CLAIMS:

1. A method for managing a microgrid (200), the method comprising:

receiving (702) status data from a set of microgrid controller elements (209)connected in a peer-to-peer controller network connecting the set of microgrid controller elements within a microgrid local area network (222)of a microgrid;

responsive to the status data indicating a change in the microgrid that exceeds a threshold level (704), re-aligning (706) the set of microgrid controller elements and a set of tasks associated with the set of microgrid controller elements to form a re-aligned microgrid configuration;

executing (708) the re-aligned microgrid configuration; and

receiving status data from a set of distributed energy resource cluster processors (202, 204, 206, 208) connected in a peer-to-peer processor network within the microgrid local area network.

2. The method of claim 1 further comprising:

sending the status data generated by a first controller element on the microgrid (200) to a second controller element in the set of microgrid controller elements (209); and

sending the status data generated by the controller element on the microgrid to every processor in the set of distributed energy resource cluster processors (202, 204, 206, 208) on the microgrid using the peer-to-peer processor network.

3. The method of claim 1 further comprising:

sending processor status data generated by a first distributed energy cluster processor on the microgrid (200) to each controller element in the set of microgrid controller elements (209); and

sending the processor status data generated by the distributed energy cluster processor to a second processor in the set of distributed energy resource cluster processors on the microgrid using the peer-to-peer processor network.

4. An apparatus comprising:

a microgrid (200) having a set of microgrid elements (209);

a microgrid controller (226) associated with the microgrid configured to initialize a first configuration of the microgrid; verify an address for each element in the set of microgrid elements; re-align the set of microgrid elements to form a second grid configuration in response to receiving status data from the set of microgrid elements connected in a peer-to-peer network that indicates a reconfiguration of the microgrid,; and execute the second grid configuration;

wherein the peer-to-peer network is a network within a local area network (222) and wherein the peer-to-peer network further comprises:

a peer-to-peer redundant ring controller network (418) sending the status data generated by a controller element within the set of microgrid elements to a set of distributed energy resource processors (202, 204, 206, 208) on the microgrid using the peer-to-peer local area network; and

a peer-to-peer processor network sending the status data generated by a distributed energy cluster processor

to every processor in the set of distributed energy resource processors.

5. The apparatus of claim 4 further comprising:

a set of two routers (444,446) connected to a processor (402) in a distributed energy resource cluster (400) within the microgrid (200).

6. The apparatus of claim 4, wherein the set of elements (209) comprises at least one of a sensor associated with a distributed energy resource, a controller associated with the distributed energy resource, a processor, a router, and a managed Ethernet switch.

7. A computer program product for configuring a microgrid (200), the computer program product comprising:

a computer recordable storage medium;

program code, stored on the computer recordable storage medium, for initializing a first configuration of the microgrid having a set of microgrid elements (209);

program code, stored on the computer recordable storage medium, for verifying an address for each element in the set of microgrid elements;

program code, stored on the computer recordable storage medium, for re-aligning the set of microgrid elements to form a second grid configuration in response to receiving status data from the set of microgrid elements connected in a peer-to-peer network that indicates a reconfiguration of the microgrid;

program code, stored on the computer recordable storage medium, for executing the second grid configuration; and

program code, stored on the computer recordable storage medium, for receiving status data from a set of