

# In-Car Data 2021



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#### 1 INTRODUCTION

#### 1.1 What is the Car Remarketing Association Europe?

In the summer of 2015, CARA, the Car Remarketing Association Europe, was founded.

CARA was established as a non-profit organization to support the market for used cars.

Our members each have a large footprint within the European market and are mainly active in sectors such as car manufacturing, fleet management, leasing, car auctions, car service providers and car data management. Of course, European dealers of used cars are also very welcome within our association.

In addition, we have support partners who are very interested in our activities but who are not included in the foregoing support category.

We come forward as an independent source within the European Car Remarketing world. In other words, a common voice towards the market, partners, and suppliers.

We support the industry standards and harmonize processes, without interfering with the policies of companies.

The Car Remarketing Association has set various goals. Some of these are:

- → Representing the interests of the car marketing industry vis-à-vis European Union institutions and international institutions (such as the European Commission, the European Parliament, the Council of the European Union, tax authorities, etc.).
- → Inform members about European or international developments that may affect the remarketing industry.
- → Coordinate the views of the members in order to create common positions and a common voice.
- → Promote the car remarketing market at European and international level.
- → Organize events on current topics and / or for a specific audience.
- → Provide a platform for members to share views and best practices and to network.

#### 1.2 Objectives and Activities

We as an association have clear goals about the remarketing industry. Therefore, we want to achieve more and deliver what we, our members and partners have all agreed upon.

#### 1.2.1 Data & Correct Mileage Reading

The goal of this work group to contribute to the establishment of a European database to provide trusted mileage information to used car buyers.

The work group provides a forum to define the requirements and recommendations of its members and interested parties in the remarketing area to such databases. Both legislative as well as commercial initiatives are considered by the work group.

You may read all about it in the <u>CARA Europe Position Paper regarding Mileage Fraud</u>.



#### 1.2.2 e-CMR

The objective of this work group is to identify and find solutions for European key issues on supply chain processes.

VAT fraud, lack of transparency, insufficient lead times and associated logistic costs are topics of this work group as well as pushing for a validation of digitized documents needed for x-border business.

The work group will concentrate on defining the requirements and processes needed to solve above mentioned challenges and to recommend tools to ensure integrity and transparency for the remarketing industry.

More information on this topic is available on our website.

#### 1.2.3 CARA Academy

In order to return the knowledge and skills of the association and of our members to the market, our association is currently working on creating an Academy. To achieve this objective, the Academy offers courses, trainings and workshops in the market with regard to the remarketing of vehicles.

Find out all about the CARA Academy on our website.



#### 2 STANDPOINT TO ACCESS IN-CAR DATA

#### 2.1 Disclaimer

This document is a legally non-binding expression of the opinion and its resulting recommendation of the non-for-profit organization CARA Europe, based on the consideration of its members, executed through a workgroup. It shall not establish a legally binding document for CARA Europe, any of its members and any recipient. CARA Europe and its members shall not have any obligations or liabilities resulting from this document. As the document is public, no recipient of the document can establish any rights, claims or damage compensation against CARA Europa and any of its members. The document does not constitute in any form a legal consultancy or comparable services under local member state or EU legislation.

#### 2.2 Concern of the workgroup In-Car Data

Future business models in the mobility area will depend more and more on access to car data. Connected, Electric, Shared and Autonomous vehicles generate a variety of telemetric data such as:

- → Geolocation and Routes
- → Driving Data (e.g., using times, idle times, utilization)
- → Road and Traffic Data (e.g., quality of road, traffic congestions, speeds)
- → Vehicle Technical Data (e.g., consumption & emissions, trouble codes, wear and tear)

These so-called "in-car data" are the focus subject of this paper. Extra-car data such as VIN decoding/ Equipment etc. are a secondary subject.

