DESCRIPTION

TITLE OF INVENTION: PARCEL INSPECTION METHOD AND APPARATUS, AND ELECTRONIC DEVICE AND STORAGE MEDIUM

TECHNICAL FIELD

[0001] The present invention relates to the field of security inspection technologies, and in particular, to a parcel inspection method and apparatus, and an electronic device and a storage medium.

BACKGROUND

[0002] With a popularization of high-speed security inspection at sites, express parcels circulating in transfer stations has achieved full security inspection. However, in practical applications, if a unified security inspection rule for different scenarios is used, it will result in low flexibility and poor adaptability. Moreover, the number of parcels requiring manual re-judgment is large, and precise filtering may not be achieved, leading to high labor input cost and low inspection efficiency.

SUMMARY

[0003] In view of the above, embodiments of the present invention provide a parcel inspection method and apparatus, and an electronic device and a storage medium, aiming to meet different inspection requirements in various scenarios, improve business adaptability and flexibility, reduce labor input cost, and enhance efficiency of parcel security inspection.

[0004] A first aspect of the embodiments of the present invention provides a parcel inspection method, which includes: acquiring logistics site information and a transport capacity type of a parcel to be inspected, where the logistics site information is determined by a binding relationship between an identity identifier of a security inspection machine and a logistics site, and the transport capacity type of the parcel to be inspected is used to characterize a transportation mode of the parcel to be inspected; determining a security inspection rule of the parcel to be inspected according to the logistics site information and the transport capacity type of the parcel to be inspected; and performing a security inspection on the parcel to be inspected according to the security inspection rule.

[0005] A second aspect of embodiments of the present invention provides a parcel inspection apparatus, which includes: an acquisition module, configured to acquire logistics site information and a transport capacity type of a parcel to be inspected, where the logistics site information is determined by a binding relationship between an identity identifier of a security inspection machine and a logistics site, and the transport capacity type of the parcel to be inspected is used to characterize a transportation mode of the parcel to be inspected; a determination module, configured to determine a security inspection rule of the parcel to be inspected according to the logistics site information and the transport capacity type of the parcel to be inspected; an inspection module, configured to perform a security inspection on the parcel to be inspected according to the security inspection rule.

[0006] A third aspect of embodiments of the present invention provides an electronic device, which includes a memory, a processor, and a computer program stored on memory and executable on the electronic device, where the computer program, when executed by the processor, implements steps of the parcel inspection method provided in the first aspect.

[0007] A fourth aspect of embodiments of the present invention provides a computer-readable storage medium, where a computer program is stored on the computer-readable storage medium, and the computer program, when executed by a processor, implements steps of the parcel inspection method provided in the first aspect.

[0008] A fifth aspect of embodiments of the present invention provides a computer program product, when the computer program product runs on the electronic device, steps of the parcel inspection method provided in the first aspect are implemented when the electronic device is executed.

[0009] The parcel inspection method and apparatus, the electronic device and the storage medium provided by the embodiments of the present invention have the following beneficial effects:

[0010] Different security inspection rules may be configured for different transport capacity types and different sites to meet different inspection requirements in different scenarios, which results in good business adaptability, high flexibility, low labor input cost, and improved efficiency of parcel security inspection.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] FIG. 1a is a schematic diagram of a scenario of a parcel inspection system according to an embodiment of the present invention.

[0012] FIG. 1b is a flowchart of an implementation procedure of a parcel inspection method according to an embodiment of the present invention.

[0013] FIG. 2 is a flowchart of an implementation procedure of a method for correcting a transport capacity type of a parcel in a parcel inspection method according to an embodiment of the present invention.

[0014] FIG. 3 is a flowchart of an implementation procedure of a first method for performing a security inspection on a parcel in a parcel inspection method according to an embodiment of the present invention.

[0015] FIG. 4 is a flowchart of an implementation procedure of a second method for performing a security inspection on a parcel in a parcel inspection method according to an embodiment of the present invention.

[0016] FIG. 5 is a flowchart of an implementation procedure of a third method for performing a security inspection on a parcel in a parcel inspection method according to an embodiment of the present invention.

[0017] FIG. 6 is a flowchart of an implementation procedure of a fourth method for performing a security inspection on a parcel in a parcel inspection method according to an embodiment of the present invention.

[0018] FIG. 7 is a flowchart of an implementation procedure of a fifth method for performing a security inspection on a parcel in a parcel inspection method according to an embodiment of the present invention.

[0019] FIG. 8 is a flowchart of an implementation procedure of a sixth method for performing a security inspection on a parcel in a parcel inspection method according to an embodiment of the present invention.

[0020] FIG. 9 is a flowchart of an implementation procedure of a seventh method for performing a security inspection on a parcel in a parcel inspection method according to an embodiment of the present invention.

[0021] FIG. 10 is a flowchart of an implementation procedure of an eighth method for performing a security inspection on a parcel in a parcel inspection method according to an embodiment of the present invention.

[0022] FIG. 11 is a block diagram of a basic structure of a parcel inspection apparatus according to an embodiment of the present invention.

[0023] FIG. 12 is a block diagram of a basic structure of an electronic device according to an embodiment of the present invention.

[0024] FIG. 13 is a schematic diagram of a structure of a storage medium according to an embodiment of the present invention.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0025] With a popularization of high-speed security inspection at sites, express parcels circulating in transfer stations has achieved full security inspection. Currently, the high-speed security inspection specifically employs a combination of image pre-screening based on AI (Artificial Intelligence) and manual re-judgment. However, in practical applications, security inspection systems generally use a unified security inspection rule, which results in low flexibility and poor adaptability, and cannot meet different inspection requirements in different scenarios. Moreover, the number of parcels requiring manual re-judgment is large, and precise filtering may not be achieved, thereby leading to high labor input cost and low inspection efficiency.

[0026] The parcel inspection solution provided by embodiments of the present invention aims to solve at least one of the following technical problems: numerous security inspection machines are deployed at sites, an inspection speed is fast, and a daily inspection volume at some sites exceeding one million, so that labor input cost are high if all AI-based prohibited items are subjected to manual re-judgment; an AI-based pre-judgment has different recognition abilities for different prohibited categories, and different transportation modes have different requirements for prohibited items, so it is difficult to accurately push prohibited parcels to manual re-judgment; the transportation mode of a parcel is difficult to determine accurately, so that missed judgment and misjudgment are more likely to occur for air shipments which have higher requirements due to factors such as real-time routing change or temporary reassignment of a mail at a site; special treatment is required for sensitive categories with specific flow directions, for example, a knife with a flow direction to Xinjiang is a prohibited item, whereas it is permitted for other flow directions; during domestic large-scale activities and large-scale competitions, parcels flowing into the local area are judged in advance, for example, during a period of the Two Sessions, a parcel with a flow direction to Beijing is subject to special attention and full judgment; in certain sites, a burlap parcels is filtered without security inspection and the like; and at aviation fields, for scenarios such as five easy-to-handle and two cold-chain categories or mainline truck loading, the manual re-judgment may not be performed in time due to limited time, in such a case, an AI-based interception of prohibited items is performed in advance, followed by the manual re-judgment.

[0027] To solve above problems, embodiments of the present invention provide a parcel inspection method and apparatus, and an electronic device and a storage medium, which are described in detail below.

[0028] Please refer to FIG. 1a, which is a schematic diagram of a scenario of a parcel inspection system according to an embodiment of the present invention. The parcel inspection system may include a computer device 100.

[0029] In the embodiments of the present invention, the computer device 100 may be used to execute a parcel inspection method, and a specific content of the parcel inspection method may be referred to following description. In one example, the computer device 100 is integrated with a parcel inspection apparatus to perform the parcel inspection method described below.

[0030] In an exemplary embodiment, the computer device 100 may be a terminal or a server.

