Concept digital delivery note / Cloud4Log / Cloud4Log Add-ons

Cloud4Log
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Add-ons

#GREEN MAGENTA
DIGITAL DELIVERY NOTE.
PAPERLESS. SUSTAINABLE. FUTURE-PROOF.

·T·· Systems·

Let's power
higher performance

The digital delivery note

Cloud4Log
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Add-ons

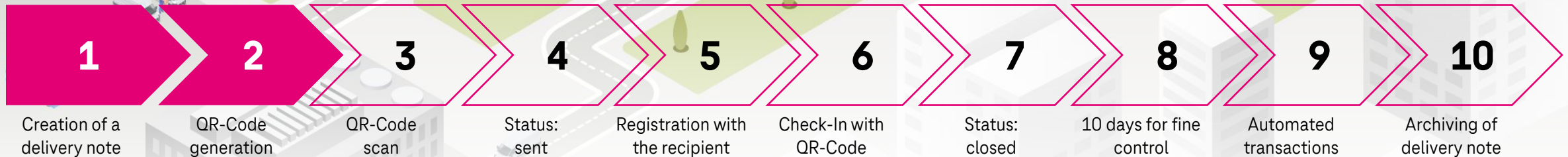**1** Delivery notes are created / uploaded by the employee or a connected system and can be enriched with further information.

2 Based on one or more delivery notes, the system automatically creates a common QR code for the checkout.

1	2	3	4	5	6	7	8	9	10
Creation of a delivery note	QR-Code generation	QR-Code scan	Status: sent	Registration with the recipient	Check-In with QR-Code	Status: closed	10 days for fine control	Automated transactions	Archiving of delivery note

The digital delivery note

4 With the acknowledgment by the driver, the status of the delivery changes to "sent" (in real time). The goods are on their way...

3 The driver scans the QR code and can now check the data and acknowledge the receipt of the delivery. Subsequently, he receives the digital delivery note on his mobile phone (as a so-called "wallet element").

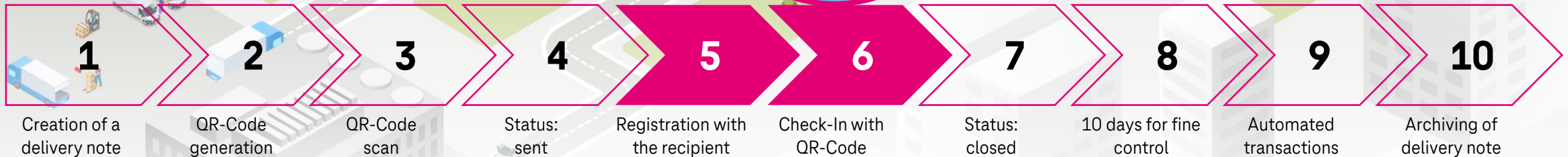| 1	2	3	4	5	6	7	8	9	10
Creation of a delivery note	QR-Code generation	QR-Code scan	Status: sent	Registration with the recipient	Check-In with QR-Code	Status: closed	10 days for fine control	Automated transactions	Archiving of delivery note

The digital delivery note

6

In the goods receipt, the driver's QR code is scanned. The goods receipt is thus given dedicated access to the delivery notes for the delivered goods.
The check-in process starts.

5

Dock 2
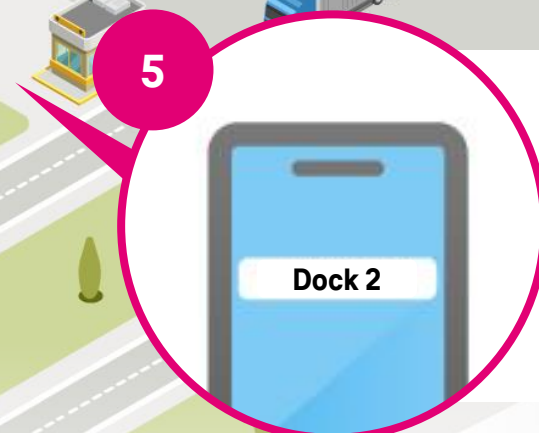
The driver registers with the recipient and the dock sensors detect a free dock and reserve it for the driver.
The driver receives the specific information via a push notification.

1	2	3	4	5	6	7	8	9	10
Creation of a delivery note	QR-Code generation	QR-Code scan	Status: sent	Registration with the recipient	Check-In with QR-Code	Status: closed	10 days for fine control	Automated transactions	Archiving of delivery note

The digital delivery note

8

For a period of 10 days from the change of status "sent" to "closed", goods receipt employees can optionally upload a detailed control document.

7

The goods receipt employee checks the delivered goods against the delivery notes (rough inspection). Subsequently, both the goods receipt employee and the driver acknowledge receipt and handover of the delivery. The status changes to "closed" (in real time).

1	2	3	4	5	6	7	8	9	10
Creation of a delivery note	QR-Code generation	QR-Code scan	Status: sent	Registration with the recipient	Check-In with QR-Code	Status: closed	10 days for fine control	Automated transactions	Archiving of delivery note

The digital delivery note

10 The digital delivery note, including the process information, are available for archiving for 10 weeks.

9 With the status transition to "closed", financial transactions between the parties involved can be carried out automatically.

