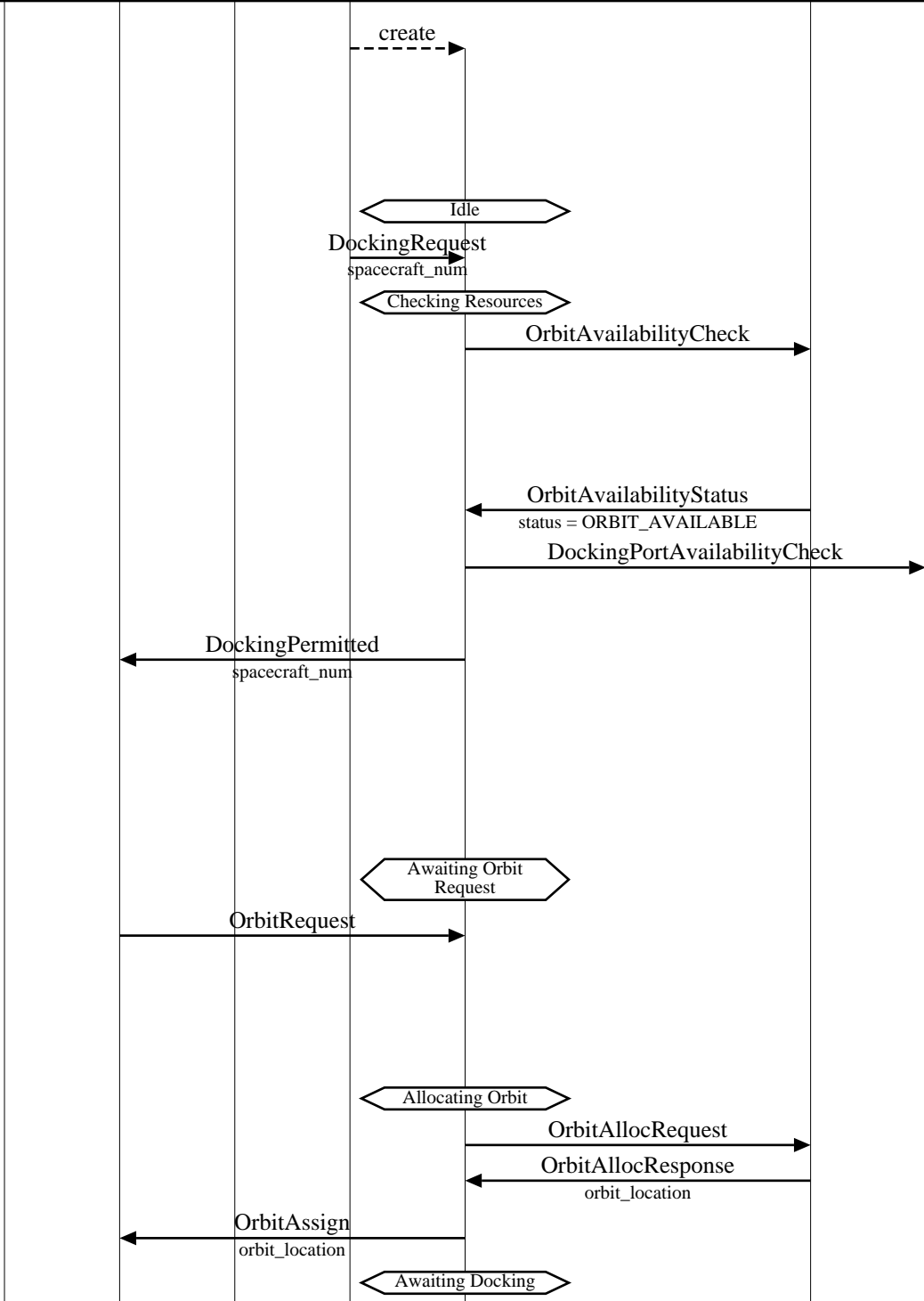


| Spaceship_obj Interfaces (Successful Spacecraft Docking and Undocking) | | | | | | | | | |
|--|-----------|---------------|-------------------|---------------|---------|-----------|-----------------|--------------------------------|--------------------------|
| space | | space port | | | | | | EventHelix.com/EventStudio 2.0 | |
| spacecraft | | central proc | | | | | | | |
| pilot | auto dock | broadcast mgr | spaceship obj mgr | spaceship obj | docking | undocking | orbit allocator | docking allocator | 05-Jul-03 16:41 (Page 1) |

Copyright © 2000-2003 EventHelix.com Inc. All Rights Reserved.



