CLAIMS

1. A server for processing on-demand services, the server comprising:

a memory for storing instructions; and

a processor for executing the stored instructions and configured to:

receive, from a computing device associated with a user, a request for an item delivery service to be provided to the user en route to a destination during a use of a transport service, wherein the request for the item delivery service includes information about at least one selected item for the item delivery service;

determine that a travel route of the user associated with the transport service overlaps with at least one of a plurality of predetermined travel routes where a plurality of delivery outposts are placed;

identify a candidate set of the plurality of delivery outposts placed on the travel route of the user; and

select a delivery outpost from the candidate set of the plurality of delivery outposts based on at least one criterion, for the user to pick up the selected item along the travel route of the user to the destination,

wherein the processor is further configured to:

identify geographical locations of a plurality of item providers in a vicinity of the plurality of predetermined travel routes;

segment the plurality of item providers into a plurality of regions based on the identified geographical locations of the plurality of item providers;

segment each of the plurality of regions into a plurality of sub-regions such that one or more item providers connected to each of the plurality of predetermined travel routes are grouped into each sub-region; and

place the plurality of delivery outposts along the plurality of predetermined travel routes, and

wherein the candidate set of the plurality of delivery outposts comprises one or more delivery outposts placed in a same sub-region.

2. The server according to claim 1, wherein the processor is further configured to:

receive, from the computing device, a request for a search for the item delivery service; and

provide the computing device with a list of items, associated with at least one item provider, which can be prepared and delivered to the candidate set of the plurality of delivery outposts within an estimated time of arrival of the user to the candidate set of the plurality of delivery outposts.

3. The server according to claim 2, wherein the selected item is selected from the list of items; and

the processor is further configured to provide the information about the selected item to a selected item provider associated with the selected item for preparing the selected item.

4. The server according to claim 3, wherein the processor is further configured to:

select a delivery service provider from one or more delivery service providers based on a geographical location of the one or more delivery service providers; and

request the selected delivery service provider to pick up the selected item at a geographical location of the selected item provider and deliver the selected item to the selected delivery outpost.

5. The server according to claim 1, wherein the candidate set of the plurality of delivery outposts includes a primary delivery outpost which is mapped to the selected item provider, and one or more subsequent delivery outposts placed in a sub-region where the primary delivery outpost is placed.

6. The server according to claim 5, wherein the processor is further configured to:

determine that the selected delivery service provider has picked up the selected item from the selected item provider;

check a current geographical location of the computing device associated with the user;

if the current geographical location of the computing device associated with the user is not in the sub-region, select the primary delivery outpost; and

if the current geographical location of the computing device associated with the user is in the sub-region, re-select a delivery outpost from the one or more subsequent delivery outposts, based on a calculation of a first estimated time of arrival of the user to the one or more subsequent delivery outposts and a second estimated time of arrival of the selected delivery service provider to the one or more subsequent delivery outposts.

7. The server according to claim 6, wherein the processor is further configured to:

define an entry point on the travel route of the user; and

detect that the user is in the sub-region when the computing device associated with the user crosses the entry point.

8. The server according to claim 6 or claim 7, wherein the processor is further configured to:

calculate a difference between a third estimated time of arrival of the user to the selected delivery outpost and a fourth estimated time of arrival of the selected delivery service provider to the selected delivery outpost;

determine that a race condition is observed, if the difference is more than a first threshold, and/or if rate of increase in the difference is more than a second threshold; and

if it is determined that the race condition is observed, re-select a delivery outpost from the one or more subsequent delivery outposts, based on the calculation of the first estimated time of arrival of the user to the one or more subsequent delivery outposts and the second estimated time of arrival of the selected delivery service provider to the one or more subsequent delivery outposts.

9. A method for processing on-demand services, the method comprising:

receiving, from a computing device associated with a user, a request for an item delivery service to be provided to the user en route to a destination during a use of a transport service, wherein the request for the item delivery service includes information about at least one selected item for the item delivery service;

determining that a travel route of the user associated with the transport service overlaps with at least one of a plurality of predetermined travel routes where a plurality of delivery outposts are placed;

identifying a candidate set of the plurality of delivery outposts placed on the travel route of the user; and

selecting a delivery outpost from the candidate set of the plurality of delivery outposts based on at least one criterion, for the user to pick up the selected item along the travel route of the user to the destination,

wherein the method further comprises:

identifying geographical locations of a plurality of item providers in a vicinity of the plurality of predetermined travel routes;

segmenting the plurality of item providers into a plurality of regions based on the identified geographical locations of the plurality of item providers;

segmenting each of the plurality of regions into a plurality of sub-regions such that one or more item providers connected to each of the plurality of predetermined travel routes are grouped into each sub-region; and

placing the plurality of delivery outposts along the plurality of predetermined travel routes, and

wherein the candidate set of the plurality of delivery outposts comprises one or more delivery outposts placed in a same sub-region.

10. The method according to claim 9 further comprising:

receiving, from the computing device, a request for a search for the item delivery service; and

providing the computing device with a list of items, associated with at least one item provider, which can be prepared and delivered to the candidate set of the plurality of delivery

outposts within an estimated time of arrival of the user to the candidate set of the plurality of delivery outposts.

11. The method according to claim 10, wherein the selected item is selected from the list of items; and

the method further comprises providing the information about the selected item to a selected item provider associated with the selected item for preparing the selected item.

12. The method according to claim 11 further comprising:

selecting a delivery service provider from one or more delivery service providers based on a geographical location of the one or more delivery service providers; and

requesting the selected delivery service provider to pick up the selected item at a geographical location of the selected item provider and deliver the selected item to the selected delivery outpost.

13. The method according to claim 9, wherein the candidate set of the plurality of delivery outposts includes a primary delivery outpost which is mapped to the selected item provider, and one or more subsequent delivery outposts placed in a sub-region where the primary delivery outpost is placed.

14. The method according to claim 13 further comprising:

determining that the selected delivery service provider has picked up the selected item from the selected item provider;

checking a current geographical location of the computing device associated with the user;

if the current geographical location of the computing device associated with the user is not in the sub-region, selecting the primary delivery outpost; and

if the current geographical location of the computing device associated with the user is in the sub-region, re-selecting a delivery outpost from the one or more subsequent delivery outposts, based on a calculation of a first estimated time of arrival of the user to the one or more subsequent delivery outposts and a second estimated time of arrival of the selected delivery service provider to the one or more subsequent delivery outposts.

15. The method according to claim 14 further comprising:

defining an entry point on the travel route of the user; and

detecting that the user is in the sub-region when the computing device associated with the user crosses the entry point.

16. The method according to claim 14 or claim 15 further comprising:

calculating a difference between a third estimated time of arrival of the user to the selected delivery outpost and a fourth estimated time of arrival of the selected delivery service provider to the selected delivery outpost;

determining that a race condition is observed, if the difference is more than a first threshold, and/or if rate of increase in the difference is more than a second threshold; and

if it is determined that the race condition is observed, re-selecting a delivery outpost from the one or more subsequent delivery outposts, based on the calculation of the first estimated time of arrival of the user to the one or more subsequent delivery outposts and the

second estimated time of arrival of the selected delivery service provider to the one or more subsequent delivery outposts.

17. A data processing apparatus configured to perform the method of any one of claims 9 to 16.

18. A computer-readable medium comprising program instructions, which, when executed by one or more processors, cause the one or more processors to perform the method of any one of claims 9 to 16.