CLAIMS:

1. A method of controlling maneuver of a refueling device (**100**), comprising:

(a) providing the refueling device (**100**) that is attached by means of a non-rigid hose (**52**) to a component (**150**) of an aircraft (**12**), wherein the refueling device comprises a nozzle (**236B**) configured for engagement with a receptacle (**22**) located on a receiver aircraft (**20**);

(b) providing a controller (**305**), associated with said refueling device;

wherein said component is configured, in a response mode, to selectively maintain a reference force on said hose,

wherein the controller (**305**) comprising a processing circuitry (**350**), and wherein the method further comprising performing the following steps utilizing the processing circuitry:

(c) obtaining a desired position (**8003**) of said refueling device (**100**), in the direction fore and aft, wherein the desired position comprising at least one of a waiting point position (**540**), an updated waiting point position (**545**), and an engagement enabling position (**930**);

(d) obtaining a current position (**660**, **760**, **8005**) of said refueling device, in the direction fore and aft, utilizing at least one position sensor (**320**) associated with the refueling device;

(e) determining, based on at least the current position and the desired position of said refueling device, whether to extend or retract said hose (**52**);

(f) in a case where the component is in a response mode, sending a command (**830**, **850**) for adjusting the state of one or more force generating arrangements (**250**) that are attached to said refueling device (**100**), causing said component (**159**) of an aircraft to detect a changed force on the hose and to maintain said reference force on the hose, thereby changing the distance (**675**, **775**) between the refueling device and the aircraft (**12**), wherein the distance is in the direction fore and aft;

(g) repeatedly performing said (c) to (f) until the difference between the current position and the desired position of said refueling device is within a defined threshold,

thereby facilitating at least one of: movement of the refueling device to one of the waiting point position and the updated waiting point position; movement of the refueling device from one of the waiting point position and the updated waiting point.

2. The method of claim 1, wherein said command further comprises:

in response to said determination being to extend the hose, a command (**830**) for adjusting said state of one or more force generating arrangements, so as to increase the force on the hose, thereby causing said component of an aircraft to detect the increased force and to extend the hose so as to maintain said reference force on the hose, thereby increasing (**630**) the distance (**675**) between the refueling device and the aircraft;

in response to said determination being to retract the hose, a command (**850**) for adjusting said state of one or more force generating arrangements, so as to decrease the force on the hose, thereby causing said component of an aircraft to detect the decreased force and to retract the hose so as to maintain said reference force on the hose, thereby decreasing (**730**) the distance (**775**) between the refueling device and the aircraft.

3. The method of any one of Claims 1 or 2, further comprising: performing said (c) to (g), for at least one of the following desired positions: a position of a receptacle (**22**) located on a receiver aircraft (**20**), an updated position (**940**) of the receptacle, a safe disengagement position (**1145**), an updated safe disengagement position (**1147**) and an at least one post-disengagement waiting point position (**1240**).

4. The method of any one of Claims 1 to 3, further comprising:

i) in response to an indication that said component changed to the response mode, obtaining the at least one waiting point position (**540**) at which the refueling device will await arrival of at least one receiver aircraft;

ii) in respect of each one of said at least one waiting point positions:

A. setting the at least one waiting point position to constitute the desired position of the refueling device;

B. performing said (c) to (g) of Claim 1 in respect of the at least one waiting point position, and in case of an indication of an update in said waiting point position, setting said updated waiting point position to constitute the desired position of the refueling device and performing said (c) to (g) in respect of said updated waiting point position,

iii) in response to an indication that one of at least one receiver aircraft meets an engagement area specification condition, obtaining the position (**930**) of a receptacle located on said receiver aircraft, setting said position of the receptacle (**22**) to constitute the desired position of the refueling device, and performing said (c) to (g) in respect of said position of the receptacle, and in case of an indication of an update in said position of the receptacle, setting said updated position (**940**) of the receptacle to constitute the desired position of the refueling device and performing said (c) to (g) in respect of said updated position of the receptacle, for the purpose of reaching and then engaging said receptacle (**22**);

iv) in response to an indication of engagement of the refueling device and the receptacle, obtaining the safe disengagement position **(1145**), and setting said safe disengagement position to constitute the desired position of the refueling device;

v) performing said (c) to (g) in respect of said safe disengagement position, and in case of an indication of an update in said safe disengagement position, setting said updated safe disengagement position (**1147**) to constitute the desired position of the refueling device and performing said (c) to (g) in respect of said updated safe disengagement position; and

vi) in response to an indication of disengagement of the refueling device and the receptacle, performing, for each next receiver aircraft of at least one receiver aircraft:

A. obtaining the at least one post-disengagement waiting point position (**1240**);

B. performing said (ii) to (v), wherein each one of said at least one post-disengagement waiting point position constitutes each one of said at least one waiting point position;

whereby the one or more receiver aircraft (**20**) can be refueled.

5. The method of any one of claims 3 to 4, wherein said receptacle is a fuel receptacle.

6. The method according to any one of the claims 1 to 5, wherein said desired position and current position are distances (**675**, **775**) from said component of an aircraft.

7. The method according to any one of claims 1 to 6, wherein said component (**150**) of an aircraft is a hose winding component capable of being attached to at least one of: the aircraft (**12**) and a pod (**51**) which is attached to the aircraft.

8. The method according to any one of claims 1 to 7, wherein said aircraft (**12**) is a tanker aircraft, said hose (**52**) is a fuel hose, said refueling device (**100**) includes a fuel delivery nozzle (**236B**) and said refueling device is capable of engaging and refueling said receiver aircraft (**20**).

9. The method according to any one of claims 1 to 8, wherein said refueling device does not include an independent means of propulsion.

10. The method according to any one of claims 1 to 9, wherein the method is performed autonomously by the refueling device.

11. A system capable of controlling maneuver of a refueling device (**100**), comprising:

a controller **(305**), for being associated with said refueling device, wherein said refueling device is capable of being attached by means of a non-rigid hose (**52**) to a component (**150**) of an aircraft, wherein said component is configured to maintain a reference force on the hose, said controller comprising a processing circuitry and configured to perform the method of any one of claims 1 to 10.

12. The system capable of controlling maneuver of the refueling device of claim 11, wherein said determination is provided by one of a Proportional Integral (PI) Controller and a Proportional Integral Derivative (PID) controller, comprised in the processing circuitry (**8000**).

13. The system capable of controlling maneuver of the refueling device of any one of claims 11 to 12, further comprising

at least one of:

a data store (**310**) coupled to said controller; one or more position sensors (**320**) coupled to said controller; one or more engagement sensors (**323**, **326**) coupled to said controller; one or more external data sources (**325**) coupled to said controller; said one or more force generating arrangements (**250, 280B**); actuators (**330**) for said one or more force generating arrangements coupled to said controller and coupled to said one or more force generating arrangements; one or more other adjustable control surfaces (**220A**, **220B**, **220C**); and one or more actuators (**333**) for said one or more

other adjustable control surfaces coupled to said controller and coupled to said one or more other adjustable control surfaces.

14. The system capable of controlling maneuver of the refueling device of any one of claims 11 to 12, further comprising:

a selectively steerable body configured for being towed by said aircraft (**12**) via the hose (**52**) at least during in-flight refueling, and comprising force generating arrangements (**250**, **280B**) configured to enable change in the force on the hose.

15. A non-transitory program storage device readable by a computer (**350**) tangibly embodying computer readable instructions executable by the computer to perform the perform the method of any one of claims 1 to 10.