CLAIMS

What is claimed is:

1. A spacecraft servicing pod, comprising:

a body configured to be deployed from a carrier spacecraft at an initial orbit other than a geosynchronous orbit;

at least one spacecraft servicing component configured to perform at least one servicing operation on a target spacecraft while being coupled to the target spacecraft;

a thruster assembly configured to alter at least one of an orbit, a velocity, or a momentum of the spacecraft servicing pod; and

a docking mechanism for coupling the body to the target spacecraft, wherein the thruster assembly is configured to transport the body from the initial orbit to the geosynchronous orbit after the body is deployed from the carrier spacecraft,

wherein the spacecraft servicing pod lacks at least one feature for independently docking and/or rendezvousing with the target spacecraft and requires another spacecraft separate from the carrier spacecraft to be docked to the target spacecraft.

2. The spacecraft servicing pod of claim 1, wherein the thruster assembly is positioned on a boom arm coupled to the body.

3. The spacecraft servicing pod of claim 1, wherein the another spacecraft is configured to rendezvous with the spacecraft servicing pod, to deliver the spacecraft servicing pod to the target spacecraft, and to couple the spacecraft servicing pod to the target spacecraft.

4. The spacecraft servicing pod of claim 1, wherein the thruster assembly is further configured to alter at least one of an orbit, a velocity, or a momentum of the target spacecraft when the body is coupled to the target spacecraft.

5. The spacecraft servicing pod of claim 1, further comprising a payload carried by the spacecraft servicing pod and configured to be delivered to the target spacecraft with the spacecraft servicing pod.

6. The spacecraft servicing pod of claim 1, wherein the thruster assembly is configured to modify the orbit of the spacecraft servicing pod to position the spacecraft servicing pod proximate the target spacecraft.

7. A spacecraft servicing pod, comprising:

a body configured to be deployed from a carrier spacecraft at an initial orbit other than a final destination orbit of the spacecraft servicing pod;

at least one spacecraft servicing component configured to perform at least one servicing operation on a target spacecraft while being coupled to the target spacecraft; and

a docking mechanism for coupling the body to the target spacecraft, wherein the body is configured to be transported from the initial orbit to the final destination orbit after the body is deployed from the carrier spacecraft, and wherein the docking mechanism is configured to couple to the target spacecraft with the assistance of another coupling spacecraft configured to hold and position the body relative to the target spacecraft, and wherein the spacecraft servicing pod lacks the ability to independently rendezvous and dock with the target spacecraft and requires the another coupling spacecraft to be docked to the target spacecraft, wherein the spacecraft servicing pod lacks one or more prepositioning features.

8. The spacecraft servicing pod of claim 7, further comprising a thruster assembly configured to transport the body from the initial orbit to the final destination orbit after the body is deployed from the carrier spacecraft.

9. The spacecraft servicing pod of claim 8, wherein the thruster assembly is positioned on a boom arm coupled to the body .

10. The spacecraft servicing pod of claim 7, wherein the spacecraft servicing pod is configured to be positioned at a location adjacent the target spacecraft using only mechanisms of another separate spacecraft.

11. A method of servicing a spacecraft, the method comprising:

deploying a pod at an initial orbit that is lower than a geosynchronous orbit;

transporting the pod from the initial orbit substantially to the geosynchronous orbit;

coupling the pod to the spacecraft at the geosynchronous orbit with an additional spacecraft;

after transporting the pod from the initial orbit substantially to the geosynchronous orbit:

approaching the spacecraft with the additional spacecraft holding the pod that is separate from both the pod and the spacecraft before the coupling;

rendezvousing the additional spacecraft holding the pod with the spacecraft; and

coupling the pod to the spacecraft with the additional carrier spacecraft; and

after being coupled to the spacecraft, performing at least one spacecraft servicing operation.

12. The method of claim 11, further comprising assisting the coupling of the pod to the spacecraft with the additional spacecraft that is separate from both the pod and the spacecraft.

13. The method of claim 11, wherein the pod lacks one or more prepositioning features.

14. The method of claim 11, wherein transporting the pod from the initial orbit to the geosynchronous orbit comprises driving the pod with a thruster assembly of the pod from the initial orbit to the geosynchronous orbit.

15. The method of claim 11, wherein transporting the pod from the initial orbit to the geosynchronous orbit comprises carrying the pod from the initial orbit to the geosynchronous orbit with the another spacecraft after the pod has been deployed in the initial orbit by a separate launch spacecraft.

16. The method of claim 11, wherein performing at least one spacecraft servicing operation comprising adjusting at least one of an orbit, a velocity, or a momentum of the spacecraft with a thruster assembly of the pod.

17. The method of claim 11, wherein performing at least one spacecraft servicing operation comprising delivering at least one spacecraft component to the spacecraft with the pod.

18. A spacecraft servicing pod, comprising:

a thruster assembly, the thruster assembly comprising at least one thruster, wherein the thruster assembly is configured to alter an orbit of the spacecraft servicing pod from a first orbit to a second orbit while the spacecraft servicing pod is not coupled to another spacecraft;

a body configured to be coupled to a target spacecraft by a carrier spacecraft at a location adjacent the target spacecraft;

at least one spacecraft servicing component configured to perform at least one servicing operation on the target spacecraft while the body is coupled to the target spacecraft, wherein the at least one spacecraft servicing component comprises the thruster assembly, and the thruster assembly is further configured to alter at least one of an orbit, a velocity, or a momentum of the target spacecraft while the body is coupled to the target spacecraft; and

a communication device configured to receive data relating to the at least one of an orbit, a velocity, or a momentum of the target spacecraft from a transmission location remote from the spacecraft servicing pod and, based on the received data relating to the at least one of an orbit, a velocity, or a momentum of the target spacecraft received by the communication device, the spacecraft servicing pod is configured to control the thruster assembly to alter the at least one of an orbit, a velocity, or a momentum of the target spacecraft while the spacecraft servicing pod is coupled to the target spacecraft.

19. The spacecraft servicing pod of claim 18, wherein the communication device is configured to receive the data from the transmission location remote from the spacecraft servicing pod, and further comprising a computer programmed to operate the thruster assembly responsive to the received data.

20. The spacecraft servicing pod of claim 18, wherein the communication device is configured to receive the data via at least one of a wired or wireless communication channel.