## CLAIMS

1. A warehouse-based transport system, applied to a stereoscopic warehouse, wherein the stereoscopic warehouse is provided with warehouse racks having multiple columns and tiers, the warehouse racks are provided with multiple tiers of reservation units, and bins are placed in slots of the reservation units; a track transport device is mounted on the warehouse racks, the device comprising:

a transverse track, a first upright, a first movable member, and a connecting mechanism of a task module, wherein

the transverse track is disposed on the rack;

the first upright is vertically disposed on the transverse track and is capable of sliding transversely;

the first movable member is disposed on the first upright and is capable of sliding along the first upright;

the connecting mechanism of the task module is disposed on the first movable member;

the task module, driven by the first movable member, stores and/or retrieves bins and/or goods, and places the bins and/or goods into a docking assembly of a freight robot running at a bottom and/or a top of the warehouse rack, or retrieves the bins and/or goods from the docking assembly;

a space capable of providing a passage for a freight robot to travel is provided below the rack; and

the task module of the track transport device is capable of extending out from the top of the stereoscopic warehouse.

2. The warehouse-based transport system according to claim 1, wherein the track transport device is provided on a fulfillment operating face of the warehouse racks.

3. The warehouse-based transport system according to claim 1, wherein the space, capable of providing the passage for the freight robot to travel and arranged below the rack, is specifically implemented as:

removing partition plates of one or more slots on a bottom rack tier of the rack to provide a passage for the freight robot; or

removing one or more rack tiers of the rack to provide a matching height to support the freight robot running on the ground.

4. The warehouse-based transport system according to claim 1 or 2, wherein an opening is provided at the top of the stereoscopic warehouse, and a shape of the opening matches the task module to allow the task module to extend out to perform a fulfillment docking operation.

5. The warehouse-based transport system according to claim 4, wherein the opening provided at the top of the stereoscopic warehouse is specifically implemented as: the task module extends through the opening provided at the top of the stereoscopic warehouse, stores and/or retrieves the bins under the drive of the first movable member, and places the bins into a docking assembly of a freight robot running at the top of the warehouse rack at the opening.

6. The warehouse-based transport system according to claim 1, wherein the goods are placed into the docking assembly or a docking bin of the freight robot running at the bottom of the rack by a goods picking device, or retrieved from the docking assembly or the docking bin and placed into the bin; the goods picking device on the rack is specifically implemented as:

a first transverse track, a first upright, a first movable member, and a connecting mechanism of a first task module, wherein

the first transverse track is disposed on the rack;

the first upright is vertically disposed on the first transverse track and is capable of sliding transversely;

the first movable member is disposed on the first upright and is capable of sliding along the first upright; and

the connecting mechanism of the first task module is disposed on the first movable member.

7. The warehouse-based transport system according to claim 5 or 6, further comprising: a second transverse track, and the second transverse track is located at a lower portion of the rack, wherein the first transverse track and the second transverse track are connected to the first upright via a slider; and

the slider moves on the transverse tracks driven by rollers and/or gears, wherein the rollers and/or gears are driven by a motor.

8. The warehouse-based transport system according to claim 7, wherein an arrangement of the track transport device on the rack further comprises: a second upright and a second movable member, wherein the second upright is vertically disposed on the transverse track and is capable of sliding transversely;

the second movable member is disposed on the second upright and is capable of sliding along the second upright; and

a connecting mechanism of a second task module is disposed on the second movable member.

9. The warehouse-based transport system according to claim 8, wherein the arrangement of the track transport device on the rack further comprises a third upright, wherein the second task module is disposed between the second upright and the third upright via the connecting mechanism; and

the second task module is driven to be positioned at a goods position or a docking position on the rack.

10. The warehouse-based transport system according to claim 8, wherein

a synchronous belt wheel, driven by a motor and controlled by a reducer, drives a synchronous belt to support a movement of the first movable member on a slide track of the first upright; and

the synchronous belt wheel, driven by the motor and controlled by the reducer, drives the synchronous belt to support the movement of the second movable member on the slide track of the second upright.

11. The warehouse-based transport system according to claim 1, wherein the autonomous mobile robot and/or the load handling device is provided at the top of the stereoscopic warehouse, the load handling device is arranged in cooperation with a lifting device, the lifting device grabs the bin or goods, the load handling device is arranged to move on the top of the stereoscopic warehouse and is configured to lift and

move the bin or the goods in the stereoscopic warehouse, and the load handling device comprises:

electrical control equipment, a drive and/or a lifting assembly,

a receiving space assembly for accommodating the bin or goods; and

the lifting assembly is configured to lift and lower the lifting device relative to the receiving space assembly.

12. The warehouse-based transport system according to claim 1 or 11, wherein a walking face for an autonomous guided vehicle (AGV) is able to be deployed at the top of the stereoscopic warehouse, and/or, a first set of parallel tracks and a second set of parallel tracks are arranged, wherein the second set of parallel tracks extends transversely to the first set on a substantially horizontal plane, forming a grid structure comprising multiple grid spaces.

13. The warehouse-based transport system according to any one of claims 1-5, wherein the task module is a component capable of performing one or more tasks such as identification, extraction, returning, and grabbing; and the connecting mechanism of the task module is connected to different task modules.

14. The warehouse-based transport system according to claim 9, wherein the docking position is a position where the second task module transfers goods to the freight robot after storing and/or retrieving the bin and/or goods from the slot of the rack.

15. An intelligent stereoscopic warehousing system, comprising one or more transport systems according to any one of claims 1-14.