CLAIMS:

What is claimed is:

1. A method for displaying information (110) for an aircraft (102), the method comprising:

identifying the information (110) for the aircraft (102);

displaying an aeronautical chart (128) on a display system (108); ~~and~~

displaying an envelope (118) in the aeronautical chart (128) based on the information (110), wherein the envelope (118) defines a space (120) flyable by the aircraft (102) that meets a number of objectives (122);

displaying an indication of undesirable space (212) outside of the envelope (118); and

displaying an indication of desired space (120) within the envelope (118).

2. The method of claim 1, wherein the envelope (118) is displayed in one of two-dimensions and three-dimensions.

~~3. The method of claim 1 further comprising:~~

~~displaying an indication of undesirable space (212) outside of the envelope (118).~~

3~~4~~. The method of claim 1~~3~~, wherein the indication of undesirable space (212) is a graphical indicator that obscures a portion of the aeronautical chart (128) outside of the envelope (118).

~~5. The method of claim 1 further comprising:~~

~~displaying an indication of desired space (120) within the envelope (118).~~

~~4~~6. The method of claim 1 further comprising:

repeating displaying the envelope (118) in the aeronautical chart (128) based on the information (110) in response to the information (110) changing, wherein the envelope (118) defines the space (120) flyable by the aircraft (102) that meets the number of objectives (122).

~~5~~7. The method of claim 1, wherein the aeronautical chart (128) is selected from at least one of a vertical view (206) and a top view (204).

~~6~~8. The method of claim 1, wherein the information (110) for the aircraft (102) is selected from at least one of an aircraft state (114), environmental information (116), and a flight plan (117).

~~7~~9. The method of claim 1, wherein identifying the information (110) associated with the aircraft (102); displaying the aeronautical chart (128); and displaying the envelope (118) in the aeronautical chart (128) based on the information (110), wherein the envelope (118) defines the space (120) flyable by the aircraft (102) that meets the number of objectives (122) is performed in a computer system (106) in the aircraft (102).

~~8~~10. The method of claim 1, wherein identifying the information (110) associated with the aircraft (102); displaying the aeronautical chart (128); and displaying the envelope (118) in the aeronautical chart (128) based on the information (110), wherein the envelope (118) defines the

space (120) flyable by the aircraft (102) that meets the number of objectives (122) is performed in a computer system (106) at a ground location.

9~~11~~. The method of claim 1, wherein the number of objectives (122) comprises at least one of a risk objective (124), an optimization objective (126), and a legal objective (127).

10~~12~~. The method of claim 1 further comprising:

generating a four-dimensional cube comprised of a plurality of cubes; and

marking the plurality of cubes with an indication of a type of space (120) based on the information (110),

wherein, the step of displaying the envelope (118) comprises:

displaying the envelope (118) using the four-dimensional cube with the type of space (120) marked for the plurality of cubes in the four-dimensional cube.

11~~13~~. A navigation system comprising:

a display system (108); and

a flight information (110) identifier configured to identify information (110) for an aircraft (102); display an aeronautical chart (128) on the display system (108); and display an envelope (118) in the aeronautical chart (128) based on the information (110), wherein the envelope (118) defines a space (120) flyable by the aircraft (102) that meets a number of objectives (122); and

wherein the flight information (110) identifier is configured to display an indication of undesirable space (212) outside of the envelope (118) and an indication of desired space (120) within the envelope (118).

12~~14~~. The navigation system of claim 13, wherein the envelope (118) is displayed in one of two-dimensions and three-dimensions.

~~15. The navigation system of claim 13, wherein the flight information (110) identifier is configured to display an indication of undesirable space (212) outside of the envelope (118).~~

13~~16~~. The navigation system of claim 11~~15~~, wherein the indication of undesirable space (212) is a graphical indicator that obscures a portion of the aeronautical chart (128) outside of the envelope (118).

~~17. The navigation system of claim 13, wherein the flight information (110) identifier is configured to display an indication of desired space (120) within the envelope (118)~~.

14~~18~~. The navigation system of claim 11~~13~~, wherein the flight information (110) identifier is further configured to repeat displaying the envelope (118) in the aeronautical chart (128) based on the information (110) in response to the information (110) changing, wherein the envelope (118) defines the space (120) flyable by the aircraft (102) that meets the number of objectives (122).

15~~19~~. The navigation system of claim 11~~13~~, wherein the aeronautical chart (128) is selected from at least one of a vertical view (206) and a top view (204).

1620. The navigation system of claim 1113, wherein the flight information (110) identifier is further configured to generate a four-dimensional cube comprised of a plurality of cubes and mark the plurality of cubes with an indication of a type of space (120) based on the information (110), and wherein in being configured to display the envelope (118) in the aeronautical chart (128) based on the information (110), the flight information (110) identifier is configured to display the envelope (118) using the four-dimensional cube with the type of space (120) marked for the plurality of cubes in the four-dimensional cube.