[0031] When the computer device 100 is a server, it may be an independent server, or a server network or server cluster composed of a plurality of servers. For example, the computer device 100 includes but is not limited to a computer, a network host, a single network server, a plurality of network server sets, or a cloud server composed of a plurality of servers. The cloud server is composed of a large number of computers or network servers based on a cloud computing.

[0032] When the computer device 100 is a terminal, the terminal may be a device that includes both receiving and transmitting hardware, that is, a device equipped with receiving and transmitting hardware capable of performing bidirectional communication over a bidirectional communication link. Such a device may include a cellular or other communication devices, which have a single-line display or a multi-line display, or a cellular or other communication devices without a multi-line display. The computer device 100 may be a desktop terminal or a mobile terminal, and the computer device 100 may also be one of a mobile phone, a tablet computer, and a laptop computer.

[0033] Those skilled in the art may understand that an application environment shown in FIG. 1a is only one type of application scenarios of a solution of the present invention, and does not constitute a limitation on the application scenarios of the solution of the present invention. Other application environments may also include more or fewer computer devices than those shown in FIG. 1a. For example, only one computer device is shown in FIG. 1a. It may be understood that the parcel inspection system may also include one or more other computer devices, which are not limited here.

[0034] In addition, as shown in FIG. 1a, the parcel inspection system may further include a storage module 200 for storing data, where the data may include logistics site information or transport capacity type of the parcel to be inspected, and so on.

[0035] It should be noted that the schematic diagram of the scenario of the parcel inspection system shown in FIG. 1a is only an example. The parcel inspection system and scenario described in the embodiments of the present invention are intended to more clearly illustrate the technical solutions of the embodiments of the present invention and do not constitute a limitation on the technical solutions provided by the embodiments of the present invention. Those skilled in the art will understand that the technical solutions provided by the embodiments of the present invention are equally applicable to similar technical problems as the parcel inspection system evolves and new business scenarios emerge.

[0036] A more detail illustration of the parcel inspection method according to the embodiments of the present invention is given below with reference to FIG. 1b to FIG. 10.

[0037] In the embodiments of the present invention, the parcel inspection method may be performed by the computer device 100 (for example, the parcel inspection apparatus) shown in FIG. 1a. To simplify and facilitate description, the execution subject will be omitted in subsequent method embodiments.

[0038] Please refer to FIG. 1b, FIG. 1b is a flowchart of an implementation procedure of a parcel inspection method according to an embodiment of the present invention. The parcel inspection method includes following content.

[0039] S11: Acquiring logistics site information and a transport capacity type of a parcel to be inspected.

[0040] In an exemplary embodiment, the logistics site information is information of a site where the parcel to be inspected is currently located. When a security inspection is performed on the parcel to be inspected, an inspection data of the parcel to be inspected is obtained and uploaded by a security inspection machine at an edge side. Therefore, the logistics site information may be determined through a binding relationship between an identity identifier of a security inspection machine and a logistics site. The transport capacity type of the parcel to be inspected may be obtained by querying an associated system, for example, a security inspection system of a previous transfer station of the parcel to be inspected, or a transport capacity scheduling system.

[0041] S12: Determining a security inspection rule of the parcel to be inspected according to the logistics site information and the transport capacity type of the parcel to be inspected.

[0042] In an exemplary embodiment, different logistics sites may be configured with a corresponding security inspection rule on a rule configuration page of the security inspection system according to parcel inspection standard set by themselves. For example, the parcel inspection standard set by different logistics sites themselves include setting different

prohibited categories according to different transport capacity types or configuring different confidence thresholds according to the different transport capacity types. It may be understood that the confidence threshold is a measurement standard for inspecting whether a parcel belongs to a prohibited item.

[0043] In the security inspection system, a matching relationship between the logistics site and the security inspection rule is established, and one logistics site may match the security inspection rule in one or more configuration dimensions. For example, the configuration dimensions of the security inspection rule include but are not limited to a site, a transport capacity type, a flow direction, a sorting line, an inflow location, a timeliness, or a deployment status of a security inspection machine.

[0044] In an exemplary embodiment, a parcel inspection is specifically performed by a combination of AI-based pre-judgment and manual re-judgment. During a process of the AI-based pre-judgment, different security inspection rule may be adopted to perform a security inspection on a parcel at different logistics sites, so that the parcel requiring manual re-judgment at the logistics site are screened out, and the parcel requiring manual re-judgment is pushed to a manual re-judgment link for manual re-judgment, thereby reducing labor input cost of a parcel security inspection. In the AI-based pre-judgment, a security inspection image of the parcel is used to inspect whether the parcel is a prohibited item, and different confidence levels are set for the different transport capacity types. The number of parcels pushed to the manual re-judgment link is controlled through the confidence level, thereby reducing the number of prohibited parcels pushed to the manual re-judgment link.

[0045] S13: Performing a security inspection on the parcel to be inspected according to the security inspection rule.

[0046] In an exemplary embodiment, for each logistics site, the security inspection rule may be flexibly configured according to an actual situation of the logistics site, and a series of the security inspection rule is used to form a filtering funnel of the logistics site, so that a corresponding filtering funnel is used at the logistics site to perform the security inspection on the parcel. For example, when the security inspection is performed on the parcel to be inspected, the inspection data of the parcel to be inspected is transmitted by the security inspection machine at the edge side to the security inspection system at a cloud side in a form of an image, so that, in the security inspection system, parcel basic information including but not limited to a waybill number, site information, a transport capacity type, a flow direction, or a locally accessible image link is extracted from the image by an information extraction module. According to the logistics site information, the logistics site may be determined, so that the

filtering funnel of the logistics site may be obtained. Then, the security inspection is performed on the parcel to be inspected according to the security inspection rule contained in the filtering funnel, and whether the parcel to be inspected needs to be pushed to the manual re-judgment link is determined.

[0047] It may be seen from the above, in the parcel inspection method according to embodiments of the present invention, according to the logistics site information and the transport capacity type of the parcel to be inspected, different security inspection rules may be configured for the different transport capacity types and different sites to meet different inspection requirements in different scenarios, which results in good business adaptability, high flexibility, low labor input cost, and improved efficiency of the parcel security inspection.

[0048] In an exemplary embodiment, the parcel refers to a parcel packed and sent for delivery, and the transport capacity type of the parcel is used to characterize a transportation mode of the parcel, which includes but is not limited to air transport, road transport, railway transport, or waterway transport. Due to real-time routing change or temporary reassignment of a mail at a site, the transport capacity type actually adopted by the parcel may be different from an initially planned transport capacity type. For example, certain parcels are normally transported by the road, but due to some special circumstances (such as a holding of domestic large-scale activities or large-scale competitions), the parcel flowing into a certain place is designated to only use the air transport, which may result in the transport capacity type actually adopted by the parcel being different from the initially planned transport capacity type. For example, a certain parcel is sent from city A to city B, and is sent to city C after two days transit and stay in city B. During a process from city A to city B, the parcel is transported by road, but a temporary reassignment is inspected in city B indicating that all parcels sent to city C in the last month need to be transported by air. At this time, in a transfer station of city B, the transport capacity type actually adopted by the parcel is different from the initially planned transport capacity type, and at this time, the security inspection system of the transfer station in city B will correct the transport capacity type of the parcel to change the transport capacity type of the parcel from the road transport to the air transport. For example, a transport capacity type correction rule may be set in the security inspection system to first monitor whether there is a change in the transport capacity type of the parcel to be inspected. If the change exists in the transport capacity type of the parcel to be inspected, the transport capacity type of the parcel to be inspected is corrected, thereby accurately determining the transport capacity type of the parcel and avoiding missed judgment and misjudgment in a subsequent parcel inspection process due to changes in the transport capacity type.

