Commission Communication on "Free Flow of Data"

Input from the Independent Automotive Aftermarket

In view of the preparation of the Commission Communication on "Free Flow of Data" **(FFoD),** the Commission, during several FFoD Workshops and also including Commissioner Günther Oettinger during the last Roundtable on Connected and Automated Driving on 30 September 2016 in Paris invited stakeholders for input on the matter.

The questions raised were i.a.

- What drives innovation and the European data economy?
- Should the Commission regulate ownership of (non-personal) industrial data?
- Some stakeholders plead to not touch the "freedom of contract" and leave data access for third party service providers to pure B2B contracts. They state that companies are willing to share data if they benefit and see a commercial interest. Is this the right approach?
- Or: Is legislation needed? Could there be a conflict of interest by the party who controls physically the data to possibly block new market entrants? When should the Commission regulate (e.g. in the event of lock-in effects of being stuck with one contractual party or of market failure?)? Is a general or sectoral answer needed?
- Who owns the data? Which kind of data is needed? Is the legislation "fit for digital purpose"?

Executive Summary

In the automotive sector, the design of closed telematics systems that control the complete flow of data to and from a vehicle threatens competition and innovation on the independent aftermarket for motor vehicle spare parts, tools, servicing and repair (as well as all services "around the car").

The following analysis shows that in-vehicle real time (vehicle-generated) data are not owned by anybody. However, this does not prevent that these data become factually foreclosed by the "connected car concepts" of vehicle manufacturers using closed telematics systems.

The access to in-vehicle data is a textbook example for a digital economy constellation where certain market players (such as independent operators, suppliers, start-up companies etc.) lack access to data required for developing new products or services or for improving them, while also lacking the possibility

of creating or collecting the required data themselves. Competition in the digital era starts already *in* the vehicle where the data quality and speed of access determines the service quality.

The so called “Extended Vehicle” concept promoted by the vehicle manufacturers will hamper new services and products by restrictions on where data is located or on data access although these restrictions do not have anything to do with protecting personal data. The Extended Vehicle concept will stifle the growth potential of the digital economy.

In highly competitive markets the factual Free Flow of Data and Interoperability must be established. Legislation is needed to mitigate the risks of foreclosure to data access and allow survival of the independent automotive aftermarket to continue to support competitive consumer choice in the digital age.

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1 Introduction

The following Memorandum debates the above questions against the example of the prominent market for motor vehicle replacement parts, tools, servicing and repair – a market representing in the EU a volume of 200 bn. Euro (parts at end consumer prices, plus labour). The multi-brand independent aftermarket sector alone accounts for more than 500.000 companies *directly* employing around 3,5 million people, offering a wide range of products and services to sustain a safe and environmentally friendly, competitive and affordable aftermarket care for the 285 million vehicle owners, drivers and business operators in the EU – throughout the entire lifetime of their vehicle.

2 The motor vehicle spare parts, tools, and servicing and repair market in the digital Age: what drives innovation and a "data economy" in the automotive aftermarket?

Many studies have shown that **large data sets** ("big data") **and algorithms** (i.e. data calculation/processing applying own know-how which becomes the basis for analysis and decision-making of companies) are valuable assets for economic growth and social progress. They are the new "super power fuel" of the economy of the future and are the drivers for innovation.[1]

This fully applies to the automotive aftermarket. The ability to innovate and compete in the digital era greatly depends on continuous access to in-vehicle generated data and the ability to apply a company's know-how and applications. **Competition in the digital age starts already in the vehicle where the data quality directly determines the service quality.**

FFoD and the concept of the "Connected Car" are associated in the public debate primarily with new telematics applications such as the intelligent control of traffic flows or new communications and entertainment functions. This blocks however the view onto the serious economic impact of the "Connected Car" on the market for motor vehicle parts and services and on adjacent markets such as the leasing business, fleet management, insurance or new mobility services.

Especially *timely data or data in real time around the clock* brings about a wide variety of new products and services relating to the operation of vehicles. The independent aftermarket for motor vehicle spare parts, service and repair needs direct access to such data in order to foster innovation and continue to compete with the vehicle manufacturer. Foreseeable use cases are for example the proactive monitoring of safety-critical vehicle systems, the predictive and thus especially efficient maintenance in the workshop, remote monitoring of operations to prevent defects, remote maintenance through software updates or reconfiguration and automated services in case of a breakdown on the road.

