[0077] The term coupled, as used herein, is defined as connected, in particular electrically or optically connected, although not necessarily directly, and not necessarily mechanically.

[0078] A single processor or other unit may fulfill the functions of several items recited in the claims.

1-21. (canceled)

22. A method of navigating an agricultural vehicle on a land area, the method comprising:

building a map of the land area, including using an aircraft with a camera system and based on a plurality of landmarks in the land area;

imaging, in real-time, at least part of the land area from above to provide a sequence of images showing the vehicle and at least one landmark;

identifying positions of the vehicle on the land area from the sequence of images by image processing, to provide vehicle data based on identification of the positions of the vehicle;

identifying a position of at least one landmark on the land area from the sequence of images by image processing, to provide landmark data based on the identification of the position of the at least one landmark;

controlling a path of the vehicle across the land area based on the built map, the vehicle data, and the landmark data.

23. A method according to claim **22**, wherein the building the map comprises:

entering basic map information about the land area, the basic map information including object data of at least one landmark;

selecting a starting position for the aircraft;

carrying out at least once

imaging the land area from above with the aircraft to provide an image of at least a part of the land area;

detecting a landmark in the image by image processing, and based on the basic map information;

identifying a position of said landmark by image processing and storing the position in the map;

at least one of:

i) detecting a further landmark in the image, and identifying the position of the further landmark,

ii) moving the aircraft to a new position,

until a predetermined criterion with respect to the basic map information has been fulfilled.

24. A method according to claim **22**, wherein the object data of the landmark comprises shape data of the landmark, color data of the landmark, and/or predetermined coordinates of the landmark.

25. A method according to claim **22**, wherein the position comprises 3 dimensions.

26. A method according to claim **22**, wherein the camera system comprises a 3D camera system.

27. A method according to claim **22**, wherein the starting position comprises a landmark with predetermined coordinates.

28. A method according to claim **22**, wherein the identifying the position of the further landmark comprises determining the position thereof with respect to an earlier identified position of at least one landmark.

29. A method of claim **22**, wherein the imaging is performed using the camera system mounted on the aircraft flying or hovering above ground.

30. A method of claim **22**, wherein the vehicle data and the landmark data are obtained by image processing of the sequence of images.

31. A method of claim **22**, wherein the vehicle and the at least one landmark each have a shape or contour, and wherein the vehicle and the at least one landmark are identified by recognizing its shape or contour, respectively, during image processing.

32. A method of claim **22**, wherein the vehicle data comprises a vehicle position, and at least one of a vehicle orientation, a vehicle direction, and a vehicle speed.

33. A method of claim **22**, wherein the agricultural vehicle comprises an optical marker, and wherein the vehicle is identified by identifying the optical marker during image processing.

34. A method of claim **22**, wherein the landmark includes a landscape element to be avoided or be followed by the agricultural vehicle, or a side of a ditch, side of a stream, a tree, a wall, a fence, an edge of a worked piece of the land area, or a mowen or plowed piece of the land area.

35. A method of claim **22**, wherein the landmark is or includes an optical marker, and wherein the landmark is identified by identifying the optical marker during image processing.

36. A method of claim **22**, further comprising:

determining, by the image processing, the position of the vehicle relative to the at least one landmark, and mapping it to an actual position of the vehicle on the land area based on an actual predetermined position of the at least one landmark.

37. A method of claim **22**, further comprising:

calculating the vehicle path on the land area from a sequence of positions identified in the sequence of images.

38. A method of claim **37**, further comprising:

comparing the calculated vehicle path with a predetermined track; and

if the calculated path deviates from the predetermined track, controlling the vehicle path towards the track.

39. A method of claim **22**, further comprising:

identifying an obstacle on the vehicle path; and

controlling the vehicle path to deviate from a predetermined track to avoid the obstacle.

40. A system for real-time navigating an agricultural vehicle on an area of land, the system comprising:

a camera system configured to image at least part of the land area from above to provide a sequence of images showing the agricultural vehicle;

an image processor configured to:

process the sequence of images to identify positions of the agricultural vehicle on the land area from the sequence of images and, based on identification of positions of the agricultural vehicle, to provide vehicle data; and

process the sequence of images to identify a position of at least one landmark on the land area from the sequence of images and, based on the identification of the position of the at least one landmark, to provide landmark data;

a control device configured to enter basic map information about the land area, the basic map information including object data of at least one landmark, and further configured to control a path of the agricultural