[0049] In some embodiments of the present invention, please refer to FIG. 2, FIG. 2 is a flowchart of an implementation procedure of a method for correcting a transport capacity type of a parcel in a parcel inspection method according to an embodiment of the present invention. As shown in FIG. 2, it specifically includes step S21 and step S22.

[0050] S21: Monitoring whether a specified transport capacity type exists for a parcel to be inspected, and judging whether a transport capacity type of the parcel to be inspected is consistent with the specified transport capacity type in a case that the specified transport capacity type exists for the parcel to be inspected.

[0051] S22: Determining that the change exists in the transport capacity type of the parcel to be inspected in a case that the transport capacity type of the parcel to be inspected is inconsistent with the specified transport capacity type, and correcting the transport capacity type of the parcel to be inspected according to the specified transport capacity type.

[0052] In an exemplary embodiment, site information, flow direction information, and timeliness information of the parcel may be extracted from a security inspection image by a security inspection system. The security inspection system may traverse real-time routing change information or a temporary reassignment instruction at a site according to the site information, the flow direction information, and the timeliness information of the parcel, and inspect whether the specified transport capacity type exists for the parcel. In a case that the specified transport capacity type exists for the parcel, whether the transport capacity type of the parcel is consistent with the specified transport capacity type may be judged. If the transport capacity type of the parcel is inconsistent with the specified transport capacity type, it is determined that the change exists in the transport capacity type of the parcel, and then the transport capacity type of the parcel is corrected according to the specified transport capacity type to make the transport capacity type of the parcel consistent with the specified transport capacity type. For example, suppose a temporary reassignment instruction received by the security inspection system is that a certain event will be held in area A from June 11, 2023 to June 20, 2023, and during this period, the specified transport capacity type of the parcel flowing into area A is air transport. The current date is June 13, 2023, and a parcel is to be transported from area B to area A through the road transport on June 14, 2023, and is planned to enter area A on June 17, 2023. At this time, according to the site information, the flow direction information, and the timeliness information of the parcel, it may be determined that the parcel has a specified transport capacity type, and the specific specified transport capacity type is the air transport. Since an initially planned transport capacity type of the parcel is the road transport, which is different from the specified transport capacity type, it may be determined that a change

exists in the transport capacity type of the parcel. At this time, the transport capacity type of the parcel may be corrected from the road transport to the air transport, ensuring that the transport capacity type of the parcel is consistent with the specified transport capacity type.

[0053] It may be understood that the initially planned transport capacity type is obtained by querying an associated system, for example, a security inspection system of a previous transfer station of the parcel, or a transport capacity scheduling system. The specified transport capacity type may be obtained by querying real-time routing information and temporary reassignment information.

[0054] In some embodiments of the present invention, please refer to FIG. 3, FIG. 3 is a flowchart of an implementation procedure of a first method for performing a security inspection on a parcel in a parcel inspection method according to an embodiment of the present invention. As shown in FIG. 3, it may specifically include step S31 to step S33.

[0055] S31: Acquiring category information and flow direction information of a parcel to be inspected.

[0056] S32: Judging whether the parcel to be inspected complies with a first category filtering condition according to the category information and the flow direction information; in a case that the parcel to be inspected complies with the first category filtering condition, acquiring, from the first category filtering condition according to the category information, a first inspection confidence threshold corresponding to a transport capacity type of the parcel to be inspected, and performing a security inspection process on the parcel to be inspected.

[0057] S33: When it is inspected that a confidence level of the parcel to be inspected is greater than the first inspection confidence threshold, determining that the parcel to be inspected is a prohibited parcel, and pushing the parcel to be inspected into a manual re-judgment process.

[0058] In an exemplary embodiment, a security inspection image of the parcel is obtained through a security inspection machine at an edge side, and then the category information of the parcel is obtained by extracting information from the security inspection image at a cloud side. For example, a category of a parcel may be divided according to clothing, food, housing, daily use, and travel of consumers, including but not limited to food category, clothing category, shoes and hats category, daily necessities category, furniture category, household appliances category, textiles category, hardware and electrical material category, kitchenware category or the like. Alternatively, the category of the parcel may be divided according to a packaging type, including but not limited to a carton, a soft parcel, a woven bag, a foam box, a turnover box, a letter or the like.

[0059] In an exemplary embodiment, the first category filtering condition is a category filtering condition set according to the flow direction of the parcel, and defines whether a category is prohibited under different transport capacity types for certain flow directions. The first category filtering condition enables different prohibited categories to be configured for different flow directions for certain special flow directions, and an inspection confidence threshold corresponding to a category is set under the different transport capacity types to measure whether a parcel is prohibited. For example, a category configuration dimension of the first category filtering condition is the site and the flow direction. Based on the logistics site, a prohibited category for flow directions of the logistics site is set, which may be understood as establishing a corresponding relationship between the flow direction and the prohibited category for the logistics site. One flow direction may correspond to one or more prohibited categories.

[0060] In an exemplary embodiment, after the category information and the flow direction information of the parcel to be inspected are obtained, the corresponding relationship between the flow direction and the prohibited category of the logistics site where the parcel to be inspected is currently located may be queried according to the category information and the flow direction information, and whether the corresponding relationship between the flow direction and the prohibited category includes the flow direction of the parcel to be inspected is searched. If the corresponding relationship between the flow direction and the prohibited category includes the flow direction of the parcel to be inspected, whether a prohibited category set corresponding to the flow direction in the corresponding relationship between the flow direction and the prohibited category includes a category of the parcel to be inspected is searched. If the prohibited category set corresponding to the flow direction in the corresponding relationship between the flow direction and the prohibited category includes the category of the parcel to be inspected, the parcel to be inspected is determined to comply with the first category filtering condition. In a case that the parcel to be inspected complies with the first category filtering condition, the first inspection confidence threshold corresponding to the transport capacity type of the parcel to be inspected may be obtained from the first category filtering condition according to the category, and then the security inspection process is performed on the parcel according to the first inspection confidence threshold. Through AI-based pre-judgment inspection, in a case that the confidence level of the parcel to be inspected is greater than the first inspection confidence threshold, it is determined that the parcel to be inspected is a prohibited parcel, and at this time, the prohibited parcel may be pushed into a manual re-judgment link to implement the manual re-judgment process on the prohibited parcel.

[0061] In some embodiments of the present invention, please refer to FIG. 4, FIG. 4 is a flowchart of an implementation procedure of a second method for performing a security inspection on a parcel in a parcel inspection method according to an embodiment of the present invention. As shown in FIG. 4, it may specifically include step S41 to step S43.

[0062] S41: Acquiring category information and sorting line information of a parcel to be inspected.

[0063] S42: Judging whether the parcel to be inspected complies with a second category filtering condition according to the category information and the sorting line information; in a case that the parcel to be inspected complies with the second category filtering condition, acquiring, from the second category filtering condition according to the category information, a second inspection confidence threshold corresponding to a transport capacity type of the parcel to be inspected, and performing a security inspection process on the parcel to be inspected.

[0064] S43: When it is inspected that a confidence level of the parcel to be inspected is greater than the second inspection confidence threshold, determining that the parcel to be inspected is a prohibited parcel and pushing the parcel to be inspected into a manual re-judgment process.

[0065] In an exemplary embodiment, the second category filtering condition is a category filtering condition set according to a logistics network node, and defines whether a category is prohibited under different transport capacity types for certain network nodes. The second category filtering condition enables different prohibited categories to be configured for different network nodes for certain special network nodes, and an inspection confidence threshold corresponding to a category is set under the different transport capacity types to measure whether a parcel is prohibited.