[1] For example: Big data and B2B digital platforms: the next frontier for Europe's industry and enterprises Recommendations of the Strategic Policy Forum on Digital Entrepreneurship, April 2016, Ares (2016) 4935147 - 02/09/2016.

Example: The key condition to all independent repair and maintenance services is the innovation and improvement of independent diagnostic testing equipment. Independent diagnostics is the basis for all competitive servicing and repair processes. To this end the independent operator requires direct access to real time in-vehicle data in order to apply algorithms which are running on the control units of the car. Unfiltered and direct access to this data is mandatory to allow a live monitoring and the creation of interoperable algorithms for multi-brand testing devices or apps which would allow independent diagnostics or prognostics as key for all subsequent digital services in the independent aftermarket.

The emergence of new business models and changes in existing ones will not only unlock new customer segments, but will also attract industry newcomers. The benefits of connectivity and automation may expand the traditional driver/passenger segment while also allowing players to tap into segments (e.g. governments and municipalities) that so far have not been attended to by the traditional automotive industry.

While this opens multiple new business models to the car manufacturers, the decisive disadvantage to third parties is that they have no direct access to the in-vehicle data and information via the telematics system of the vehicle. Direct communication with the vehicle owner via the central information display is also not possible for third parties or limited to few functions (such as entertainment or navigation) which are however yet unrelated to the repair and maintenance needs of the car.

While all future use cases are hardly predictable in detail, it is already obvious that the "extended vehicle" concept as currently envisaged by the vehicle manufacturers (to be looked at in more detail later under section 9) will create a data monopoly of the vehicle manufacturer which significantly differs from the today's analogue situation.[2]

Conclusion: Data access and the opportunity to use data with embedded algorithms represent already today decisive factors for companies when it comes to their competitiveness and to establishing innovative, digital business models for the benefit of the consumer. It is needless to say that the quantity of data will grow rapidly in the future and thus increase the dependence of entrepreneurs on such data. Any access barriers or restrictions concerning the data access complicating a direct and independent communication with a vehicle will therefore significantly impede free competition and the competitiveness of the single market players.

[2] An evaluation of the dynamic impact of the restricted access is in this scenario not (yet) possible. This applies even more if the discussion is about the highly relevant making available of real-time data over an application programming interface (cf. *Drexl*, et al in: Ausschließlichkeits- und Zugangsrechte an Daten, GRUR Int. 2016, 914, 918, Position Paper of the Max Planck Institute for Innovation and Competition of 16 Aug 2016).

3 Economic attribution of data

The dilemma described above correlates with the fact that no legal provisions exist in view of **measurement data**, i.e. these data and information do not fall into any legal category. For this reason it is also not possible to assert any protective rights against the car manufacturers, instead it is *the power of the facts that rules*. If the vehicle manufacturer alone has factual access to the measurement values for the vehicles produced by it, existing laws can no longer help. But the call for a *Free Flow of Data* must not stop at the gates to such an important market.

3.1 Who owns "the data"? Should there be a "right on data"?

Neither national law nor European law provides for general ownership of data.[3] If anything, the law grants selective protection to specific creative results of human work, structured databases or computer software. Essentially, the law thus exceptionally protects data which fulfil enumerative and narrowly restricted qualitative criteria. However, modern approaches to data processing, often referred to in terms of "Big Data", are not oriented by quality, but by quantity. The storage, transmission and processing capabilities of information technology today allow the generous and disorderly handling of data. The economic value arises here from the easily processed great mass of data, not from the quality of any individual data. The reality of life today when dealing with data is thus diametrically opposed to the understanding of the legal system as to what should be worthy of protection by way of the attribution of a kind of ownership. The typical measurement and condition data which are essential to all innovation are therefore not owned by anyone.

European law does not recognise "one" data law that covers all aspects of data as such. Therefore, data is neither singularly protected by data privacy law nor by any other existing legal provision. Depending on the quality of the respective data or its relation to an individual, the approaches to legally protect data vary substantially. The question whether there already exists a right in data and/or should be introduced is subject to intense academic discussions in Germany and across Europe. For a detailed survey see Osborne Clarke's "*Legal study on Ownership and Access to data*", a Study for the European Commission DG Communications Network, Content & Technology. **The majority of scholars tend toward the conclusion that a property right to data does not exist.**[4]

Mere vehicle-generated data does not represent any creative results of human work, structured databases or computer software.

