VDA / Odette API Project

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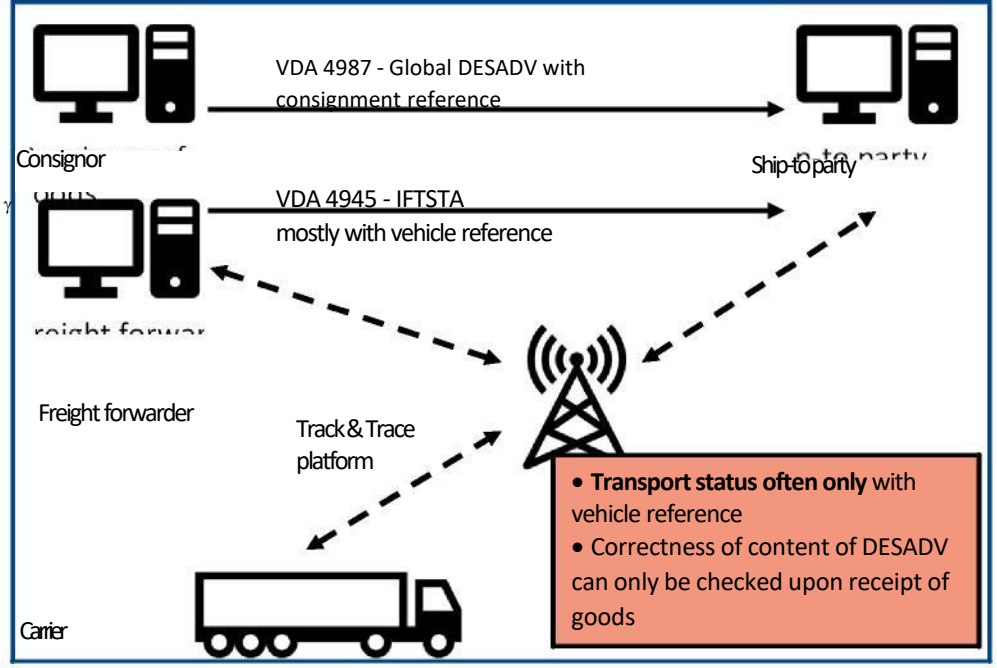
The complete digitalisation of the supply chain requires new technological solutions.

Why are the previous solutions no longer sufficient?