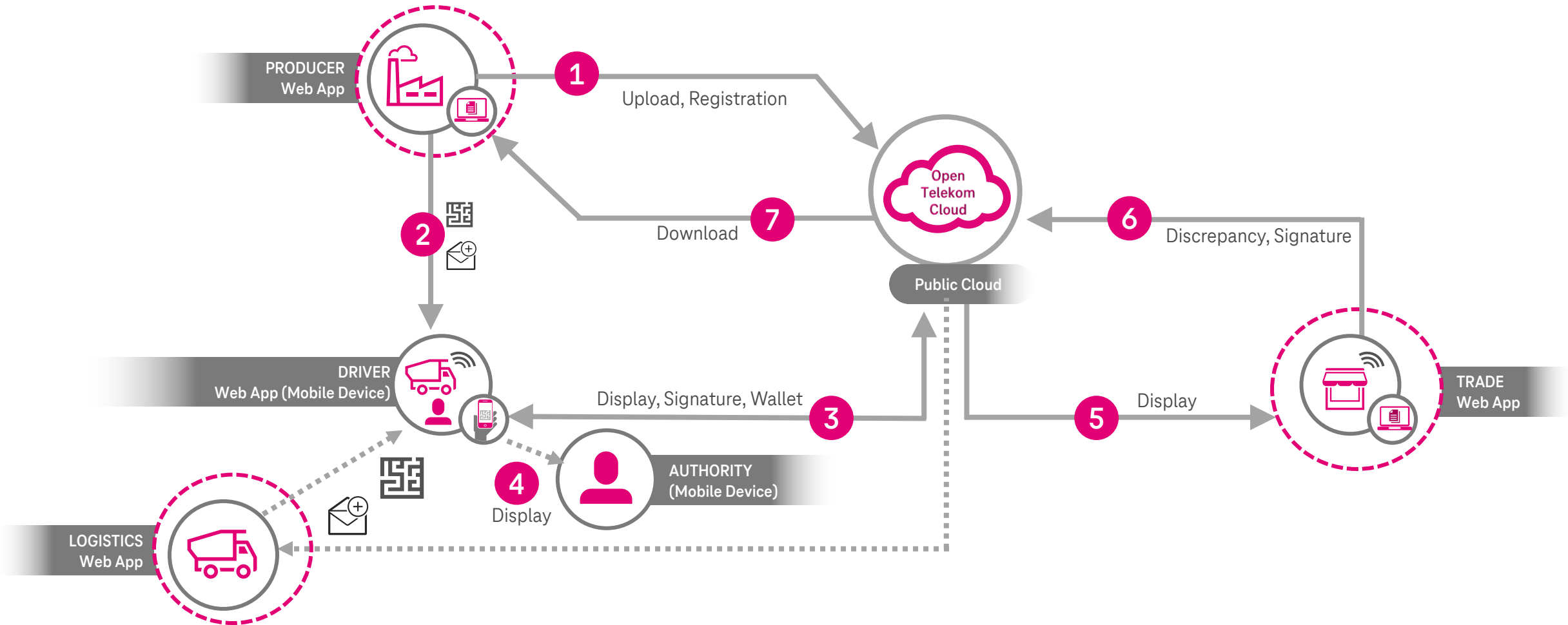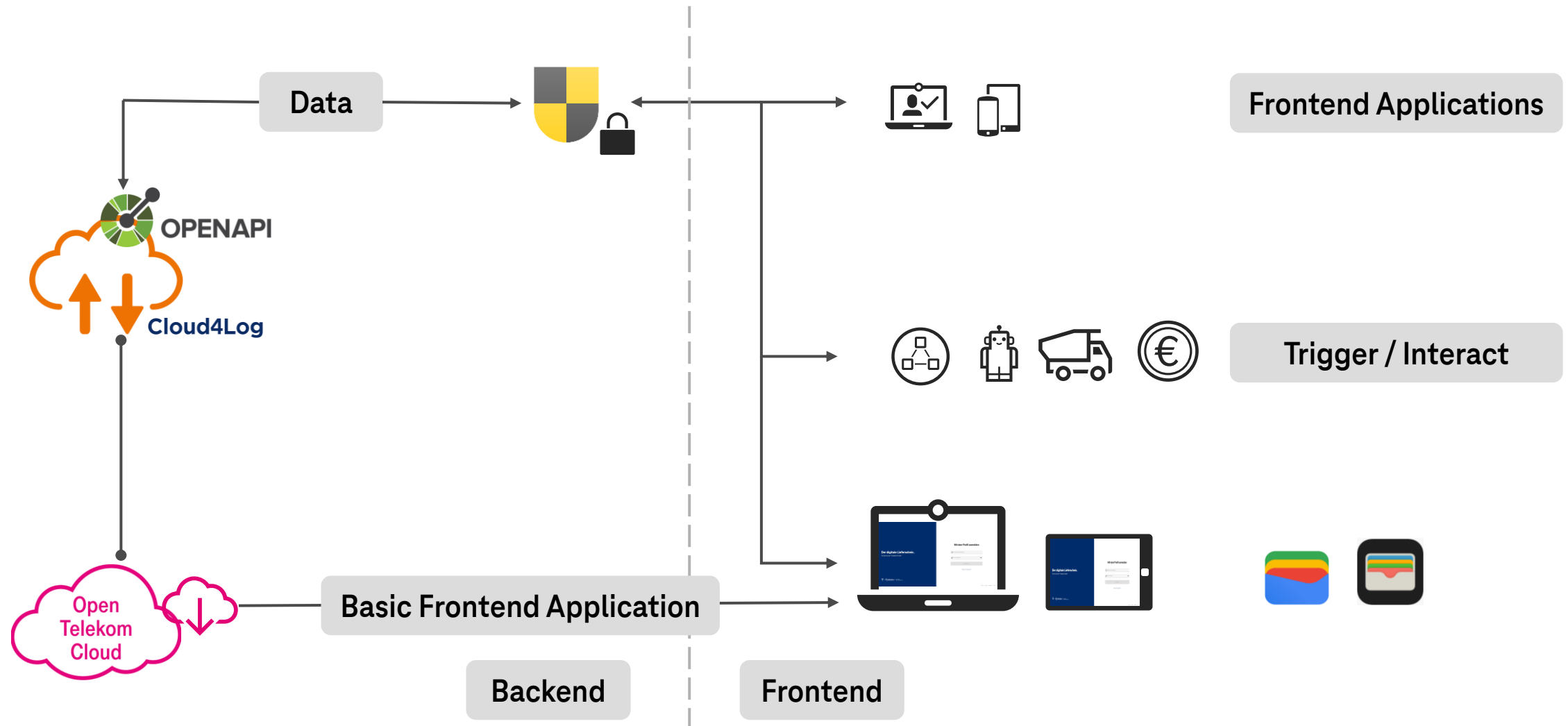| 1	2	3	4	5	6	7	8	9	10
Creation of a delivery note	QR-Code generation	QR-Code scan	Status: sent	Registration with the recipient	Check-In with QR-Code	Status: closed	10 days for fine control	Automated transactions	Archiving of delivery note

Cloud4Log Basic (GS1)

