CLAIMS

~~What is claimed is:~~

1. A conducted electrical weapon comprising:

a magazine comprising a plurality of firing tubes;

a plurality of wire-tethered electrodes, wherein each firing tube of the plurality of firing tubes is configured to receive a single, different electrode of the plurality of wire-tethered electrodes; and

a housing comprising:

a user control interface;

a signal generator configured to generate a first voltage of a stimulus signal and a second voltage of ~~a~~the stimulus signal;

a selector circuit configured to selectively couple the signal generator to the plurality of wire-tethered electrodes; and

a processing circuit coupled to the user control interface, the signal generator and the selector circuit, wherein the processing circuit is configured to perform operations comprising:

receiving a first activation signal of a sequence of activation signals via the user control interface;

deploying a single first electrode of the plurality of wire-tethered electrodes toward a remote location in response to the first activation signal of the sequence of activation signals;

receiving a second activation signal of the sequence of activation signals via the user control interface;

deploying a second electrode of the plurality of wire-tethered electrodes toward the remote location in response to the second activation signal of the sequence of activation signals;

coupling the first voltage of the stimulus signal to the single first electrode via the selector circuit; and

coupling the second voltage of the stimulus signal to the second electrode via the selector circuit.

2. The conducted electrical weapon of claim 1, wherein the single first electrode is disposed parallel to the second electrode in the magazine prior to being deployed in response to the first activation signal.

3. The conducted electrical weapon of claim 2, wherein the single first electrode is configured to launch from the magazine at a first location, wherein the second electrode is configured to launch from the magazine at a second location, and wherein a spacing between the first location and the second location is less than 1.0 inches.

4. The conducted electrical weapon of claim 3, wherein coupling the first voltage of the stimulus signal comprises coupling the first voltage of the stimulus signal to the single first electrode after the second electrode is deployed.

5. The conducted electrical weapon of claim 3, wherein coupling the first voltage of the stimulus signal comprises coupling the first voltage of the stimulus signal to the single first electrode after both deploying the single first electrode and deploying the second electrode.

6. The conducted electrical weapon of claim 3, wherein deploying the second electrode includes deploying a single second electrode.

7. The conducted electrical weapon of claim 6, wherein the processing circuit is further configured to:

delay deployment of the second electrode for a minimum period of time after the single first ~~partial circuit~~electrode is deployed; and

enable the deployment of the second electrode after the minimum period of time has elapsed.

8. The conducted electrode weapon of claim 6, wherein the single first electrode is coupled to the signal generator via a first filament and the second electrode is coupled to the signal generator via a second filament, and wherein a length of the first filament is at least thirty feet and a length of the second filament is at least thirty feet.

9. The conducted electrical weapon of claim 3, wherein deploying the single first electrode comprises deploying the single first electrode after deploying the second electrode.

10. The conducted electrode weapon of claim 3, wherein deploying the second electrode comprises deploying a plurality of second electrodes of the plurality of wire-tethered electrodes in response to the second activation signal.

11. A method performed by a conducted electrical weapon, the method comprising:

receiving, via a user control interface of the conducted electrical weapon, a first activation signal of a sequence of activation signals;

deploying a single first electrode of a plurality of wire-tethered electrodes toward a remote location in response to the first activation signal of the sequence of activation signals, wherein the single first electrode is deployed from a first firing tube of a magazine of the conducted electrical weapon;

receiving, via the user control interface of the conducted electrical weapon, a second activation signal of the sequence of activation signals;

deploying a second electrode of the plurality of wire-tethered electrodes toward the remote location in response to a second activation signal of the sequence of activation signals; and

generating, via a signal generator of the conducted electrical weapon, a first voltage of a stimulus signal and a second voltage of the stimulus signal;

coupling, via a selector circuit of the conducted electrical weapon, the first voltage of the stimulus signal to the single first electrode; and

coupling, via the selector circuit of the conducted electrical weapon, the second voltage of the stimulus signal to the second electrode to provide the stimulus signal to the remote location.

12. The method of claim 11, wherein deploying the second electrode includes deploying a single second electrode.

13. The method of claim 12, wherein the single first electrode is deployed toward the remote location at a first angle of deployment relative to the remote location and the second electrode is deployed toward the remote location at a second angle of deployment relative to the remote location, and wherein the first angle of deployment is independent of the second angle of deployment.

