

SYSTEM FOR DETERMINING TRANSPORT ROUTES AND/OR POSITIONS OF GOODS AND TRIGGERING AUTOMATED OPERATIONS

FIELD OF INVENTION

The present invention relates to a system for determining the transport routes and/or the position of goods and a method for determining the transport routes and/or the position of goods, wherein based on the determined transport route and/or position of the goods an automated operation is triggered.

BACKGROUND

At present, independent systems are often used in logistics and production planning. Moreover, the corresponding payment and ordering systems are usually also independent of these systems. Particularly, in the case of cross-company processes, no reliable system exists that can manage logistics, planning, payment and ordering tasks within one system. A further critical point, especially in the case of cross-company exchange, is the question of how such data can be protected against manipulation.

In view of this, it is found that a need exists to provide a system, which can provide the opportunity to manage planning, logistics, ordering and finance incl. payment tasks within one system. In particular, there is a need to provide a more or less automated system that allows an automated cross-company exchange of goods, payments and other finance, insurance, factoring related transactions, and that meets the high security requirements.

SUMMARY

In an aspect, there is provided a system (100) for determining the transport routes and/or the position of goods, comprising:

- at least one load carrier unit (10) for transporting and/or storing goods, wherein the at least one load carrier unit comprises data storage means configured to store at least identification data comprising at least information with respect to the type of goods and the amount of the goods transported by and/or stored on the load carrier unit;

- at least one data collection point (20), wherein the at least one load carrier unit and the at least one data collection point comprise communication means configured to provide a data exchange between the at least one load carrier unit and the at least one data collection point and exchanging at least the identification data;

- at least one route and/or position evaluation means (30) configured to determine the route and/or the position of the at least one load carrier unit based on the data exchange between the at least one data collection point and the at least one load carrier unit;

- at least one triggering means (30) configured to trigger a predetermined operation on at least one computer unit (40) depending on the determined route and/or position of the at least one load carrier unit, wherein the operation triggered on the at least one computer unit (40) issues an order message,

- wherein the system (100) comprises a plurality of automatic or manually triggered data collection points (20) each having a certain communication range, wherein the route and/or the position of the at least one load carrier unit (10) is determined by the data exchange with a respective data collection point (20).

In another aspect, there is provided a method for determining the transport routes and/or the position of goods, comprising the steps:

providing a system (100) for determining the transport routes and/or the position of goods as defined above;

determining (S10) at least one route and/or position of at least one load carrier unit (10) by position evaluation means (30) based on a data exchange between at least one data collection point (20) and at least one load carrier unit (10);

triggering (S20) by at least one triggering means (30) a predetermined operation on at least one computer unit (40) depending on the determined route and/or position of the at least one load carrier unit (10), wherein the operation triggered on the at least one computer unit (40) issues an order message.

In another aspect, there is provided a use of at least one load carrier unit (10) for transporting and/or storing goods, wherein the at least one load carrier unit (10) comprises data storage means configured to store at least identification data comprising at least information with respect to the type of goods and the amount of the goods transported by and/or stored on the load carrier unit (10) in a system (100) as defined above.

In another aspect, there is provided a use of at least one data collection point (20) configured to provide a data exchange between at least one load carrier unit (10) in a system as defined above.

In another aspect, there is provided a use of analysis data as input data for an analysis algorithm for estimating and/or predicting the stock quantities and/or transport times and/or required replenishment and/or for a simulation and/or optimization of a system (100) in a system (100) as defined above.

In another aspect, there is provided a computer program element which when executed by a processor is configured to carry out the method as defined above.

In the view of the above, it is an object of the present disclosure to provide a system, which can provide the opportunity to manage planning, logistics, ordering and finance incl. payment tasks within one system. Moreover, it is in particular the object of the present disclosure to provide a more or less automated system that allows a cross-company exchange of goods and payments and other finance related transactions that also meets the high security requirements.

These and other objects, which become apparent upon reading the following description are solved by the subject-matter of the independent claims. The dependent claims refer to preferred examples of the disclosure.

According to a first example, a system for determining the transport routes and/or the position of goods is provided, comprising: at least one load carrier unit for transporting and/or storing goods, wherein the at least one load carrier unit comprises data storage means configured to store at least identification data comprising at least information with respect to the type of goods and the amount of the goods transported by and/or stored on the load carrier unit; at least one data collection point, wherein the at least one load carrier unit and the at least one data collection point comprise communication means configured to provide a data exchange between the at least one load carrier unit and the at least one data collection point and exchanging at least the identification data; at least one route and/or position evaluation means configured to determine the route and/or the position of the at

least one load carrier unit based on the data exchange between the at least one data collection point and the at least one load