The platform and the process take into account all relevant roles

PRODUCER Web App

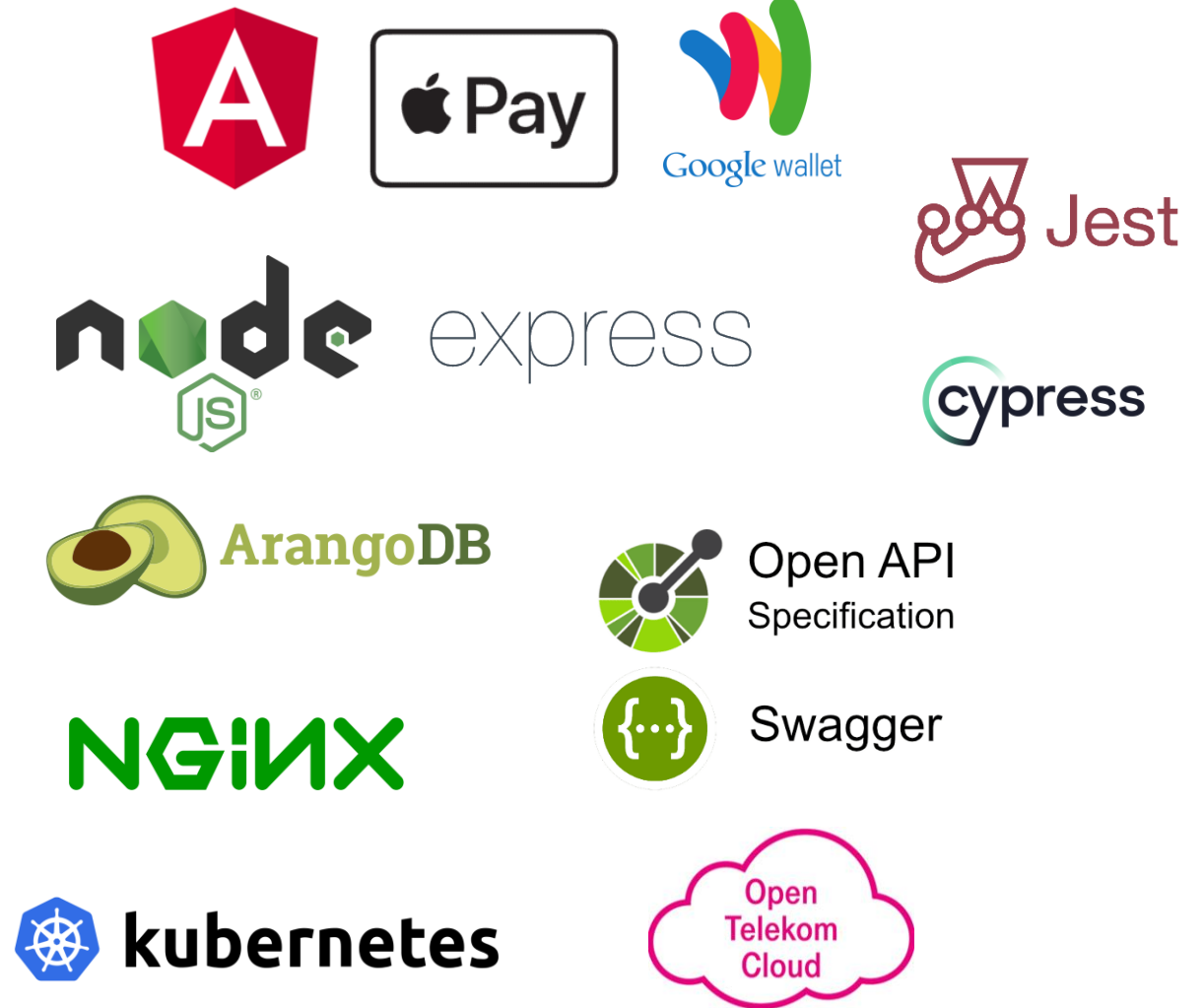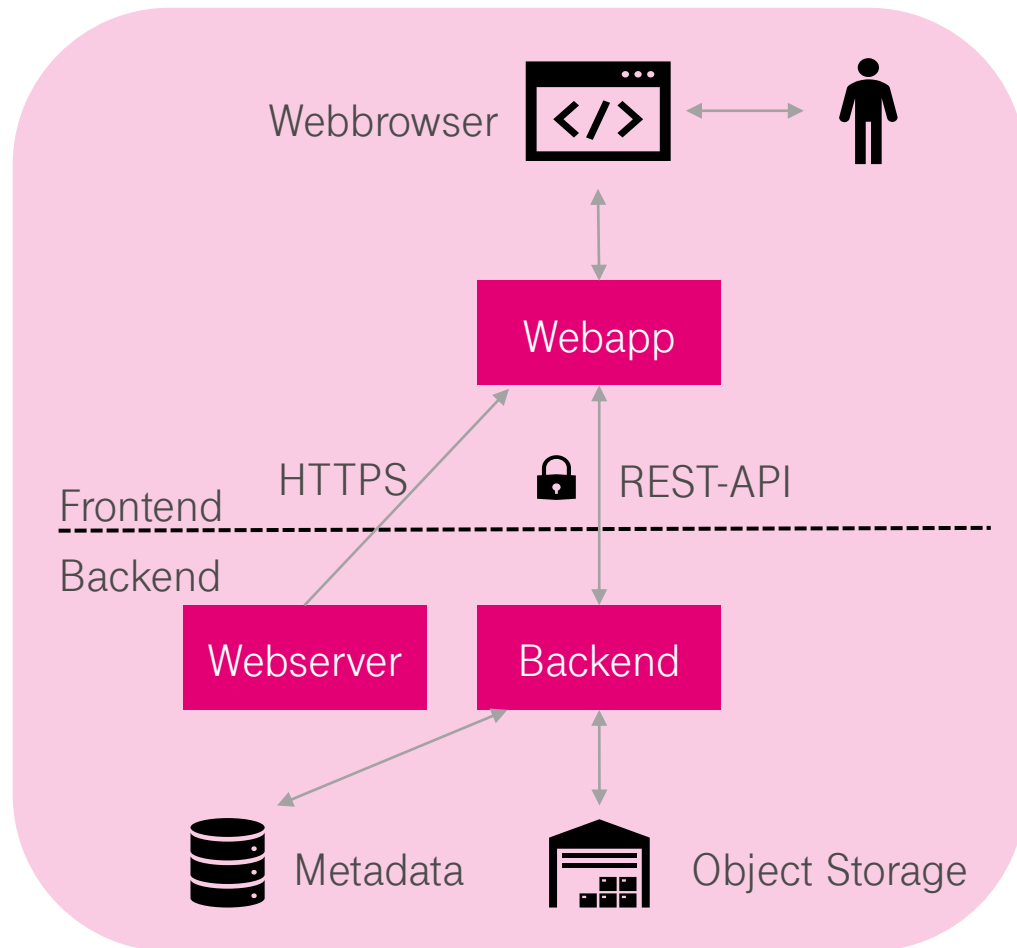**1** Upload, Registration

Open Telekom Cloud

Public Cloud

7 Download

2

DRIVER Web App (Mobile Device)

3 Display, Signature, Wallet

AUTHORITY (Mobile Device)

4 Display

LOGISTICS Web App

6 Discrepancy, Signature

TRADE Web App

5 Display

Cloud4Log Basic (GS1)

Opening the Cloud API will allow third parties to interact with the application and connect existing systems

Data

OPENAPI

Cloud4Log

Open Telekom Cloud

Basic Frontend Application

Frontend Applications

Trigger / Interact

Backend

Frontend

Cloud4Log Basic

Our architecture with a modern technology stack

Webbrowser

Webapp

HTTPS   REST-API

Frontend
Backend

Webserver   Backend

Metadata   Object Storage

Jest

Google wallet

node express

cypress

ArangoDB

Open API Specification

NGINX

Swagger

kubernetes

Open Telekom Cloud

Cloud4Log Basic (GS1)

Significant service advantages

Significant process advantages for users

Simple and fast selection of delivery notes with deviations

Accelerated delivery feedback in real time

Paperless transport process & available departure time at the loading point in real time