Spaceship object manager uses the spacecraft number to find that it currently has no spaceship object assigned to handle this spacecraft. So it creates a spaceship object to handle the request

The docking request is passed to the newly created object

Spaceship Obj checks if sufficient orbit resources are available to handle this docking request

LEG: Orbit Resource is Available

Orbit resources are available

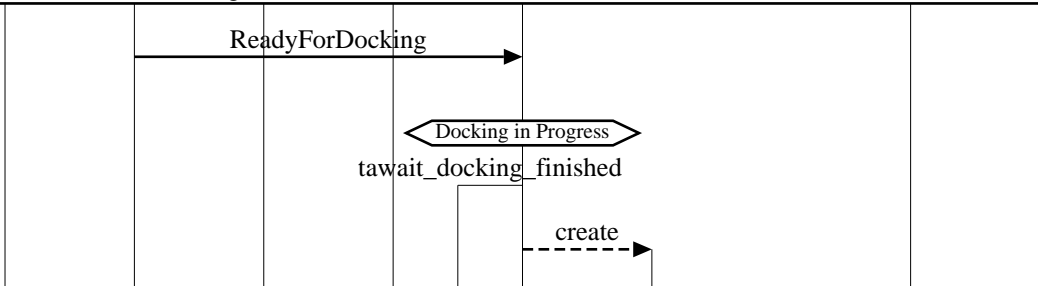
LEG: Docking Port is Available

The system has enough resources to handle the orbit request. Once DockingPermitted has been sent, the docking request should NOT be rejected due to resource unavailability. Refer to Chapter 3 of the AutoDock 1.0 Green book

Spacecraft is to be assigned a temporary orbit before docking since AutoDock 1.0 doesnot support direct docking and also only one docking or undocking procedure may be active at any given time

Inform details of the orbit assigned to the spacecraft

Spacecraft reaches the assigned orbit



Spacecraft inform the docking station that it is ready for docking

Object spaceship obj starts timer for docking procedure

Object docking is created to handle the docking procedure

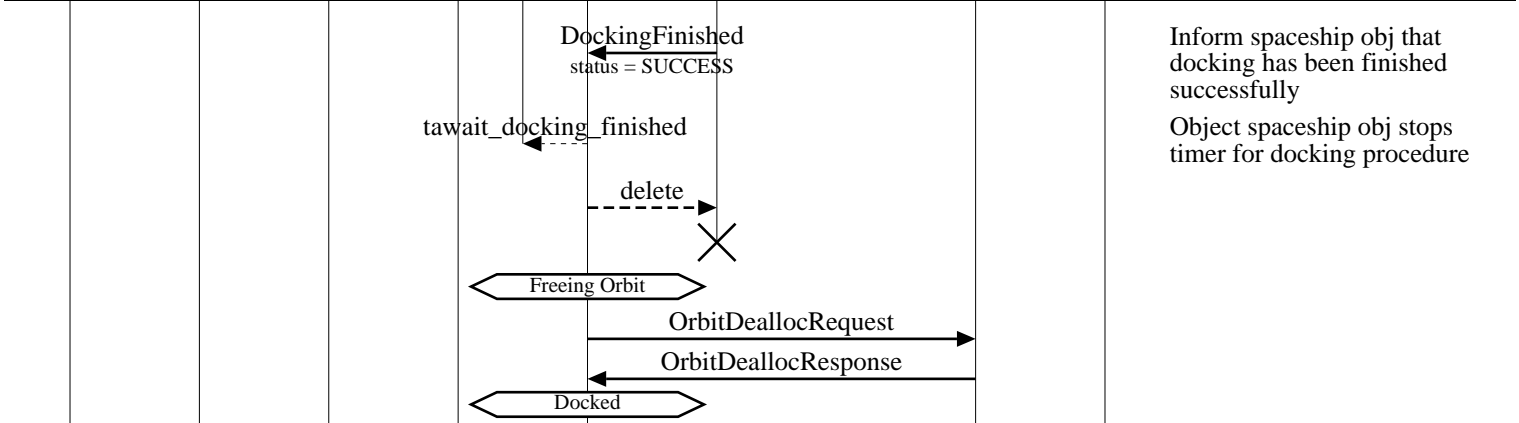
| Spaceship_obj Interfaces (Successful Spacecraft Docking and Undocking) | | | | | | | | | |
|--|-----------|---------------|-------------------|---------------|---------|-----------|-----------------|--------------------------------|--------------------------|
| space | | space port | | | | | | EventHelix.com/EventStudio 2.0 | |
| spacecraft | | central proc | | | | | | | |
| pilot | auto dock | broadcast mgr | spaceship obj mgr | spaceship obj | docking | undocking | orbit allocator | docking allocator | 05-Jul-03 16:41 (Page 2) |