In-car-data can be stored in the car or at external databases. CARA observes (but is agnostic to) the three principal models of storage and processing such as Extended Vehicle (ExVe), Shared Data Server (SDS) or In-Vehicle Platform (IVP) discussed in the public.<sup>1</sup>

In-car data can be personal data and needs to be processed with respect to GDPR and e-privacy directive, see paragraph 5.3 CARA position with regard to GDPR/e-Privacy.

#### 2.3 Mission of the workgroup In-Car-Data

The CARA workgroup defines a standpoint of CARA Europe regarding the access and use rights to in-car generated data from vehicles owned, operated and/or traded by CARA members and the framework conditions needed to support the fleet and remarketing business.

The access to in-car data to the remarketing value chain delivers savings for consumers and enterprises, enhances competition, supports environmental goals of emission reduction, raises values of used assets to support the circular economy approach while ensuring consumers freedom of choice on data privacy.

<sup>&</sup>lt;sup>1</sup> See FIA Region I Policy Brief <a href="https://www.fiaregion1.com/wp-content/uploads/2017/05/20160412fia-policy-brief">https://www.fiaregion1.com/wp-content/uploads/2017/05/20160412fia-policy-brief</a> on car connectivity fin.pdf

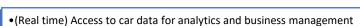


The standpoint shall be published and used to contribute to the discussion process of legislation on a European or national level. The standpoint shall be shared with other associations for mutual support in the subject.



#### 3 IN-CAR DATA ACCESS AND BENIFITS

# 3.1 In-Car Data Access's Requirements for CARA-members during remarketing Life Cycle of a car



- Communication to driver
- Provision of services:
- •OTA\* diagnosis and updates
- •Steering of repair and maintenance
- •Enhanced services (e.g. pay-as-you-drive services (Insurance, mobility services, real CO2 taxation)
- •RV management and forecast based on real use
- Freedom of choice where to store and process data
- •Ensure data privacy (GDPR) compliance
- New models of vehicle owner-/usership

- •Depersonalization of vehicle (erase data from phone, GPS, entertainment etc)
- •Keep required data of vehicle history (mileage, maintenance & repair; inspections)
- Ensure data access is transparent at any stage and transferable
- •To improve understanding of the day-to-day usage of the vehicle

#### De-fleeting

New car / In-use

initial owner

- Offer maximum transparency to buyers
- Ensure data access is possible at any stage of remarketing
- Ensure no-risk transaction (with regard to GDPR, Vehicle history (maintenance &mileage))
- Enhanced transparency about internal vehicle conditions, reduce risk about bad surprises

# Remarketing transaction

- Access to vehicle history (irrevocable from previous owners/drivers)
- •Continue history and services
- Freedom of choice where to store and process data
- Freedom of choice where to service and repair the vehicle (incl OTA)

New (final) owner

<sup>\*</sup> OTA = Over-the-air



#### 3.2 In-Car Data Remarketing Value Chain's Benefits

- → Pay-as-you-drive offers for Insurance and finance rates:

  Savings to the consumer and enterprises, enhanced competition.
- → Enhanced fleet planning, forecast of need for maintenance, repair or replacement, optimization of residual value management:

Savings to consumer and enterprises, environmental benefits)

→ External storage of car maintenance and mileage data:

Customer and competition benefit

→ External storage of maintenance of residual value due to enhanced trust, better and prolonged use of assets during lifetime:

Circular economy

→ OEM independent management of personal data access and management between Owners, Keepers and Drivers:

Consumer benefit on data privacy

- → Enhanced offering of in-car services with higher competition:

  Competitive benefit: OEM, Owner and 3rd parties can offer services.
- → Real Driving CO2 Emission taxation:

  Environmental benefits

#### 3.3 In-Car Data Access for CARA members - Key Conclusions

There is no legal definition of data ownership, see paragraph 6. Data Ownership Issue. Data processing legislation defines data access and deletion rights.

CARA members have identified an open list, the "CARA-List of In-Car Data", of data elements to be considered during the vehicle lifetime, with regard to remarketing.

CARA-List makes a clear distinction between different data categories to ensure freedom of choice for repair & maintenance and a risk-minimal remarketing of the vehicles, increasing value and enhancing the circular economy of the mobility sector.