Transparent documentation of delivery deviations including damage patterns

Comprehensible documentation of the loading equipment exchange at the loading and unloading point
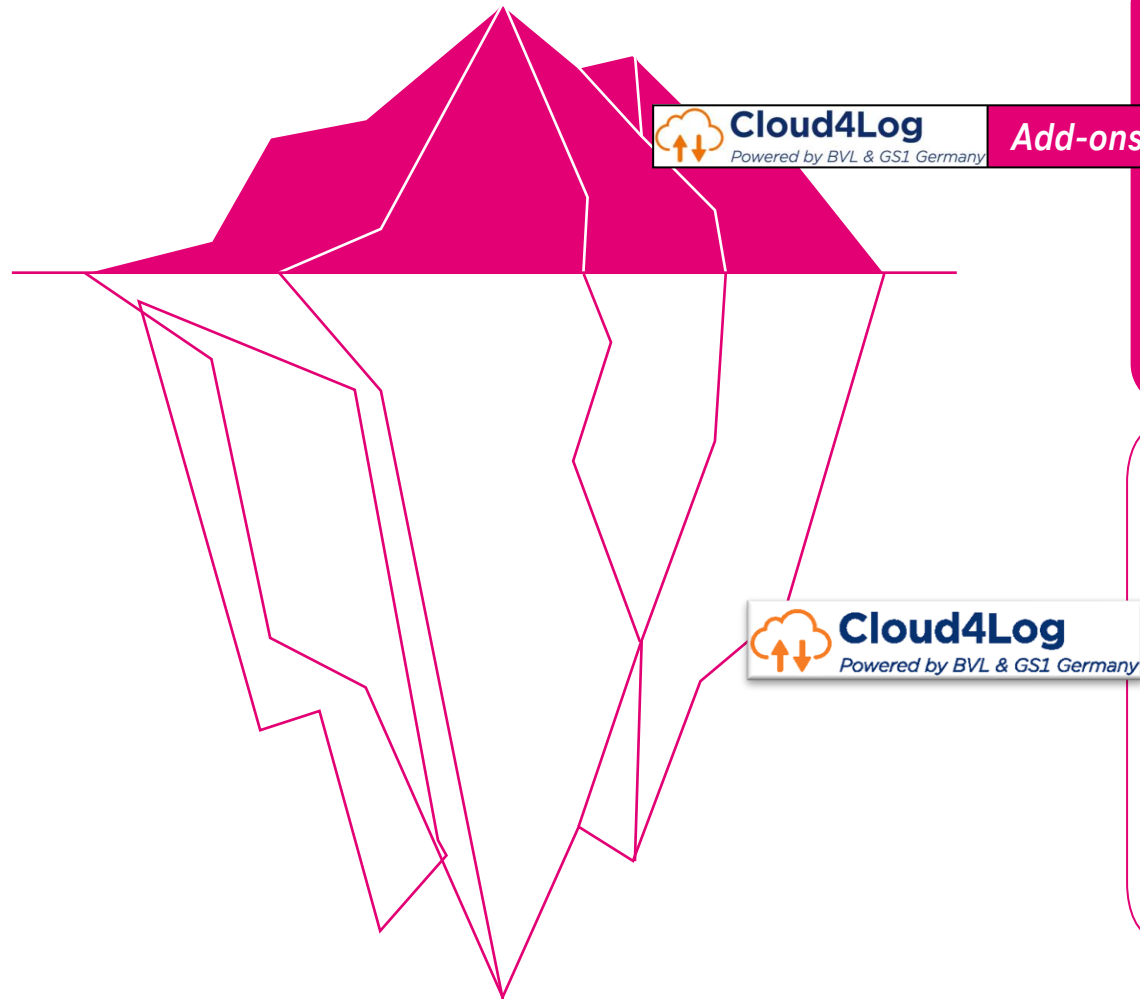
Reduction of invoice corrections and credit notes

Quick and easy identification of driver personnel and cargo at the unloading point

No scanning effort for archiving delivery documents & no loss of delivery notes

Cloud4Log Add-ons (T-Systems)

Value-added service Cloud4Log Add-ons

Cloud4Log Add-ons develops specific services together with GS1. At the same time, these features implement useful extensions as well as company-specific requirements. T-Systems is responsible for development, marketing and billing.

The digital delivery note was developed by T-Systems under the name Cloud4Log and is operated by GS1 on behalf of the German Bundesvereinigung Logistik as a service provider. As an OPEN API / cloud solution, the system provides a simple, universally applicable system without mapping company-specific requirements.

Cloud4Log Add-ons (T-Systems)

Service offerings

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Add-ons

01

Digital delivery notes

Delivery notes with M2M attachment; electronic delivery notes and import/edit of article list

02

Waybill

Waybill (CMR) as a freight-accompanying document; waybill in digital form (eCMR)

03

Real-time communication

Updating of information in all connected frontends or systems

04

Driver App

Download of the delivery note and communication support from and to the driver

05

SAP-interface

Support for connecting the SAP system to Cloud4Log

06

Archiving

Automatic archiving of delivery notes and management via ImageMaster

07

Event-related payment

Status change triggers payment

08

Business Monitoring

Standard and custom dashboards for business process analysis

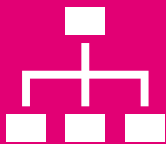## 09

Interface to dock sensors and slot management

Dock assignment, dock occupancy and much more

Cloud4Log Add-ons (T-Systems)
Service offerings

01
Digital delivery notes

- In addition to the human-readable PDF format, the delivery note is supported with machine-readable attachments.

- Process-relevant information such as stockkeeping unit are read from uploaded delivery notes and can be edited in the application.

- Processed information, e.g. about load carriers and deviations, is supplemented in the machine-readable part of the file.

- The formats XML and JSON are currently offered.

- The delivery note is completely digitized and only read and processed in XML format.

- The new DELIVER-X standard for a hybrid electronic delivery note from ZUGFeRD is supported.

Cloud4Log Add-ons (T-Systems)

Service offerings

02
Waybill

- The previous CMR form is carried in the folder as a freight-accompanying paper and can be filled with the current information
- The electronic waybill is stored as an XML structure and processed in Cloud4Log
- A waybill is generated from a delivery note

03
Real-time communication

- Instant propagation of status changes
- Updates for the entire supply chain
- Reduction of asynchronous processes: Driver signature terminates process

04
Cloud4Log App

- Driver app for offline access to delivery notes
- Employee app as a supplement to the web application
- App with digital signature support
- Support of the electronic waybill

Cloud4Log Add-ons (T-Systems)

Service offerings

05
SAP-interface

- Support service for connecting SAP systems to Cloud4Log

- Transfer of delivery notes from SAP

- Preparation of check-out from SAP

- Return of deliveries to SAP

06 Archiving with ImageMaster

- Automatic archiving after certain process steps

- Document management of archived files in ImageMaster

07 Event-related payment

- After successful and full completion of the check-in process, an event is triggered

- This event causes a payment to be triggered at a credit institution

Cloud4Log Add-ons (T-Systems)

Service offerings

08

Business Monitoring

- Representation of company-specific identifiers
- Analysis of business developments and handling of event
- Provision of specific dashboards

09 Interface to dock sensors

- Identification of vehicles by license plate recognition
- Dock assignment for vehicles
- Automatic start of check-in / check-out
- Downtime recording

11 Self-Service driver

- Provision of a separate terminal for the driver to sign in and out at the location.
- Independent checking and signing of the documents accompanying the freight by the driver after handover/acceptance of goods

01a Delivery notes with machine-readable attachment

Service Description

Cloud4Log Basic currently only works with delivery notes in human-readable PDF format. These are converted to PDF/A-3 format for later archiving.

The information determined during the process is integrated into or attached to the PDF document. Any machine-readable attachments are extracted by Cloud4Log Basic during the upload and offered at the API, but are ignored in terms of content and process.