ReadyForDocking

A docking or undocking that is already in progress finishes

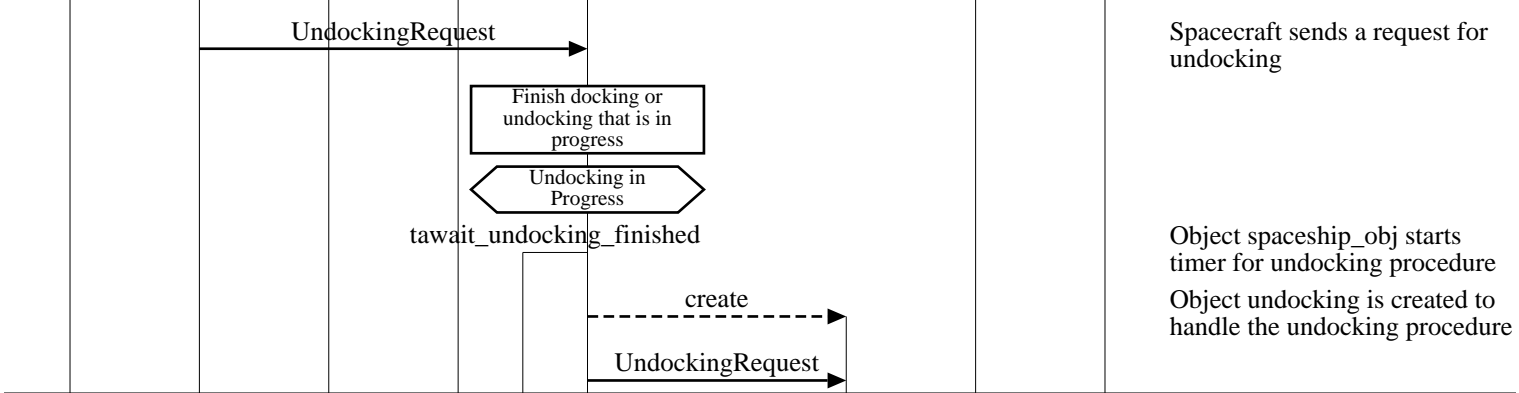
Spacecraft reaches the assigned port and attains the same orbit and velocity as the docking station

Spacecraft docking has been completed



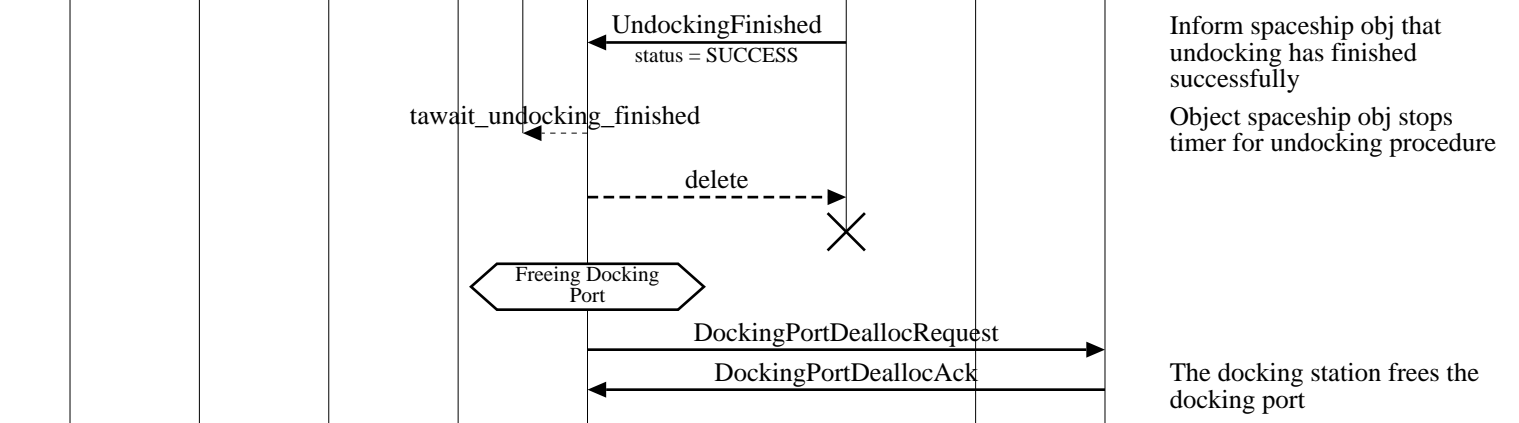
Inform spaceship obj that docking has been finished successfully
Object spaceship obj stops timer for docking procedure