CARA Members require a free choice of the owner for an independent data storage and processing of the vehicle data such as correct mileage, maintenance data, emission, and statutory compliance etc. This is in line with consumer protection rights, environmental protection requirements with regards to emissions, and to support the circular economy character of the remarketing business.

The owner is the best party to manage data privacy concerns with regard to drivers and keepers.



# 3.4 CARA's Key Requirements to Manage In-Car Data for the Remarketing of Used Vehicles

The key players in the remarketing value chain need autonomous<sup>2</sup> and secure<sup>3</sup> access to in-car data to create added-value based on the digital data cars generate while in use.

Owners of the vehicles should have the ultimate right to define the access, management, use, storage, and processing of in-car data, respecting the data privacy rights of drivers.

In-car data access rights need to be maintained during the remarketing process by a storage and processing of choice.

Owners should have the right to allow, control or restrict access to in-car data and systems and pass this access to downstream customers.

Owner-Keeper-Driver relation with regard to data management needs a clarification to empower owners' rights to ensure consumer protection, data privacy and maintain residual value of used cars.

<sup>&</sup>lt;sup>2</sup> Independent from the vehicle manufacturers.

<sup>&</sup>lt;sup>3</sup> Based on latest security technologies and processes available in the competitive market.



#### 4 CARA-LIST OF IN-CAR DATA

CARA has agreed and proposed an open list of car data types that should be considered during the lifetime and the remarketing of a car.

The list is the base for CARA's standpoint how data fields shall be handled with regard to data privacy and data availability.

Each Data field is assigned to:

- → Car data field category (7 existent)
- → Car data type (5 existent)
- → Car data transaction type (relevant for the assessment of the use of data 3 existent)
- → Car data volume type (3 existent)
- → Car data volume velocity type (3 existent)
- → Car data relevance for remarketing (4 existent)

The complete list of In-Car Data can be found in Annex 2 and is available in Excel format upon request.

#### 4.1 Data Field Category

Each Data field is assigned to one of the following Data Field Categories:

Nr	Data Field Category	Description and Comment
1	Invariant Vehicle Base data	Data originating from the manufacturer or Importer, usually invariant during lifetime unless car is modified or altered with regards to the type of approved vehicle.
2	Registration Vehicle Base Data	Data generated during the registration or putting-into- operation of a vehicle.
3	Vehicle Data Static when not in use	Vehicle generated data that is usually not changing when the car is not in use.
4	Vehicle Data dynamic when in use	Vehicle generated data that is changing while in operation.
5	Maintenance and Repair Data	Data generated by the performance of maintenance and repairs at workshops.
6	Remarketing Specific Processing Data	Data that is generated by Owners, keeps, or assigned service providers during the remarketing process.
7	PTI related data	Data that relates to the status and outcomes of the periodical technical inspection as required by the legislation the car is registered under.



#### 4.2 Data Type

Each Data field is assigned to one of the following Data Types:

Data Categories	Data Category Description
LEGAL	Data created from governmental processes with regards to the specific vehicle.
BASE	Vehicle Base data, usually from OEM.
IMAGE	Image Data created when vehicle is exposed to image creating devices, especially during remarketing.
DATES	Calendar Dates created during the lifetime of a vehicle with relevance for the car remarketing and ownership.
USE	Data created using the vehicle from the vehicle itself or from processes the vehicle is involved with.

#### 4.3 Data Transaction Type

The Data Transaction Type is the most important factor in the CARA-List of Car Data, this is relevant for the assessment of the use of data.

Each Data field is assigned to one of the following Data Transaction Types:

Acronym	Data Transaction Type	Description & Assessment	General rule of use
VTD	Vehicle Technical Data	Public data with no restriction rights of the owner, keeper, or driver.	Publicly available without consent of driver/keeper/owner.
TRANS	Transaction Data	Data generated by the vehicle while in use, originating from the car itself or transactions (services or products) related to the car.	Vehicle Owner discretion data: Vehicle Owner can decide about the use of the data without consent of the keeper or the driver.
PERSONAL	Discretional Personal Data  Data in conjunction with the car that refer to a private individual or can be related to it, with reasonable efforts.		Consent of driver, keeper and owner required to process data. GDPR rights of all affected individual apply.



