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 ~~joist~~ socket comprising a hollow tubular body and a base,

wherein the ~~joist~~ socket is slidingly engaged with the channeled structure using at least one T-bolt which is slidingly engaged with the linear gap.

2. The assembly of claim 1, wherein the ~~channeled structure comprises:~~

~~a solid, flattened bottom portion;~~

two flattened side wall portions extend~~ing~~ upward from the bottom portion at approximately right angles~~, each side wall portion terminating in~~ and the flanges extend~~ing~~ 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~~.

~~3. The assembly of claim 2, wherein the joist socket is slidingly engaged with the channeled structure using at least one T-bolt which is slidingly engaged with the linear gap of the channeled structure.~~

~~4. The assembly of claim 3, wherein the T-bolt comprises a head having a width greater than that of the linear gap.~~

~~5. The assembly of claim 1 , wherein the joist socket comprises:~~

~~a hollow tubular body; and~~

~~a base.~~

~~6.~~3. The assembly of claim 1 , wherein the channeled structure is configured to secure to a base structure and the ~~joist~~ socket is configured to secure to a second structure.

~~7~~4. The assembly of claim ~~6~~3, wherein the base structure is a suspended work platform system.

~~8~~5. The assembly of claim ~~7~~4, wherein the suspended work platform is articulatable.

~~9~~6. The assembly of claim ~~6~~3, wherein the second structure is a supported work platform system.

~~10~~7. The assembly of claim 1, further comprising a deck retainer.

~~11. An access structure integration assembly comprising:~~

~~at least one substantially squared tubular channeled structure, the channeled structure comprising~~

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

~~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; at least one joist socket comprising~~

~~a hollow tubular body, and~~

~~a base having a plurality of apertures,~~

~~a plurality of T-bolts extending through the apertures of the joist 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; and~~

~~optionally, at least one substantially linear deck retainer comprising a plurality of apertures corresponding to the apertures of the channeled structure, wherein the deck retainer is parallel to the channeled structure and secured to the channeled structure by a plurality of bolts, each bolt extending through a set of corresponding apertures of the channeled structure and deck retainer.~~

~~12~~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 ~~joist~~ socket comprising a hollow tubular body, a base 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,

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

~~13~~9. The base structure of claim ~~12~~8, wherein the channeled structure is a substantially squared tubular C channel and comprises:

~~a solid, flattened~~ the bottom portion which is flattened;

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

~~14. The base structure of claim 13, wherein the joist sockets are slidingly engaged with the C channels using at least one T-bolt which is slidingly engaged with the linear gap of the C channel.~~

~~15~~10. The base structure of claim ~~12~~8, further comprising a deck retainer.

~~16~~11. The base structure of claim ~~15~~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.

~~17~~12. The base structure of claim ~~12~~8, wherein the at least one unit comprises four ~~joists~~ elongate structural members interconnected with four hubs.

~~18~~13. The base structure of claim ~~12~~8, wherein the ~~joist~~ sockets are configured to secure to a ~~second structure~~supported work platform system.

~~19. The base structure of claim 18, wherein the second structure is a supported work platform system.~~

~~20. The base structure of claim 12, wherein the unit comprises at least two joists and each integration assembly is secured to one of the joists.~~

~~21~~14. The base structure of claim 8 ~~20~~, wherein the ~~joists~~ elongate structural members contain a plurality of cage nuts and the C channels comprise a plurality of apertures corresponding to the cage nuts.

~~22~~15. The base structure of claim ~~16~~14, wherein the integration assemblies are secured to the ~~joists~~ elongate structural members by a plurality of bolts, each bolt extending through an aperture of the channeled structures and engaging a corresponding cage nut.

~~23. The base structure of claim 12, comprising a plurality of units, each unit defined by four joists interconnected with four hubs, wherein the joists and hubs are interconnected such that the joists are copolanar with respect to one another.~~

~~24~~16. The base structure of claim ~~23~~1623~~15~~, wherein each ~~joist~~ elongate structural member comprise~~s~~~~ing~~ an upper element and a bottom element.

