CONOPS 2

Deployment, Acquisition, & Checkout

# Deployment

* Interceptor and target are structurally connected and deployed together from launch vehicle upper stage.
* Spacecraft activated via sep switch, begin beaconing 45 minutes after deployment
* Spacecraft await contact from the ground for further instructions

# Acquisition & Checkout

* Spacecraft beacons acquired by ground station
* Checkout determines spacecraft health prior to mission

Phase 1: Cooperative Rendezvous

# Separation

* Separation initiated by ground command
* Pointing control engaged
* Both Interceptor and Target use pointing control to slow/stop resulting tumble
* GPS receivers and image processing visual aids activated

# Docking Demonstration

* Spacecraft drift a short distance (< 2m) before beginning docking maneuver.
* Both spacecraft use pointing control to achieve proper alignment for docking
* Interceptor moves back to target for docking.

# Second Separation, Inspection, & Fine Stationkeeping

* Spacecraft separate.
* Interceptor maneuvers out to 10 meters to perform inspection using image processing payload
* Propulsion used to actively maintain 10 meter distance for [TBD time].

# Coarse Stationkeeping

* Interceptor moves to maximum stationkeeping distance (100+ meters)
* Maintains stationkeeping for [TBD time].

# Cooperative Rendezvous

* Interceptor uses GPS receiver data and visual aid image processing data to rendezvous within 10 meters of Target.

# Inspection & Fine Stationkeeping

* Interceptor maneuvers out to 10 meters to perform inspection using image processing payload
* Propulsion used to actively maintain 10 meter distance for [TBD time].

# Second Docking Demonstration

* Interceptor docks with Target for the second time

Phase 2: Partial Non-Cooperative Rendezvous

# Coarse Stationkeeping

* Target deactivates image processing visual aids
* Interceptor moves to maximum stationkeeping distance (100+ meters)
* Maintains stationkeeping for [TBD time].

# Partial Non-Cooperative Rendezvous

* Interceptor uses GPS receiver data and image processing sans visual aids to rendezvous within 10 meters of Target

# Inspection & Fine Stationkeeping

* Interceptor maneuvers out to 10 meters to perform inspection using image processing payload
* Propulsion used to actively maintain 10 meter distance for [TBD time].

Phase 3: Non-Cooperative Rendezvous

# Coarse Stationkeeping

* Target turns off GPS receiver, activates Non-Cooperative Mission Countdown
* Interceptor moves to maximum stationkeeping distance (100+ meters)
* Maintains stationkeeping for [TBD time].

# Inspection & Fine Stationkeeping

* Interceptor maneuvers out to 10 meters to perform inspection using image processing payload
* Propulsion used to actively maintain 10 meter distance for [TBD time].

# Non-Cooperative Rendezvous

* Interceptor uses image processing sans visual aids to rendezvous within 10 meters of Target

# Inspection & Fine Stationkeeping

* Interceptor maneuvers out to 10 meters to perform inspection using image processing payload
* Propulsion used to actively maintain 10 meter distance for [TBD time].

Phase 4: Extended Operations & End of Life

# Extended Operations

* If there is enough ΔV remaining, more incremental rendezvous maneuvers may be performed

# End of Life

* 25 year deorbit requirement