PTV Axylog
Service description

Contents

Short title	Service Description PTV Axylog
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1   Product objective

PTV Axylog is a cloud-based product to gain transparency and control of the logistics transport chain.

The set of modules and functions and the collaboration between the different parties involved supports end-to-end visibility of the transport chain. The system is able to acquire all information and data generated along the chain and makes it available and transparent to all parties.

Possible parties in this process are: Shippers, planners, dispatchers, fleet owners, drivers, recipients of shipments (e.g. warehouse operators). The use of PTV Axylog by a dedicated party depends on their specific rights and roles.

Different delivery structures such as LTL, FTL, parcel and last mile delivery can be supported by PTV Axylog depending on the concrete use cases of different target groups (such as, for example, retailers/wholesalers, production industries and logistics service providers).

The PTV Axylog system is composed of a central cloud-based application completed by a mobile application for ePOD. Different interfaces (API) allow to connect to external systems. Simple connectivity to telematics services provides a real-time transport visibility based on actual vehicle positions. A document management module supports the digitization of delivery papers, other important documents, and official signatures via the mobile application.

PTV Axylog supports the products PTV Route Optimiser ST (version 2022 or newer) and PTV Route Optimiser CL. Planned routes can be imported and adopted for the transport execution in PTV Axylog. The complete transport execution, information exchange and information representation are provided within PTV Axylog.

PTV Axylog can also be connected as stand-alone product to third party systems (e.g., ERP, TMS) via API.

2   Product description

2.1   Product scope

PTV Axylog is available at **portal.axylog.com**, after logging in, the product displays a series of indicators that measure the status of the activities based on active modules.

The menu comprises

- Delivery tracker

- Delivery Management

- User Management

- Registry

- QrDocuments

- Chat

- Chat management

- System

- Logs & Monitor

- Statistics

and depend on the modules that have been subscribed.

Delivery tracker allows the display of pick-up and deliveries in two modes, by trip and by grid view. In the trip mode, deliveries are grouped by shipment code and can be associated with a vehicle or a driver. In trip mode it is possible to view the list of deliveries associated with it and to open the relative detail for each of them. In the header of each trip, coloured segments are represented, each of which corresponds to a delivery or a pick-up. At the end of each segment an arrow is shown, downwards for deliveries and upwards for collections. The colours of the segments and arrows identify the status of each delivery or pick-up.

For each trip it is possible to view the starting point and the destination on the map. If the telematics interfaces are configured it is possible to follow the vehicle along its route, determine the arrival and stop times for each stage. If a driver equipped with the QrDelivery app is associated with the trip, further information will be displayed such as the outcome of the delivery with the related reasons, images, geographical coordinates of the place and the graphic signature. The data received will determine the status change of deliveries or pick-up and the additional information are visible in detail.

In the table view mode, the deliveries are listed according to the filters and sorting that are chosen. The columns of the table are customizable and on the left there is always the coloured segment with the relative arrow indicating its status. The displayed data can be exported in Excel or PDF formats.

Delivery Management it contains the Trip Maintenance and Bordereau functions that are used to control and manage trips. The Trip Maintenance function allows you to change some trip data such as license plate, carrier, driver and departure date. Bordereau instead allows you to view the lists of missions associated with the drivers. It allows you to check the status and especially if the driver has taken over their trip.

User Management is used to manage the portal users and users of the QrDelivery mobile application. In QrDelivery Users it is possible to create the personal data of the drivers by specifying the telephone number, name and surname. If the chat module is active further parameters will be visible. In Users and roles, you can manage the permissions of each user including the use of the chat, if active.

Registry contains all the personal data of the partners connected to the context and are divided into 5 macro types: Deposits, Carriers, Customers, Suppliers and Shippers. The personal data can be created, modified, deleted and exported. In addition to the personal data, numerous other information is managed that allows all the various modules to work in the best possible way.

QrDocuments if the Document Management module is active, through this item it is possible to view and manage the documents linked to deliveries. The original documents are managed, those digitally signed, those scanned and any attachments. QrDocuments includes Archive, Management and Upload functions. In Archive you can select the documents present by highlighting for example those unsigned or not yet scanned. From the grid is possible to export the selected data in Excel and PDF formats. In Management it is possible to manage documents received but not been recognized by the OCR system. With the Upload function it is possible to manually associate a scanned transport document or any other document in PDF format to a specific delivery. The Document Management module includes the function that applies the signature, acquired through the POD module, to the original PDF.