In Cloud4Log Add-ons, existing, machine-readable attachments are also read out during the upload and the data relevant to the process is processed.

In addition, the information generated during the process (XML or JSON) is attached to the PDF document in machine-readable form.

Service Features

- Cloud4Log Add-ons recognizes the machine-readable part of the uploaded delivery note and extracts existing, process-relevant information (delivery note number, order number).
- If available, this information is used/pre-filled for further processing of the delivery note.
- Information about load carrier exchange, deviations and driver information accumulated during the process is stored in a structured manner in the machine-readable part and attached to the delivery note (status closed).
- Optionally, this machine-readable part can be loaded separately via an endpoint.

Service

- The prerequisite for using the service is the onboarding of the company to Cloud4Log Basic. We provide comprehensive consulting.

- A prerequisite is also the initial, machine-readable part of the delivery note with a known and stable structure (for the transfer of process-relevant information from the dispatcher).

1. Initial consultation: Analysis of the delivery notes, implementation of the service
2. Evaluation of the reading of the machine-readable part using example delivery notes and evaluation of the results; joint definition of the relevant information for the further process
3. Interface test support
4. Automatic memorizing and reading in machine-readable format
5. Display of the information accumulated in the process separately and as an attachment
6. Optional: automatic reading of structured information directly from the PDF delivery note and use of this information during processing (e.g. delivery note and order number). This is not an OCR procedure, but an analysis at the file structure level

Value-add for the customer

All customers:
- Avoidance of manual errors.
- Time savings through automatic display of the information accumulated during the process (load carrier exchange, deviations, driver information), if entered in detail (delimitation: no separate reading of pallet slips, goods receipt documents, fine control documents or other attachments).

Consignor/goods issue:
- Time savings through automatic transfer of process-relevant information.
- Yard management support.

Further information

Cloud4Log Basic:
https://bvl-digital.de/cloud4log/

Registration

https://bvl-digital.de/cloud4log/#anmeldung

Contact: c4l-support@t-systems.com

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01b digital delivery note

Service Description

Similar to Service 01a, but additionally/deviating:

Cloud4Log Basic currently only works in human-readable PDF format.

Cloud4Log Add-ons ensures that the application only expects an XML structure of the delivery note in the upload. A PDF document for control purposes is generated from this for display during the process.
The information recorded during the process is stored in the XML structure.
The DELIVER-X standard is developed by AWV and is the basis for the XML structure.

Service Features

- When uploading the delivery note, the XML structure is recognized according to the DELIVER-X standard.
- All relevant end points are supplied with the data available in the XML structure so that the process is optimally prepared.
- All relevant information can be viewed and edited in the relevant fields in the frontend. The current information as well as the information recorded during the process (load carrier, deviations) are saved in a XML structure.
- The fully processed delivery note is provided as XML (DELIVER-X structure).
- A PDF document can be generated from the XML structure for display/download, to which further attachments (goods receipt document, pallet slip, detailed inspection, images) can be attached.

Value-add for the customer

All customers:
- M2M communication; Digitization based on DELIVER-X standard.
- Backwards compatibility to Cloud4Log Basic and Cloud4Log Add-ons 01a, therefore also includes the functionality of Cloud4Log Add-ons 01a (except for optional functions).
- The PDF document is generated in human-readable form for display/download, thus the frontend can for example continue to be used without restriction.

Service

- The prerequisite for using the service is the onboarding of the company to Cloud4Log Basic. We provide comprehensive consulting.

- Service 01a is included (without the optional part), as these build on each other.

- Delivery notes with a uniform XML or JSON structure on the outgoing goods side are required. This does not mean a PDF document, but an XML/JSON file.

1. Analysis of the structure of the delivered delivery notes, checking the Deliver-X conformity, defining and implementing adjustments if necessary

2. Testing the memorizing, processing and reading of the delivery note

3. Automatic extraction of data when uploading the delivery note, filling of the API endpoints, filling of the folder in the frontend if wanted

4. Provision of the updated digital delivery note after completion of the process as well as ongoing generation of a PDF delivery note based on this data for display/download

5. Monitoring and troubleshooting in pilot operation, optimization in the further course

Further information

Cloud4Log Basic:
https://bvl-digital.de/cloud4log/

Registration

https://bvl-digital.de/cloud4log/#anmeldung

ZUGFeRD/Deliver-X: https://www.ferd-net.de/aktuelles/meldungen/standardisierung-elektronischer-lieferscheine.html

Contact: c4l-support@t-systems.com

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Add-ons

01c Import and edit article list

Service Description

Similar to Service 01b, but additionally/deviating:

Companies want to check at item level in the process of rough/fine control. For this purpose, the item information is extracted from the delivery note *).
This item information is displayed (in the frontend) as an article list. In the incoming goods inspection, item by item can be checked and ticked off.
Deviations can be recorded directly for each item. This information is stored in a structured manner and can therefore be processed automatically.

Service Features

- When the delivery note is uploaded from the PDF document in outgoing goods, the information about the individual items is read out. Alternatively, the following applies:
    - *) From a machine-readable attachment provided by the customer (from Service 01b) or
    - *) by reading the (structurally stable) PDF document.
- This article information can then be read out via the API and also listed in a table in the front end.
- In goods receipt, deviations can now be recorded directly at item level.
- The deviations can be called up via the API and displayed in the article overview in the closed delivery note.

Value-add for the customer

Goods receipt:
- Technically, work is carried out at the item level instead of at the delivery note level.
- The system contains all the necessary information about items in order to process the item positions in the goods receipt as a checklist.
- Deviations can be assigned directly to the item position.
- Further processing possible due to direct assignment digitally (via API).

Service

- The prerequisite for using the service is the onboarding of the company to Cloud4Log Basic. We provide comprehensive consulting.

- Service 01b is included as these build on each other. Additional requirements are delivery notes with a known and stable structure.

1. Evaluation: Reading out the item list from the XML (preferred) or the machine-readable part of the PDF using example delivery notes and evaluating the results

2. Evaluation: Merging the processed data into the XML structure or the machine-readable part, support for interface tests

3. Provision of this article list in the API or in the frontend

4. Provision of an editing function in the frontend to mark the item list as "checked" during the visual inspection or to provide position-specific deviations

5. Automatic memorizing and reading in machine-readable format

6. Optional: Automatic reading of the item information directly from the PDF and use of this information in the goods receipt

Further information

Cloud4Log Basic:
https://bvl-digital.de/cloud4log/

Registration

https://bvl-digital.de/cloud4log/#anmeldung

Contact: c4l-support@t-systems.com

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Add-ons

02a Waybill (CMR) as a document accompanying the freight

Service Description

Cloud4Log Basic currently only processes digital delivery notes.

In this "Service 02a" it is possible to use waybills instead. Cloud4Log Add-ons offers both the upload of digital, pre-filled waybills and the provision of an empty form that can be filled out via the frontend.

When uploading pre-filled waybills, existing content is read out and offered for further processing, then successively supplemented with the process information and offered for display or download.

Addition/upload of further documents accompanying the freight is possible.