Although data can be created as a result of software applications, the data resulting from a software process is also not subject to copyright protection. The concept of extending legal protection to the results generated by protected works is completely alien to the laws in Europe and even not recognized under

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[3] This statement is true irrespective of the nature of the data and irrespective of the question whether the data can be associated with a human being (personal data) or not, cf. below 3.2.

[4] See *Grützmacher*, CR 2016, 485 for a good overview.

US copyright law.[5] Furthermore, results from mere measuring and diagnosis processes are also not protectable by a process patent.[6] Results from pure working methods that do not create or modify a product are not subject to patent protection. Accordingly, the mere interaction between software and car hardware is not protectable by a process patent. Even if the data stemming from a patented method could be protected as a "process result", the use of such information for the diagnosis of a car´s condition would be proper use of the process and free as this is what the product or process was made for. The rights of the patentee exhaust after the first sale of the product provided that it is properly used.[7]

Therefore, the typical measurement and condition data retrieved from vehicles/sensors, which are essential to all innovation, are not owned by anyone. In other words, the vehicle manufacturers do not own the data which they now want to control in practice.

Also, privacy law does not result in any data ownership (cf. below 3.2). That is because data privacy law regards data as a threat not as an asset. Essentially, data privacy law is a personality right,[8] designed to protect the individual from any infringement of their right to privacy resulting from the collection, processing, use and transfer of personal data. Even though data protection laws grant the data subjects rather extensive rights, data protection law would only be a regulatory instrument of the public law which is supposed to regulate the interaction of data subjects and data controllers but should not create private commercially exploitable rights. This finding seems to be supported by the "census judgement" (*Volkszählungsurteil*) of the German Federal Constitution Court in which the court stated "*information, also information on people, is a picture of social reality which cannot be allocated exclusively to the data subject".*

A few voices in literature support the establishment of an *erga omnes* right to set incentives for the data economy and to create legal certainty.[9] In contrast, there seems to be a consensus that a right to data should currently not be established due to unpredictable effects such a right may cause. Most voices regard existing contractual solutions suffice in order to protect data effectively.[10] Therefore, these academics argue that it has not yet been shown that there indeed is an economic necessity to create a right in data. Furthermore, the artificial limitation of data might negatively affect innovation because especially big data applications depend on large amounts of data.

3.2 Data protection (data privacy)

Data protection law also does not grant any kind of ownership rights. Although legal questions regarding all aspects of the reach and extent of data protection law are currently being discussed intensively, the European data protection law is intended to provide protection against data, but not any protection

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5 Design Data Corporation v. Unigate Enterprise, Inc., No. 12-cv-04131-WHO [N.D. Cal. Aug. 6, 2014.
6 For Germany cf. RC Munich I, docket 7 O 13161/14 –FLT-3-Gene-Test.
7 Cf. German Federal Supreme Court, docket X ZR 33/10 in re MPEG-2-encoded-video-data.
8 *Hoeren*, in: Grützmacher, Recht der Daten und Datenbanken im Unternehmen, 1st edition 2014, § 23 par. 4.
9 *Zech*, CR 2015, 137 (144 et al.).
10 *Dorner*, CR 2014, 617.

of data. Data protection law is understood to be a protective law restricting the use of personal data, as data are regarded as a threat to privacy in the eyes of data protection law. However, as vehicle-related data practically always relate also to persons, in the concurrent view of vehicle manufacturers and data protection authorities, the handling of such data in principle requires a reliable and justifying data protection structure as well as the information for the individuals concerned.

But the data protection law relating to individuals must be distinguished from the "right to data". An appreciation of commercial values is foreign to data protection law. More specifically, the "Right to Data Portability" also does not constitute a solution, as such a legal claim of the users relates only to personal data and thus in particular only to existing data. Thus, it is not possible to point the way for future data streams (such as technical vehicle measurement data) towards other market participants.

Data protection law does not grant any kind of ownership rights.