Chat is an integrated communication system through which it is possible to communicate with all users of the context who are enabled to use this function. The system manages not only the creation of conversations between users, including drivers, but also the linking of messages to deliveries or pick-up. These conversations are visible not only in the chat but also in the delivery details. This feature is very useful because all the information and messages relating to a delivery are present in a single point, thus facilitating users. The chat includes the ability to send not only messages but also documents and images.

Chat management allows to create user groups. This is the function that allows also to customize the use of the module.

System includes all the basic functions needed to administer the system tables such as Alert Template, Alert Workflow, Dashboard configuration, POD reasons, GPS telematics configurations and Report designer.

With Alert Template it is possible to create a draft of the messages connected to a specific event. The events that generate an alert are defined in the Alert Workflow. It is also possible to specify under what conditions the alert must be triggered, for example x minutes late. Dashboard configuration is used to associate dashboards to a company, to a specific user or to all users who have a specific role. POD reasons are the table of reasons that can be associated with the outcome of a pick-up or delivery. With GPS telematics configuration it is possible to configure the telematic systems and their association with the carriers. This item is present only if the visibility module has been subscribed. Report designer can be used to customize the available reports.

Logs & Monitor communication status display. Monitor and record the status of each transaction and highlight any errors. Errors can occur in several stages from communication problems to processing errors

Statistics here we find the dashboards to view the performance and the calculation of KPIs. Based on the modules that have been subscribed, the user has predefined dashboards available that allow for specific analyses for each active module.

2.2   Available modules and functions

2.2.1   Common functions

API integration

All portal features are exposed via RESTful HTTP services. The use is regulated by an authentication and roles system.

User management

The main user can create and manage the users of the context. In addition to the internal users, it is possible to invite and then create users for external companies connected to the context, for example carriers.

There are no limits to the creation of users except as specified in the contract.

App user management

Management of users enabled to use the mobile application. Is possible to specify only surname, name and telephone number. The telephone number is unique and therefore can be present only once, it means that is not possible to associate multiple users to the same number.

Master data

It contains the personal and operational data of all the figures involved in the delivery process. The main types are Warehouses, Carriers, Customers and Suppliers, for each of them it is possible to create sub-types such as Transit Points for warehouses.

Alert management and alert workflow

Through this function it is possible to manage in HTML format the draft messages to be sent when a particular event occurs. Templates can be private or public, the public ones are standard and visible to all users of the platform while the private ones are visible only to the context that created them.

With Alert Workflow it is possible to decide when and how to send alerts that can be sent by e-mail, SMS or trigger a webhook that call a web service. The workflow can be fully parameterized and managed by the administrative user of the context. The events that can trigger an alert can be selected from a list box and are managed by Axylog.

System tables and parameters

There are several tables that contain operational data such as labels, pod reasons, dashboards, media types. All the tables can be managed by the context user.

The parameters are divided into two sections, general and external partner. General parameters are relative to the context while those for external partner are the parameters that can be specified for each external company. An example is the parameter that indicates whether or not satellite positions must be acquired for a given carrier.

Logs

The logs record any errors returned by API calls, when queuing the data to be processed and analyzing the data before they are written to the production tables.

2.2.2   Proof of delivery bundle

Deliveries

In the delivery's dashboard, the information is shown in grid format and for each of them there is an icon on the left that represents its status. The icon consists of a segment that can be green, orange or red and represents whether a delivery or a collection is late or on time. The arrows are relative to the status, therefore delivered or collected, and the colour indicates with or without problems. The information presented in the grid can be configured according to the customer need from a list of data available. All the data in the grid can be exported in Excel or PDF format and the limit of the exportable rows is 5,000.

It is possible to view all the deliveries in the grid on the map, the limit of pins that can be displayed is 500.

Trip

If the trip number is available, it is possible to view the deliveries in an aggregate way. A trip can be linked to the driver to which it was assigned, for privacy reasons, the name of the driver can be hidden to the users of the context while it is always visible to the users of the carrier to which it belongs. In the trip view you can open the map to see all the stops and their estimated route.

Positions and ETA calculation

In the Proof of Delivery module, the positions are transmitted by the drivers through their smartphones. The coordinates are not acquired continuously but only at events, so if the driver decides to send his position or while making a pick-up or delivery. With each new position received, the system updates the estimated arrival times for the current and subsequent stops. In the event of an incorrect address the system will not provide the ETA of all the stops.

Live tracking

Through this function it is possible to send a message to the recipient by e-mail or SMS a dynamic link through which the estimated time of arrival is communicated in real-time. The information on the page is automatically updated with each event triggered by the POD. The sending of the link by SMS must be contractually provided for.