Service Features

- API endpoint or separate tab in the frontend for uploading additional documents in PDF format that accompany the freight.
- Pre-filled waybills are read out, displayed and stored in the folder.
- Provision of an empty CMR form with the possibility to edit the form in the frontend.
- Signature "Sign on Glass".
- The waybills are available to the driver during transport.
- Download and display of the waybill during and at the end of the process.
- Other documents accompanying the freight can also be uploaded on request.

Service

- The prerequisite for using the service is the onboarding Lof the company to Cloud4Log Basic. We provide comprehensive consulting.

1. Consulting on the initial setup of the service, test, if necessary interface test, individual adjustments

2. Upload of the waybill as a pre-filled PDF, memorizing of the information, editability of these information

3. Provision of input mask for empty CMR, editability of the form

4. Upload of documents accompanying the freight (confirmation of dangerous goods, …) and return delivery documents (confirmation of arrival*) as an attachment to the waybill under the responsibility of those involved)

)*To be clarified in the archiving context

5. Signature "Sign-on-Glass" and positioning of the signatures in the correct places of the CMR

Value-add for the customer

All customers:
- Processing of alternative, freight-accompanying documents (here: CMR) using the basic and Add-ons features of C4L
- Electronic delivery of pre-filled documents via the API or via the frontend
- Time savings when filling out/editing the documents
- Availability of the processed CMR and other documents accompanying the freight in real time for all parties involved

Further information

Cloud4Log Basic:
https://bvl-digital.de/cloud4log/

Registration
https://bvl-digital.de/cloud4log/#anmeldung

Contact: c4l-support@t-systems.com

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Add-ons

02b Waybill in electronic form (eCMR)

Service Description

Similar to Service 02a, but additionally/deviating:

- Processing of an electronic waybill in XML format in addition to the analysis of an uploaded PDF document.
- All data is already transmitted digitally via API and processed by us.
- Generation of a waybill in human-readable PDF format from the XML data.
- Optional: Advanced digital signature instead of the simple electronic signature.

Service Features

- Mapping of the eCMR structure in our Cloud4Log Add-ons system.
- Processing of the eCMR in standardized XML form in input and output.
- Generation of a CMR in human-readable PDF format for all stakeholders to view and download.
- Optional: implementation of the advanced digital signature at the relevant points.

Service

- The prerequisite for using the service is the onboarding of the company to Cloud4Log Basic. We provide comprehensive consulting.
- Service 02a is included as these build on each other.

1. Consulting on the initial setup of the service, test, if necessary interface test, individual adjustments
2. Upload waybill as a standardized XML structure, memorizing of the information, editability of these information
3. Generation of a human-readable waybill in PDF format for viewing/downloading
4. Optional: implementation of the advanced digital signature

Value-add for the customer

All customers:
- Effort and time savings for the customer through direct interface communication without the detour via the PDF waybill.
- Optional: advanced digital signature.

Further information

Cloud4Log Basic:
https://bvl-digital.de/cloud4log/

Registration

https://bvl-digital.de/cloud4log/#anmeldung

Contact: c4l-support@t-systems.com

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02c eFTI Compatibility

Service Description

Similar to Service 02b, but additionally/deviating:

- Delimitation: Currently no eFTI compatibility (due to unknown specifications)
- Earliest findings after **08/21/2023**

Service Features

Value-add for the customer

Service

- The prerequisite for using the service is the onboarding of the company to Cloud4Log Basic. We provide comprehensive consulting.

Further information

Cloud4Log Basic:
https://bvl-digital.de/cloud4log/

Registration

https://bvl-digital.de/cloud4log/#anmeldung

Contact: c4l-support@t-systems.com

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Add-ons

Service Description

In Cloud4Log Basic, all information is exchanged asynchronously, both in the frontend and in wallets. The frontend updates its information every 10 minutes. Wallet items are not updated.

Cloud4Log Add-ons is also able to provide changed information in the backend in real time using so-called "Server Sent Events". This information can then be received and displayed by the frontend. Central events have already been realized. However, further data for synchronous communication can also be provided for company-specific requirements.

Service Features

- Changes to desired information and/or status are reported to the system as events in real time and can be displayed both on the Cloud4Log Add-ons API and in the frontend. Events are always communicated to everyone involved.
- Customers of Service 03a are also shown these events in real time, e.g. status changes, exceeding of defined thresholds or newly uploaded documents.
- If desired, the driver's signature ends the goods receipt process, which means that the goods receipt employee no longer has to become active.

Service

- The prerequisite for using the service is the onboarding of the company to Cloud4Log Basic. We provide comprehensive consulting.

1. Consulting: When the service is activated, the actual information requirements for the company are determined (requirements analysis)
2. Company-specific requirements are implemented
3. Synchronous data display in the frontend
4. Process completion (delivery note folder in the status "closed") directly through the signature of the driver (and without signature of the recipient)

Value-add for the customer

All customers (with booked Service 03a):
- Real-time signaling of desired events.
- Technical basis for further services.

Goods Receipt:
- Accelerated processing on request.
- Error prevention in goods receipt.

Further information

Cloud4Log Basic:
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Cloud4Log Powered by BVL & GS1 Germany *Add-ons*

Service Description

In Cloud4Log Basic, all information is exchanged asynchronously, both in the frontend and in wallets. The frontend updates its information every 10 minutes. Wallet items are not updated.

Cloud4Log Add-ons is also able to provide changed information in real time using the so-called "Server Sent Events". Central events have already been realized. The information can then be received and displayed by wallet elements. Therefore, the focus here is on data exchange with the driver.

Service Features

- Changes to desired information and/or status are reported to the system as events in real time and can be displayed both on the Cloud4Log Add-ons API and in the frontend. Events are always communicated to everyone involved.
- The service 03b is also used to update and display the associated wallet elements. Here, for example, the arrival time slot and the planned dock occupancy can be displayed to the driver. The service is therefore particularly interesting for incoming goods.
- By booking this service it will be possible to record a dock and/or a time slot in Cloud4Log Add-ons (FE). This information can then be transmitted to the wallet element as push information.

Service

- The prerequisite for using the service is the onboarding of the company to Cloud4Log Basic. We provide comprehensive consulting.

1. Consulting: When the service is activated, the actual information requirements for the company are determined (requirements analysis)
2. Company-specific requirements are implemented
3. Entry of dock information by recipient/goods receipt in the folder
4. Synchronous data in wallets

Value-add for the customer

Recipient/goods receipt (with booked service 03b):
- Can provide the driver with real-time updated information.
  - Synchronous data in wallet items.
  - Display of the time slot.
  - Signaling of the planned unloading dock.
- Helps to avoid delays and congestion in incoming goods.

Further information

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Registration
https://bvl-digital.de/cloud4log/#anmeldung

Contact: c4l-support@t-systems.com

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Add-ons

Service Description

The ZeKju product provides messenger communication between drivers, dispatchers and other parties involved in the supply chain during the transport of a delivery.

With this service, Cloud4Log Add-ons offers current and future users of ZeKju an interface. Information such as driver data and notified delivery time is sent from ZeKju to Cloud4Log Add-ons and information about the completion of the collection or delivery from Cloud4Log Add-ons to ZeKju. The driver is also offered the option of downloading the delivery note(s), which supports the offline availability of Cloud4Log Add-ons.