[0066] In an exemplary embodiment, for a prohibited category, a priority of the first category filtering condition is greater than a priority of the second category filtering condition, that is, only when the prohibited category is not configured in the first category filtering condition, the prohibited category will take effect in the second category filtering condition. For example, a category configuration dimension of the second category filtering condition is a site and a sorting line, and the prohibited category corresponding to the different network nodes are determined through the sorting line. It may be understood that one network node may correspond to one or more prohibited categories.

[0067] In an exemplary embodiment, after the category information and the sorting line information of the parcel to be inspected are obtained, a corresponding relationship between the sorting line and the prohibited category of the logistics site where the parcel to be inspected

is currently located may be queried according to the category information and the sorting line information, and whether the corresponding relationship between the sorting line and the prohibited category includes the sorting line of the parcel to be inspected is searched. If the corresponding relationship between the sorting line and the prohibited category includes the sorting line of the parcel to be inspected, whether a prohibited category set corresponding to the sorting line in the corresponding relationship between the sorting line and the prohibited category includes a category of the parcel to be inspected is searched. If the prohibited category set corresponding to the sorting line in the corresponding relationship between the sorting line and the prohibited category includes the category of the parcel to be inspected, the parcel to be inspected is determined to comply with the second category filtering condition. In a case that the parcel to be inspected complies with the second category filtering condition, the second inspection confidence threshold corresponding to the transport capacity type of the parcel to be inspected may be obtained from the second category filtering condition according to the category, and then the security inspection process is performed on the parcel according to the second inspection confidence threshold. Through AI-based pre-judgment inspection, in a case that the confidence level of the parcel to be inspected is greater than the second inspection confidence threshold, it is determined that the parcel to be inspected is a prohibited parcel, and at this time, the prohibited parcel may be pushed into a manual re-judgment link to implement the manual re-judgment process on the prohibited parcel.

[0068] In an exemplary embodiment, during the AI-based pre-judgment inspection, if the confidence level of the parcel to be inspected given by the AI is lower than a configured reference confidence level (the first inspection confidence threshold or the second inspection confidence threshold), the parcel to be inspected will be excluded from an AI-based calculation result. If the category of the parcel to be inspected fails to belong to the prohibited categories under the transport capacity type corresponding to the parcel to be inspected, the parcel to be inspected will also be excluded. After performing relevant exclusion and sorting, the number of parcels entering manual re-judgment may be reduced, thereby lowering labor input cost.

[0069] In some embodiments of the present invention, please refer to FIG. 5, FIG. 5 is a flowchart of an implementation procedure of a third method for performing a security inspection on a parcel in a parcel inspection method according to an embodiment of the present invention. As shown in FIG. 5, it specifically includes step S51 and step S52.

[0070] S51: Acquiring flow direction information of a parcel to be inspected.

[0071] S52: Judging whether the parcel to be inspected complies with a first re-judgment condition according to the flow direction information, and pushing the parcel to be inspected

into a manual re-judgment process in a case that the parcel to be inspected complies with the first re-judgment condition.

[0072] In an exemplary embodiment, a flow direction of a parcel is specifically represented as site information of a transfer station to which the parcel is to be sent next. The first re-judgment condition is set as a flow direction screening condition, with a site and a flow direction as a configuration dimension. For different logistics sites, the flow direction that correspond to the sites and require manual re-judgment is configured, which is used to screen out a parcel with the flow direction requiring manual re-judgment, so that the parcel with the flow direction is pushed into a manual re-judgment link to implement the manual re-judgment process of the parcel. It may be understood that one site may be configured with one or more flow directions requiring manual re-judgment. For example, when the security inspection is performed on the parcel, the flow direction information of the parcel to be inspected may be obtained, and the flow direction information of the parcel to be inspected is compared with the flow direction configured in the first re-judgment condition to judge whether the flow direction of the parcel to be inspected is the flow direction configured in the first re-judgment condition. If the flow direction of the parcel to be inspected is the flow direction configured in the first re-judgment condition, the parcel to be inspected is determined to comply with the first re-judgment condition, and at this time, the parcel may be pushed into the manual re-judgment link for the manual re-judgment process. Through the embodiment, only parcels with certain special flow directions may be pushed for manual re-judgment, while other flow directions are not pushed, thereby reducing the number of parcels entering manual re-judgment and lowering labor input cost.

[0073] In some embodiments of the present invention, please refer to FIG. 6, FIG. 6 is a flowchart of an implementation procedure of a fourth method for performing a security inspection on a parcel in a parcel inspection method according to an embodiment of the present invention. As shown in FIG. 6, it may specifically include step S61 and step S62.

[0074] S61: Acquiring flow direction information of a parcel to be inspected.

[0075] S62: Judging whether the parcel to be inspected complies with a second re-judgment condition according to the flow direction information, and intercepting the parcel to be inspected from entering a manual re-judgment process in a case that the parcel to be inspected complies with the second re-judgment condition.

[0076] In an exemplary embodiment, the second re-judgment condition is set as a flow direction filtering condition, also with a site and a flow direction as a configuration dimension. Opposite to the first re-judgment condition, for different logistics sites, the flow directions that

correspond to the sites and do not require manual re-judgment is configured, which is used to filter out a parcel not requiring manual re-judgment. It may be understood that one site may be configured with one or more flow directions not requiring manual re-judgment. For example, when the security inspection is performed on the parcel, the flow direction information of the parcel to be inspected may be obtained, and the flow direction information of the parcel to be inspected is compared with the flow direction configured in the second re-judgment condition to judge whether the flow direction of the parcel to be inspected is the flow direction configured in the second re-judgment condition. If the flow direction of the parcel to be inspected is the flow direction configured in the second re-judgment condition, the parcel to be inspected is determined to comply with the second re-judgment condition, and at this time, the parcel may be intercepted to prevent the parcel from entering the manual re-judgment process. Through the embodiment, parcels with certain flow directions may be filtered out, thereby reducing the number of parcels entering manual re-judgment and lowering labor input cost.

[0077] In some embodiments of the present invention, please refer to FIG. 7, FIG. 7 is a flowchart of an implementation procedure of a fifth method for performing a security inspection on a parcel in a parcel inspection method according to an embodiment of the present invention. As shown in FIG. 7, it may specifically include step S71 and step S72.

[0078] S71: Acquiring flow direction information and timeliness information of a parcel to be inspected.

[0079] S72: Judging, according to the flow direction information, the timeliness information, and a transport capacity type of the parcel to be inspected, whether the parcel to be inspected complies with a third re-judgment condition, and pushing the parcel to be inspected into a manual re-judgment process in a case that the parcel to be inspected complies with the third re-judgment condition.

[0080] In an exemplary embodiment, a site, the flow direction, the transport capacity type, and the timeliness may be used as configuration dimensions to set the third re-judgment condition, so as to realize the manual re-judgment process for the parcel with a certain flow direction and a certain transport capacity type within a validity period, thereby meeting a temporary regulatory requirement when certain cities hold large-scale activities or large-scale competitions within a specific time. For example, for different logistics sites, the third re-judgment condition corresponding to the sites may be configured, and the third re-judgment condition includes a valid time information, the flow direction information, and the transport capacity type information. It may be understood that one site may be configured with one or more third re-judgment conditions. For example, when the security inspection is performed on

the parcel, the flow direction information, the timeliness information, and the transport capacity type information of the parcel to be inspected may be obtained, and the flow direction information, the timeliness information, and the transport capacity type information of the parcel to be inspected are compared with the flow direction, the valid time, and the transport capacity type configured in the third re-judgment condition, so as to judge whether the flow direction of the parcel to be inspected is consistent with the flow direction configured in the third re-judgment condition, judge whether the timeliness of the parcel to be inspected is within the valid time configured in the third re-judgment condition, and judge whether the transport capacity type of the parcel to be inspected is consistent with the transport capacity type configured in the third re-judgment condition. If the flow direction of the parcel to be inspected is consistent with the flow direction configured in the third re-judgment condition, the timeliness of the parcel to be inspected is within the valid time configured in the third re-judgment condition, and the transport capacity type of the parcel to be inspected is consistent with the transport capacity type configured in the third re-judgment condition, the parcel to be inspected is determined to comply with the third re-judgment condition, and at this time, the parcel may be pushed into a manual re-judgment link for the manual re-judgment process, so as to realize the manual re-judgment process for the parcel with a certain flow direction and a certain transport capacity type within a validity period, thereby meeting a temporary regulatory requirement when certain cities hold large-scale activities or large-scale competitions within a specific time.

