CLAIMS

What is claimed is:

1. A jackup deployed riser protection structure comprising:

a plurality of coupler receivers disposed onto a jackup hull;

a tubular sleeve, wherein the tubular sleeve is a hollow structure that allows a riser to pass through;

a support structure coupled with the tubular sleeve to provide support for the tubular sleeve; and

a plurality of couplers coupled with the support structure, wherein each of the plurality of couplers is coupled with one of the plurality of coupler receivers, so that the jackup deployed riser protection structure is supported by the jackup hull in order to provide protection to the riser.

2. The jackup deployed riser protection structure of claim 1, wherein the support structure comprises two triangle frames extending from the tubular sleeve at a predetermined angle;

wherein each triangle frame comprises:

a horizontal beam with one proximity end and a distal end;

a slope beam with one proximity end and a distal end;

a vertical beam with one top end and a bottom end; and

a diagonal beam with one proximity end and a distal end;

wherein the proximity ends of the horizontal beam and slope beam are coupled to the tubular sleeve at higher coupling points and the proximity end of the diagonal beam to the tubular sleeve at a lower coupling point;

wherein the distal ends of the horizontal and slope beams are coupled to form a distal juncture;

wherein the distal end of the diagonal beam is coupled to the slope beam at a middle point; and

wherein the top and bottom ends of the vertical beam are coupled to a middle point of the horizontal and slope beams respectively.

3. The jackup deployed riser protection structure of claim 2, wherein the support structure further comprises two horizontal members and two cross members for bracing the two triangle frames; wherein all four brace members are coupled to the middle points of the horizontal beam and slope beam.

4. The jackup deployed riser protection structure of claim 2, wherein each of the triangle frames is disposed with at least two of the plurality of couplers at the distal juncture and the middle point of the horizontal beam.

5. The jackup deployed riser protection structure of claim 1, wherein the tubular sleeve comprises one partial tubular for coupling to the support structure and another partial tubular that is separable from or movably coupled with the one partial tubular; thereby when the two partial tubular are assembled, the riser passes through it.

6. The jackup deployed riser protection structure of claim 1, wherein the tubular sleeve comprises one partial tubular for coupling to the support structure and a plurality of clamps that are separable from or movably coupled with the one partial tubular; thereby when the one partial tubular and plurality of clamps are assembled, the riser passes through it.

7. The jackup deployed riser protection structure of claim 6, further comprises a second tubular sleeve that is gripped by the tubular sleeve; so that the riser passes through the second tubular sleeve.

8. A jackup drilling platform comprising:

a jackup hull;

a plurality of legs slidably passing through the jackup hull for providing support to the jackup hull;

a riser for being used during drilling operation; and

a jackup deployed riser protection structure comprising:

a plurality of coupler receivers disposed onto a jackup hull;

a tubular sleeve, wherein the tubular sleeve is a hollow structure that allows the riser to pass through;

a support structure coupled with the tubular sleeve to provide support for the tubular sleeve; and

a plurality of couplers coupled with the support structure, wherein each of the plurality of couplers is coupled with one of the plurality of coupler receivers, so that the jackup deployed riser protection structure is supported by the jackup hull in order to provide protection to the riser.

9. The jackup drilling platform of claim 8, wherein the support structure comprises two triangle frames extending from the tubular sleeve at a predetermined angle;

wherein each triangle frame comprises:

a horizontal beam with one proximity end and a distal end;

a slope beam with one proximity end and a distal end;

a vertical beam with one top end and a bottom end; and

a diagonal beam with one proximity end and a distal end;

wherein the proximity ends of the horizontal beam and slope beam are coupled to the tubular sleeve at higher coupling points and the proximity end of the diagonal beam to the tubular sleeve at a lower coupling point;

wherein the distal ends of the horizontal and slope beams are coupled to form a distal juncture;

wherein the distal end of the diagonal beam is coupled to the slope beam at a middle point; and

wherein the top and bottom ends of the vertical beam are coupled to a middle point of the horizontal and slope beams respectively.

10. The jackup drilling platform of claim 9, wherein the support structure further comprises two horizontal members and two cross members for bracing the two triangle frames; wherein all four brace members are coupled to the middle points of the horizontal beam and slope beam.

11. The jackup drilling platform of claim 9, wherein each of the triangle frames is disposed with at least two of the plurality of couplers at the distal juncture and the middle point of the horizontal beam.