4 Task for the European legislator: FFoD calls for regulating access to data and interoperability in certain market conditions

The access to in-vehicle real time data (combined with interfaces for interoperability) is a textbook example for a digital economy constellation where certain market players (such as independent automotive aftermarket operators, independent parts producers, start-up companies etc.) lack access to data required for developing new products or services or for improving them, while also lacking the possibility of creating or collecting the required data themselves. On the other hand, there are - in the case of the automotive aftermarket - no incentives for the companies (car manufacturers) that create or collect the data, to grant such (potential) competitors access to their data. Lack of access to data can therefore easily become the source of market power where (potential) market players are not able to create or gather the data themselves or gain access to the data otherwise (which even if it was provided via the vehicle manufacturer, introduces anti-trust, market control and data quality issues).

From an economic point of view, the *regulation of access possibilities* is necessary where highly competitive markets would be hindered without such intervention, or where the emergence of new markets would be suppressed. In particular, enforcing the access to data may prevent a concentration of market power.

Competition law enforcement before the courts or by complaints before competition authorities are principally not a proper tool for **a systematic answer to questions regarding the access to data**. It would be irresponsible to deny the necessity for a special legal data access regulation by pointing at legal remedies available under competition law as the high diversity of business models and their dynamics within the digital economy is in strict contrast to the necessary consideration on **a case-by-case basis required in competition law, which is very difficult to handle for small and medium-sized companies**.

The deployment of the telematics technology has wide repercussions on the market for motor vehicle parts, test equipment, servicing and repair as well as on other mobility service industries such as e.g. leasing companies, fleet management or insurances. The permanent accessibility to real time (live) data has already brought about a wide variety of new products and combined interoperable services.

These new connectivity functions have also led to new consumer expectations in the after-sales market for faster and more predictive services. For example, consumers expect today information about the "health status" of their vehicle and an alert *before* a problem would occur or to avoid a breakdown (prognostics). In such a data driven business situation, only a special legal provision on the access to raw data can prevent potential market failure by protecting the functionality of competition and thereby also enabling innovation.

5 Innovation and competitiveness in today´s analogue situation

Today the innovative capability and competitiveness of the independent automotive aftermarket (i.e. of market players such as the spare parts manufacturers, the spare parts distributors, producers of diagnostic and workshop equipment, independent data publishers, technical inspection associations, testing centres, independent and authorised workshops etc.) are based on the possibility of direct communication with the vehicle and the current analogue access to the technical vehicle (measurement) data through the physical on-board diagnostic (OBD) interface. On this basis, it is possible for example to apply different diagnostic methods and to offer alternative repair methods (e.g. the repair of a single component instead of the more expensive replacement of the entire system).

Of course already today vehicles have turned into "computers on wheels" and digitization plays a major role. No workshop can localise defects or maintain and repair a vehicle without communicating with the control units of the vehicle. Today, this communication happens mostly when the vehicle is stationary as it takes place via a wired connection through defined interfaces (OBD plugs) or through local Wi-Fi in the workshop. Diagnostic devices provided especially by the providers on the multi-brand market such as Bosch, Actia, Hella-Gutmann, Snap-On or Autocom, are used to reading and interpreting the measured values of the control units of the car.

Presently all necessary data, that is the real time vehicle-generated raw data, is made available through the OBD II port. In fact, the OBD port is the gateway to the car and much of the data generated in the car is accessible through this gate. The OBD port represents a physical interface to the Controller Area Network ("CAN") bus system which interlinks the control units to form an in-vehicle network. Some data is standardized, but only to a small extent for the purpose of exhaust emission tests. An abundance of other information is available from the CAN bus system via the OBD port as well. That information is on the one hand not protected by technical means such as encryption, but on the other hand it is also often neither standardized nor even officially documented. Various independent operators have specialised in legally admissible reverse engineering and then offer documentations as well as hard- and software using information available via the CAN bus system to provide their competitive service offers.

Consequently, the OBD port, as a physical interface to the CAN bus system, today provides comprehensive, physical, direct and therefore also real-time in-vehicle access to a variety of data from the car.

The data available through the physical OBD interface is today open for an independent, alternative and innovative usage, as it is raw data, i.e. data that is not being aggregated, filtered or processed and is not subject to any **unavoidable latency due to over the air transmission through various servers.**

The access to the data is an essential prerequisite for creation of e.g. alternative fault detection, alternative repair methods and alternative recommendations to the customer (e.g. a limited repair instead of the exchange of the more expensive complex system).

