balloting via Web interface, transmission via the Internet, and automated tabulation Completed by: Cyber Security Expert 4 Data extracted.	In the conte what percet think the th realized AN effect? Prov maximum v of values as the realized effect in [m the time but low as [mini	ext of a Federa trage of the ti reat would be D have an obs ide minimum alues. Interpr "I think this t AND have and ost likely] pen to this estimate imum] % and %." (numbers	me do you most likely ervable and et this range hreat would observeable cent (%) of e could be as as high as	assuming the threat is realize what percentage of the time it have a low, medium, and h impact? (numbers should su 100) uld ble of e as				
Voting Step: ABSENTEE BALLOT REQUEST	Minimum	Most Likely	Maximum	Low	Medium	High		
Errors in Absentee Ballot Request Forms and Instructions	1	3	5	100	0	0		
Types of threat vectors: Accidental modification at LEO of absentee ballot request forms and instructions; Accidental loss at LEO of absentee ballot request forms and instructions; Accidental addition at LEO of erroneous absentee ballot request forms and instructions; Accidental addition at LEO of erroneous absentee ballot request forms and instructions;								
Errors in Processing Completed Absentee Ballot Request Packets	0	1	3	100	0	0		
Types of threat vectors: Accidental modification of completed absentee ballot request packets at the LEO; Accidental loss of completed absentee ballot request packets at the LEO; Accidental destruction of completed absentee ballot request packets at the LEO;								
Errors in Absentee Ballots and Instructions	0	1	3	100	0	0		
Types of threat vectors: Accidental modification at LEO of absentee ballots and instructions; Accidental loss at LEO of absentee ballots and instructions; Accidental destruction at LEO of absentee ballots and instructions; Accidental addition at LEO of erroneous absentee ballots and instructions;								
ERRORS DURING TRANSMISSION OF ELECTION MATERIALS								
Errors in Transmission of Absentee Ballot Request Forms and Instructions	0	1	3	100	0	0		
Types of threat vectors: Accidental modification of absentee ballot request forms and instructions during their transmission from LEO to the voters; Accidental loss of absentee ballot request forms and instructions during their transmission from LEO to the voters; Accidental destruction of absentee ballot request forms and instructions during their transmission from LEO to the voters;								
Errors in Transmission of Completed Absentee Ballot Request Packets	0	1	3	100	0	0		
Types of threat vectors: Accidental modification of completed absentee ballot request packets during their transmission from the voters to the LEO; Accidental loss of completed absentee ballot request packets during their transmission from the voters to the LEO; Accidental destruction of completed absentee ballot request packets during their transmission from the voters to the LEO;								

THREAT VECTORS VOTING SCENARIO: Electronic absentee voting system with balloting via Web interface, transmission via the Internet, and automated tabulation Completed by: Cyber Security Expert 4 Data extracted.	In the conte what percer think the th realized ANI effect? Prov maximum v. of values as be realized effect in [mo the time but low as [mini	LIKELIHOC ext of a Federa ntage of the ti reat would be D have an obs ide minimum alues. Interpre "I think this tl AND have an o sost likely] pere this estimate imum] % and a %." (numbers n to 100)	el election, me do you most likely most likely most likely most likely and et this range hreat would observeable cent (%) of e could be as as high as					
Voting Step: ABSENTEE BALLOT REQUEST	Minimum	Most Likely	Maximum	Low	Medium	High		
Errors in Transmission of Rejections of Absentee Ballot Requests	0	1	3	100	0	0		
Types of threat vectors: Accidental modification of rejections of absentee ballot requests during their transmission from LEO to the voters; Accidental loss of rejections of absentee ballot requests during their transmission from LEO to the voters; Accidental destruction of rejections of absentee ballot requests during their transmission from LEO to the voters;								
ERRORS AT VOTER'S LOCATION								
Errors in Voting Access	0	1	3	100	0	0		
Types of threat vectors: Online access nonexistent, irregular and/or unreliable; Difficulties with finding or logging in the election website; Election website ease-of-use and clarity;			•		,			
Errors in Obtaining Voter's Assistance	100	100	100	100	0	0		
Types of threat vectors: Contact wrong LEO; Being unaware of voter's assistance resources; Putting trust in unvetted third-party resources;			•					
Errors in Absentee Ballot Requests	100	100	100	100	0	0		
Types of threat vectors: Incorrect contact information provided to LEO; Absentee ballot request packet incorrectly completed/signed; Absentee ballot request packet incorrectly transmitted to LEO;				100		J		
ACCIDENTAL DISRUPTIONS								
Disruptions by Natural Events	0	1	2	99	1	0		
Types of threat vectors: Weather-related; Earthquake; Outbreak;								
Disruptions by Environmental Events	0	1	2	100	0	0		
Types of threat vectors: Fire; Spill; Flooding;								
Disruptions by Human-Created Collateral Events	0	1	2	100	0	0		
Types of threat vectors: Technical failure; Labor-related; Terrorism;								

