VDA / Odette API Project
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The complete digitalisation of the supply chain requires new technological solutions.

Why are the previous solutions no longer sufficient?

**UN/EDIFACT scenario does not reach all partners and does not cover all processes.**

- VDA 4987 - Global DESADV with consignment reference
- VDA 4945 - IFTSTA mostly with vehicle reference
- Track & Trace platform
- Carrier

- Consignor
- Freight forwarder
- Carrier

- Transport status often only with vehicle reference
- Correctness of content of DESADV can only be checked upon receipt of goods

**Digitalisation = paperless processes**

But: tons of paper are printed, transported and then destroyed every day:
- Roll cards
- Loading lists
- Waybills
- Delivery notes
- Loading plans

How do we get to a digital transport file?
The solution was developed together with all stakeholders involved.

- AUDI
- BMW
- DAIMLER (MERCEDES BENZ)
- PORSCHE
- VOLKSWAGEN
- DRÄXLMAIER
- ROBERT BOSCH
- SCHAEFFLER

**OEM and supplier**

- DUVENBECK
- ALPENSPED
- KÜHNE & NAGEL
- ELSEN

**Transport service provider**

- CONIZI / FLEETBOARD
- GEFEG
- ICL SYSTEMS
- LABAL
- RIO
- SEEUBURGER
- WSW

**IT companies**
REST APIs offer the best conditions for the comprehensive integration of all partners.

REST API is the best way to bridge the gaps between established systems and new, internet-based services.

- Small, lightweight information modules and software modules are possible.
- With HTTP, APIs use the native Internet protocol and can be used by both browsers and software modules.
- REST API can be easily integrated into apps for mobile devices.

- API also facilitate the conversion of processes to electronic documents.
- With API, JSON data can be transferred (the standard for mobile devices).
- Operating system independent:
  - Android
  - iOS
  - Windows
  - Linux
- Automated generation of software modules possible
Existing messages and solutions are not replaced but complemented in a targeted way.
In step 1, a toolbox for API was developed.

<table>
<thead>
<tr>
<th>Description</th>
<th>UN/CEFACT DATA MODEL</th>
<th>UN/CEFACT API DESIGN RULES</th>
<th>OPEN API V3.0 SPECIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>The required data structures are to be used and accepted internationally. Therefore, artefacts from the UN/CEFACT Reference Data Model for transport (MMT) are used.</td>
<td>Here, too, the drafts of the UN/CEFACT experts were used as the basis for the VDA recommendation. Future adjustments are possible.</td>
<td>From this, programme codes can be generated automatically in various programming languages for implementation.</td>
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<td>Result</td>
<td>There is a uniform framework for the specification of API regardless of the specific application area (logistics, finance, master data, etc.). The VDA/Odette recommendation uses international standards as far as possible.</td>
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In step 2, concrete use cases were defined and implemented.

Techniques of "rapid prototyping" were used.

From a list of twelve user stories in the area of Transport Track & Trace, use cases were defined that are to be mapped with an API interface.
A clear definition of documents and objects was necessary

Definition
Result: OpenAPI 3 API-Specification

- Process description
- Data model
- Functional model
- YML file
- Available on GitHub, Swagger and VDA

The specification has been tested in a prototype and will be validated in pilot applications in the near future.
Next step - pilot implementation

User Stories

As a consignor of goods, I would like to be able to "marry" my consignment number with the registration number of the collecting means of transport and send it to the repository.

As a driver, I would like to be able to marry the consignment number with my registration number and transfer the consignment to the repository as loaded (or means of transport departed).

As the recipient of the goods, I would like to be able to determine the means of transport used with the consignment number of the supplier.

Option: As a carrier, I would like to be able to transmit the current status of a consignment or means of transport to the repository at any time.

Option: As the recipient of the goods, I would like to be able to determine the status of the transport at any time using the consignment number (or indicator).