The access to real time data in the car is further mandatory for a lot of service tasks which require accurate data in millisecond intervals.

Example: The analysis of a turbocharger as fitted to many private and commercial car engines requires high frequency updates of measured sensor data. In order to service a defective turbo charger, sensor data must be obtained from multiple sensors, such as the accelerator, lambda probe, air throughput (air-mass meter), air pressure, engine speed, etc. The measured, interactive and highly dynamic values need to be measured with millisecond precision otherwise the fault detection and repair becomes impossible.

For those tasks the independent operator can today provide innovative, alternative and affordable repair methods. He thereby ensures appropriate and cost efficient solutions for all kinds and categories of vehicles. Only by way of direct access it is possible for example to apply different diagnostic methods or to offer alternative repair methods at all.

In order to back up the availability of such independent products, **the current physical data link connector** enshrined in the EU's Euro 5/6 and Euro VI legislation (based on cross-referenced UN-ECE Reg 83 and 49) **provides today a standardised, direct and unmonitored access to in-vehicle live status data, and thereby supports innovation and independent competitive SME entrepreneurship.**

6 Change of paradigm in the digital world: Exclusion of independent service providers from access to data through closed telematics systems

The current landscape of mostly stationary service and repair services starts to change dramatically with the introduction of closed telematics systems, which combine access to time-critical in-vehicle data with the possibility to embed applications enabling remote diagnostics and real-time prognostics services. In the digital world the one who has the application in the car that can directly access and process data will decide about if, when and where repair is performed.

Example: The predictive maintenance system which is already introduced by vehicle manufacturers such as BMW in new car models (e.g. "BMW Teleservice"). Due to the constant monitoring of the car by the vehicle manufacturer's proprietary diagnosis application installed in the vehicle and displayed to the driver "on the dashboard of the car" the vehicle manufacturer knows first when a certain part needs

urgent replacement and can immediately contact the car driver proposing a replacement in one of its authorized workshops. The instant monitoring of the car by remote connection becomes a clear competition advantage over the current “analogue” situation.

While this development is at first glance clearly to the benefit of the consumer, it bears the risk of less price competition on the aftermarket and a negative price development already in the short term. If independent operators are no longer able to provide substitutable service or a second opinion on certain repair tasks to the customer, the vehicle manufacturer is gaining full control over the aftermarket. Such actual threats come from telematics systems being designed as closed black boxes. Already today, we note that vehicle manufacturers shift more and more data which formerly was accessible through the OBD port to their non-standardised and thereby proprietary wireless network systems. Vehicle manufacturers are thereby creating technically closed telematics systems which can only communicate exclusively with the manufacturer of the vehicle concerned. In parallel, the data stream through the physical interface is more and more replaced by the remote data transmission. The measurement data are often reduced to emission-relevant values only (accounting for only a small percentage of what is necessary for the full service, maintenance and repairs of all vehicle systems). The digitization of repair services for motor vehicles and the increasing introduction of closed telematics systems raise the threat that independent aftermarket operators will lose their direct access to the measurement data.

In other words: The independent motor vehicle aftermarket faces the threat of being excluded from the opportunities arising from the increasing digitization of connected cars, as it is factually cut off entirely or partly from the possibility to communicate with the vehicle and its data . This also leaves the field for future innovation, including the relevant data needed for the development of public digital infrastructure, to the vehicle manufacturer alone.

This is increasingly important with the ability a vehicle remotely monitors its dynamic generated data whilst it is being driven. The real-time prognostics become key to the driver’s decision who will service his car in the future. If predictive diagnostics are reserved only for the vehicle manufacturers or are only offered to independent operators on basis of a data set selected by the vehicle manufacturer, a competition disadvantage is created and an equal level playing field is excluded.

Competition starts already in the vehicle where the data quality and speed of access determines the service quality. As a consequence, the ability to innovate and compete in the digital era greatly depends on direct interaction with the customer, on the ability to create partnerships (ecosystems) across industries and services and on access to the required content and quality of data.

The proprietary design of the in-vehicle telematics applications provides however exclusively the vehicle manufacturers with a timely privileged access to the vehicle data and a completely new, privileged diagnostics and information advantage which enables them to offer exclusive online services. Also, they have the ability to be in direct contact with the driver in the vehicle through the car dashboard (which as most convenient option has the potential to bypass also the traditional client relationship established through their authorised dealer network).