THREAT VECTORS		INCLUMO	\D.		INADACT	
VOTING SCENARIO: Electronic absentee voting system with balloting via Web interface, transmission via the Internet, and automated tabulation Completed by: Cyber Security Expert 4 Data extracted.	In the conte what percer think the thi realized ANI effect? Prov maximum vi of values as be realized if effect in [months] the time but low as [mini	LIKELIHOO ext of a Federal stage of the tir reat would be b have an obse ide minimum alues. Interpre "I think this th AND have an o st likely] pero t this estimate rnum] % and a %." (numbers	l election, me do you most likely ervable and et this range areat would observeable eent (%) of could be as as high as	assuming th what percei it have a lov	IMPACT xt of a Feder e threat is re ntage of the t v, medium, a imbers shoul	alized, time would nd high
Voting Step: ABSENTEE BALLOT DELIVERY	need to sum		Maximum	Low	Medium	High
ATTACKS						
INSIDER ATTACKS						
Attacks by Denial of Service	5	20	40	99	1	0
Types of threat vectors: Election webserver tampering; Intentional disruption of absentee ballot transmission from the LEO to the voters;						
Attacks During Transmission of Absentee Ballot and Instructions	0	1	3	100	0	0
Types of threat vectors: Intentional modification of absentee ballots and instructions during their transmission from LEO to the voters; Intentional destruction of absentee ballots and instructions during their transmission from LEO to the voters; Intentional addition of fake absentee ballots and instructions during transmission from LEO to the voters;						
OUTSIDER ATTACKS						
Attacks Against Voting Access	10	30	50	99	1	0
Types of threat vectors: Phishing attack;						
Attacks by Denial of Service	25	50	75	99	1	0
Types of threat vectors: Intentional disruption of transmission of absentee ballots from the LEO to the voters;						
UNINTENTIONAL DISRUPTIONS						
ERRORS DURING TRANSMISSION OF ELECTION MATERIALS						
Errors in Transmission of Absentee Ballot and Instructions	0	0	3	100	0	0
Types of threat vectors: Accidental modification of absentee ballots and instructions during their transmission from LEO to the voters; Accidental loss of absentee ballots instructions during their transmission from LEO to the voters; Accidental destruction of absentee ballots and instructions during their transmission from LEO to the voters;						

VOTING SCENARIO: Electronic absentee voting system with balloting via Web interface, transmission via the Internet, and automated tabulation Completed by: Cyber Security Expert 4 Data extracted.	In the conte what percet think the th realized AN effect? Prov maximum v of values as be realized effect in [m the time bu low as [min	ext of a Federa ntage of the ti reat would be D have an obs vide minimum alues. Interpre "I think this ti AND have an ost likely] per t this estimate irnum] % and %." (numbers n to 100)	al election, me do you e most likely ervable and et this range hreat would observeable cent (%) of e could be as as high as	IMPACT In the context of a Federal election, assuming the threat is realized, what percentage of the time would it have a low, medium, and high impact? (numbers should sum to 100)				
Voting Step: ABSENTEE BALLOT DELIVERY	Minimum	Most Likely	Maximum	Low	Medium	High		
ACCIDENTAL DISRUPTIONS								
Disruptions by Natural Events	0	1	2	99	1	0		
Types of threat vectors: Weather-related; Earthquake; Outbreak;								
Disruptions by Environmental Events	0	1	2	100	0	0		
Types of threat vectors: Fire; Spill; Flooding;								
Disruptions by Human-Created Collateral Events	0	1	2	100	0	0		
Types of threat vectors: Technical failure; Labor-related; Terrorism;								