14. The method of claim 13, wherein the single first electrode is deployed from the conducted electrical weapon at a first launch angle, ~~and~~ wherein the second electrode is deployed

from the conducted electrical weapon at a second launch angle, and wherein the first launch angle is equal to the second launch angle.

15. The method of claim 14, wherein the single first electrode is deployed from the conducted electrical weapon at a first location on the conducted electrical weapon, and wherein the second electrode is deployed from the conducted electrical weapon at a second location on the conducted electrical weapon, and wherein a spacing between the first location and the second location is less than 1.0 inches.

16. The method of claim 15, wherein deploying the second electrode comprises deploying the second electrode at least six inches away from the single first electrode at the remote location.

17. The method of claim 15, wherein the second voltage of the stimulus signal is provided to the remote location after the single first electrode is deployed and the second electrode is deployed.

18. The method of claim 15, wherein the first voltage of the stimulus signal is coupled to the single first electrode after both the single first electrode and the single second electrode are deployed.

19. The method of claim 11, wherein deploying the second electrode comprises deploying at least two second electrodes of the plurality of wire-tethered electrodes.

20. The method of claim 11, further comprising decoupling, via at least one of the signal generator or the selector circuit, the single first electrode from the first voltage during a first period of time between a first time at which the single first electrode is deployed and a second time at which the second electrode is deployed.

~~21. A method, comprising:~~

~~deploying, by a processing circuit of a conducted electrical weapon, a first partial circuit toward a remote location in response to a first activation signal of a sequence of activation signals, wherein the first partial circuit comprises a first electrode;~~

~~deploying, by the processing circuit, a second electrode toward the remote location to provide a second partial circuit, wherein the second electrode is deployed in response to a second activation signal of the sequence of activation signals; and~~

providing, by a signal generator of the conducted electrical weapon, an electrical signal between the first electrode and the second electrode, wherein the second partial circuit enables the electrical signal to be provided at the remote location via the first partial circuit.

22. The method of claim 21, wherein the first partial circuit comprises a single conductive signal path between the conducted electrical weapon and the remote location.

23. The method of any one of claims 21-22, wherein, prior to the second activation signal, the first partial circuit is configured to provide an open-circuit voltage between the conducted electrical weapon and the remote location.

24. The method of any one of claims 21-23, further comprising decoupling, by the processing circuit, the first electrode from the signal generator during a first period of time between a first time at which the first electrode is deployed and a second time at which the second electrode is deployed.

25. The method of any one of claims 21-24, wherein the electrical signal is provided based on a first voltage and a second voltage, and wherein one or more of a group comprising the first voltage and second voltage is retained at the conducted electrical weapon in response to the first activation signal of the series of activation signals.

26. The method of any one of claims 21-25, wherein deploying the second electrode comprises deploying the second electrode a second period of time after the first partial circuit is deployed.

27. The method of any one of claims 21-26, wherein deploying the second electrode comprises preventing the deploying of the second electrode for a minimum period of time, wherein the second period of time is equal or greater than the minimum period of time.

28. The method of any one of claims 21-27, wherein the minimum period of time is between 50 milliseconds and 100 milliseconds.

29. The method of any one of claims 21-28, wherein providing the electrical signal includes providing the electrical signal between the first electrode and the second electrode after each of the first electrode is deployed and the second electrode is deployed.

30. The method of any one of claims 21-29, wherein providing the electrical signal includes coupling the signal generator to the first partial circuit before or after providing the electrical signal to the second electrode.

31. The method of any one of claims 21-30, wherein providing the electrical signal includes coupling the electrical signal to the first partial circuit and the second partial circuit starting at a same time.

32. The method of any one of claims 21-31, wherein deploying the first partial circuit comprises providing at least a third conductive signal path between the conducted electrical weapon and the remote location.

33. The method of any one of claims 21-32, further comprising detecting a voltage of the electrical signal at the first electrode, wherein the voltage is detected starting after the first partial circuit is deployed and the second electrode is deployed.