Spacecraft wishes to depart from the docking station



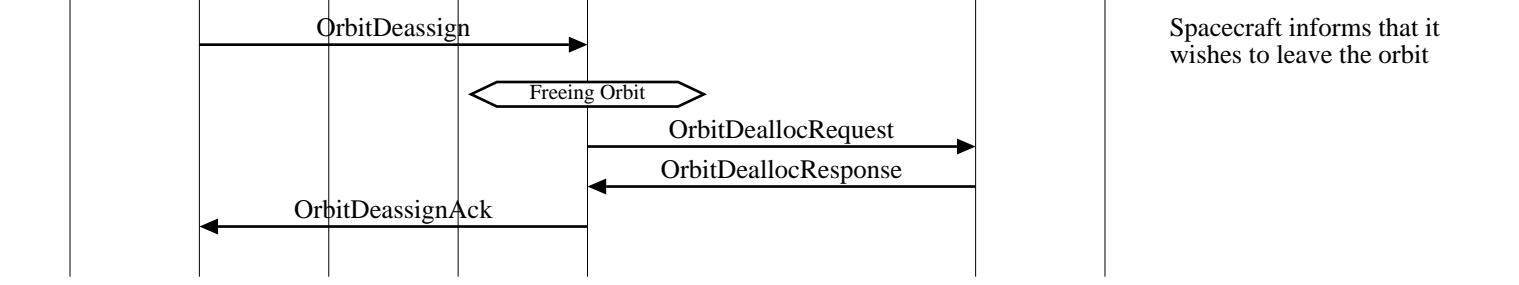
Spacecraft sends a request for undocking
Object spaceship_obj starts timer for undocking procedure
Object undocking is created to handle the undocking procedure

Spacecraft reaches the assigned orbit



Inform spaceship obj that undocking has finished successfully
Object spaceship obj stops timer for undocking procedure
The docking station frees the docking port

The docking station schedules next docking or undocking request

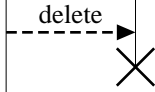


Spacecraft informs that it wishes to leave the orbit

Spaceship_obj Interfaces (Successful Spacecraft Docking and Undocking)

| | | | | | | | | | | |
|------------|-----------|---------------|-------------------|---------------|---------|-----------|-----------------|-------------------|--------------------------------|--|
| space | | space port | | | | | | | EventHelix.com/EventStudio 2.0 | |
| spacecraft | | central proc | | | | | | | | |
| pilot | auto dock | broadcast mgr | spaceship obj mgr | spaceship obj | docking | undocking | orbit allocator | docking allocator | 05-Jul-03 16:41 (Page 3) | |

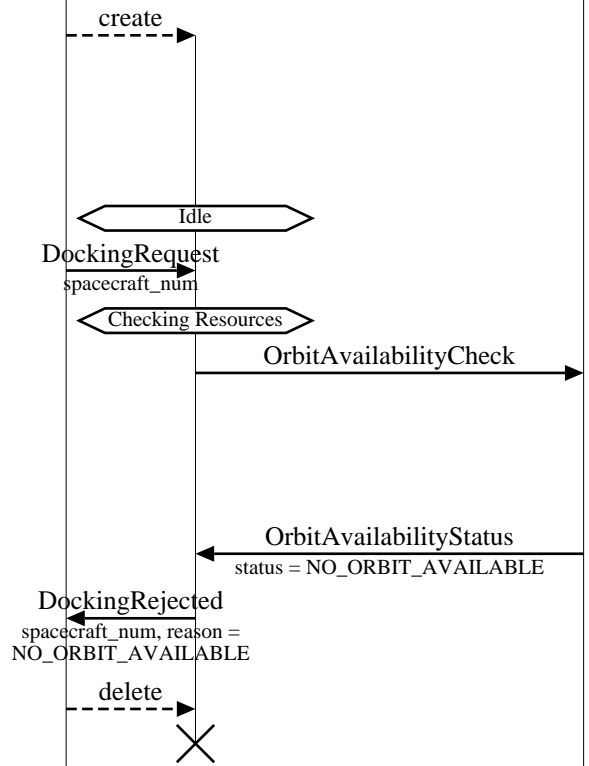
UndockingFinished
status = SUCCESS



Inform spaceship obj mgr that undocking has finished and docking/undocking resources have been released