~~25~~17. The base structure of claim ~~24~~16, wherein the ~~comprising a plurality of~~ integration assemblies~~, each integration assembly~~ are secured to the upper element of a ~~joist~~ elongate structural member ~~and parallel to the joist~~.

~~26. The base structure of claim 25, wherein each joist further comprises a plurality of cage nuts and each C channel includes a plurality of apertures corresponding to the cage nuts.~~

~~27. The base structure of claim 26, wherein the integration assemblies are secured to the joists by a plurality of bolts, each bolt extending through an aperture in the channeled structure and engaging a cage nut.~~

~~28~~18. The base structure of claim ~~17~~ 12 further comprising a plurality of suspension connectors secured to the hubs.

~~29~~19. A suspended work platform system comprising:

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

a plurality of hubs,

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

wherein the ~~joists~~elongate structural members and hubs are interconnected such that the ~~joists~~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 having 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 channeled structure;

a plurality of ~~joist~~ sockets comprising

a hollow tubular body, and

a base having a plurality of apertures, and

a plurality of T-bolts extending through the apertures of the ~~joist~~ 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 secures at least two ~~joist~~ sockets, wherein each integration assembly is secured to the upper element of one of the ~~joists~~elongate structural members, and

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

~~30~~20. The suspended work platform system of claim ~~29~~19, wherein the ~~joists~~elongate structural members comprise a plurality of cage nuts which engage the deck retainer bolts to secure deck retainer and channeled structure to ~~joists~~elongate structural members.

~~31~~21. The suspended work platform system of claim ~~29~~19, further comprising at least two suspension connectors, each secured to one of the hubs.

~~32~~22. The suspended work platform system of claim ~~29~~19, wherein the ~~joist~~ sockets are configured to secure a second structure.

~~33~~23. The suspended work platform system of claim ~~32~~22, wherein the second structure is a supported work platform system.

~~34~~24. The suspended work platform system of claim ~~29~~ 19 which is articulatable.

~~35~~25. The suspended work platform system of claim ~~29~~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 second surface,

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

~~36~~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;

~~a second structure~~at least one unit of a supported work platform system;

at least two integration assemblies, each assembly comprising

a C-shaped 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 ~~joist~~ socket comprising a hollow tubular body, a base and at least one T-bolt, wherein the socket is slidingly engaged with the linear gap of the C-shaped channel structure using the at least one T-bolt;

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

~~37. The integrated system of claim 36, wherein the base structure is a work platform system.~~

~~38. The integrated system of claim 37, wherein the base structure is a suspended work platform system.~~

~~39. The integrated system of claim 38, wherein the suspended work platform system is articulatable.~~

~~40~~27. The integrated system of claim ~~36~~26, wherein the base structure comprises at least one unit comprising

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

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

at least four hubs,

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

~~41. The integrated system of claim 36, wherein the integration assemblies each further include a substantially linear deck retainer.~~

~~42~~28. The integrated system of claim ~~40~~27, wherein each integration assembly is secured to a ~~joist~~elongate structural member such that the integration assembly is parallel with the ~~joist~~elongate structural member.

~~43. The integrated system of claim 42, wherein each joist further includes at least two cage nuts.~~

~~44~~29. The integrated system of claim ~~43~~28, wherein each integration assembly is secured to the ~~joist~~elongate structural member using at least two bolts which each engage one cage nut.

~~45~~30. The integrated system of claim ~~36~~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.