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



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

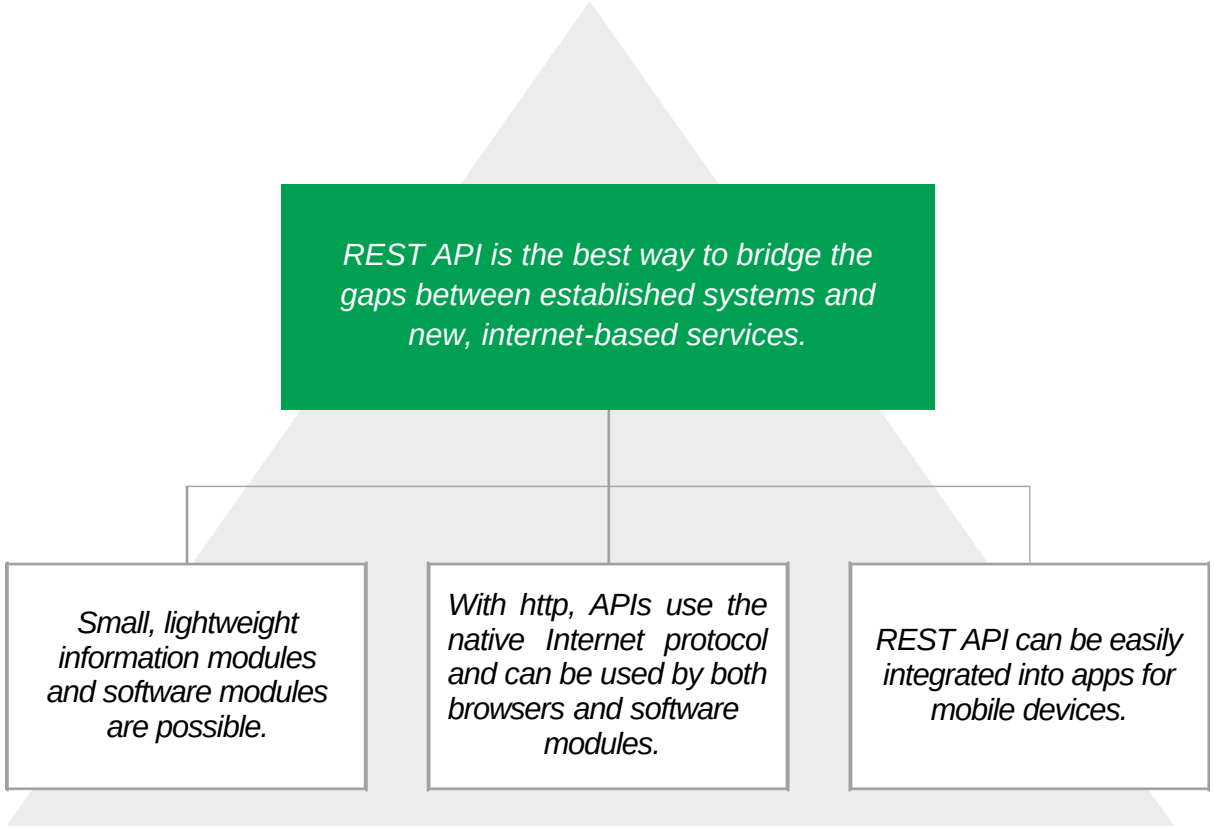
- DUVENBECK
- ALPENSPED
- KÜHNE & NAGEL
- ELSEN

Transport service provider

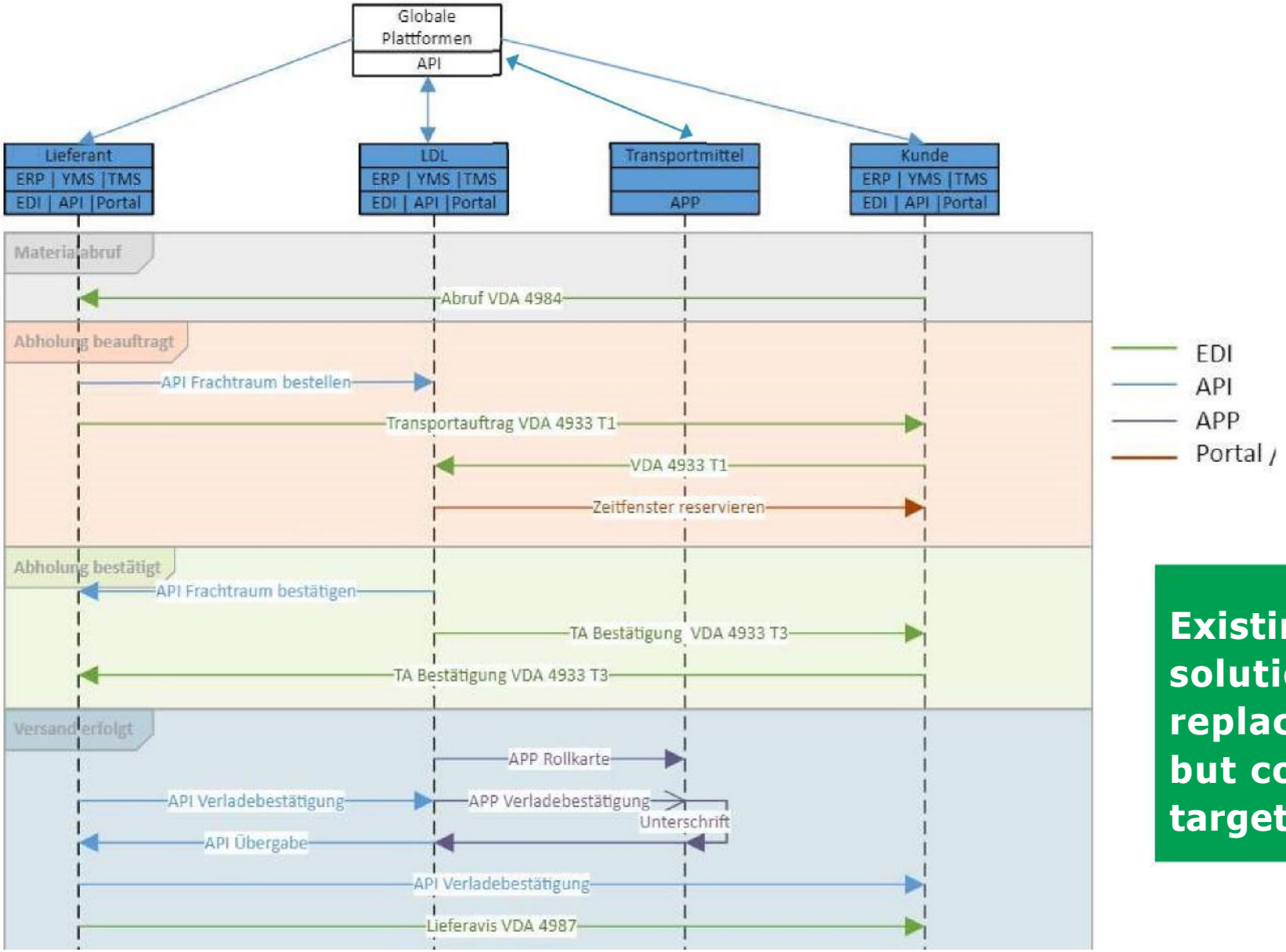
- CONIZI / FLEETBOARD
- GEFEG
- ICL SYSTEMS
- LABAL
- RIO
- SEEBURGER
- WSW

IT companies

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



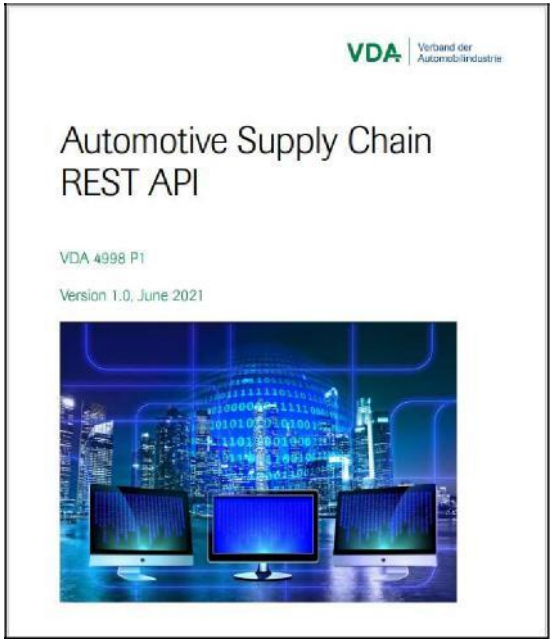
- API also facilitate the conversion of processes to electronic documents.
- With API, JSON data can be transferred (the standard for mobile devices)
- Operating system independent:
  - Android
  - iOS
  - Windows
  - Linux
- Automated generation of software modules possible



Existing messages and solutions are not replaced
but complemented in a targeted way.

In step 1, a toolbox for API was developed.

	UN/CEFACT DATA MODEL	UN/CEFACT API DESIGN RULES	OPEN API V3.0 SPECIFICATION
Description	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.	Here, too, the drafts of the UN/CEFACT experts were used as the basis for the VDA recommendation. Future adjustments are possible.	From this, programme codes can be generated automatically in various programming languages for implementation.
Result	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.		



In step 2, concrete use cases were defined and implemented.

Techniques of "rapid prototyping" were used.