Service Features

- Support for messengers Telegram, WhatsApp and Viber.
- After the driver has taken over the tour, the information about the driver, vehicle and notified delivery time is transferred to Cloud4Log Add-ons. There, it is supplemented and displayed in the associated folder.
- If the notified delivery time changes during transport, this information is synchronized between ZeKju and Cloud4Log Add-ons.
- After completion of the goods issue and the goods receipt (through the signatures), these events are communicated to ZeKju.
- The delivery note handed over at the goods issue is made available to the driver for download.

Service

- The prerequisite for using the service is the onboarding of the company to Cloud4Log Basic. We provide comprehensive consulting.
- The prerequisite is an agreement between the issuer of the delivery note and the driver's forwarding agent that delivery notes may be saved locally.

1. Onboarding at ZeKju, onboarding at Cloud4Log
2. Clarification of data protection aspects
3. Synchronization of the notified delivery time (initially generated when creating the folder in Cloud4Log Add-ons, updated during transport in ZeKju)
4. Transfer of driver information from ZeKju to Cloud4Log Add-ons
5. Download function for delivery notes

Value-add for the customer

All customers:

- Easy communication with the driver during transport.
- Timely updating of the system data via the interface between ZeKju and Cloud4Log Add-ons.
- Offline availability of delivery notes in control situations.
- Use of existing messengers by the driver.

Further information

Registration
https://bvl-digital.de/cloud4log/#anmeldung

ZeKju: https://www.zekju.com

Contact: c4l-support@t-systems.com

Service Description

A widely used source system for delivery notes in the industry is SAP.

In SAP, standard delivery notes can be created using the "Supply Chain Planning and Control" module and the "Delivery Notes" view.

In this service, both Cloud4Log and SAP experts are available for connecting the company-specific systems.

The classic human-readable PDF format can be connected as well as machine-readable communication with the help of XML generators.

Service Features

- Provision and configuration of a solution to import delivery notes in PDF format into Cloud4Log and to export the processed delivery notes to SAP as PDF.
- The processed delivery note with all information (as a merged PDF) is returned to SAP and stored or archived in "Document Management".
- Provision and configuration of a solution to read and process delivery notes in XML format from SAP in Cloud4Log.

Service

1. Recording of requirements together with the consultant and the department.
2. Definition of the connection structure in cooperation with the consultant and the department. This structure is then used to set up the connection between different systems, for example SAP and Cloud4Log.
3. Key mapping between the two systems based on the defined structure. Mandatory fields and the fields to be mapped are listed with important information such as relevant tables, field lengths, field formats, etc.
4. Definition of a technical specification. All necessary technical conditions and requirements are recorded in the form of a document.
5. Establishing the connection between the systems. Aspects such as partner agreements, distribution models and transmission technologies are checked and defined during configuration.
6. Comprehensive verification and guarantee of data integrity through extensive testing of the connection. This ensures that the data is transferred correctly.
7. Supporting customers in the HyperCare phase during the first four weeks of production operations to ensure everything runs smoothly.

Value-add for the customer

Customer focus: Goods issue/dispatcher and goods receipt/recipient, forwarding agents

- Automatic data exchange with SAP via the interface: data on goods issue and receipt can be called up at any time.
- Avoiding manual errors.
- Time savings through machine representation of the data accumulated during the process.

Further information

Cloud4Log Basic:
https://bvl-digital.de/cloud4log/

Registration

https://bvl-digital.de/cloud4log/#anmeldung

Contact: c4l-support@t-systems.com

Cloud4Log Powered by BVL & GS1 Germany *Add-ons*

06 Archiving with ImageMaster

Service Description

ImageMaster has been the T-Systems software for digitizing business processes and document management for over 25 years - from creating and archiving to deleting. Cloud4Log Add-ons and ImageMaster work together in this service.

In a first stage, a company is reserved a client-capable area in ImageMaster. Immediately before the automatic deletion, the delivery notes that have been processed and provided with all attachments are automatically archived in ImageMaster. The company's users can then log into ImageMaster to manage the archived data.

Service Features

- Automatic backup of the delivery notes including all necessary information at the end of the retention period in Cloud4Log Add-ons (delivery notes are kept for exactly 10 weeks after the folder is created).
- Read access to all delivery notes of the respective service recipient already archived in ImageMaster.
- Input of search criteria based on the metadata, display of the corresponding search results.
- Subsequently, possibility of downloading the archived files.

Service

- The prerequisite for using the service is the onboarding of the company to Cloud4Log Basic. We provide comprehensive consulting.
- Prerequisite is the approval of the terms and conditions for the use of the ImageMaster as a separate service.

1. Onboarding ImageMaster with named users of the company, a multi-tenant group is created for the company or for the company's locations
2. Automatic archiving of all delivery notes that belong to a company and its locations, it is possible to remove individual locations
3. Search and download function in ImageMaster

Value-add for the customer

All companies without their own archiving (KMU):
- Timely, automatic transfer of delivery notes to the archive.
- Audit-proof archiving.
- Easy access to the client's archive.
- On request, extension to other events in the process flow is possible.

Further information

Cloud4Log Basic: https://bvl-digital.de/cloud4log/
Registration

https://bvl-digital.de/cloud4log/#anmeldung

ImageMaster

https://www.t-systems.com/de/de/digital/digital-business-transformation/new-work/enterprise-content-management/imagemaster

Contact: c4l-support@t-systems.com

Service Description

The digital delivery note essentially passes through three statuses:

- Delivery note created (→ status open),
- Goods issue ended (passing of risk to the carrier/driver → status "sent"),
- Goods receipt ended (rough check; transfer of risk to goods receipt → status "closed")

There is also the option of completing the (optional) fine-tuning by uploading a document as an attachment to the delivery note. The status remains closed.

Event-related events can be triggered for some of these changes. Thus, for example, a payment order associated with the delivery can be triggered automatically.

Service Features

- Trigger event-related (payment-relevant) event at:
  - Delivery note / folder in the status "sent"
  - Delivery note / folder in the status "closed"
  - The delivery note was subjected to a fine check
- The payment order can be triggered and signaled at a defined time after the occurrence of the event.

Service

- The prerequisite for using the service is the onboarding of the company to Cloud4Log Basic. We provide comprehensive consulting.

1. Initial meeting to coordinate the specific events and determine buffer times
2. Setting up the events and testing
3. Ongoing operation of the service

Value-add for the customer

Consignor and freight forwarder:
- Invoicing and payment as soon as possible
- Early opportunity to deal with losses and complaints

Further information

Cloud4Log Basic:

https://bvl-digital.de/cloud4log/

Registration

https://bvl-digital.de/cloud4log/#anmeldung

Contact: c4l-support@t-systems.com

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08 Business Monitoring

Service Description

- An operational monitoring is provided for the service provider in Cloud4Log Basic. In order to keep an eye on business processes, we offer both general and customer-specific business monitoring with Cloud4Log Add-ons.
- Here, general dashboards for
  - the service provider,
  - the company as well as
  - the individual locations are provided.
- Furthermore, customer-specific monitoring can be evaluated, developed and operated.