#### 4.4 Data Volume Type

Each Data field is assigned to one of the following Data Volume Types:

Data Volume Type	Meaning
Unique identifier	Primary key of all car related data, a unique identifier.
Unique data set	Data set is usually containing one data point such as a date.
Multiple data sets/points	Data set usually consist out of multiple data points such as dates, amounts, text fields, Boolean fields etc.

#### 4.5 Data Volume Velocity Type

Each Data field is assigned to one of the following Data Volume Velocity Types:

Data Volume Type	Meaning
Static	Unusually unchangeable during the lifetime of a car.
Dynamic	Dynamic but irrelevant for historic recording
Dynamic & Historic	Dynamic and relevant for a history recording

### 4.6 Data Relevance for Remarketing Type

Each Data field is assigned to one of the following Data Transaction Types:

Relevant for remarketing	Meaning
Must	Must have access to the data to be able to remarket the data
Value	Data relevant to remarket a vehicle with significance to the residual value
Nice	Nice to have
None	Irrelevant for remarketing



#### 4.7 Car Data Example

As example, the 'transmission' of a car is listed as follows in CARA's list of In-Car Data:

Transmission							
Field category	Invariant Vehicle Base data						
Туре	Base						
Transaction type	VTD						
Volume type	Unique data set						
Volume velocity type	Static						
Relevance for remarketing	Must						

The complete list of In-Car Data can be found in Annex 2 and is available in Excel format upon request.



# 5 CARA POSITION

#### 5.1 CARA position on Access to Car Data

- → CARA suggest establishing a common understanding within European legislation about the Car Data transaction Types.
- → CARA requires access to Vehicle Technical Data to be publicly available without rights of third parties to limit the access.
- → CARA suggest that access to Transactional Data shall be available based on the sole discretion of the vehicle owner.
- → CARA supports the current legislation that access to Personal Data is based only on the discretion of the affected individuals, which are owner, keeper, and driver of a vehicle.

#### 5.2 CARA position regarding other initiatives

- → CARA supports the "Manifesto for fair Digitalization Opportunities" from AFCAR Alliance, Leaseurope and other associations.
- → CARA is technology agnostic and does not favour any technological solution if the freedom of access, process and use of data is ensured.
- → CARA requires a consideration of the transfer of data access, storage, and management rights during the remarketing process:
  - Limitation of VIN related data as personal data to personal information to categories with highest risks of data processing.
  - VIN related data generated by the car as machine generated data vs real personal data.
  - Owner- keeper-driver need a secure process to pass the right of data use irrevocably (or at a cost if revoked) to a vehicle buyer.

#### 5.3 CARA position with regard to GDPR/e-Privacy

- CARA shall make a clear proposal (respecting GDPR and E privacy directive) what data shall be considered personal data and what are car related data at the time of remarketing of the vehicle.
- There should be a clear data structure which separate personal data (rights of the individual affected apply) and pure vehicle related data (rights do not apply)
- → A safe legal basis is required to ensure that vehicle data and histories are protected from individual rights.
- → CARA members should make sure that all personal data are deleted when car change the owner.