Claims

1. System (100) for determining the transport routes and/or the position of goods, comprising:
 - at least one load carrier unit (10) for transporting and/or storing goods, wherein the at least one load carrier unit comprises data storage means configured to store at least identification data comprising at least information with respect to the type of goods and the amount of the goods transported by and/or stored on the load carrier unit;
 - at least one data collection point (20), wherein the at least one load carrier unit and the at least one data collection point comprise communication means configured to provide a data exchange between the at least one load carrier unit and the at least one data collection point and exchanging at least the identification data;
 - at least one route and/or position evaluation means (30) configured to determine the route and/or the position of the at least one load carrier unit based on the data exchange between the at least one data collection point and the at least one load carrier unit;
 - at least one triggering means (30) configured to trigger a predetermined operation on at least one computer unit (40) depending on the determined route and/or position of the at least one load carrier unit, wherein the operation triggered on the at least one computer unit (40) issues an order message,
 - wherein the system (100) comprises a plurality of automatic or manually triggered data collection points (20) each having a certain communication range, wherein the route and/or the position of the at least one load carrier unit (10) is determined by the data exchange with a respective data collection point (20).
2. System (100) according to claim 1, wherein the route and/or the position of the at least one load carrier unit (10) is determined by a triangulation method, in case a data exchange can be established with more than two data collection points (20).
3. System (100) according to any one of the preceding claims, wherein the route and/or the position of the at least one load carrier unit (10) is determined by means of a signal strength analysis or by using a positioning determination algorithm based on signals in a Low-Power Wide-Area Network (LPWAN).
4. System (100) according to any one of the preceding claims, wherein at least one load carrier unit further comprises a position determining unit, preferably a Global Positioning System (GPS), providing positioning data with respect to a position of the at least one load carrier unit (10) and wherein the positioning data are used by the at least one route and/or position evaluation means (30) for determining the route and/or the position of the at least one load carrier unit (10).
5. System (100) according to any one of the preceding claims, wherein the operation triggered on the at least one computer unit (40) is generating at least one of the following data:
 - goods receipt data or goods issue data;
 - inventory data;
 - order data;
 - master data
 - identification data;
 - credit risk management data;

- insurance data;
 - invoicing data;
 - banking data;
 - financing data;
 - factoring data;
 - tokenization data;
 - payment data;
 - clearing data;
 - tax data;
 - customs data;
 - accounting/ general ledger data;
 - official (trade) statistics data; and/or
 - quality data.
- 6.** System (100) according to any one of the preceding claims, wherein the operation triggered on the at least one computer unit (40) is further issuing at least one of the following messages:
- goods receipt message, goods outgoing message or goods issue message;
 - inventory message;
 - product master data message;
 - identification message;
 - credit risk management message;
 - insurance message;
 - invoicing message;
 - banking message;
 - financing message;
 - factoring message;
 - tokenization message;
 - payment message;
 - release message;
 - clearing message;
 - tax message;
 - customs message;
 - accounting/ general ledger message;
 - official (trade) statistics message; and/or
 - quality message
- 7.** System (100) according to claim 6, wherein the system (100) further comprises display and/or printing means outputting the generated data and/or message.
- 8.** System (100) according to any one of the preceding claims, wherein the load carrier unit (10) is a pallet unit, an intermediate bulk container (IBC), a tank unit, a silo unit, an overseas container, a railway car or a tank vessel.
- 9.** System (100) according to any one of the preceding claims, wherein the system (100) further comprises data collection means configured to collect analysis data with respect to the identification data of the at least one load carrier unit (10), the determined route and/or positions of the at least one load carrier unit and/or the triggered predetermined operations.

10. Method for determining the transport routes and/or the position of goods, comprising the steps:
 - providing a system (100) for determining the transport routes and/or the position of goods according to any one of claims 1 to 9;
 - determining (S10) at least one route and/or position of at least one load carrier unit (10) by position evaluation means (30) based on a data exchange between at least one data collection point (20) and at least one load carrier unit (10);
 - triggering (S20) by at least one triggering means (30) a predetermined operation on at least one computer unit (40) depending on the determined route and/or position of the at least one load carrier unit (10), wherein the operation triggered on the at least one computer unit (40) issues an order message.
11. Use of at least one load carrier unit (10) for transporting and/or storing goods, wherein the at least one load carrier unit (10) comprises data storage means configured to store at least identification data comprising at least information with respect to the type of goods and the amount of the goods transported by and/or stored on the load carrier unit (10) in a system (100) according to any one of claims 1 to 9.
12. Use of at least one data collection point (20) configured to provide a data exchange between at least one load carrier unit (10) in a system according to any one of claims 1 to 9.
13. Use of analysis data as input data for an analysis algorithm for estimating and/or predicting the stock quantities and/or transport times and/or required replenishment and/or for a simulation and/or optimization of a system (100) in a system (100) according to any one of claims 1 to 9.
14. A computer program element which when executed by a processor is configured to carry out the method according to claim 10.