34. A conducted electrical weapon comprising:

a signal generator configured to generate a stimulus signal;

a plurality of wire-tethered electrodes;

a processing circuit configured to deploy the plurality of wire-tethered electrodes from the conducted electrical weapon and provide the stimulus signal across the plurality of wire-tethered electrodes, wherein the processing circuit is configured to:

deploy a first partial circuit toward a remote location in response to a first activation signal of a sequence of activation signals, wherein the partial circuit comprises a first electrode of the plurality of wire-tethered electrodes;

deploy a second electrode of the plurality of wire-tethered electrodes toward the remote location to provide a second partial circuit, wherein the second electrode is deployed in response to a second activation signal of the sequence of activation signals; and

provide the stimulus signal between the first electrode and the second electrode, wherein the second partial circuit enables the stimulus signal to be provided at the remote location via the first partial circuit.

35. The conducted electrical weapon of claim 34, wherein the first partial circuit comprises a single conductive signal path between the conducted electrical weapon and the first electrode at the remote location.

36. The conducted electrical weapon of any one of claims 34-35, wherein the processing circuit is further configured to:

delay deployment of the second electrode for a minimum period of time after the first partial circuit is deployed; and

enable deployment of the second electrode after the minimum period of time has elapsed.

37. The conducted electrical weapon of any one of claims 34-36, further comprising a selector circuit, wherein the processing circuit is configured to control the selector circuit to:

couple the first partial circuit to the signal generator after the first partial circuit is deployed and the second electrode is deployed.

38. The conducted electrical weapon of any one of claims 34-37, further comprising a voltage detector configured to detect a voltage at the first electrode starting after the first partial circuit is deployed and the second electrode is deployed.

39. A method, comprising:

deploying, by a processing circuit of a conducted electrical weapon, a first partial circuit toward a remote location in response to a first activation signal of a sequence of activation signals, wherein the partial circuit comprises a first wire-tethered electrode;

deploying, by the processing circuit, a second wire-tethered electrode toward the remote location to provide a second partial circuit, wherein the second wire-tethered electrode is deployed in response to a second activation signal of the sequence of activation signals; and

conducting, by a signal generator of the conducted electrical weapon, a stimulus current at the remote location, wherein the stimulus current is conducted between the first wire-tethered electrode and the second wire-tethered electrode, and wherein the first partial circuit is prevented from providing the stimulus current at the remote location unless the second wire-tethered electrode is deployed.

40. The method of claim 39, further comprising coupling the first wire-tethered electrode to the signal generator to provide the stimulus current after the second wire-tethered is deployed.

41. A method, comprising:

initiating, by a processing circuit of a conducted electrical weapon, a first launch of one or more first electrodes responsive to a first activation signal of a plurality of activation signals;

initiating, by the processing circuit of the conducted electrical weapon, a second launch of one or more second electrodes responsive to a second activation signal of the plurality of activation signals; and

providing, by a signal generator of the conducted electrical weapon, a current between at least one first electrode of the one or more first electrodes and at least one second electrode of the one or more second electrodes, wherein a first number of the one or more first electrodes is less than a minimum number of electrodes required by the conducted electrical weapon for remote delivery of the current.

42. The method of claim 41, wherein the minimum number is determined in accordance with a second number of different voltages generated by the signal generator for the remote delivery of the current and a third number of the different voltages to which each electrode of the one or more first electrodes and the one or more second electrodes is respectively configured to be coupled at a same time.

43. The method of any one of claims 41-42, wherein the second number is two and the third number is one.

44. The method of any one of claims 41-43, wherein the first number is one.

45. The method of any one of claims 41-44, wherein the minimum number is greater than two.

46. The method of any one of claims 41-45, wherein the one or more second electrodes include a plurality of electrodes.

47. The method of any one of claims 41-46, wherein a second number of the plurality of electrodes is greater than the minimum number.

48. The method of any one of claims 41-47, wherein the second launch is initiated prior to the first launch.

49. The method of any one of claims 41-48, further comprising:

providing, by the signal generator, the current between at least two second electrodes of the plurality of electrodes prior to the first launch.

50. The method of any one of claims 41-49, wherein each electrode of the one or more first electrodes and each electrode of the one or more second electrodes is respectively coupled to the conducted electrical weapon via a different conductive filament.

51. The method of any one of claims 41-50, wherein a second number of the one or more second electrodes is less than the minimum number.