Service Features

- Provision of a dashboard for service providers.
- Provision of a standard dashboard for companies and for company locations with the following content:
  - Registered companies, delivery notes in total, folders in total,
  - Delivery notes with recorded load carrier exchange in goods issue/goods receipt in the reporting month,
  - Delivery note status open/sent/closed, folder status open/sent/closed, load carrier goods issue/goods receipt
- Provision of a customized dashboard including data analysis.

Value-add for the customer

Customer focus: GS1 as a service provider; all companies

- Business Process Optimization
- Trend analysis
- Advertising

Service

- The prerequisite for using the service is the onboarding of the company to Cloud4Log Basic. We provide comprehensive consulting.

1. Initial workshop for the selection of standard monitoring or the definition of customer-specific monitoring requirements
2. Development and configuration of standard dashboards
3. Development and configuration, testing and initial support of customer-specific dashboards
4. Provision of standard dashboards
5. Provision of customized dashboards

Further information

Cloud4Log Basic:
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Contact: c4l-support@t-systems.com

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09 RampSens: interface to dock sensors

Service Description

The RampSens product supports yard management by equipping the loading docks of the loading and unloading zones with a special dock sensor system. The core functionality is the detection of objects in front of the dock, approaching/removing trucks and loading/unloading. Accordingly, the dock status is marked as free, switching, occupied or blocked. In addition, the license plate of the truck/trailer is recognized and displayed. Cloud4Log Add-ons is enabled to automatically evaluate and display this and other data from the dock sensors. The dispatcher in incoming goods can optionally (Service 03b) transmit the intended destination dock to the driver in his wallet element and thus optimize the processes in the yard.

Service Features

- If the dispatcher/porter (receiver) wants to assign a dock to the driver, he can enter this in Cloud4Log Add-ons as information about the folder in the inflow and thus have it transferred to the driver's wallet element in time before delivery.
- License plate recognition: RampSens recognizes the license plate of the truck/trailer. This information is automatically transferred to Cloud4Log Add-ons. The license plate can now be compared and displayed with the license plate already recorded for the folder in Cloud4Log Add-ons.
- The current dock can be seen in both the driver's wallet element (Service 03b) and the Cloud4Log Add-ons application.
- Vehicle downtimes can be determined/documented at docks in order to optimize future planning.

Value-add for the customer

Yard management:
- Avoidance of vehicle congestion, double routes and unnecessary delays in front of and on the company premises through early dock allocation and control.
- Optimization of the prescribed break and rest times for drivers.
- Transparency regarding dock occupancy at a glance.
- Automatic exchange of information between Cloud4Log Add-ons and RampSens.

Service

- The prerequisite for using the service is the onboarding of the company to Cloud4Log Basic. We provide comprehensive consulting.
- The prerequisite is the connection of the docks of companies in the supply chain using the RampSens application.

1. Initial discussion to record the specific requirements, selection of the desired information in Cloud4Log Add-ons
2. Elaboration, development and provision of customer-specific scenarios
3. Provision of the information in the frontend and (when booking service 03b) in the wallet element

Further information

Cloud4Log Basic:
https://bvl-digital.de/cloud4log/

Registration
https://bvl-digital.de/cloud4log/#anmeldung

Contact: c4l-support@t-systems.com

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Service Description

Service Features

Value-add for the customer

Service

- The prerequisite for using the service is the onboarding of the company to Cloud4Log Basic ... advise fully.

- The prerequisite is the connection of the ramps of companies in the supply chain by means of RampSens application.

1. Initial discussion to record the specific requirements, selection of the desired information in Cloud4Log Add-ons.

2. Elaboration, development and provision of customer-specific scenarios.

3. Provision of the information in the frontend as well as (when booking service 03b) in the wallet element.

Further information

Cloud4Log Basic:
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Contact: c4l-support@t-systems.com

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Add-ons

Service Description

In the frontend of Cloud4Log Basic, goods receipt and goods issue are always triggered via the registered employee of the consignee or consignor. This means that the driver is always dependent on personal contact with an employee to start the handover or takeover of goods.

With Cloud4Log Add-ons, the driver is additionally offered the possibility to independently announce his presence via the system immediately upon arrival, without first having to contact an employee of the consignee or consignor. Likewise, the driver can independently check and sign the documents accompanying the freight after handing over/accepting the goods.

This separates the handover of the goods, which requires the physical presence of all parties involved, from the individual administrative activity of the driver.

Service Features

- The driver is provided with his own terminal at the location for logging in and out.
- The driver can log in by entering the transport number (outgoing goods) or scanning the QR code (incoming goods) and inform the corresponding employee at the location of his arrival.
- All employees registered at the location are automatically informed by the system about the registration of a driver and can start the handover "at the push of a button".
- After handing over the goods, the driver can independently check and sign the papers accompanying the delivery received, again using the transport number or QR code.

Value-add for the customer

- **Yard-Management (**Goods receipt / goods issue)**:**
  - Decoupling of the driver's arrival from the immediate availability of an employee at goods issue/goods receipt.
  - Time saving for the employee .
  - Goods inwards / goods outwards due to independent checking of the documents accompanying the freight by the driver.
- The driver can check the documents accompanying the goods more conveniently on a larger terminal screen.

11 Self-Service driver (goods receipt / goods issue)

Service

- The prerequisite for using the service is the onboarding of the company to Cloud4Log Basic, we advis[...] fully.
1. Initial discussion: Detailed analysis of the necessary process, creation of hardware requirements.
2. If necessary, adaptation of the software, test
3. Rollout at the agreed locations
4. Supervision of the introduction and pilot operation

Further information

Cloud4Log Basic:
https://bvl-digital.de/cloud4log/

Registration
https://bvl-digital.de/cloud4log/#anmeldung

Contact: c4l-support@t-systems.com

Cloud4Log Powered by BVL & GS1 Germany *Add-ons*

Sustainability of paper delivery notes

Resource consumption of delivery notes exclusively in food retail

1395 tons of CO2
are generated by paper delivery notes

2.7 million kg
Wood is necessary to produce paper delivery notes

1 billion liters
Water is used to produce paper delivery notes

180 m p.a.

✓ **Extension to other documents accompanying the freight**

Sustainability of digital delivery notes

Effects on sustainability through digitization of the delivery note

Future challenges for sustainability

- **Demand for paper** is expected to **double** between 2005 and 2030

- Paper production **requires natural resources** such as wood, water, energy and other materials

- Paper bleaching is the most water-intensive part of the papermaking process, using up to **13 liters of water** to produce a **single A4 sheet**

Sustainability benefits per 1 million delivery notes (A4)

- **Saving of 7.7 tons of CO_2 emissions** by switching from printed paper delivery notes to digital form

- **Reduction of 5,000 kg of paper** → less paper consumption → less paper waste generation

- Increase in water use efficiency by **saving up to 5,984 m³ of water**

Supported Sustainable Development Goals

6 CLEAN WATER AND SANITATION

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

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