Conclusion: The proprietary design of the in-vehicle telematics applications (data plus algorithms) prevents equal access by independent operators and service providers and limits their ability to innovate and compete online on an equal footing. It ultimately limits consumers' freedom of choice between competitive repair, mobility and consumer convenience services.

7 Regulatory gap regarding *data* about the condition of the vehicle

With the provisions dealing with technical *repair information* in the Motor Vehicle Regulation (Regulation (EU) No. 461/2010 of the Commission of 27 May 2010) and in the EURO 5/6 Regulation (Regulation (EC) No. 715/2007 of the European Parliament and the Council of 20 June 2007), the European legislator pursued the intention of ensuring competition on the aftermarket, which is a separate market also under competition law. But this does not concern "data", *but repair instructions and information on the interpretation of measurement data* (i.e. „how something is repaired", „when are measurement data is good or bad").

It was the intention of the EU legislator that the vehicle manufacturer should not be able to gain excessive advantages from the fact that it first assembled the vehicle. Once a vehicle is sold, it enters the aftersales market, and on this market independent product and service providers should have a level playing field with the vehicle manufacturers. The access for independent operators to the in-vehicle data is provided free of charge via the OBD connector and then the information about how to repair a vehicle and the interpretation of measured values is provided by the vehicle manufacturer, at least against reasonable remuneration. The inclusion of repair information in the Motor Vehicle Type Approval law technically specified and underpinned the competition law (which was too general). Here, the inclusion of programming standards first put into effect the **principle of "reparability by design"** (analogously to safety/data privacy by design) in order to keep vehicles from being factually closed and thus unreparable for independent market operators. The relatively small technical provision made it possible that vehicles of all brands can be diagnosed and programmed in all workshops throughout Europe, and the motorist can be put quickly back onto the road.

However, these indirect bases for the legal rights of independent operators under competition law (Motor Vehicle Regulation) and Motor Vehicle Type Approval law (EURO 5/6 and EURO VI, both are currently being incorporated into the Framework Regulation (COM 2016-31) date back to a time when it was not yet really foreseeable that, in the course of technical progress, access to the measurement data of the vehicle would be decreasingly via a local physical connection and would cover an increasing number of components. Now, access increasingly takes place through wireless networks with the car manufacturer as the only recipient, in particular where permanent long-distance monitoring is concerned. Measured by the European legislator's intention to ensure competition and innovation on this aftermarket, there is therefore a need for legislative action. The information about how to maintain or repair a vehicle and how to interpret measurement data becomes worthless if access to these measurement data is impossible or greatly restricted because the telematics unit is technically and thus factually closed. The technological development of connected cars must not lead to a situation where the aftermarket for services and parts, which is as important to the European economy as the market for new vehicles as well as for 284 million motorist consumers and businesses, becomes imbalanced and captive.

8 What data is needed? How to ensure the generation of competition and innovation for "services around the car"?

Firstly, and as outlined below, it is a general and undisputed principle that all data either used as raw data or in the form of already computed repair and maintenance information for actual diagnostics, repair, maintenance, prognostics and predictive services for cars shall be directly accessible to independent operators. Legislation ensuring non-discrimination of data access, content and quality for the provision of competitive services is needed to ensure competition on the market for the repair and maintenance of vehicles, and combined with the possibility to implement independently developed algorithms/functionalities.

Secondly, the same undisputed competition principles apply in respect of the ability to develop new and innovative services and products directly or indirectly relating to the repair and maintenance of vehicles, or for all services around the car. Independent operators may not be kept from developing alternative solutions by cutting them off from the information and data they need. Third parties must be able to develop and implement their own time critical applications for the predictive repair and maintenance of the car.

All of this requires direct access to in-vehicle generated measurement ("raw") data. Such direct access to the in-vehicle generated measurement raw data is a pre-requisite to the ability to provide independent telematics functions and competitive services. Without this direct access, the associated issues of aggregated, processed or re-formatted data, together with latency become barriers to the development of innovative and competitive services.

Access to in-vehicle data is the basis for any further aggregation and processing to create information that can subsequently be used to provide services. The same data may be used for one or more services, but it is important that all the data required to allow a specific service to be provided is available under the same conditions as for the respective vehicle manufacturer to ensure that the aggregation and processing can equally be made by independent service providers.