52. The method of any one of claims 41-51, wherein the first launch is initiated prior to the second launch.

~~53. A conducted electrical weapon, comprising:~~

~~a signal generator configured to generate a first voltage and a second voltage for remote delivery of a stimulus current;~~

~~a plurality of electrodes comprising one or more first electrodes and one or more second electrodes; and~~

~~a processing circuit configured to launch the plurality of electrodes and electrically couple the plurality of electrodes to the signal generator, wherein the processing circuit is configured to:~~

~~provide one or more first ignition signals to initiate a first launch of the one or more first electrodes responsive to a first activation signal of a plurality of activation signals;~~

~~provide one or more second ignition signals to initiate a second launch of the one or more second electrodes responsive to a second activation signal of the plurality of activation signals; and~~

~~remotely deliver the stimulus current between at least one first electrode of the one or more first electrodes and at least one second electrode of the one or more second electrodes, wherein the first launch provides less than a minimum number of electrodes required by the conducted electrical weapon for the remote delivery of the stimulus current.~~

~~54. The conducted electrical weapon of claim 53, wherein one or more first electrodes comprise only one electrode and the minimum number is determined to be two in accordance with the only one electrode being further configured to conduct one voltage at a time of either the first voltage and the second voltage.~~

~~55. The conducted electrical weapon of any one of claims 53-54, wherein the processing circuit is configured to deploy the only one electrode prior to the second launch.~~

~~56. The conducted electrical weapon of any one of claims 53-55, wherein each electrode of plurality of electrodes is configured to provide a respective, single, electrically conductive path for the stimulus current.~~

~~57. The conducted electrical weapon of any one of claims 53-56, wherein the processing circuit is further configured to initially couple the first voltage and the second voltage to the plurality of electrodes after the first launch and the second launch.~~

~~58. A handle of a conducted electrical weapon, comprising:~~

~~a control interface;~~

a signal generator configured to generate a first voltage and a second voltage for remote delivery of a stimulus signal;

a processing circuit configured to launch a plurality of provided electrodes and electrically couple the plurality of provided electrodes to the signal generator, wherein the processing circuit is configured to:

provide one or more first ignition signals to initiate a first launch of one or more first provided electrodes of the provided plurality of electrodes responsive to an activation signal received via the control interface;

provide one or more second ignition signals to initiate a second launch of one or more provided second electrodes of the provided plurality of electrodes responsive to another activation signal received via the control interface; and

couple the first voltage and the second voltage across at least one first provided electrode of the one or more first provided electrodes and at least one second provided electrode of the one or more second provided electrodes, wherein, in accordance with the one or more first ignition signals, the first launch provides less than a minimum number of electrodes required by the conducted electrical weapon for the remote delivery of the stimulus signal.

59. The handle of claim 58, wherein the minimum number is two.

60. The handle of any one of claims 58-59, wherein the one or more first ignition signals comprise a single ignition signal and the processing circuit is configured to provide the single ignition signal to a single provided electrode of the plurality of provided electrodes.

61. A method, comprising:

initiating, by a processing circuit of a conducted electrical weapon, a first launch of a plurality of first electrodes toward a remote location in response to a first activation signal of a sequence of activation signals;

initiating, by the processing circuit, a second launch of one or more second electrodes toward the remote location in response to a second activation signal of the sequence of activation signals;

providing, by a signal generator of the conducted electrical weapon, a stimulus signal via at least one first electrode of the plurality of first electrodes and at least one second electrode of

~~the one or more second electrodes, wherein the one or more second electrodes are fewer in number than the plurality of first electrodes.~~

~~62. The method of claim 61, wherein the one or more second electrodes comprise one second electrode.~~

~~63. The method of any one of claims 61-62, wherein the one or more first electrodes comprise at least three first electrodes.~~

~~64. The method of any one of claims 61-63, wherein the one or more second electrodes are deployed after the one or more first electrodes are deployed.~~

~~65. The method of any one of claims 61-64, further comprising:~~

~~receiving, by the processing circuit, the second activation signal via a control interface of the conducted electrical weapon, wherein the plurality of first electrodes are deployed after the second activation signal is received.~~

~~66. The method of any one of claims 61-65, further comprising:~~

~~receiving, by the processing circuit, the first activation signal via the control interface.~~

~~67. The method of any one of claims 61-66, further comprising automatically selecting, by the processing circuit, the one or more second electrodes after the first launch and prior to the second activation signal of the sequence of activation signals.~~