Alert

If provided in the Alert Workflow the sending of alerts by e-mail are included in the module, sending by SMS must be contractually provided (not included).

Chat

Integrated exchange of messages, documents and photos. If enabled, users can exchange messages with each other through the chat on the portal. If authorized, drivers using the mobile application can also send messages containing text, documents and images. Conversations can take place between users but can also be linked to the deliveries.

KPI & Dashboard

Pre-defined graphic dashboards based on a business intelligence system allow to have a graphical visualisation of the performance and execution of the routes, orders and drivers.

2.2.3   Real time visibility bundle

Telematics system management

With the telematics system management, a carrier can configure and administer their telematics systems in order to connect it to the Axylog product services. Based on this connectivity PTV Axylog receives and makes use of the telematics systems location information (GPS). On customer request, the configuration can be performed by the PTV Axylog help desk.

Deliveries

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It is possible to view all the deliveries in the grid on the map, the limit of pins that can be displayed is 500.

In the real-time visibility the detection of the arrival of a truck at a destination is supported a geo-fencing function using the GPS position of the telematics system.

Trip

In the real time visibility, the trip must be connected to a truck through the license plate number of the vehicle or trailer. In the header of the trip there is an icon, which represents the status of the satellite system connected to that trip. If there are problems with the acquisition of the positions or coordinates are inconsistent, the icon turns grey, blue or red. In the first case it means that the telematic system is not provided, if blue tracking is active but no position is acquired, the reason could be the wrong license plate. Red color represents the incongruity of the data received, for example outdated position.

Positions and ETA calculation

The positions are acquired by the telematic systems installed on board of the vehicles, the coordinates are acquired continuously and in real time.

If there is a problem with the telematic system and the positions are not acquired, they are not recovered, the system always acquires the last valid position.

If the telematic systems are present on both, tractor and trailer, the system never acquires both positions, but priority is always given to the trailer because the tractor could change during the trip.

The position reading frequency can be parameterized in minutes.

With each new position received, the system updates the estimated arrival times for the current and subsequent stages. In the event of an incorrect address and therefore not geo-codable, the system will not provide the ETA of all the stops.

Live tracking

Through this function it is possible to send the recipient a message by e-mail or SMS containing a dynamic link through which the estimated time of arrival is communicated in real-time. The information on the page is automatically updated upon receipt of a position provided by the Telematics Service or a delivery outcome triggered by the POD. The sending of the link by SMS must be contractually provided for.

Alert

If provided in the Alert Workflow the sending of alerts by e-mail are included in the form, sending by SMS instead must be contractually provided (not included).

KPI & Dashboard

In Real Time Visibility, the dashboards allow you to accurately measure the efficiency of the carriers' satellite systems. They display numerous information and indications thanks to which it is possible to understand the causes of the lack of tracking and then act directly to solve the problems highlighted. The current dashboards relate to the performance of each individual carrier, to the punctual analysis of the monitored number plates and to the points of destination not intercepted by the geo-fencing function.

2.2.4   Document management

Type of documents

The system is able to manage the delivery document and any attachments. The delivery document can only have one of the following three states: original, digitally signed and scanned. This means that it is not possible to have for example the original document and the scanned document at the same time.

Transmission of documents

There are three ways of uploading, via API, FTP or manually.

File

It is possible to search for stored documents and view the related PDF. The search filters allow you to select documents also based on their status, then scanned or digitally signed.

Management

If optical recognition of scanned documents is active and some are not automatically recognized through this function, it is possible to assign the documents to the related deliveries.

Upload

Manual document loading function.

OCR

The system provides logistics third parties with the ability to send scans of delivery documents via FTP. The system recognizes by reading the QR-code or the barcode printed to each document. The codes can also contain page numbers and total pages and thanks to this the system is able to highlight any missing pages.

KPI & Dashboard

with the dashboards present in this module it is possible to measure the performance in loading documents.

2.3   Mobile application QrDelivery

QrDelivery allows to create a real-time connection between drivers operating on the move and back-end operators. The mobile application is available for iOS and Android operating systems and can be downloaded for free.

Authentication by SMS

The application does not use username and password but only the device is authenticated through an SMS.

Chat

Exchange messages between users or linked to a delivery. Sending of documents and images is included.

Creation of delivery trips

By reading QR-codes or barcodes present in the transport documents the user can create a trip, the sequence of the trip will be the same as the sequence of reading documents. This function is not applicable in combination with PTV Route Optimiser ST/CL.

Electronic bordereau

- Download bordereau

The user (driver) is notified when there is a new bordereau or an update. However, the user can trigger the download via a button. The user has been preassigned to the route by the leading system.