[0081] In some embodiments of the present invention, please refer to FIG. 8, FIG. 8 is a flowchart of an implementation procedure of a sixth method for performing a security inspection on a parcel in a parcel inspection method according to an embodiment of the present invention. As shown in FIG. 8, it may specifically include step S81 and step S82.

[0082] S81: Acquiring a deployment status of a security inspection machine corresponding to a parcel to be inspected.

[0083] S82: Judging whether the parcel to be inspected complies with a fourth re-judgment condition according to the deployment status of the security inspection machine, and pushing the parcel to be inspected into a manual re-judgment process in a case that the parcel to be inspected complies with the fourth re-judgment condition.

[0084] In an exemplary embodiment, the security inspection machine experiences three deployment statuses from entry to delivery operation: being deployed, in trial operation, and delivered.

[0085] In an exemplary embodiment, a site and the deployment status of the security inspection machine may be used as configuration dimensions to set the fourth re-judgment condition, so as to realize a flexibly configuration of whether to push the parcel for the manual re-judgment process according to a device status. For example, for different sites, the fourth re-judgment condition corresponding to the sites may be configured, and the fourth re-judgment condition includes deployment status information of the security inspection machine, which is one of the three deployment statuses: being deployed, in trial operation, and delivered. For example, when the security inspection is performed on the parcel, the deployment status information of the security inspection machine corresponding to the parcel to be inspected may be obtained, and the deployment status of the security inspection machine corresponding to the parcel to be inspected is compared with the deployment status of the security inspection machine configured in the fourth re-judgment condition to judge whether the deployment status of the security inspection machine corresponding to the parcel to be inspected is consistent with the deployment status of the security inspection machine configured in the fourth re-judgment condition. If the deployment status of the security inspection machine corresponding to the parcel to be inspected is consistent with the deployment status of the security inspection machine configured in the fourth re-judgment condition, the parcel to be inspected is determined to comply with the fourth re-judgment condition, and at this time, the parcel may be pushed into a manual re-judgment link for the manual re-judgment process.

[0086] In an exemplary embodiment, a site and a transport capacity type may be used as configuration dimensions to set a fifth re-judgment condition, so as to realize a flexibly configuration of whether to push the parcel for the manual re-judgment process according to the transport capacity type. For example, for different sites, the fifth re-judgment condition corresponding to the sites may be configured, and the fifth re-judgment condition includes transport capacity type information. When the security inspection is performed on the parcel, the transport capacity type information of the parcel to be inspected may be obtained, and the transport capacity type of the parcel to be inspected is compared with the transport capacity type configured in the fifth re-judgment condition to judge whether the transport capacity type configured in the fifth re-judgment condition includes the transport capacity type of the parcel to be inspected. If the transport capacity type configured in the fifth re-judgment condition includes the transport capacity type of the parcel to be inspected, the parcel to be inspected is determined to comply with the fifth re-judgment condition, and at this time, the parcel may be pushed into a manual re-judgment link for the manual re-judgment process.

[0087] In some embodiments of the present invention, please refer to FIG. 9, FIG. 9 is a flowchart of an implementation procedure of a seventh method for performing a security inspection on a parcel in a parcel inspection method according to an embodiment of the present invention. As shown in FIG. 9, it specifically includes step S91 and step S92.

[0088] S91: Acquiring routing information of a parcel to be inspected.

[0089] S92: Judging whether the parcel to be inspected is an air-landed parcel according to the routing information, and intercepting the parcel to be inspected from entering a manual re-judgment process in a case that the parcel to be inspected is the air-landed parcel.

[0090] In an exemplary embodiment, a corresponding security inspection rule may be configured for the air-landed parcel to intercept the air-landed parcel from entering the manual re-judgment process. For example, the routing information of the parcel to be inspected may be obtained, and according to the routing information, whether the parcel to be inspected has undergone air take-off and air landing is determined according to the routing information. If the parcel to be inspected has undergone air take-off and air landing, it is determined that the parcel to be inspected is an air-landed parcel, and at this time, the parcel to be inspected is intercepted from entering the manual re-judgment process.

[0091] In some embodiments of the present invention, please refer to FIG. 10, FIG. 10 is a flowchart of an implementation procedure of an eighth method for performing a security inspection on a parcel in a parcel inspection method according to an embodiment of the present invention. As shown in FIG. 10, it specifically includes step S101 and step S102.

[0092] S101: Acquiring sorting line information of a parcel to be inspected.

[0093] S102: Judging whether the parcel to be inspected complies with a pre-airport interception condition according to the sorting line information, and performing an interception process on the parcel to be inspected in a case that the parcel to be inspected complies with the pre-airport interception condition.

[0094] In an exemplary embodiment, for a pre-airport site, after the parcel is security inspected at the pre-airport site, it will proceed directly into a security inspection at an airport, with short time and stricter inspection requirements, making it easy to encounter a situation where there is not enough time to push for manual re-judgment.

[0095] In an exemplary embodiment, for the pre-airport site, the pre-airport interception condition conforming to the pre-airport site may be configured with a sorting line as a configuration dimension. For example, after the sorting line information of the parcel to be inspected is obtained, the sorting line of the parcel to be inspected is compared with the sorting line configured in the pre-airport interception condition to determine whether the sorting line

configured in the pre-airport interception condition includes the sorting line of the parcel to be inspected. If the sorting line configured in the pre-airport interception condition includes the sorting line of the parcel to be inspected, the parcel to be inspected is determined to comply with the pre-airport interception condition, and at this time, the parcel to be inspected is intercepted, and then according to the scenario, the parcel to be inspected may be returned for re-judgment or opened for confirmation.

[0096] In an exemplary embodiment, a combined parcel filtering condition may be configured with a site and sorting line as configuration dimensions. According to the sorting line information of the parcel to be inspected, it may be determined whether the parcel to be inspected is a combined parcel. If the parcel to be inspected is the combined parcel, the parcel to be inspected is intercepted from entering the manual re-judgment process. The combined parcel is a parcel composed of a plurality of parcels. Through the embodiment, certain combined parcels may be filtered out, thereby reducing the number of parcels entering manual re-judgment and lowering labor input cost.

[0097] It should be noted that the various implementation methods for performing the security inspection on the parcel described above (for example, the first method to the eighth method) may be combined according to requirements. For example, when the security inspection is performed on the parcel, the first method is executed first, and then the third method is executed, that is, the first method and the third method are combined to jointly implement the security inspection on the parcel. However, an execution order of the various implementation methods for performing the security inspection on the parcel described above (for example, the first method to the eighth method) may also be set according to requirements, which is not specifically limited in the present invention.

[0098] In an exemplary embodiment, a reminder function may also be set, for example, key reminders for parcels with certain special transport capacity types, certain special flow directions, or certain special sorting lines may be implemented according to dimensions such as the transport capacity type, the flow direction, or the sorting line, to indicate that these parcels require special attention.

[0099] It may be understood that sequence numbers of each step in the above embodiments does not imply an execution order. The execution order of each process should be determined by its function and internal logic, and should not impose any limitations on the implementation process of embodiments of the present invention.

