BRIEF DESCRIPTION OF THE INVENTION

In one aspect, a method is provided for use in locating and prioritizing cargo. The method includes: transmitting a scanning command to a cargo location and classification sensor (CLCS), the scanning command including scan instructions for execution by the CLCS; scanning, by the CLCS, an area to determine location information and content information for each of a plurality of pieces of cargo; and receiving, by a processor, the location information and content information for each of ~~a~~ the plurality of pieces of cargo from ~~a cargo location and classification sensor (~~the CLCS~~)~~. The method also includes determining a priority listing of pieces of cargo based on mission information, the location information, and the content information. The method also includes transmitting a set of waypoints for specified pieces of cargo selected from the priority listing to a control system (FCS) configured to maneuver a vehicle to a position above a specified piece of cargo. The method further includes generating an overlay for a pilotage system (PS) display to assist a user (e.g. a pilot) in maneuvering the vehicle above each piece of cargo for pickup and merging the overlay and the PS display, wherein the PS display displays a video of the pieces of cargo taken from the vehicle positioned above each piece of cargo.

In another aspect, a system is provided. The system includes a communications unit configured to receive location information and content information for each of a plurality of pieces of cargo from a cargo location and classification sensor (CLCS). The CLCS is configured to scan an area to determine the location information and content information for each of the plurality of pieces of cargo. The system also includes a laser radar scan planner module configured to transmit a scanning command to the CLCS, the scanning command including scan instructions for execution by the CLCS, and a cargo pickup planner module configured to determine a priority listing of pieces of cargo based on mission information, the location information, and the content information. The system also includes a cargo approach planner module configured to transmit a set of waypoints for specified pieces of cargo selected from the priority listing to a control system (FCS) configured to maneuver a vehicle to a position above a specified piece of cargo. The system further includes a cargo pickup overlay generator module configured to generate an overlay for a pilotage system (PS) display to assist a user in maneuvering the vehicle above each piece of cargo for pickup and a video overlay merge module

configured to merge the overlay and the PS display, wherein the PS display displays a video of the pieces of cargo taken from the vehicle positioned above each piece of cargo.

In yet another aspect, a computer-readable storage device is provided having encoded thereon computer readable instructions that are executable by a processor to perform functions including transmitting a scanning command to a cargo location and classification sensor (CLCS), the scanning command including scan instructions for execution by the CLCS; scanning, by the CLCS, an area to determine location information and content information for each of a plurality of pieces of cargo; and receiving the location information and content information for each of ~~a~~ the plurality of pieces of cargo from ~~a cargo location and classification sensor (~~the CLCS~~)~~. The instructions are executable by the processor to perform functions further including determining a priority listing of pieces of cargo based on mission information, the location information, and the content information. The instructions are executable by the processor to perform functions further including transmitting a set of waypoints for

WHAT IS CLAIMED IS:

1. A method of locating and prioritizing cargo, said method comprising:
transmitting a scanning command to a cargo location and classification sensor (CLCS), the scanning command including scan instructions for execution by the CLCS;
scanning, by the CLCS, an area to determine location information and content information for each of a plurality of pieces of cargo;
receiving, by a processor, the location information and content information for each of ~~a~~ the plurality of pieces of cargo from ~~a cargo location and classification sensor (~~the CLCS~~)~~;
determining a priority listing of pieces of cargo based on mission information, the location information, and the content information;
transmitting a set of waypoints for specified pieces of cargo selected from the priority listing to a control system (FCS) configured to maneuver a vehicle to a position above a specified piece of cargo;
generating an overlay for a pilotage system (PS) display to assist a pilot in maneuvering the vehicle above each piece of cargo for pickup; and
merging the overlay and the PS display, wherein the PS display displays a video of the pieces of cargo taken from the vehicle positioned above each piece of cargo.

2. A method in accordance with claim 1, further comprising receiving global positioning system (GPS) coordinates associated with the plurality of pieces of cargo.

~~3. A method in accordance with claim 1, further comprising transmitting a scan signal to the CLCS, the scan signal including scan instructions for execution by the CLCS.~~

43. A method in accordance with claim 1, further comprising transmitting the priority listing of pieces of cargo to a user display.

~~5~~4. A method in accordance with claim 43, further comprising receiving specified pieces of cargo selected by a user from the priority listing of pieces of cargo.