| Spaceship_obj Interfaces (Orbit Resource not Available) | | | | | | | | | | |
|---|-----------|---------------|-------------------|---------------|---------|-----------|-----------------|-------------------|--------------------------|--------------------------------|
| space | | space port | | | | | | | | EventHelix.com/EventStudio 2.0 |
| spacecraft | | central proc | | | | | | | | |
| pilot | auto dock | broadcast mgr | spaceship obj mgr | spaceship obj | docking | undocking | orbit allocator | docking allocator | 05-Jul-03 16:41 (Page 4) | |

Copyright © 2000-2003 EventHelix.com Inc. All Rights Reserved.



Spaceship object manager uses the spacecraft number to find that it currently has no spaceship object assigned to handle this spacecraft. So it creates a spaceship object to handle the request

The docking request is passed to the newly created object

Spaceship Obj checks if sufficient orbit resources are available to handle this docking request

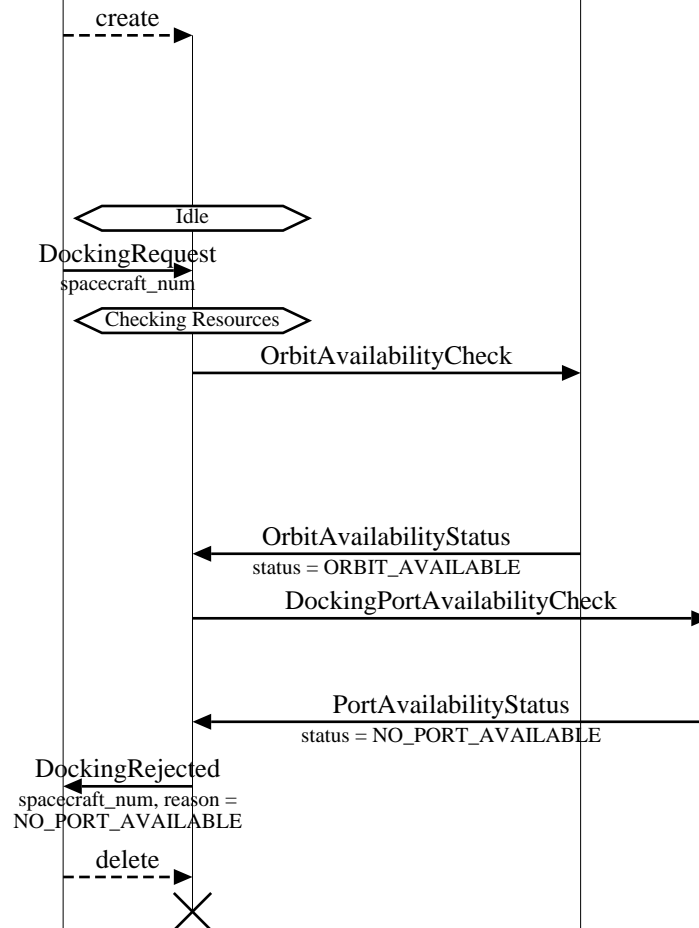
LEG: No Orbit Resource Available

No orbit can be provided

Send the rejection back to the spaceship obj mgr so that it can delete this object

| Spaceship_obj Interfaces (Docking Resource not Available) | | | | | | | | | |
|---|-----------|---------------|-------------------|---------------|---------|-----------|-----------------|--------------------------------|--------------------------|
| space | | space port | | | | | | EventHelix.com/EventStudio 2.0 | |
| spacecraft | | central proc | | | | | | | |
| pilot | auto dock | broadcast mgr | spaceship obj mgr | spaceship obj | docking | undocking | orbit allocator | docking allocator | 05-Jul-03 16:41 (Page 5) |

Copyright © 2000-2003 EventHelix.com Inc. All Rights Reserved.



Spaceship object manager uses the spacecraft number to find that it currently has no spaceship object assigned to handle this spacecraft. So it creates a spaceship object to handle the request

The docking request is passed to the newly created object

Spaceship Obj checks if sufficient orbit resources are available to handle this docking request

LEG: Orbit Resource is Available

Orbit resources are available

LEG: No Docking Ports Available

No docking port can be provided

Send the rejection back to the spaceship obj mgr so that it can delete this object