THREAT VECTORS VOTING SCENARIO: Electronic absentee voting system with balloting via Web interface, transmission via the Internet, and automated tabulation Completed by: Cyber Security Expert 4 Data extracted.	In the conte what percet think the the realized AN effect? Prove maximum were of values as be realized effect in [medium the time but low as [min]	ext of a Federa ritage of the til reat would be D have an obs vide minimum alues. Interpre "I think this til AND have an o ost likely] pero til this estimate imum] % and a %." (numbers a to 100)	al election, me do you e most likely ervable and et this range hreat would observeable cent (%) of e could be as as high as	ral election, ealized, time would and high Id sum to		
Voting Step: BALLOT MARKING	Minimum	Most Likely	Maximum	Low	Medium	High
ATTACKS						
INSIDER ATTACKS						
Attacks Against Marking Absentee Ballots and Forms	1	3	5	98	2	0
Types of threat vectors: Election webserver tampering;						
OUTSIDER ATTACKS						
Attacks Against Marking Absentee Ballots and Forms	0	1	3	100	0	0
Types of threat vectors: Phishing attack; Coerced vote; Masqueraded vote; Vote buying; Pay voter not to vote; Ineligible vote;						
UNINTENTIONAL DISRUPTIONS						
ERRORS AT VOTER'S LOCATION						
Errors in Voting Access	1	3	5	100	0	0
Types of threat vectors: Online access nonexistent, irregular and/or unreliable; Difficulties with finding or logging in the election website; Election website ease-of-use and clarity;						
Errors in Obtaining Voter's Assistance	100	100	100	100	0	0
Types of threat vectors: Contact wrong LEO; Being unaware of voter's assistance resources; Putting trust in unvetted third-party resources;						
Errors in Absentee Ballot Marking	100	100	100	100	0	0
Types of threat vectors: Marked ballot packet incorrectly completed/signed; Absentee ballot damaged on webserver; Marked ballot packet incorrectly transmitted to LEO; Marked ballot packet not transmitted to LEO;						

THREAT VECTORS VOTING SCENARIO: Electronic absentee voting system with balloting via Web interface, transmission via the Internet, and automated tabulation Completed by: Cyber Security Expert 4 Data extracted.	In the conte what percet think the the realized AN effect? Prove maximum were of values as be realized effect in [medium the time but low as [min]	ext of a Federa ntage of the ti reat would be D have an obs vide minimum alues. Interpre "I think this ti AND have an o ost likely] pere t this estimate imum] % and d %." (numbers	al election, me do you most likely ervable and et this range hreat would observeable cent (%) of e could be as as high as	what percentage of the time would it have a low, medium, and high impact? (numbers should sum to 100)				
Voting Step: BALLOT MARKING	Minimum	Most Likely	Maximum	Low	Medium	High		
Disruptions by Natural Events Types of threat vectors: Weather-related; Earthquake; Outbreak;	0	1	2	99	1	0		
Disruptions by Environmental Events Types of threat vectors: Fire; Spill; Flooding;	0	1	2	100	0	0		
Disruptions by Human-Created Collateral Events Types of threat vectors: Technical failure; Labor-related; Terrorism;	0	1	2	100	0	0		

THREAT VECTORS VOTING SCENARIO: Electronic absentee voting system with balloting via Web interface, transmission via the Internet, and automated tabulation Completed by: Cyber Security Expert 4 Data extracted.	In the conte what percei think the th realized AN effect? Prov maximum v of values as be realized effect in [m the time bu low as [min	D have an obvide minimur alues. Interp "I think this AND have an ost likely] pe t this estima irnum] % and %." (numbe	ral election, time do you be most likely bervable m and bret this range threat would d observeable rcent (%) of the could be as d as high as	assuming the threat is realized, what percentage of the time w it have a low, medium, and higi impact? (numbers should sum 100)				
Voting Step: MARKED BALLOT RETURN	Minimum Most Likely Maximum			Low	Medium	High		
ATTACKS								
INSIDER ATTACKS								
Attacks by Denial of Service	0	0	1	100	0	0		
Types of threat vectors: Intentional disruption of transmission of marked ballots from voter to LEO;				100	U U	0		
Attacks During Transmission of Marked Ballots Packets	0	0	1	100	0	0		
Types of threat vectors: Intentional modification of marked ballot packets during their transmission from the voters to the LEO; Intentional destruction of marked ballot packets during their transmission from the voters to the LEO; Intentional addition of fake marked ballot packets during transmission from the voters to the LEO;								
OUTSIDER ATTACKS								
Attacks to Voting Access	3	5	7	100	0	0		
Types of threat vectors: Phishing attack;		·			I			
Attacks by Denial of Service	25	50	75	99	1	0		
Types of threat vectors: Intentional disruption of transmission of marked ballots;								
UNINTENTIONAL DISRUPTIONS								
ERRORS DURING TRANSMISSION OF ELECTION MATERIALS								
Errors in Transmission of Marked Ballot Packets	0	0	2	100	0	0		
Types of threat vectors: Accidental modification of marked ballot packets during their transmission from the voters to the LEO; Accidental loss of marked ballot packets during their transmission from the voters to the LEO; Accidental destruction of marked ballot packets during their transmission from the voters to the LEO;								