[0100] The foregoing describes in detail the method embodiments of the present invention with reference to FIG. 1a to FIG.10. The apparatus embodiments of the present invention are

described in detail below with reference to FIG. 11 and FIG.12. It should be understood that the description of the method embodiments corresponds to the description of the apparatus embodiments. Therefore, for parts not described in detail, reference may be made to the foregoing method embodiments.

[0101] In some embodiments of the present invention, please refer to FIG. 11, FIG. 11 is a block diagram of a basic structure of a parcel inspection apparatus according to an embodiment of the present invention. In this embodiment, each module included in the apparatus is used to execute each step in the above method embodiments. Please refer to the relevant descriptions in the above method embodiments for details.

[0102] As shown in FIG. 11, the parcel inspection apparatus includes an acquisition module 111, a determination module 112, and an inspection module 113, where the acquisition module 111 is configured to acquire logistics site information and a transport capacity type of a parcel to be inspected, the determination module 112 is configured to determine a security inspection rule of the parcel to be inspected according to the logistics site information and the transport capacity type of the parcel to be inspected, and the inspection module 113 is configured to perform a security inspection on the parcel to be inspected according to the security inspection rule.

[0103] In an exemplary embodiment, the parcel inspection apparatus further includes a monitoring module, which is used to monitor whether a change exists in the transport capacity type of the parcel to be inspected, and perform a corrective process on the transport capacity type of the parcel to be inspected in a case that the change exists in the transport capacity type of the parcel to be inspected.

[0104] In an exemplary embodiment, the monitoring module is specifically used to: monitor whether a specified transport capacity type exists for the parcel to be inspected; judge whether the transport capacity type of the parcel to be inspected is consistent with the specified transport capacity type in a case that the specified transport capacity type exists for the parcel to be inspected; determine that the change exists in the transport capacity type of the parcel to be inspected in a case that the transport capacity type of the parcel to be inspected is inconsistent with the specified transport capacity type; and correct the transport capacity type of the parcel to be inspected according to the specified transport capacity type.

[0105] In an exemplary embodiment, the inspection module 113 is specifically used to: acquire category information and flow direction information of the parcel to be inspected, where the flow direction information is used to represent site information of a transfer station to which the parcel to be inspected is to be sent next; judge whether the parcel to be inspected

complies with a first category filtering condition according to the category information and the flow direction information, where the first category filtering condition is used to characterize whether a category is prohibited under different transport capacity types for different flow directions; in a case that the parcel to be inspected complies with the first category filtering condition, acquire, from the first category filtering condition according to the category information, a first inspection confidence threshold corresponding to the transport capacity type of the parcel to be inspected, and perform a security inspection process on the parcel to be inspected, where the first inspection confidence threshold is used to characterize a measurement standard for whether the parcel to be inspected belongs to a prohibited item; and when it is inspected that a confidence level of the parcel to be inspected is greater than the first inspection confidence threshold, determine that the parcel to be inspected is a prohibited parcel and push the parcel to be inspected into a manual re-judgment process.

[0106] In an exemplary embodiment, the inspection module 113 is specifically used to: acquire category information and sorting line information of the parcel to be inspected; judge whether the parcel to be inspected complies with a second category filtering condition according to the category information and the sorting line information, where the second category filtering condition is used to characterize whether a category is prohibited under different transport capacity types for different network nodes; in a case that the parcel to be inspected complies with the second category filtering condition, acquire, from the second category filtering condition according to the category information, a second inspection confidence threshold corresponding to the transport capacity type of the parcel to be inspected, and perform a security inspection process on the parcel to be inspected, where the second inspection confidence threshold is used to characterize a measurement standard for whether the parcel to be inspected belongs to a prohibited item; and when it is inspected that the confidence level of the parcel to be inspected is greater than the second inspection confidence threshold, determine that the parcel to be inspected is a prohibited parcel and push the parcel to be inspected into a manual re-judgment process.

[0107] In an exemplary embodiment, the inspection module 113 is specifically used to: acquire flow direction information of the parcel to be inspected, where the flow direction information is used to represent site information of a transfer station to which the parcel to be inspected is to be sent next; judge whether the parcel to be inspected complies with a first re-judgment condition according to the flow direction information, where the first re-judgment condition is configured with a flow direction requiring manual re-judgment; and push the parcel

to be inspected into a manual re-judgment process in a case that the parcel to be inspected complies with the first re-judgment condition.

[0108] In an exemplary embodiment, the inspection module 113 is specifically used to: acquire flow direction information of the parcel to be inspected, where the flow direction information is used to represent a site information of a transfer station to which the parcel to be inspected is to be sent next; judge whether the parcel to be inspected complies with a second re-judgment condition according to the flow direction information, where the second re-judgment condition is configured with a flow direction not requiring manual re-judgment; and intercept the parcel to be inspected from entering a manual re-judgment process in a case that the parcel to be inspected complies with the second re-judgment condition.

[0109] In an exemplary embodiment, the inspection module 113 is specifically used to: acquire flow direction information and timeliness information of the parcel to be inspected, where the flow direction information is used to represent a site information of a transfer station to which the parcel to be inspected is to be sent next; judge, according to the flow direction information, the timeliness information, and the transport capacity type of the parcel to be inspected, whether the parcel to be inspected complies with a third re-judgment condition, where the third re-judgment condition is configured with a flow direction, a valid time, and a transport capacity type; and push the parcel to be inspected into a manual re-judgment process in a case that the parcel to be inspected complies with the third re-judgment condition.

[0110] In an exemplary embodiment, the inspection module 113 is specifically used to: acquire a deployment status of the security inspection machine corresponding to the parcel to be inspected, where the deployment status of the security inspection machine includes one of being deployed, in trial operation, or delivered; judge whether the parcel to be inspected complies with a fourth re-judgment condition according to the deployment status of the security inspection machine, where the fourth re-judgment condition is configured with the deployment status of the security inspection machine; and push the parcel to be inspected into a manual re-judgment process in a case that the parcel to be inspected complies with the fourth re-judgment condition.

[0111] In an exemplary embodiment, the inspection module 113 is specifically used to: judge whether the parcel to be inspected complies with a fifth re-judgment condition according to the transport capacity type of the parcel to be inspected, where the fifth re-judgment condition is configured with a transport capacity type; and push the parcel to be inspected into a manual re-judgment process in a case that the parcel to be inspected complies with the fifth re-judgment condition.

[0112] In an exemplary embodiment, the inspection module 113 is specifically used to: acquire routing information of the parcel to be inspected; judge whether the parcel to be inspected is an air-landed parcel according to the routing information, where the air-landed parcel is a parcel that has undergone an air take-off and an air landing; and intercept the parcel to be inspected from entering a manual re-judgment process in a case that the parcel to be inspected is the air-landed parcel.

[0113] In an exemplary embodiment, the inspection module 113 is specifically used to: acquire sorting line information of the parcel to be inspected; judge whether the parcel to be inspected complies with a pre-airport interception condition according to the sorting line information, where the pre-airport interception condition is configured with a sorting line; and perform an interception process on the parcel to be inspected in a case that the parcel to be inspected complies with the pre-airport interception condition.

[0114] In an exemplary embodiment, the inspection module 113 is specifically used to: judge whether the parcel to be inspected is a combined parcel, where the combined parcel is a parcel formed by combining a plurality of parcels; and intercept the parcel to be inspected from entering a manual re-judgment process in a case that the parcel to be inspected is the combined parcel.

[0115] In addition, FIG. 11 only shows one embodiment of the parcel inspection apparatus, not all embodiments. Based on embodiments of the parcel inspection apparatus in the present invention, all other embodiments obtained by those skilled in the art without creative effort shall fall within the protection scope of the present invention.