#### **6 DATA OWNERSHIP ISSUE**

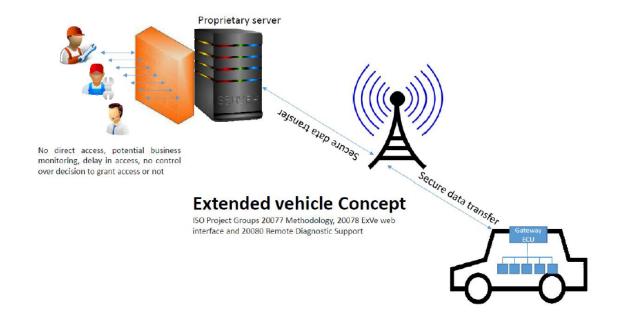
- → Owner keeper- driver dilemma.
- → Ownership of data is legally not defined<sup>4</sup>.
- → Data access is regulated by GDPR, Business Secrecy laws, commercial laws.
- → Private individual rights to delete data can lead to a substantial loss of information if car-generated data is considered personal data in full extend.
- → Gatekeeper functions such as ExVe can restrict private individuals or companies from using data of their vehicles.

<sup>&</sup>lt;sup>4</sup> see Woger <a href="https://www.cmshs-bloggt.de/tmc/data-ownership-dateneigentum/">https://www.cmshs-bloggt.de/tmc/data-ownership-dateneigentum/</a> or Betriebsberater 2019/22: Schalast Rechtsanwälte; Kornmeier / Baranowski
<a href="https://www.schalast.com/Uploads/Dokumente/Kornmeier\_Baranowski1.pdf?m=1559035983&">https://www.schalast.com/Uploads/Dokumente/Kornmeier\_Baranowski1.pdf?m=1559035983&</a>

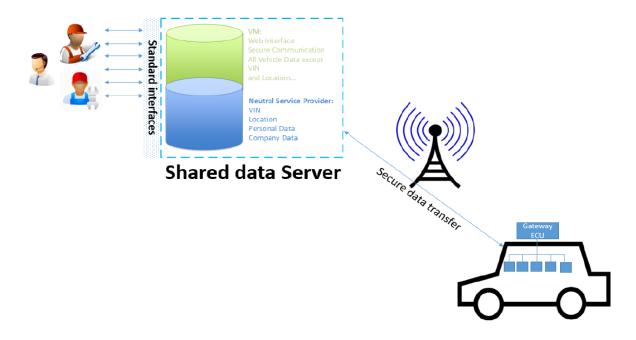


# 7 CAR CONNECTIVITY MODELS<sup>5</sup>

#### 7.1 OEM Model



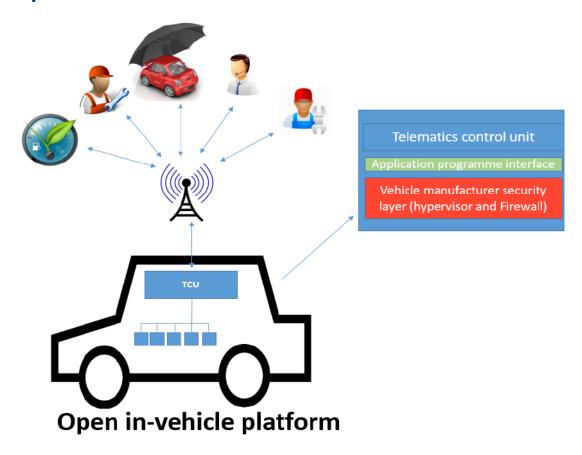
#### 7.2 Provider Model



<sup>&</sup>lt;sup>5</sup> https://www.fiaregion1.com/wp-content/uploads/2017/05/20160412fia policy brief on car connectivity fin.pdf



# 7.3 Open Market Model





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#### **Annex 2. CARA-List of In-Car Data**

# Field Category 1. Invariant Vehicle Base data

Data Field Category Nr.	Description of Data Field Category and Data fields	Data type	Data Transaction Type	Data volume Type	Static, Dynamic, Historic	Relevant for Remarketing
1.1	VIN	Base	VTD	Unique identifier	Static	Must
1.2	Engine	Base	VTD	Unique data set	Static	Must
1.3	Transmission	Base	VTD	Unique data set	Static	Must
1.4	Equipment	Base	VTD	Multiple data sets/ points	Static	Must
1.5	Options Installed	Base	VTD	Multiple data sets/ points	Static	Must
1.6	Production Date	Dates	VTD	Unique data set	Static	Must
1.7	Data from the COC Certificate (e.g., Consumption data as per homologation; Emission Data (Classification and CO2 levels))	Legal	VTD	Multiple data sets/ points	Static	Must
1.8	Data from Registration document I and II except keeper data	Legal	VTD	Multiple data sets/ points	Static	Must
1.9	Insurance Classification	Base	VTD	Multiple data sets/ points	Dynamic	Must