VOTING SCENARIO: Electronic absentee voting system with balloting via Web interface, transmission the Internet, and automated tabulation Completed by: Cyber Security Expert Data extracted.	what percent think the predict of values a percent in [in the time below as [m. [maximum]]	s "I think this I AND have an nost likely] pe	ral election, time do you be most likely sservable in and cret this range threat would dobserveable rcent (%) of the could be as d as high as	assuming the threat is realized, what percentage of the time would it have a low, medium, and high impact? (numbers should sum to 100) Id ble f as					
Voting Step: MARKED BALLOT RETURN	Minimun	Most Likely	Maximum	Low	Medium	High			
ACCIDENTAL DISRUPTIONS									
Disruptions by Natural Events Types of threat vectors: Weather-related; Earthquake; Outbreak;	0	1	2	99	1	0			
Disruptions by Environmental Events Types of threat vectors: Fire; Spill; Flooding;	0	1	2	100	0	0			
Disruptions by Human-Created Collateral Events Types of threat vectors: Technical failure; Labor-related; Terrorism;	0	1	2	100	0	0			

THREAT VECTORS VOTING SCENARIO: Electronic absentee voting system with balloting via Web interface, transmission via the Internet, and automated tabulation Completed by: Cyber Security Expert 4.	think the threat would be most likely realized AND have an observable effect? Provide minimum and maximum values. Interpret this range of values as "I think this threat would be realized AND have an observeable effect in [most likely] percent (%) of				ealized, time would and high	
Data extracted.	effect in [most likely] percent (%) of the time but this estimate could be as low as [minimum] % and as high as [maximum] %." (numbers DO NOT need to sum to 100)					
Voting Step: RETURNED BALLOT PROCESSING & TABULATION	Minimum	Most Likely	Maximum	Low	Medium	High
ATTACKS						
INSIDER ATTACKS						
Attacks Against VRDB	0	0	2	100	0	0
Types of threat vectors: Intentional modification of registration records; Intentional destruction of registration records; Intentional addition of fake registration records; VRDB intentional crash;						
Attacks by Denial of Service	0	0	1	100	0	0
Types of threat vectors: Intentional disruption of processing of marked ballots at LEO;						
Attacks Against Processing of Returned Ballots	0	0	1	100	0	0
Types of threat vectors: Intentional modification of marked ballot packets at the LEO; Intentional destruction of marked ballot packets at the LEO; Intentional addition of fake marked ballot packets at the LEO; Intentional loss of marked ballot packets at the LEO;						
Attacks Against Tabulation	0	0	1	100	0	0
Types of threat vectors: Intentional subversion of the counting process; Intentional subversion of the validation process; Intentional subversion of the tabulated results;						
Attacks Against Adjudication	0	0	1	100	0	0
Types of threat vectors: Intentional refusal of legitimate ballots; Intentional acceptance of invalid ballots; Intentional misapplication of rules for determining voter's intent;						
OUTSIDER ATTACKS						
Attacks by Denial of Service	25	50	75	99	1	0
Types of threat vectors: Intentional disruption of marked ballot processing and tabulation activities at LEO;						