~~6~~5. A method in accordance with claim 1, further comprising using vehicle information to generate the overlay to assist the pilot in adjusting hover altitude of the vehicle to a proper altitude above a piece of cargo.

~~7~~6. A system comprising:
a communications unit configured to receive location information and content information for each of a plurality of pieces of cargo from a cargo location and classification sensor (CLCS), wherein the CLCS is configured to scan an area to determine the location information and content information for each of the plurality of pieces of cargo;
a laser radar scan planner module configured to transmit a scanning command to the CLCS, the scanning command including scan instructions for execution by the CLCS;
a cargo pickup planner module configured to determine a priority listing of pieces of cargo based on mission information, the location information, and the content information;
a cargo approach planner module configured to transmit a set of waypoints for specified pieces of cargo selected from the priority listing to a control system (FCS) configured to maneuver a vehicle to a position above a specified piece of cargo;
a cargo pickup overlay generator module configured to generate an overlay for a pilotage system (PS) display to assist a pilot in maneuvering the vehicle above each piece of cargo for pickup; and
a video overlay merge module configured to merge the overlay and the PS display, wherein the PS display displays a video of the pieces of cargo taken from the vehicle positioned above each piece of cargo.

~~8~~7. A system in accordance with claim ~~7~~6, wherein said communications unit is further configured to receive global positioning system (GPS) coordinates associated with the plurality of pieces of cargo.

~~9. A system in accordance with claim 7, further comprising a laser radar scan planner module configured to transmit a scan signal to the CLCS, the scan signal including scan instructions for execution by the CLCS.~~

~~10~~8. A system in accordance with claim ~~7~~6, wherein said cargo pickup planner module is further configured to transmit the priority listing of pieces of cargo to a user display.

~~11~~9. A system in accordance with claim ~~10~~8, wherein said communications unit is further configured to receive specified pieces of cargo selected by a user from the priority listing of pieces of cargo.

~~12~~10. A system in accordance with claim ~~7~~6, wherein said communications unit is further configured to use vehicle information to generate the overlay to assist the pilot in adjusting hover altitude of the vehicle to a proper altitude above a piece of cargo.

~~13~~11. A system in accordance with claim ~~7~~6, wherein said video overlay merge module is further configured to transmit the merged overlay and the PS display to a user display.

~~14~~12. A non-transitory computer-readable storage device having encoded thereon computer readable instructions that are executable by a processor to perform functions comprising:

transmitting a scanning command to a cargo location and classification sensor (CLCS), the scanning command including scan instructions for execution by the CLCS;

scanning, by the CLCS, an area to determine location information and content information for each of a plurality of pieces of cargo;

receiving the location information and content information for each of ~~a~~ the plurality of pieces of cargo from ~~a cargo location and classification sensor~~the ~~(~~CLCS~~)~~;

determining a priority listing of pieces of cargo based on mission information, the location information, and the content information;

transmitting a set of waypoints for specified pieces of cargo selected from the priority listing to a controls system (FCS) configured to maneuver a vehicle to a position above a specified piece of cargo;

generating an overlay for a pilotage system (PS) display to assist a pilot in maneuvering the vehicle above each piece of cargo for pickup; and

merging the overlay and the PS display, wherein the PS display displays a video of the pieces of cargo taken from the vehicle positioned above each piece of cargo.

~~15. A non-transitory computer-readable storage device in accordance with claim 14, wherein the instructions are executable by the processor to perform functions comprising transmitting a scan signal to the CLCS, the scan signal including scan instructions for execution by the CLCS.~~

~~16~~13. A non-transitory computer-readable storage device in accordance with claim ~~14~~12, wherein the instructions are executable by the processor to perform functions comprising:
transmitting the priority listing of pieces of cargo to a user display; and
receiving specified pieces of cargo selected by a user from the priority listing of pieces of cargo.

~~17~~14. A non-transitory computer-readable storage device in accordance with claim ~~14~~12, wherein the instructions are executable by the processor to perform functions comprising using vehicle information to generate the overlay to assist the pilot in adjusting hover altitude of the vehicle to a proper altitude above a piece of cargo.

~~18~~15. A non-transitory computer-readable storage device in accordance with claim ~~14~~12, wherein the instructions are executable by the processor to perform functions comprising:
transmitting the merged overlay and the PS display to a user display.