~~46. The integrated system of claim 45, wherein each joist socket is slidingly engaged with the C channel by a T-bolt slidingly engaged with the linear gap of the C channel.~~

~~47. The integrated system of claim 36, wherein each joist socket comprises a hollow tubular body and a base.~~

~~48. The integrated system of claim 36, wherein each integration assembly comprises two joist sockets.~~

~~49. The integrated system of claim 36, wherein the second structure is at least one unit of a work platform system.~~

~~50. The integrated system of claim 49, wherein the second structure is a supported work platform system.~~

~~51. The integrated system of claim 50, wherein the supported work platform system comprises at least two levels.~~

~~52. The integrated system of claim 36, further comprising a barrier secured to the second structure.~~

~~53. The integrated system of claim 36, wherein the second structure is shoring.~~

~~54~~31. The integrated system of claim ~~36~~26, further comprising a third structure, the third structure comprising

at least four hubs; and

at least four ~~joists~~elongate structural members, each of the four ~~joists~~elongate structural members configured to be interconnected with at least two of the four hubs;

wherein the ~~joists~~elongate structural members and hubs are configured to be interconnected so that (i) one of the ~~joists~~elongate structural members - and two of the hubs - configured to remain stationary; (ii) two of the ~~joists~~elongate structural members are rotatable; and (iii) two of the hubs - and one of the ~~joists~~elongate structural members - are translatable;

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

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

wherein the at least four ~~joists~~elongate structural members are substantially coplanar with respect to each other in the initial and final positions;

wherein at least one of the ~~joists~~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 last one ~~joist~~elongate structural member with respect to the at last 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 a portion of a platform

when the platform is positioned with respect to the hubs and ~~joists~~elongate structural members in the final position.

~~55~~32. An integrated work platform system for suspending from 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 ~~joists~~elongate structural members, each having an upper element and a 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 ~~joists~~elongate structural members comprises at least four ~~joists~~elongate structural members and wherein the plurality of hubs comprises at least four hubs;

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

a plurality of integration assemblies, each secured to a ~~joist~~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 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;

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

a plurality of ~~joist~~ sockets comprising

a hollow tubular body, and

a base having a plurality of apertures, and

a plurality of T-bolts extending through the apertures of the ~~joist~~ 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 ~~joist~~ sockets; and a second structure having framework secured to the ~~joist~~ sockets.

~~56~~33. The integrated work platform system of claim ~~55~~32, wherein the second structure includes a plurality of coplanar platforms.

~~57~~34. The integrated work platform system of claim ~~56~~33, further comprising at least one additional platform parallel to, but not copolanar with, the platforms.

~~58~~35. The integrated work platform system of claim ~~56~~33, wherein the second structure comprises at least three parallel, non-coplanar platforms.

~~59. A method of integrated a second structure with respect to a base structure, the method comprising:~~

~~providing a base structure;~~

~~providing a second structure;~~

~~providing at least two integration assemblies, each integration assembly comprising a C channel and a joist socket slidingly engaged with the C channel; and~~

~~securing the C channels of the integration assemblies to the base structure and securing the joist sockets of the integration assemblies to the second structure.~~

~~60. The method of claim 59, wherein the base structure is a suspended work platform system.~~

~~61. The method of claim 60, wherein the base structure is articulatable.~~

~~62. The method of claim 59, wherein the second structure is a work platform system.~~

~~63~~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 system that is suspended from a structure, the suspended work platform system comprising a plurality of interconnected hubs and ~~joists~~elongate structural members such the ~~joists~~elongate structural members are coplanar with respect to each other,

aligning a plurality of deck retainers parallel to a plurality of ~~joists~~elongate structural members such that the number of deck retainers is less than the number of ~~joists~~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 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, wherein each flange has an inner surface and an outer surface;

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

providing a plurality of ~~joist~~ sockets, the ~~joist~~ sockets comprising a tubular body, a base with at least two apertures, one T-bolt projecting through each of the apertures such that the T-bolt is oppose that tubular body, and a nut partially engaged with each T-bolt;

sliding each ~~joist~~ 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 ~~joist~~ sockets.

~~64~~37. The method of claim ~~63~~36, further comprising providing a work platform assembly on a second end of the supported work platform system frame members.

~~65~~38. The method of claim ~~64~~37, further comprising:

providing an articulatable work platform assembly comprising a plurality of hubs and a plurality of ~~joists~~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 and translating one or more of the plurality of ~~joists~~elongate structural members with respect to one or more of the plurality of hubs;

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