THREAT VECTORS				IMPACT					
VOTING SCENARIO: Electronic absentee voting system with <u>balloting</u> via Web interface, <u>transmission via the Internet</u> , and <u>automated tabulation</u>	In the context of a Federal election, what percentage of the time do you think the threat would be most likely realized AND have an observable effect? Provide minimum and maximum values. Interpret this range of the time would in the context of a Federal election, assuming the threat is realized, what percentage of the time would it have a low, medium, and high impact? (numbers should sum to 100)								
Completed by: Cyber Security Expert 4. Data extracted.	be realized AND have an observeable effect in [most likely] percent (%) of the time but this estimate could be a low as [minimum] % and as high as [maximum] %." (numbers DO NOT need to sum to 100)								
Voting Step: RETURNED BALLOT PROCESSING & TABULATION	Minimum	Most Likely	Maximum	Low	Medium	High			
UNINTENTIONAL DISRUPTIONS									
ERRORS AT LOCAL ELECTION OFFICE									
Errors in VRDB	0	0	2	100	0	0			
Types of threat vectors: Accidental modification of registration records; Accidental loss of registration records; Accidental destruction of registration records; Accidental addition of erroneous registration records; VRDB accidental crash;									
Errors in Processing of Returned Ballots	0	0	2	100	0	0			
Types of threat vectors: Accidental modification of marked ballot packets at the LEO; Accidental destruction of marked ballot packets at the LEO; Accidental loss of marked ballot packets at the LEO;		ı							
Errors in Tabulation	0	0	2	100	0	0			
Types of threat vectors: Errors in counting process; Errors in validation process; Accidental loss of tabulated results; Accidental destruction of tabulated results; Errors in publication of tabulated results;				100	0	J			
Errors in Adjudication	0	0	2	100	0	0			
Types of threat vectors: Accidental refusal of legitimate ballots; Accidental acceptance of invalid ballots; Accidental misapplication of rules for determining voter's intent;				100	<u> </u>	Ü			
ACCIDENTAL DISRUPTIONS									
Disruptions by Natural Events	0	1	2	99	1	0			
Types of threat vectors: Weather-related; Earthquake; Outbreak;									
Disruptions by Environmental Events	0	1	2	100	0	0			
Types of threat vectors: Fire; Spill; Flooding;									
Disruptions by Human-Created Collateral Events	0	1	2	100	0	0			
Types of threat vectors: Technical failure; Labor-related; Terrorism;									

THREAT VECTORS VOTING SCENARIO: Electronic absentee voting system with balloting via Web interface, transmission via the Internet, and automated tabulation	In the conte what percer think the th realized ANI effect? Prov maximum v	LIKELIHOC ext of a Federa ntage of the ti reat would be D have an obs vide minimum alues. Interpr "I think this t	al election, ime do you e most likely servable and et this range	what percentage of the time would it have a low, medium, and high impact? (numbers should sum to 100)			
Completed by: Cyber Security Expert 4 Data extracted.	effect in [me the time but low as [mini	AND have an ost likely] per this estimate imum] % and %." (numbers to 100)	cent (%) of e could be as as high as				
Voting Step: POST-ELECTION AUDIT	Minimum	Most Likely	Maximum	Low	Medium	High	
ATTACKS							
INSIDER ATTACKS							
Attacks Against VRDB	0	0	2	100	0	0	
Types of threat vectors: Intentional modification of registration records; Intentional destruction of registration records; Intentional addition of fake registration records; VRDB intentional crash;							
Attacks Against Post-Election Audit	0	0	2	100	0	0	
Types of threat vectors: Intentionally compromise auditors; Intentionally select audit samples non-randomly; Intentional modification of audit results; Intentional destruction of audit results;						-	
UNINTENTIONAL DISRUPTIONS							
ERRORS AT LOCAL ELECTION OFFICE							
Errors in VRDB	0	0	2	100	0	0	
Types of threat vectors: Accidental modification of registration records; Accidental loss of registration records; Accidental destruction of registration records; Accidental addition of erroneous registration records; VRDB accidental crash;							
Errors in Post-Election Audit	0	0	2	100	0	0	
Types of threat vectors: Accidental non-random selection of audit samples; Accidental modification of audit results; Accidental loss of audit results; Accidental destruction of audit results;							
ACCIDENTAL DISRUPTIONS							
Disruptions by Natural Events	0	1	2	99	1	0	
Types of threat vectors: Weather-related; Earthquake; Outbreak;							

<u>balloting via Web interface</u> , <u>transmission via</u> <u>the Internet</u> , and <u>automated tabulation</u>	In the conte what percer think the thing realized ANI effect? Prov maximum violation of values as be realized in effect in [mithe time but low as [mini	at of a Federa tage of the ti- reat would be D have an obs- ide minimum alues. Interpre "I think this ti AND have an obst likely] pero t this estimate mum] % and a %." (numbers into 100)	I election, me do you most likely ervable and et this range hreat would observeable eent (%) of e could be as as high as	it have a low, medium, and high impact? (numbers should sum to 100)				
Voting Step: POST-ELECTION AUDIT	Minimum	Most Likely	Maximum	Low	Medium	High		
Disruptions by Environmental Events	0	1	2	100	0	0		
Types of threat vectors: Fire; Spill; Flooding;								
Disruptions by Human-Created Collateral Events Types of threat vectors: Technical failure; Labor-related; Terrorism;	0	1	2	100	0	0		