[0116] In some embodiments of the present invention, please refer to FIG. 12, FIG. 12 is a block diagram of a basic structure of an electronic device according to an embodiment of the present invention. As shown in FIG. 12, the electronic device 12 of the embodiment includes: a processor 121, a memory 122, and a computer program 123 stored on the memory 122 and executable on the processor 121, for example, a program of the parcel inspection method. When the processor 121 executes the computer program 123, the steps in the foregoing parcel inspection method embodiments are implemented. Alternatively, when the processor 121 executes the computer program 123, functions of the modules in the embodiments corresponding to the foregoing parcel inspection apparatus are implemented. For specific details, please refer to the relevant descriptions in the embodiments, which will not be repeated here.

[0117] Exemplary, the computer program 123 may be divided into one or more modules (units), and the one or more modules are stored in the memory 122 and executed by the

processor 121 to complete the parcel inspection method of the present invention. The one or more modules may be a series of computer program instruction segments capable of completing a specific function, and the instruction segments are used to describe an execution process of the computer program 123 in the electronic device 12. For example, the computer program 123 may be divided into an acquisition module, a determination module, and an inspection module, and the specific functions of the modules are as described above.

[0118] The electronic device may include, but is not limited to, the processor 121 and the memory 122. Those skilled in the art may understand that FIG. 12 is only an example of the electronic device 12 and fails to constitute a limitation on the electronic device 12. It may include more or fewer components than those shown in the figure, or combine some components, or have different components, for example, the electronic device may further include an input/output device, a network access device, or a bus, and so on.

[0119] The processor121 may be a Central Processing Unit (CPU), or other general-purpose processors, a Digital Signal Processor (DSP), an Application Specific Integrated Circuit (ASIC), a Field-Programmable Gate Array (FPGA), or other programmable logic devices, a discrete gate, a transistor logic device, or a discrete hardware component, and so on. The general processor may be a microprocessor, or the processor may also be any conventional processor, and so on.

[0120] The memory122 may be an internal storage unit of the electronic device 12, for example, a hard disk or a memory of the electronic device 12. The memory 122 may also be an external storage device of the electronic device 12, for example, a plug-in hard disk equipped on the electronic device 12, a Smart Media Card (SMC), a Secure Digital (SD) card, or a flash card (Flash Card), and so on. Furthermore, the memory 122 may further include both an internal storage unit and an external storage device of the electronic device 12. The memory 122 is used to store the computer program and other programs and data required by the electronic device. The memory 122 may also be used to temporarily store data that has been output or is to be output.

[0121] It should be noted that the information interaction, execution process, and other contents between the above-mentioned apparatuses/units are based on the same concept as the method embodiments of the present invention, so that the specific functions and technical effects may be referred to the method embodiments section, and will not be repeated here.

[0122] Furthermore, FIG. 12 shows only one embodiment of the electronic device 12, not all embodiments. Based on the embodiments of the electronic device in the present invention, all

other embodiments obtained by those skilled in the art without creative effort shall fall within the protection scope of the present invention.

[0123] The embodiment of the present invention also provides a computer-readable storage medium, please refer to FIG. 13, where a computer program 1310 is stored on the computer-readable storage medium 1300, and the computer program 1310, when executed by a processor, the steps in the above method embodiments may be implemented. In the embodiment, the computer-readable storage medium 1300 may be non-volatile or volatile.

[0124] In addition, FIG. 13 shows only one embodiment of the computer-readable storage medium, not all embodiments. Based on the embodiments of the computer-readable storage medium in the present invention, all other embodiments obtained by those skilled in the art without creative effort shall fall within the protection scope of the present invention.

[0125] Embodiments of the present invention provide a computer program product. When the computer program product runs on a mobile terminal, the mobile terminal is caused to execute the steps in the foregoing method embodiments when executed.

[0126] Those skilled in the art may clearly understand that for the convenience and brevity of description, only the division of the above functional units or modules is used as an example. In practical applications, the above functions may be allocated to be completed by different functional units or modules according to needs, that is, the internal structure of the device is divided into different functional units or modules to complete all or part of the functions described above. The functional units or modules in the embodiments may be integrated into one processing unit, or each unit may exist physically alone, or two or more units may be integrated into one unit. The above integrated units may be implemented in the form of hardware or in the form of software functional units. In addition, the specific names of the functional units or modules are only for the convenience of distinguishing each other and are not used to limit the scope of protection of the present invention. The specific working process of the units or modules in the above device may be referred to the corresponding process in the aforementioned method embodiments, and will not be repeated here.

[0127] If the integrated modules/units are implemented in the form of a software functional unit and sold or used as an independent product, they may be stored in a computer-readable storage medium. Based on such understanding, all or part of the processes in the methods of the foregoing embodiments implemented in the present invention may also be accomplished by instructing relevant hardware through a computer program. The computer program may be stored in a computer-readable storage medium, and when executed by a processor, may implement the steps of the various method embodiments described above. The computer

program includes computer program code, which may be in the form of source code, object code, an executable file, or some intermediate forms, and so on. The computer-readable medium may include any entity or device capable of carrying the computer program code, a recording medium, a usb flash drive, a portable hard disk, a magnetic disk, an optical disc, a computer memory, a Read-Only Memory (ROM), a Random Access Memory (RAM), an electrical carrier signal, a telecommunication signal, or a software distribution medium, and so on. It should be noted that the content included in the computer-readable medium may be appropriately increased or decreased according to the requirements of legislation and patent practice within a jurisdiction. For example, in some jurisdictions, the computer-readable media do not include electrical carrier signals or telecommunications signals, based on legislation and patent practice.

[0128] In the above embodiments, the description of each embodiment has its own focus. For parts not detailed or recorded in a certain embodiment, please refer to the relevant descriptions of other embodiments.

[0129] The above embodiments are only used to illustrate the technical solutions of the present invention and are not intended to limit them. Although the present invention has been described in detail with reference to the foregoing embodiments, those skilled in the art should understand that they may still modify the technical solutions described in the foregoing embodiments or equivalently replace some of the technical features. These modifications or replacements do not cause the essence of the corresponding technical solutions to deviate from the spirit and scope of the technical solutions of the embodiments of the present invention, and should be included within the protection scope of the present invention.

CLAIMS

What is claimed is:

1. A parcel inspection method, comprising:

acquiring logistics site information and a transport capacity type of a parcel to be inspected, wherein the logistics site information is determined by a binding relationship between an identity identifier of a security inspection machine and a logistics site, and the transport capacity type of the parcel to be inspected is used to characterize a transportation mode of the parcel to be inspected;

determining a security inspection rule of the parcel to be inspected according to the logistics site information and the transport capacity type of the parcel to be inspected; and

performing a security inspection on the parcel to be inspected according to the security inspection rule.

2. The parcel inspection method according to claim 1, further comprising:

monitoring whether a change exists in the transport capacity type of the parcel to be inspected, and performing a corrective process on the transport capacity type of the parcel to be inspected in a case that the change exists in the transport capacity type of the parcel to be inspected.

3. The parcel inspection method according to claim 2, wherein the monitoring whether the change exists in the transport capacity type of the parcel to be inspected, and performing the corrective process on the transport capacity type of the parcel to be inspected in the case that the change exists in the transport capacity type of the parcel to be inspected comprises:

monitoring whether a specified transport capacity type exists for the parcel to be inspected;

judging whether the transport capacity type of the parcel to be inspected is consistent with the specified transport capacity type in a case that the specified transport capacity type exists for the parcel to be inspected;

determining that the change exists in the transport capacity type of the parcel to be inspected in a case that the transport capacity type of the parcel to be inspected is inconsistent with the specified transport capacity type; and

correcting the transport capacity type of the parcel to be inspected according to the specified transport capacity type.