~~68. The method of any one of claims 61-67, further comprising:~~

~~generating, by the signal generator, two different voltages for the stimulus signal, wherein providing the stimulus signal comprises applying one voltage of the two different voltages to the one or more second electrodes.~~

~~69. The method of any one of claims 61-68, wherein providing the stimulus signal comprises applying the two different voltages to the plurality of first electrodes.~~

~~70. The method of any one of claims 61-69, wherein providing the stimulus signal comprises applying a second voltage of the two different voltages to the plurality of first electrodes, wherein the second voltage is different from the one voltage.~~

~~71. The method of any one of claims 61-70, wherein providing the stimulus signal comprises applying at least one voltage generated by the signal generator to the plurality of first electrodes prior to initiating the second launch.~~

72. The method of any one of claims 61-71, wherein the stimulus signal is initially provided to the one more second electrodes after the first launch and the second launch, and wherein the first launch is after the second launch.

73. A conducted electrical weapon comprising:

a signal generator configured to generate a stimulus signal;

a plurality of wire-tethered electrodes;

a user control interface configured to receive a plurality of activation signals; and

a processing circuit configured to deploy the plurality of wire-tethered electrodes from the conducted electrical weapon and provide the stimulus signal across the plurality of wire-tethered electrodes, wherein the processing circuit is configured to:

initiate a first launch of first wire-tethered electrodes of the plurality of wire-tethered electrodes toward a remote location in response to a first activation signal of the plurality of activation signals;

initiate a second launch of one or more second wire-tethered electrodes of the plurality of wire-tethered electrodes toward the remote location in response to a second activation signal of the plurality of activation signals; and

provide the stimulus signal via at least one first wire-tethered electrode of the plurality of first wire-tethered electrodes and at least one second wire-tethered electrode of the one or more second wire-tethered electrodes, wherein a second number of the one or more second wire-tethered electrodes is less than a first number of the plurality of first wire-tethered electrodes.

74. The conducted electrical weapon of claim 73, wherein the one or more second wire-tethered electrodes comprise a single second wire-tethered electrode and the second number is one.

75. The conducted electrical weapon of any one of claims 73-74, wherein the one or more first wire-tethered electrodes comprise at least two first wire-tethered electrodes.

76. The conducted electrical weapon of any one of claims 73-75, wherein the processing circuit is further configured to:

automatically select a next set of wire-tethered electrodes of the plurality of wire-tethered electrodes, wherein the next set of wire-tethered electrodes is automatically selected after the first launch and prior to the second activation signal of the plurality of activation signals; and

initiate the second launch in accordance with the next set of wire-tethered electrodes, wherein the next set of wire-tethered electrodes comprises the one or more second wire-tethered electrodes.

77. The conducted electrical weapon of any one of claims 73-76, wherein the stimulus signal comprises two different voltages for delivering the stimulus signal, and wherein providing the stimulus signal comprises applying one voltage of the two different voltages to the one or more second electrodes.

78. A method, comprising:

simultaneously deploying, by a conducted electrical weapon, first wire-tethered electrodes toward a remote location in response to detecting a first actuation of a control interface of the conducted electrical weapon;

deploying, by the conducted electrical weapon, a single second electrode toward the remote location in response to detecting a second actuation of the control interface of the conducted electrical weapon; and

conducting, by the conducted electrical weapon, an electrical signal from a signal generator of the conducted electrical weapon at the remote location via at least one first wire-tethered electrode of the first wire-tethered electrodes and the second single wire-tethered electrode.

79. The method of claim 78, wherein the single second wire-tethered electrode is deployed after the first wire-tethered electrodes are deployed.

80. The method of any one of claims 78-79, further comprising:

conducting, by the conducted electrical weapon, a second electrical signal from the signal generator via the first wire-tethered electrodes prior to the second actuation, wherein the second electrical signal is conducted between the first wire-tethered electrodes at the remote location.

81. A method, comprising:

deploying, by a conducted electrical weapon, a single first electrode in response to a first activation signal of a sequence of activation signals;

deploying, by the conducted electrical weapon, a second electrode in response to a second activation signal of the sequence of activation signals; and

providing, by a signal generator of the conducted electrical weapon, a stimulus signal between the single first electrode and the second electrode.