# Field Category 2. Registration Vehicle Base Data

Data Field Category Nr.	Description of Data Field Category and Data fields	Data type	Data Transaction Type	Data volume Type	Static, Dynamic, Historic	Relevant for Remarketing
2.1	1st Registration date	Dates	VTD	unique data set	static	must
2.2	Warranty Start Date	Dates	VTD	unique data set	static	value
2.3	Selling Dealer	Base	VTD	unique data set	static	value
2.4	number plate	Legal	PERSONAL	multiple data sets/ points	dynamic & historic	value
2.5	Keeper Names and Address	Legal	PERSONAL	multiple data sets/ points	dynamic & historic	none
2.6	Dates of changes of registration	Dates	VTD	multiple data sets/ points	dynamic & historic	must
2.7	Date of deregistration	Dates	VTD	multiple data sets/ points	dynamic & historic	must
2.8	Date of scrapping/stolen/ total loss	Dates	VTD	unique data set	dynamic & historic	must
2.9	Vehicle Status in operation/scrapped, stolen, total loss	Legal	VTD	unique data set	dynamic & historic	must
2.10	Number of previous keepers	USE	VTD	unique data set	dynamic & historic	must
2.11	Use as Hire or commercial transportation car	Legal	VTD	unique data set	dynamic & historic	must



# Field Category 3. Vehicle Data Static when not in use

Data Field Category Nr.	Description of Data Field Category and Data fields	Data type	Data Transaction Type	Data volume Type	Static, Dynamic, Historic	Relevant for Remarketing
3.1	Odometer reading (mileage for connected cars could also be driven mileages)	USE	TRANS	multiple data sets/ points	dynamic & historic	must
3.2	Odometer reading event type (registration, PTI, insurance, repair/maintenance, public, user, other)	USE	TRANS	multiple data sets/ points	dynamic & historic	must
3.3	Vehicle location data / GPS tracking singular or in conjunction with any other data categories	USE	PERSONAL	multiple data sets/ points	dynamic & historic	none
3.4	Average real Consumption and/or CO2 emission	USE	TRANS	multiple data sets/ points	dynamic & historic	value
3.5	Acceleration / Deceleration exceptions (exceed specified limits)	USE	PERSONAL	multiple data sets/ points	dynamic & historic	value
3.6	Lateral Forces exceptions (exceed specified limits)	USE	PERSONAL	multiple data sets/ points	dynamic & historic	value
3.7	Braking forces exceptions (exceed specified limits)	USE	PERSONAL	multiple data sets/ points	dynamic & historic	value
3.8	Revolution exceptions (over rev of engine)	USE	PERSONAL	multiple data sets/ points	dynamic & historic	value
3.9	Permanent Dignostic Trouble Codes (DTC)	USE	PERSONAL	multiple data sets/ points	dynamic & historic	value
3.10	Permanent Car system status data	USE	PERSONAL	multiple data sets/ points	dynamic & historic	nice
3.11	Amount of Data transferred within timeframe	USE	PERSONAL	multiple data sets/ points	dynamic & historic	none
3.12	Battery State of Health	USE	TRANS	multiple data sets/ points	dynamic & historic	value
3.13	Battery State of Charge	USE	TRANS	multiple data sets/ points	dynamic	value



