CLAIMS

What is claimed is:

1. An access structure integration assembly comprising:

at least one channeled structure having a linear gap, a solid, flattened bottom portion and two flattened side wall portions extending upward from the bottom portion, each side wall portion terminating in a flange extending from the side wall portions such that the flanges extend toward each other, thereby creating the linear gap; and

at least one socket comprising a hollow tubular body connected at a first end to a solid base and having a second open end, wherein the solid base includes at least one aperture;

wherein the socket is slidingly engaged with the channeled structure using at least one T-bolt which is secured in the at least one aperture of the solid base and slidingly engaged with the linear gap.

2. The assembly of claim 1, wherein the two flattened side wall portions extend upward from the bottom portion at approximately right angles, and the flanges extend at a right angle from the side wall portions.

3. The assembly of claim 1, wherein the channeled structure is configured to secure to a base structure and the socket is configured to secure to a second structure.

4. The assembly of claim 3, wherein the base structure is a suspended work platform system.

5. The assembly of claim 4, wherein the suspended work platform is articulatable.

6. The assembly of claim 3, wherein the second structure is a supported work platform system.

7. The assembly of claim 1, further comprising a deck retainer.

8. A base structure comprising:

at least one unit comprising at least two elongate structural members;

at least two access structure integration assemblies, each assembly secured to and parallel with a respective one of the elongate structural member of the at least one unit, each integration assembly comprising

at least one channeled structure including a linear gap, wherein the channeled structure comprises a bottom portion, and

at least one socket comprising a hollow tubular body connected at a first end to a solid base and having a second open end, wherein the solid base includes at least one aperture, and

at least one T-bolt,

wherein the base of the socket is slidingly engaged with the linear gap of the channeled structure using the at least one T-bolt which is secured in the at least one aperture of the solid base,

wherein each channeled structure is secured to and parallel with one of the elongate structural members.

9. The base structure of claim 8, wherein the channeled structure is a substantially squared tubular C channel and comprises:

the bottom portion which is flattened;

two flattened side wall portions extending upward form the bottom portion at approximately right angles, each side wall portion terminating in a flange extending at a right angle from the side wall portions such that the flanges extend toward each other; and

the linear gap having a width.

10. The base structure of claim 8, further comprising a deck retainer.

11. The base structure of claim 10, wherein the deck retainer is secured between the unit and a C channel such that the deck retainer is parallel with the channeled structure.

12. The base structure of claim 8, wherein the at least one unit comprises four elongate structural members interconnected with four hubs.

13. The base structure of claim 8, wherein the sockets are configured to secure to a supported work platform system.

14. The base structure of claim 8, wherein the elongate structural members contain a plurality of cage nuts and the C channels comprise a plurality of apertures corresponding to the cage nuts.

15. The base structure of claim 14, wherein the integration assemblies are secured to the elongate structural members by a plurality of bolts, each bolt extending through an aperture of the channeled structures and engaging a corresponding cage nut.

16. The base structure of claim 15, wherein each elongate structural member comprises an upper element and a bottom element.

17. The base structure of claim 16, wherein the integration assemblies are secured to the upper element of a elongate structural member.

18. The base structure of claim 12 further comprising a plurality of suspension connectors secured to the hubs.

19. A suspended work platform system comprising:

a plurality of elongate structural members, each having an upper element and a bottom element; and

a plurality of hubs,

wherein the plurality of elongate structural members comprises at least four elongate structural members and wherein the plurality of hubs comprises at least four hubs;

wherein the elongate structural members and hubs are interconnected such that the elongate structural members are coplanar with respect to each other;

a plurality of access structure integration assemblies, each integration assembly comprising

a substantially linear deck retainer comprising a plurality of apertures;

a substantially squared tubular channeled structure parallel with the deck retainer comprising

a solid, flattened bottom portion containing a plurality of apertures corresponding to the apertures of the deck retainer,

two flattened side wall portions extending upward from the bottom portion at approximately right angles, each side wall portion terminating in a flange extending at a right angle from the side wall portions such that the flanges extend toward each other, and

a linear gap extending the length of the channeled structure and having a width;

a plurality of deck retainer bolts extending through the corresponding apertures of the deck retainer and the channeled structure;

a plurality of sockets comprising

a solid base having a plurality of apertures, and

a hollow tubular body having a first end connected to the solid base and a second open end,

a plurality of T-bolts extending through the apertures of the socket and into the linear gap of the channeled structure and having a head portion with a width greater than that of the linear gap, wherein the T-bolts are slidingly engaged with the channeled structure and each of the T-bolts is secured with a nut;

wherein each channeled structure secure at least two sockets, wherein each integration assembly is secured to the upper element of one of the elongate structural members, and

wherein the number of elongate structural members is greater than the number of integration assemblies.