4. The parcel inspection method according to claim 3, wherein the monitoring whether the specified transport capacity type exists for the parcel to be inspected comprises:

extracting, by a security inspection system, site information, flow direction information, and timeliness information of the parcel to be inspected from a security inspection image; and

traversing, by the security inspection system, real-time routing change information or a temporary reassignment instruction according to the site information, the flow direction information, and the timeliness information of the parcel to be inspected to inspect whether the specified transport capacity type exists for the parcel to be inspected.

5. The parcel inspection method according to any one of claims 1 to 4, wherein the performing the security inspection on the parcel to be inspected according to the security inspection rule comprises:

acquiring category information and flow direction information of the parcel to be inspected, wherein the flow direction information is used to represent a site information of a transfer station to which the parcel to be inspected is to be sent next;

judging whether the parcel to be inspected complies with a first category filtering condition according to the category information and the flow direction information, wherein the first category filtering condition is used to characterize whether a category is prohibited under different transport capacity types for different flow directions;

in a case that the parcel to be inspected complies with the first category filtering condition, acquiring, from the first category filtering condition according to the category information, a first inspection confidence threshold corresponding to the transport capacity type of the parcel to be inspected, and performing a security inspection process on the parcel to be inspected, wherein the first inspection confidence threshold is used to characterize a measurement standard for whether the parcel to be inspected belongs to a prohibited item; and

when it is inspected that a confidence level of the parcel to be inspected is greater than the first inspection confidence threshold, determining that the parcel to be inspected is a prohibited parcel, and pushing the parcel to be inspected into a manual re-judgment process.

6. The parcel inspection method according to any one of claims 1 to 5, wherein the performing the security inspection on the parcel to be inspected according to the security inspection rule comprises:

acquiring category information and sorting line information of the parcel to be inspected;

judging whether the parcel to be inspected complies with a second category filtering

condition according to the category information and the sorting line information, wherein the second category filtering condition is used to characterize whether a category is prohibited under different transport capacity types for different network nodes;

in a case that the parcel to be inspected complies with the second category filtering condition, acquiring, from the second category filtering condition according to the category information, a second inspection confidence threshold corresponding to the transport capacity type of the parcel to be inspected, and performing a security inspection process on the parcel to be inspected, wherein the second inspection confidence threshold is used to characterize a measurement standard for whether the parcel to be inspected belongs to a prohibited item; and

when it is inspected that a confidence level of the parcel to be inspected is greater than the second inspection confidence threshold, determining that the parcel to be inspected is a prohibited parcel and pushing the parcel to be inspected into a manual re-judgment process.

7. The parcel inspection method according to any one of claims 1 to 6, wherein the performing the security inspection on the parcel to be inspected according to the security inspection rule comprises:

acquiring flow direction information of the parcel to be inspected, wherein the flow direction information is used to represent site information of a transfer station to which the parcel to be inspected is to be sent next;

judging whether the parcel to be inspected complies with a first re-judgment condition according to the flow direction information, wherein the first re-judgment condition is configured with a flow direction requiring manual re-judgment; and

pushing the parcel to be inspected into a manual re-judgment process in a case that the parcel to be inspected complies with the first re-judgment condition.

8. The parcel inspection method according to any one of claims 1 to 7, wherein the performing the security inspection on the parcel to be inspected according to the security inspection rule comprises:

acquiring flow direction information of the parcel to be inspected, wherein the flow direction information is used to represent site information of a transfer station to which the parcel to be inspected is to be sent next;

judging whether the parcel to be inspected complies with a second re-judgment condition according to the flow direction information, wherein the second re-judgment condition is configured with a flow direction not requiring manual re-judgment; and

intercepting the parcel to be inspected from entering a manual re-judgment process in a case that the parcel to be inspected complies with the second re-judgment condition.

9. The parcel inspection method according to any one of claims 1 to 8, wherein the performing the security inspection on the parcel to be inspected according to the security inspection rule comprises:

acquiring flow direction information and timeliness information of the parcel to be inspected, wherein the flow direction information is used to represent a site information of a transfer station to which the parcel to be inspected is to be sent next;

judging, according to the flow direction information, the timeliness information, and the transport capacity type of the parcel to be inspected, whether the parcel to be inspected complies with a third re-judgment condition, wherein the third re-judgment condition is configured with a flow direction, a valid time, and a transport capacity type; and

pushing the parcel to be inspected into a manual re-judgment process in a case that the parcel to be inspected complies with the third re-judgment condition.

10. The parcel inspection method according to any one of claims 1 to 9, wherein the performing the security inspection on the parcel to be inspected according to the security inspection rule comprises:

acquiring a deployment status of the security inspection machine corresponding to the parcel to be inspected, wherein the deployment status of the security inspection machine comprises one of being deployed, in trial operation, and delivered;

judging whether the parcel to be inspected complies with a fourth re-judgment condition according to the deployment status of the security inspection machine, wherein the fourth re-judgment condition is configured with a deployment status of a security inspection machine; and

pushing the parcel to be inspected into a manual re-judgment process in a case that the parcel to be inspected complies with the fourth re-judgment condition.

11. The parcel inspection method according to any one of claims 1 to 10, wherein the performing the security inspection on the parcel to be inspected according to the security inspection rule comprises:

judging whether the parcel to be inspected complies with a fifth re-judgment condition according to the transport capacity type of the parcel to be inspected, wherein the fifth re-

judgment condition is configured with a transport capacity type; and

pushing the parcel to be inspected into a manual re-judgment process in a case that the parcel to be inspected complies with the fifth re-judgment condition.

12. The parcel inspection method according to any one of claims 1 to 11, wherein the performing the security inspection on the parcel to be inspected according to the security inspection rule comprises:

acquiring routing information of the parcel to be inspected;

judging whether the parcel to be inspected is an air-landed parcel according to the routing information, wherein the air-landed parcel is a parcel that has undergone an air take-off and an air landing; and

intercepting the parcel to be inspected from entering a manual re-judgment process in a case that the parcel to be inspected is the air-landed parcel.

13. The parcel inspection method according to any one of claims 1 to 12, wherein the performing the security inspection on the parcel to be inspected according to the security inspection rule comprises:

acquiring sorting line information of the parcel to be inspected;

judging whether the parcel to be inspected complies with a pre-airport interception condition according to the sorting line information, wherein the pre-airport interception condition is configured with a sorting line; and

performing an interception process on the parcel to be inspected in a case that the parcel to be inspected complies with the pre-airport interception condition.

14. The parcel inspection method according to any one of claims 1 to 13, wherein the performing the security inspection on the parcel to be inspected according to the security inspection rule comprises:

judging whether the parcel to be inspected is a combined parcel, wherein the combined parcel is a parcel formed by combining a plurality of parcels; and

intercepting the parcel to be inspected from entering a manual re-judgment process in a case that the parcel to be inspected is the combined parcel.

15. The parcel inspection method according to any one of claim 14, wherein the judging whether the parcel to be inspected is a combined parcel comprises:

judging whether the parcel to be inspected is a combined parcel according to the sorting line information of the parcel to be inspected.

16. A parcel inspection apparatus, comprising:

an acquisition module, configured to acquire logistics site information and a transport capacity type of a parcel to be inspected, wherein the logistics site information is determined by a binding relationship between an identity identifier of a security inspection machine and a logistics site, and the transport capacity type of the parcel to be inspected is used to characterize a transportation mode of the parcel to be inspected;

a determination module, configured to determine a security inspection rule of the parcel to be inspected according to the logistics site information and the transport capacity type of the parcel to be inspected; and

an inspection module, configured to perform a security inspection on the parcel to be inspected according to the security inspection rule.

17. An electronic device, comprising a memory, a processor, and a computer program stored on memory and executable on the processor, wherein the computer program, when executed by the processor, implements steps of the method according to any one of claims 1 to 15.

18. A computer-readable storage medium, wherein a computer program is stored on the computer-readable storage medium, and the computer program, when executed by a processor, implements steps of the method according to any one of claims 1 to 15.