12. The jackup drilling platform of claim 8, wherein the tubular sleeve comprises one partial tubular for coupling to the support structure and another partial tubular that is separable from or movably coupled with the one partial tubular; thereby when the two partial tubular are assembled, the riser passes through it.

13. The jackup drilling platform of claim 8, wherein the tubular sleeve comprises one partial tubular for coupling to the support structure and a plurality of clamps that are separable from or movably coupled with the one partial tubular; thereby when the one partial tubular and plurality of clamps are assembled, the riser passes through it.

14. The jackup drilling platform of claim 13, further comprises a second tubular sleeve that is gripped by the tubular sleeve; so that the riser passes through the second tubular sleeve.

CLAIMS

1. A jackup deployed riser protection structure comprising:

a plurality of coupler receivers disposed onto a jackup hull;

a tubular sleeve, wherein the tubular sleeve is a hollow structure that allows a riser to pass through;

a support structure coupled with the tubular sleeve to provide support for the tubular sleeve; and

a plurality of couplers coupled with the support structure, wherein each of the plurality of couplers is coupled with one of the plurality of coupler receivers, so that the jackup deployed riser protection structure is supported by the jackup hull in order to provide protection to the riser;

wherein the support structure comprises two triangle frames extending from the tubular sleeve at a predetermined angle;

wherein each triangle frame comprises:

a horizontal beam with one proximity end and a distal end;

a slope beam with one proximity end and a distal end;

a vertical beam with one top end and a bottom end; and

a diagonal beam with one proximity end and a distal end;

wherein the proximity ends of the horizontal beam and slope beam are coupled to the tubular sleeve at higher coupling points and the proximity end of the diagonal beam to the tubular sleeve at a lower coupling point;

wherein the distal ends of the horizontal and slope beams are coupled to form a distal juncture;

wherein the distal end of the diagonal beam is coupled to the slope beam at a middle point; and

wherein the top and bottom ends of the vertical beam are coupled to a middle point of the horizontal and slope beams respectively.

2. The jackup deployed riser protection structure of claim 1, wherein the support structure further comprises two horizontal members and two cross members for bracing the two triangle frames; wherein all four brace members are coupled to the middle points of the horizontal beam and slope beam.

3. The jackup deployed riser protection structure of claim 1, wherein each of the triangle frames is disposed with at least two of the plurality of couplers at the distal juncture and the middle point of the horizontal beam.

4. A jackup drilling platform comprising:

a jackup hull;

a plurality of legs slidably passing through the jackup hull for providing support to the jackup hull;

a riser for being used during drilling operation; and

a jackup deployed riser protection structure comprising:

a plurality of coupler receivers disposed onto a jackup hull;

a tubular sleeve, wherein the tubular sleeve is a hollow structure that allows the riser to pass through;

a support structure coupled with the tubular sleeve to provide support for the tubular sleeve; and

a plurality of couplers coupled with the support structure, wherein each of the plurality of couplers is coupled with one of the plurality of coupler receivers, so that the jackup deployed riser protection structure is supported by the jackup hull in order to provide protection to the riser;

wherein the support structure comprises two triangle frames extending from the tubular sleeve at a predetermined angle;

wherein each triangle frame comprises:

a horizontal beam with one proximity end and a distal end;

a slope beam with one proximity end and a distal end;

a vertical beam with one top end and a bottom end; and

a diagonal beam with one proximity end and a distal end;

wherein the proximity ends of the horizontal beam and slope beam are coupled to the tubular sleeve at higher coupling points and the proximity end of the diagonal beam to the tubular sleeve at a lower coupling point;

wherein the distal ends of the horizontal and slope beams are coupled to form a distal juncture;

wherein the distal end of the diagonal beam is coupled to the slope beam at a middle point; and

wherein the top and bottom ends of the vertical beam are coupled to a middle point of the horizontal and slope beams respectively.

5. The jackup drilling platform of claim 4, wherein the support structure further comprises two horizontal members and two cross members for bracing the two triangle frames; wherein all four brace members are coupled to the middle points of the horizontal beam and slope beam.

6. The jackup drilling platform of claim 4, wherein each of the triangle frames is disposed with at least two of the plurality of couplers at the distal juncture and the middle point of the horizontal beam.