Data Field Category Nr.	Description of Data Field Category and Data fields	Data type	Data Transaction Type	Data volume Type	Static, Dynamic, Historic	Relevant for Remarketing
3.14	Fuel levels (petrol, diesel, CNG, LPG, etc)	USE	TRANS	multiple data sets/ points	dynamic	value
3.15	Oil Levels (engine oil, transmissions etc)	USE	TRANS	multiple data sets/ points	dynamic & historic	value
3.16	Oil remaining lifetimes	USE	TRANS	multiple data sets/ points	dynamic & historic	value
3.17	tires installed	USE	TRANS	multiple data sets/ points	dynamic	value
3.18	tire type summer winter all year	USE	TRANS	multiple data sets/ points	dynamic	value
3.19	tires brand	USE	TRANS	multiple data sets/ points	dynamic	value
3.20	wheel rims	USE	TRANS	multiple data sets/ points	dynamic	value
3.21	Entertainment setting (radio tuned, playlist, connected devices etc)	USE	PERSONAL	multiple data sets/ points	dynamic & historic	none
3.22	Content (Navigation, Contacts, files, and messages stored from mobile devices)	USE	PERSONAL	multiple data sets/ points	dynamic & historic	none
3.23	Software versions of ECUs and other electronic components in the car	USE	TRANS	multiple data sets/ points	dynamic & historic	nice
3.24	Status of pay-per-use functionalities in the car	USE	TRANS	multiple data sets/ points	dynamic & historic	value
3.25	Vehicle Damage Status as defined by actual Owner	USE	TRANS	multiple data sets/ points	dynamic & historic	value
3.26	Settings of connectivity and data privacy of car	USE	PERSONAL	multiple data sets/ points	dynamic	none



# Field Category 4. Vehicle Data dynamic when in use

Data Field Category Nr.	Description of Data Field Category and Data fields	Data type	Data Transaction Type	Data volume Type	Static, Dynamic, Historic	Relevant for Remarketing
4.1	Vehicle location data / GPS tracking singular or in conjunction with any other data categories	USE	PERSONAL	multiple data sets/ points	dynamic & historic	none
4.2	Actual and average real Consumption and/or CO2 emission	USE	PERSONAL	multiple data sets/ points	dynamic & historic	none
4.3	Acceleration / Deceleration actual	USE	PERSONAL	multiple data sets/ points	dynamic & historic	none
4.4	Lateral Forces exceptions actual	USE	PERSONAL	multiple data sets/ points	dynamic & historic	none
4.5	Braking forces exceptions actual	USE	PERSONAL	multiple data sets/ points	dynamic & historic	none
4.6	Revolution actual	USE	PERSONAL	multiple data sets/ points	dynamic & historic	none
4.7	Battery State of Health actual	USE	PERSONAL	multiple data sets/ points	dynamic & historic	none
4.8	Battery State of Charge actual	USE	PERSONAL	multiple data sets/ points	dynamic & historic	none
4.9	Fuel levels actual	USE	PERSONAL	multiple data sets/ points	dynamic & historic	none
4.10	Oil Levels actual	USE	PERSONAL	multiple data sets/ points	dynamic & historic	none
4.11	Oil remaining lifetime actual	USE	PERSONAL	multiple data sets/ points	dynamic & historic	none
4.12	Coolant temperature actual	USE	PERSONAL	multiple data sets/ points	dynamic & historic	none
4.13	Charging pressure actual	USE	PERSONAL	multiple data sets/ points	dynamic & historic	none