Reservation of transport capacity

Confirmation of transport capacity

Establish a link between consignment and means of transport

Transport status including deviation target/actual quantities

Handover/Takeover notification

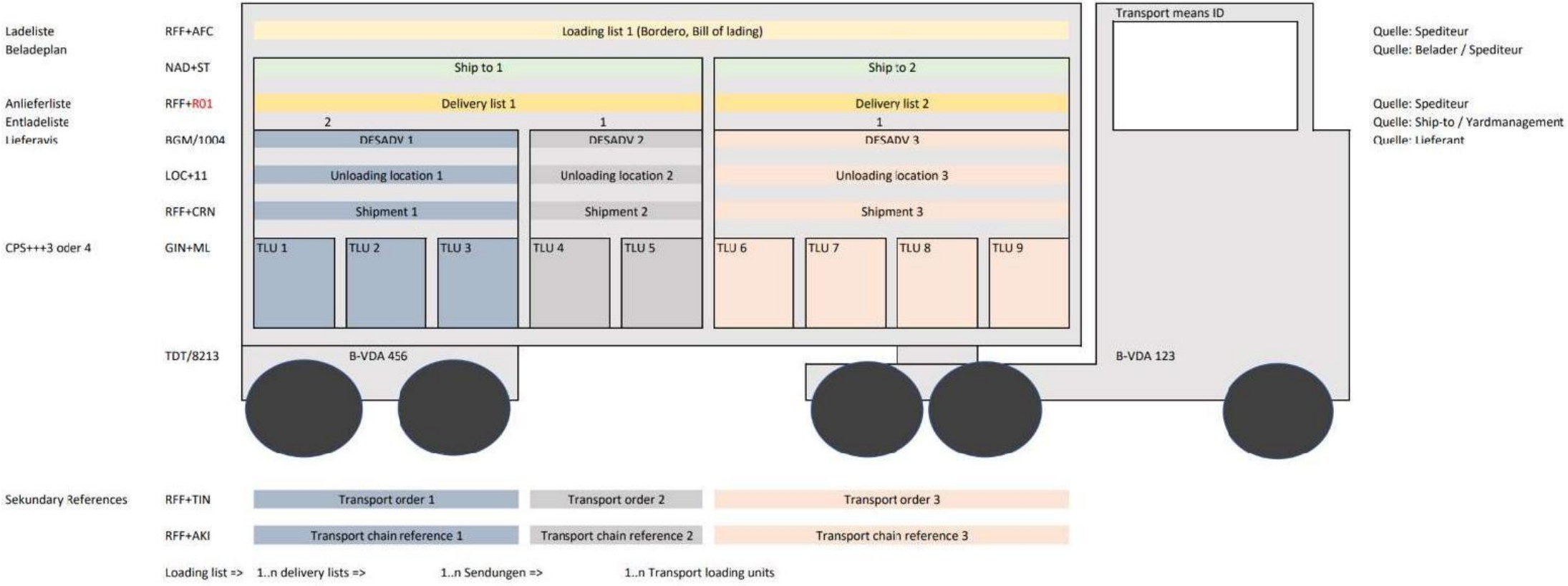
Damage notification and report of IoT devices

Definition of a Minimum Viable Product

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.

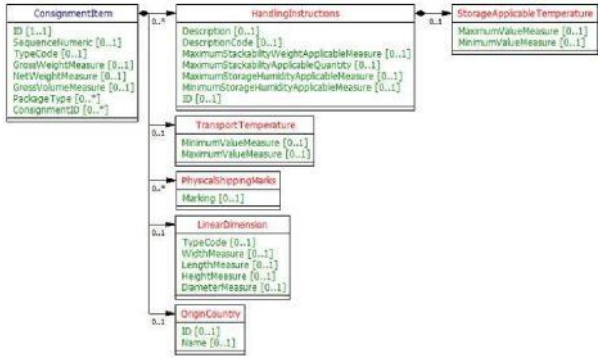
A clear definition of documents and objects was necessary

Definition



Result: OpenAPI 3 API-Specification

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



[transport-api_for_automotive_industry | 1.0.0 | JoergWaltherOdette | SwaggerHub]

[Odette-International-Ltd/transport-track-and-trace-api (github.com)]

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).