20. The suspended work platform system of claim 19, wherein the elongate structural members comprise a plurality of cage nuts which engage the deck retainer bolts to secure the deck retainer and channeled structure to the elongate structural members.

21. The suspended work platform system of claim 19, further comprising at least two suspension connectors, each secured to one of the hubs.

22. The suspended work platform system of claim 19, wherein the sockets are configured to secure a second structure.

23. The suspended work platform system of claim 22, wherein the second structure is a supported work platform system.

24. The suspended work platform system of claim 19 which is articulatable.

25. The suspended work platform system of claim 19, wherein at least one of the hubs comprises

a first surface with a set of openings;

a second surface substantially parallel to the first surface, the second surface having a second set of openings; and

a structural element connected between the first surface and the second surface,

wherein at least one of the first set and second set of openings is co-axial with respect tot one of the openings in the second set of openings.

26. An integrated system comprising:

a base structure which is a suspended work platform system comprising at least two elongate structural members, each having an upper element, a lower element, and a plurality of cage nuts positioned along the upper element;

at least one unit of a supported work platform system;

at least two integration assemblies, each assembly comprising

a C-chaped channeled structure including a bottom portion having a plurality of apertures and a linear gap, each aperture corresponding to a respective cage nut, and

at least one socket comprising a hollow tubular body having a first end connected to a solid base and a second open end, wherein the solid base includes at least one aperture, and at least one T-bolt, wherein the socket is slidingly engaged with the linear gap of the C-shaped channeled structure using the at least one T-bolt which is secured in the at least one aperture of the solid base;

wherein each integration assembly is secured to one of the elongate structural members so as to be parallel with the respective elongate structural member, and wherein the second structure is secured to the suspended work platform system by engagement with the sockets.

27. The integrated system of claim 26, wherein the base structure comprises at least one unit comprising:

at least four elongate structural members, each having an upper element, a bottom element, and a plurality of diagonal support members interspersed between the upper and lower elements;

wherein at least two of the elongate structural members include at least two cage nuts; and

at least four hubs;

wherein the elongate structural members and hubs are interconnected such that the elongate structural members are coplanar with respect to each other.

28. The integrated system of claim 27, wherein each integration assembly is secured to a elongate structural member such that the integration assembly is parallel with the elongate structural member.

29. The integrated system of claim 28, wherein each integration assembly is secured to the elongate structural member using at least two bolts which each engage one cage nut.

30. The integrated system of claim 26, wherein each channeled structure is a C channel comprising:

a solid, flattened bottom portion,

two flattened side wall portions extending upward from the bottom portion at approximately right angles, each side wall portion terminating in a flange extending at a right angle from the side wall portions such that the flanges extend toward each other, and

a linear gap extending the length of the C channel and having a width.

31. The integrated system of claim 26, further comprising a third structure, the third structure comprising:

at least four hubs; and

at least four elongate structural members, each of the elongate structural members interconnected so that (i) one of the elongate structural members – and two of the hubs – are configured to remain stationary; (ii) two of the elongate structural members are rotatable; and (iii) two of the hubs – and one of the elongate structural members – are translatable;

wherein the two stationary hubs are connected to the second structure;

wherein, when interconnected, the two rotatable elongate structural members, the two translatable hubs, and the one translatable elongate structural member can articulate from an initial position to a final position with respect to the stationary elongate structural member and the stationary hubs;

wherein at least four elongate structural members are substantially coplanar with respect to one another in the initial and final positions;

wherein at least one of the elongate structural members is configured to be connected with at least one of the hubs using a pin to provide free rotation of the at least one elongate structural member with respect to the at least one hub about the pin; and

wherein the free rotation is restricted by at least one of (i) an additional pin that is to be located proximate a perimeter of the at least one hub; and (ii) at least one portion of a platform when the platform is positioned with respect to the elongate structural members in the final position.