Data Field Category Nr.	Description of Data Field Category and Data fields	Data type	Data Transaction Type	Data volume Type	Static, Dynamic, Historic	Relevant for Remarketing
4.14	tire pressure actual	USE	PERSONAL	multiple data sets/ points	dynamic & historic	none
4.15	Status of vehicle equipment (e.g., on/off; locked/Open: doors, lights, HVAC, seats etc) actual	USE	PERSONAL	multiple data sets/ points	dynamic & historic	none
4.16	Radio tuned	USE	PERSONAL	multiple data sets/ points	dynamic & historic	none
4.17	Phone/ Mobile Device connected data (type, Operation system etc)	USE	PERSONAL	multiple data sets/ points	dynamic & historic	none
4.18	Messages from Phone / mobile device	USE	PERSONAL	multiple data sets/ points	dynamic & historic	none
4.19	Apps installed (Carplay/Android Auto)	USE	PERSONAL	multiple data sets/ points	dynamic & historic	none
4.20	Contacts from mobile devices	USE	PERSONAL	multiple data sets/ points	dynamic & historic	none
4.21	Internet Connection data (when, time, data volume)	USE	PERSONAL	multiple data sets/ points	dynamic & historic	none
4.22	Internet Connection data (IP Address)	USE	PERSONAL	multiple data sets/ points	dynamic & historic	none
4.23	Phone/ Mobile Device connection data (when, time)	USE	PERSONAL	multiple data sets/ points	dynamic & historic	none
4.24	Phone/ Mobile Device connection data (numbers dial/ received)	USE	PERSONAL	multiple data sets/ points	dynamic & historic	none
4.25	Diagnostic trouble codes (DTC)	USE	TRANS	multiple data sets/ points	dynamic & historic	none
4.26	Error/ trouble Messages from vehicle	USE	TRANS	multiple data sets/ points	dynamic & historic	none
4.27	Warnings displayed to driver (malfunctions, weather)	USE	TRANS	multiple data sets/ points	dynamic & historic	none



Data Field Category Nr.	Description of Data Field Category and Data fields		Data Transaction Type			Relevant for Remarketing
4.28	Events recorded of malfunctions of vehicle functions (except location data)	USE	TRANS	multiple data sets/ points	dynamic & historic	none



# Field Category 5. Maintenance and Repair Data

Data Field Category Nr.	Description of Data Field Category and Data fields	Data type	Data Transaction Type	Data volume Type	Static, Dynamic, Historic	Relevant for Remarketing
5.1	Maintenance event type	USE	OFFLINE	multiple data sets/ points	dynamic & historic	value
5.2	Maintenance event date	USE	OFFLINE	multiple data sets/ points	dynamic & historic	value
5.3	Maintenance Event repair operation (Labour operation)	USE	OFFLINE	multiple data sets/ points	dynamic & historic	value
5.4	Maintenance Event repair replacement (part)	USE	OFFLINE	multiple data sets/ points	dynamic & historic	value
5.5	Maintenance repair invoice amount	USE	OFFLINE	multiple data sets/ points	dynamic & historic	nice
5.6	Maintenance workshop name, address, and type (OEM/IAM)	USE	PERSONAL	multiple data sets/ points	dynamic & historic	none



# Field Category 6. Remarketing Specific Processing Data

Data Field Category Nr.	Description of Data Field Category and Data fields	Data type	Data Transaction Type	Data volume Type	Static, Dynamic, Historic	Relevant for Remarketing
6.1	Whole vehicle image	Image	OFFLINE	multiple data sets/ points	dynamic & historic	must
6.2	part vehicle image	Image	OFFLINE	multiple data sets/ points	dynamic & historic	value
6.3	damage image	Image	OFFLINE	multiple data sets/ points	dynamic & historic	must
6.4	detail image	Image	OFFLINE	multiple data sets/ points	dynamic & historic	must
6.5	interior image	Image	OFFLINE	multiple data sets/ points	dynamic & historic	must
6.6	paint thickness measurements	USE	OFFLINE	multiple data sets/ points	dynamic & historic	value
6.7	Vehicle damage status as defined by remarketer	USE	OFFLINE	multiple data sets/ points	dynamic & historic	must



# Field Category 7. PTI related data

Data Field Category Nr.	Description of Data Field Category and Data fields	Data type	Data Transaction Type	Data volume Type	Static, Dynamic, Historic	Relevant for Remarketing
7.1	PTI result document	Legal	OFFLINE	multiple data sets/ points	dynamic & historic	must
7.2	Emission check Document	Legal	OFFLINE	multiple data sets/ points	dynamic & historic	must
7.3	Validity of periodical technical inspection date / next inspection required date	Dates	VTD	unique data set	dynamic & historic	must