

What is claimed is:

1. A method for identifying a damaged part of a vehicle, comprising:

acquiring, by a client device, a captured image of the vehicle;

determining, by the client device, a damaged area based on an act of marking a damage
5 location in said captured image, and thereby forming a marked image;

sending, by the client device, said marked image to a server;

identifying, by the server, feature parts in said marked image, and determining a relative
positional relationship between said feature parts and said damaged area based on the
positions of said feature parts and said damaged area in the marked image, said relative
10 positional relationship between said feature parts and said damaged area including one
of the direction of said feature parts with respect to said damaged area, the distance
from said feature parts to said damaged area, and the distance percentage of the distance
from said feature parts to said damaged area, or a combination thereof;

matching, by the server, said relative positional relationship in a feature correspondence
15 library to obtain a corresponding related part, said feature correspondence library is
established based on a feature library which is constructed from a plurality of feature
parts of the vehicle, and the feature correspondence library includes data for positional
relationship between parts of the vehicle, and the feature library and the feature
correspondence library are both established in advance; and

20 determining, by the server, the damaged part in said captured image based on said
related part.

2. A method for identifying a damaged part of a vehicle, comprising:

acquiring, by a client device, a captured image of the vehicle and sending said captured
25 image to a server;

identifying, by the server, a first damage location in said captured image, and marking said first damage location in said captured image, thereby generating a marked image;

sending, by the server, said marked image to said client device;

displaying, by the client device, mark information of the first damage location in said
5 marked image;

confirming, by the client device, a vehicle damage location based on received interaction, said vehicle damage location including said first damage location;

sending, by the client device, an auxiliary damage image of which the vehicle damage location has been confirmed to the server;

10 identifying, by said server, at least one feature part included in said auxiliary damage image, after receiving said auxiliary damage image;

determining, by the server, a relative positional relationship between said feature part and said vehicle damage location in said auxiliary damage image, said relative positional relationship between said feature parts and said vehicle damage location
15 including one of the direction of said feature parts with respect to said vehicle damage location, the distance from said feature parts to said vehicle damage location, and the distance percentage of the distance from said feature parts to said vehicle damage location, or a combination thereof;

matching, by said server, said relative positional relationship in a feature
20 correspondence library to obtain a corresponding related part, said feature correspondence library is established based on a feature library which is constructed from a plurality of feature parts of the vehicle, and the feature correspondence library includes data for positional relationship between parts of the vehicle, and the feature library and the feature correspondence library are both established in advance; and

25 determining, by the server, the damaged part in said captured image based on said related part.

3. An apparatus for identifying a damaged part of a vehicle, comprising:

a receiving module for receiving a marked image uploaded by a client device, said marked image including a damaged area determined based on an act of marking a damage location in a captured image;

5 a positional relationship determining module for identifying feature parts in said marked image, and determining a relative positional relationship between said feature parts and said damaged area based on the positions of said feature parts and said damaged area in the marked image, said relative positional relationship between said feature parts and said damaged area including one of the direction of said feature parts
10 with respect to said damaged area, the distance from said feature parts to said damaged area, and the distance percentage of the distance from said feature parts to said damaged area, or a combination thereof;

a matching module for matching said relative positional relationship in a feature correspondence library to obtain a corresponding related part, said feature
15 correspondence library is established based on a feature library which is constructed from a plurality of feature parts of the vehicle, and the feature correspondence library includes data for positional relationship between parts of the vehicle, and the feature library and the feature correspondence library are both established in advance; and

a part identifying module for determining the damaged part in said captured image
20 based on said related part.

4. The apparatus according to claim 3, further comprising:

a feature library for storing vehicle parts of the vehicle; and

a feature correspondence library for storing part positional relationship data constructed
25 by using the vehicle parts in said feature library as a reference, said part positional relationship data including relationship data characterizing at least one of a related part

to which an area between vehicle parts pertains, a related part to which the area in a specified direction of a vehicle part pertains, and a related part to which an area of specified proportion between vehicle parts pertains.

- 5 5. The apparatus according to claim 3, wherein said positional relationship determining module is configured to:

construct a coordinate system by using the center point of said damaged area as an origin;

determine position coordinate data of said feature parts in said coordinate system,
10 respectively; and

determine the relative positional relationship between said feature parts and said damaged area based on the position coordinate data of said feature parts.

- 15 6. The apparatus according to claim 5, wherein said positional relationship determining module comprises:

a feature selecting unit for selecting, when it is identified that the number N of the feature parts in said marked image is greater than 3, K feature parts from the N feature parts to determine the relative positional relationship between said damaged area and said K feature reference parts, wherein $2 \leq K \leq 3$.

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7. The apparatus according to claim 6, wherein said positional relationship determining module is configured to:

transform said damaged area into a corresponding first regular geometric figure according to the shape of said damaged area;

- 25 construct, in said coordinate system, second regular geometric figures including said

origin and position coordinates data of at least two feature parts;

calculate size of feature area of the first regular geometric figure included in said second regular geometric figures, respectively;

determine a scope information on scope of said damaged area between said feature parts

5 based on the sizes of said feature areas and the coordinate distances of said feature parts;
and

determine the relative positional relationship between said feature parts and said damaged area based on the matching of said scope information.

10 8. The apparatus according to claim 4, wherein,

if no positional relationship data matching said relative positional relationship is found in said feature correspondence library by said matching module, positional relationship data having the highest matching degree with said relative positional relationship is acquired; and

15 the related part corresponding to the positional relationship data having said highest matching degree is used as the related part that matches said relative positional relationship.