32. An integrated work platform system for suspending form an overhead structure, the system comprising:

a first structure comprising

at least two suspension connectors with a first end and a second end, wherein the second end is configured to secure to an overhead structure;

a plurality of elongate structural members, each having an upper element and bottom element; and

a plurality of hubs, at least two of the hubs having a first surface with an opening configured to engage the first end of the suspension connectors,

wherein the plurality of elongate structural members comprises at least four elongate structural members and the plurality of hubs comprises at least four hubs;

wherein the elongate structural members and hubs are interconnected such that the elongate structural members are coplanar with respect to each other;

a plurality of integration assemblies, each secured to an elongate structural member and comprising

a substantially linear deck retainer comprising a plurality of apertures;

a substantially squared tubular C channel parallel with the deck retainer, each C-channel comprising

a solid, flattened bottom portion containing a plurality of apertures corresponding to the apertures of the deck retainer,

two flattened side wall portions extending upward form the bottom portion at approximately right angles, each side wall portion terminating in a flange extending at a right angle from the side wall portions such that the flanges extend toward each other, and

a linear gap extending the length of the C channel and having a width;

a plurality of deck retainer bolts extending through the corresponding apertures of the deck retainer and C channel;

a plurality of sockets comprising

a solid base having a plurality of apertures, and

a hollow tubular body having a first end connected to the solid base and a second open end,

a plurality of T-bolts extending through the apertures of the socket and into the linear gap of the C channel and having a head portion with a width greater than that of the linear gap, wherein the T-bolts are slidingly engaged with the C channels and each of the T-bolts is secured with a nut;

wherein each C channel secures at least two sockets; and

a second structure having a framework secured to the sockets.

33. The integrated work platform system of claim 32, wherein the second structure includes a plurality of coplanar platforms.

34. The integrated work platform system of claim 33, further comprising at least one additional platform parallel to, but not coplanar with, the platforms.

35. The integrated work platform system of claim 33, wherein the second structure comprises at least three parallel, non-coplanar platforms.

36. A method of installing a supported work platform system with respect to a suspended work platform system, the method comprising:

providing a suspended work platform structure that is suspended from a structure, the suspended work platform system comprising a plurality of interconnected hubs and elongate structural members such that the elongate structural members are coplanar with respect to each other;

aligning a plurality of deck retainers parallel to a plurality of elongate structural members such that the number of deck retainers is less than the number of elongate structural members and the deck retainers are each parallel with respect to each other;

aligning a plurality of C-channels collinear with the deck retainers, wherein the C-channels comprise a solid, flattened bottom portion containing a plurality of apertures corresponding to the apertures of the deck retainer, two flattened side wall portions extending upward form the bottom portion at approximately right angles, each side wall portion terminating in a flange extending at a right angle from the side wall portions such that the flanges extend toward each other, and a linear gap extending the length of the C channel, wherein each flange has an inner surface and an outer surface;

securing the deck retainers and C-channels to the elongate structural members using the plurality of bolts;

providing a plurality of sockets, the sockets comprising a tubular body connected at a first end to a solid base and having a second open end, wherein the solid base includes at least two apertures, wherein each of the sockets further comprises one T-bolt projecting through each of the apertures of the solid base such that the T-bolt is opposed to the tubular body, and a nut partially engaged with each T-bolt;

sliding each socket along the outer surface of one of the flanges such that the T-bolts pass through the linear gap;

tightening the nuts so that the head of the T-bolts engage the inner surfaces of the flanges; and

securing a first end of a supported work platform system frame member in each of the plurality of sockets.

37. The method of claim 36, further comprising providing a work platform assembly on a second end of the supported work platform system frame members.

38. The method of claim 37, further comprising:

providing an articulatable work platform assembly comprising a plurality of hubs and a plurality of elongate structural members connected to the plurality of hubs; and

articulating the articulatable work platform assembly from an initial position to a final position, the articulating including at least one of rotating the translating one or more of the plurality of elongate structural members with respect to one or more of the plurality of hubs;

wherein the plurality of elongate structural members are substantially coplanar with respect to each other in the initial and final positions.