- Connect driver to bordereau

By capturing the barcode or QR-code of a planned route by the user (driver), this route is assigned to and connected with the respective user (driver).

- Update sequence

The user can change the delivery sequence simply by moving the deliveries to their device. It can be configured if this manual change of sequence is allowed by the driver.

Outcomes

- Delivered

When the delivery has no anomalies.

Delivery with anomaly

In case of any issue with the shipment. The application asks to take a picture of the transport document and the shipment. The maximum number of images that can be sent is four.

- Not delivered

In case of total refusal of the delivery.

Send position

- Travelling

The driver can use this option when he wants to update his position, at the departure or during the trip.

- Arrival

When the driver reaches the destination location, he can declare the arrival.

Reading parcels at loading and unloading

If the QR- or barcode of each individual package is acquired from the platform via API the driver can check-off the shipping code printed on the case/load unit to confirm loading or unloading of individual cases/load units.

Equipment declaration

The driver can declare the exchange of loading equipment at a location. It is possible to manage both the delivery and/or collection of equipment.

Cash on delivery

If the cash on delivery process is supported (data provided via API) the user must read the cash information, declare the real amount received and the payment method.

Digital signature

The mobile application allows the capture of customer signature. This signature is placed over the references of the signatory, the reference number of the delivery document and the geographical coordinates of the delivery location.

Offline mode

The application works with or without online connectivity. In case of lack of connectivity, all data collected are saved in a queue. When connectivity is restored, the data is sent.

Options

- Activation

At the first use of the application the activation is required.

If for any reason the application has been deactivated, it can be reactivated via this function.

- Profile update

If the profile configuration has been changed in the backend application the profile on mobile side will be updated automatically.

2.4   Handling concept (UX)

The PTV Axylog portal has been designed to be easy to use and modern in appearance. Each user can customize their environment by saving filters, for example, so that only the information they need appears automatically.

Information also from different sources are displayed in a homogeneous manner.

Thanks to this, the learning curve for using PTV Axylog is very short, and a user becomes productive in a short time.

3 Subscription

PTV Axylog is made available as a Subscription as a SaaS product.

3.1 Modules and Sales packages

Depending on the product configuration ordered and subscribed by the customer, the Axylog product provides either the bundles described as

- Proof of Delivery (chapter 2.2.2) OR

- Real-time Visibility (chapter 2.2.3) OR

- the combination of both bundles Proof of Delivery AND Real-time Visibility.

The module 2.2.4 Document Management can be ordered in combination with 2.2.2 Proof of Delivery or the combined bundles 2.2.2 and 2.2.3. It is not available for 2.2.3 only.

3.2 Product Limitations

The following are the current product limitations:

- Standard data retention period for all data in the PTV Axylog product is limited to 12 months. This period might be subject to change or agreed upon in the individual subscription contract.

- SMS contract and related cost are not included in the offer and needs to be provided by the customer.

- A large number of telematics system is available being connected to PTV Axylog. New systems can be connected on request and after technical validation.

3.3 Glossary

POD Proof of Delivery is the process that validates the receipt of the goods by the customer. Validation takes place through a mobile application installed on the devices of the drivers who deliver the goods.

Visibility it is the ability to trace the vehicles and therefore the goods along the logistics chain that goes from suppliers to the end customer.

Orders corresponds to one single task, pickup or delivery with a unique order ID.

Orders per monthly subscription term corresponds to the sum of **Orders** acquired in the same monthly term.

Monthly subscription term corresponds to the monthly subscription period.

4   User management

In the portal.axylog.com Users | Management, the Subscription admin has the option to activate authorized Users for the use of the PTV Axylog service as well as to manage the roles of its authorized Users.

5   Technical system description

5.1   General

PTV Axylog can be used as a web client and is recommended to be used with the Google ChromeTM web browser on a desktop computer.

Functionality and layouts from untested web browsers and operating system recommendations can vary.

PTV Axylog operates via Windows AzureTM on Europe cluster.

The Service Description is not an assurance of a claim to all variants.

5.2   Technical scope and requirements

Language and units of measurements: English (US) language and US units of measurement are NOT available in this version.

- Browser: Use the latest version of Google ChromeTM or another Chromium-based browser.

- Client configuration:

- Network bandwidth: recommended connection speed 20 Mbps or more

- Screen resolution: 1600 x 900 (high color quality) or higher (1920 x 1200 recommended)

- Processor: Recommended Intel Core i5 or newer

- Operating system: Microsoft Windows 8 or newer

- Mobile requirements: iOS 11 or newer; Android 4.4. or newer