CLAIMS

1. A computer-implemented method, comprising:

identifying, at an augmented reality (AR) client terminal, initial location information for a location of a user;

capturing a scene picture associated with the location of the user;

performing image matching between the captured scene picture and scene pictures in a scene picture set, wherein the scene picture set is generated based on the initial location information, each scene picture in the scene picture set is associated with detailed location information, the initial location information is generated by a global positioning system (GPS), the scene picture set includes the scene pictures related to locations that are within a threshold distance from a location indicated by the initial location information, and the threshold distance is larger than a positioning error value of the GPS; and

in response to the captured scene picture matching a particular scene picture in the scene picture set, determining refined location information for the location of the user based on the detailed location information of the particular scene picture.

2. The computer-implemented method of claim 1, wherein the initial location information represents planar location information, and the refined location information includes elevation information.

3. The computer-implemented method of claim 1, wherein the initial location information is generated using the GPS of a mobile terminal in proximity to the AR client terminal.

4. The computer-implemented method of claim 1, wherein the AR client terminal reports the initial location information to a background server terminal.

5. The computer-implemented method of claim 4, wherein the AR client terminal downloads the scene picture set from the background server terminal based on the initial location information.

6. The computer-implemented method of claim 1, further comprising:

reporting the refined location information to a location-based-service (LBS) server terminal; and

receiving a push message including virtual data from the LBS server terminal based on the refined location information.

7. The computer-implemented method of claim 6, wherein the AR client terminal displays an augmented scene picture to the user by combining the virtual data in the push message and a real-time scene picture scanned by the AR client terminal.

8. A non-transitory, computer-readable medium storing one or more instructions executable by a computer system to perform operations comprising:

identifying, at an augmented reality (AR) client terminal, initial location information for a location of a user;

capturing a scene picture associated with the location of the user;

performing image matching between the captured scene picture and scene pictures in a scene picture set, wherein the scene picture set is generated based on the initial location information, each scene picture in the scene picture set is associated with detailed location information, the initial location information is generated by a global positioning system (GPS), the scene picture set includes the scene pictures related to locations that are within a threshold distance from a location indicated by the initial location information, and the threshold distance is larger than a positioning error value of the GPS; and

in response to the captured scene picture matching a particular scene picture in the scene picture set, determining refined location information for the location of the user based on the detailed location information of the particular scene picture.

9. The non-transitory, computer-readable medium of claim 8, wherein the initial location information represents planar location information, and the refined location information includes elevation information.

10. The non-transitory, computer-readable medium of claim 8, wherein the initial location information is generated using the GPS of a mobile terminal in proximity to the AR client terminal.

11. The non-transitory, computer-readable medium of claim 8, wherein the AR client terminal reports the initial location information to a background server terminal.

12. The non-transitory, computer-readable medium of claim 11, wherein the AR client terminal downloads the scene picture set from the background server terminal based on the initial location information.

13. The non-transitory, computer-readable medium of claim 8, wherein the operations further comprise:

reporting the refined location information to a location-based-service (LBS) server terminal; and

receiving a push message including virtual data from the LBS server terminal based on the refined location information.

14. The non-transitory, computer-readable medium of claim 13, wherein the AR client terminal displays an augmented scene picture to the user by combining the virtual data in the push message and a real-time scene picture scanned by the AR client terminal.

15. A computer-implemented system, comprising:

one or more computers; and

one or more computer memory devices interoperably coupled with the one or more computers and having tangible, non-transitory, machine-readable media storing one or more instructions that, when executed by the one or more computers, perform one or more operations comprising:

identifying, at an augmented reality (AR) client terminal, initial location information for a location of a user;

capturing a scene picture associated with the location of the user;

performing image matching between the captured scene picture and scene pictures in a scene picture set, wherein the scene picture set is generated based on the initial location

information, each scene picture in the scene picture set is associated with detailed location information, the initial location information is generated by a global positioning system (GPS), the scene picture set includes the scene pictures related to locations that are within a threshold distance from a location indicated by the initial location information, and the threshold distance is larger than a positioning error value of the GPS; and

in response to the captured scene picture matching a particular scene picture in the scene picture set, determining refined location information for the location of the user based on the detailed location information of the particular scene picture.

16. The computer-implemented system of claim 15, wherein the initial location information represents planar location information, and the refined location information includes elevation information.

17. The computer-implemented system of claim 15, wherein the initial location information is generated using the GPS of a mobile terminal in proximity to the AR client terminal.

18. The computer-implemented system of claim 15, wherein the AR client terminal reports the initial location information to a background server terminal.

19. The computer-implemented system of claim 18, wherein the AR client terminal downloads the scene picture set from the background server terminal based on the initial location information.

20. The computer-implemented system of claim 15, wherein the one or more operations further comprise:

reporting the refined location information to a location-based-service (LBS) server terminal; and

receiving a push message including virtual data from the LBS server terminal based on the refined location information.