9. An apparatus for identifying a damaged part of a vehicle, comprising:

20 an image marking module for acquiring a captured image uploaded by a client device, identifying a first damage location in said captured image, and marking said first damage location in said captured image, thereby generating a marked image;

a mark sending module for sending said marked image to said client device;

an auxiliary interacting module for receiving an auxiliary damage image returned from
25 the client device, and identifying at least one feature part included in said auxiliary

damage image, said auxiliary damage image including image information formed by confirming a vehicle damage location in said marked image based on an interaction;

a position determining module for determining a relative positional relationship between said feature parts and the vehicle damage location in said auxiliary damage
5 image, said relative positional relationship between said feature parts and the vehicle damage location including one of the direction of said feature parts with respect to the vehicle damage location, the distance from said feature parts to the vehicle damage location, and the distance percentage of the distance from said feature parts to the vehicle damage location, or a combination thereof; and

10 a part identifying module for matching said relative positional relationship in a feature correspondence library to obtain a corresponding related part, and determining the damaged part in said captured image based on said related part,

wherein said feature correspondence library is established based on a feature library which is constructed from a plurality of feature parts of the vehicle, and the feature
15 correspondence library includes data for positional relationship between parts of the vehicle, and the feature library and the feature correspondence library are both established in advance.

10. The apparatus according to claim 9, wherein said auxiliary damage image received
20 by said auxiliary interacting module further comprises mark information of a second damage location, said second damage location including a new vehicle damage location added to said marked image.

11. A server comprising a processor and a memory for storing processor-executable
25 instructions, wherein upon execution of said instructions, said processor is configured to:

receive a marked image uploaded by a client device, said marked image including a damaged area determined based on an act of marking a damage location in a captured image;

5 identify feature parts in said marked image, and determine a relative positional relationship between said feature parts and said damaged area based on the positions of said feature parts and said damaged area in the marked image, said relative positional relationship between said feature parts and said damaged area including one of the direction of said feature parts with respect to said damaged area, the distance from said feature parts to said damaged area, and the distance percentage of the distance from
10 said feature parts to said damaged area, or a combination thereof;

match said relative positional relationship in a feature correspondence library to obtain a corresponding related part, said feature correspondence library is established based on a feature library which is constructed from a plurality of feature parts of the vehicle, and the feature correspondence library includes data for positional relationship between
15 parts of the vehicle, and the feature library and the feature correspondence library are both established in advance; and

determine the damaged part in said captured image based on said related part.

12. A server comprising a processor and a memory for storing processor-executable
20 instructions, wherein upon execution of said instructions, said processor is configured to:

acquire a captured image uploaded by a client device, identify a first damage location in said captured image, and mark said first damage location in said captured image, thereby generating a marked image;

25 send said marked image to said client device;

receive an auxiliary damage image returned from the client device, and identify at least

one feature part included in said auxiliary damage image, said auxiliary damage image including image information formed by confirming a vehicle damage location in said marked image based on an interaction;

5 determine a relative positional relationship between said feature parts and the vehicle damage location in said auxiliary damage image, said relative positional relationship between said feature parts and the vehicle damage location including one of the direction of said feature parts with respect to the vehicle damage location, the distance from said feature parts to the vehicle damage location, and the distance percentage of the distance from said feature parts to the vehicle damage location, or a combination
10 thereof; and

match said relative positional relationship in a feature correspondence library to obtain a corresponding related part, and determine the damaged part in said captured image based on said related part, said feature correspondence library is established based on a feature library which is constructed from a plurality of feature parts of the vehicle, and
15 the feature correspondence library includes data for positional relationship between parts of the vehicle, and the feature library and the feature correspondence library are both established in advance.

13. An electronic device comprising a display, a processor and a memory storing
20 processor-executable instructions, wherein upon execution of said instructions, said processor is configured to:

acquire a captured image of a vehicle;

determine a damaged area based on an act of marking a damage location in said captured image on the display, thereby forming a marked image;

25 identify feature parts in said marked image, and determine a relative positional relationship between said feature parts and said damaged area based on the positions of said feature parts and said damaged area in the marked image, said relative positional

relationship between said feature parts and said damaged area including one of the direction of said feature parts with respect to said damaged area, the distance from said feature parts to said damaged area, and the distance percentage of the distance from said feature parts to said damaged area, or a combination thereof;

- 5 match said relative positional relationship in a feature correspondence library to obtain a corresponding related part, said feature correspondence library is established based on a feature library which is constructed from a plurality of feature parts of the vehicle, and the feature correspondence library includes data for positional relationship between parts of the vehicle, and the feature library and the feature correspondence library are
10 both established in advance; and

determine the damaged part in said captured image based on said related part.

14. An electronic device comprising a display, a processor and a memory storing processor-executable instructions, wherein upon execution of said instructions, said
15 processor is configured to:

acquire a captured image of a vehicle, identify a first damage location in said captured image, and mark said first damage location in said captured image, thereby generating a marked image;

display, on said display, mark information of the first damage location in said marked
20 image;

confirming a vehicle damage location based on received interaction to form an auxiliary damage image, said vehicle damage location including said first damage location;

identify at least one feature part included in said auxiliary damage image;

determine a relative positional relationship between said feature parts and the vehicle
25 damage location in said auxiliary damage image, said relative positional relationship between said feature parts and the vehicle damage location including one of the

direction of said feature parts with respect to the vehicle damage location, the distance from said feature parts to the vehicle damage location, and the distance percentage of the distance from said feature parts to the vehicle damage location, or a combination thereof; and

- 5 matching said relative positional relationship in a feature correspondence library to obtain a corresponding related part, and determine the damaged part in said captured image based on said related part, said feature correspondence library is established based on a feature library which is constructed from a plurality of feature parts of the vehicle, and the feature correspondence library includes data for positional relationship
- 10 between parts of the vehicle, and the feature library and the feature correspondence library are both established in advance.