82. The method of claim 81, wherein the single first electrode comprises a single wire-tethered electrode.

83. The method of any one of claims 81-82, wherein the first activation signal comprises a single first activation signal.

84. The method of any one of claims 81-83, further comprising detecting, by a processing circuit of the conducted electrical weapon, the first activation signal.

85. The method of any one of claims 81-84, further comprising detecting, by the processing circuit of the conducted electrical weapon, the second activation signal.

86. The method of any one of claims 81-85, wherein the first activation signal is detected from a user control interface in communication with the processing circuit and the second activation signal is detected from the user control interface.

87. The method of any one of claims 81-86, wherein deploying the second electrode includes deploying a single second electrode.

88. The method of any one of claims 81-87, wherein the second activation signal comprises a single second activation signal.

89. The method of any one of claims 81-88, wherein the single first electrode is deployed toward a remote location at a first angle of deployment relative to the remote location and the second electrode is deployed toward the remote location at a second angle of deployment relative to the remote location, and wherein the first angle of deployment is independent of the second angle of deployment.

90. The method of any one of claims 81-89, wherein the single first electrode is deployed from the conducted electrical weapon at a first launch angle, and wherein the second electrode is deployed from the conducted electrical weapon at a second launch angle, and wherein the first launch angle is equal to the second launch angle.

91. The method of any one of claims 81-90, wherein the single first electrode is deployed from the conducted electrical weapon at a first location on the conducted electrical weapon, and wherein the second electrode is deployed from the conducted electrical weapon at a second location on the conducted electrical weapon, wherein a spacing between the first location and the second location is less than 1.0 inches.

92. A conducted electrical weapon comprising:

a signal generator configured to generate a stimulus signal;

a plurality of wire-tethered electrodes;

a processing circuit for deploying the plurality of wire-tethered electrodes from the conducted electrical weapon and providing the stimulus signal across the plurality of wire-tethered electrodes, wherein the processing circuit is configured to:

deploy a single first electrode of the plurality of wire-tethered electrodes in response to a first activation signal of a sequence of activation signals;

deploy a second electrode of the plurality of wire-tethered electrodes in response to a second activation signal of the sequence of activation signals; and

couple the signal generator across the single first electrode and the second electrode to provide the stimulus signal.

93. The conducted electrical weapon of claim 92, wherein the processing circuit is further configured to receive the first activation signal, and wherein the first activation signal comprises a single first activation signal.

94. The conducted electrical weapon of any one of claims 92-93, further comprising a user control interface, wherein the single first activation signal is received by the processing circuit via the user control interface.

95. The conducted electrical weapon of any one of claims 92-94, wherein the processing circuit is further configured to receive the second activation signal via the user control interface, wherein the second activation signal comprises a single second activation signal.

96. The conducted electrical weapon of any one of claims 92-95, wherein the single first electrode is configured to launch from the conducted electrical weapon at a first angle relative to the conducted electrical weapon, wherein the second electrode is configured to launch from the conducted electrical weapon at a second angle relative to the conducted electrical weapon, and wherein the first angle is parallel to the second angle.

97. The conducted electrical weapon of any one of claims 92-96, wherein the single first electrode is configured to launch from the conducted electrical weapon at a first location on the conducted electrical weapon, wherein the second electrode is configured to launch from the conducted electrical weapon at a second location, and wherein a spacing between the first location and the second location is less than 0.5 inches.

98. A method, comprising:

~~deploying, by a conducted electrical weapon, a single first electrode from the conducted electrical weapon in response to a single first activation signal of a sequence of activation signals;~~

~~deploying, by the conducted electrical weapon, a single second electrode from the conducted electrical weapon in response to a single second activation signal of the sequence of activation signals; and~~

~~providing, by a signal generator of the conducted electrical weapon, a stimulus signal via the single first electrode and the single second electrode.~~

~~99. The method of claim 98, wherein deploying the single first electrode includes deploying the single first electrode at a first angle of deployment and wherein deploying the single second electrode includes deploying the single second electrode at a second angle of deployment, and wherein the first angle of deployment is independent of the second angle of deployment.~~

~~100. The method of any one of claims 98-99, wherein providing the stimulus signal includes providing the stimulus signal from the signal generator across the single first electrode and the single second electrode after each of the single first electrode and the single second electrode are deployed from the conducted electrical weapon.~~