Third parties cannot be forced to base their services on data and information already processed and interpreted by the vehicle manufacturer whose logic and routines may not fit for such alternative products and services, let alone the latency when accessing the vehicle manufacturers information via his servers (no real time access). Therefore, the data used for these services should not be in pre-configured by vehicle manufacturers as aggregated data sets (or as information or even as services), but should be directly available to support alternative and competitive service offers. As a consequence and to prevent any discrimination, general competition principles call for the ability of independent operators to directly access the actual data generated or exchanged inside the vehicle that is being (or will be) managed in the vehicle before being sent to the vehicle manufacturer's server, before the server further processes it. This non-standardized in-vehicle raw data should be directly accessible to third party service providers to support time-critical embedded applications needing real-time data as well as the ability to create and implement alternative competitive services and products.

As will be explained further below, **the proposal of vehicle manufacturers for the extended vehicle** concept (see below) lacks all of this. Third parties are kept away from real time data and from "full and fresh" raw data generated inside the vehicle. It **is a highly discriminatory solution**. When vehicle manufacturers state "the independent aftermarket gets all it needs" the basis of non-discrimination, this is not correct. The data sets they offer are restrictive and would only allow very limited innovation. The result is that the independent aftermarket would be forced to follow the vehicle manufacturers' data sets and subsequent business models, but always from a disadvantaged position in relation to the full range of services, latency, costs and in-vehicle customer communication. Independent entrepreneurship and consumer choice is stifled.

Conclusion: Direct access to the in-vehicle generated measurement "raw data", combined with the possibility to apply independent algorithms/functionalities, is a pre-requisite for the aftermarket to provide independent telematics functions and competitive services. Since the vehicle manufacturers' extended vehicle concept will block this direct access and in-vehicle third party applications, the associated issues of aggregated, processed or re-formatted data, together with latency will hamper competition and innovation. The (private and corporate) customer will eventually lose out, as once independent operators disappeared he will fully dependent on the maintenance and service offers of the vehicle manufacturers without the chance to receive a second opinion on alternative and competitive repair and maintenance schemes from independent operators.

9 The extended vehicle concept of vehicle manufacturers

To open up their telematics boxes, vehicle manufacturers created the so-called "extended vehicle concept". The basic principle of the extended vehicle is a transfer of data via the mobile telecom networks from the vehicle to the vehicle manufacturer's *external* data server (OEM backbone) where data are made available to third party service providers. As stated in the C-ITS Report (Cooperative Intelligent Transport Systems) of DG MOVE, *it does not allow for all real-time applications.*

As a result, the extended vehicle concept cuts off third parties from the independent aftermarket from direct communication and real-time data access as all communication to and from the vehicle is routed through the remote server of the vehicle manufacturer, which allows a complete control of the data exchanged. The vehicle manufacturer will factually be able to control the content and qualities of the data forwarded to third parties and thus control the competitor´s ability to provide competing services. Independent operators are prevented from implementing their own independent remote monitoring or diagnostic test methods and algorithms directly inside the vehicle. The control of both the access and data content blocks the ability of service providers to create their own services and forces them to emulate the services of the manufacturer, but from a disadvantaged position.

Example: The usability of time-critical data is highly dependent on an immediate transmission. High availability means that a multitude of new data is created in rapid succession. The engine speed typically fulfils both of these criteria. For example, vehicle manufacturers could exclude all service providers depending on a real-time transmission of engine speed information from competition.

In so far, it is of a particular concern that the Extend Vehicle by way of principle leads to a delay on a technical level ("lag"). That is why real-time data analysis is no longer possible. In comparison, third parties (competitors) only have access to some of the vehicle data via the server of the vehicle manufacturer. On the way from the vehicle to the server of the vehicle manufacturer and from that server to the server of the third party, the data is inevitably subject to technical restrictions (e.g. varying transmission times) which is why third parties only have access to a limited data quantity and quality (significantly less than 100 %), whilst incurring additional latencies and costs.

In addition, the data initially retrieved by the server from the cars is not necessarily the same data subsequently made available by the servers. The data available will be restricted to known use cases and always be filtered/aggregated by the vehicle manufacturer. This restricts innovation, alternative competitive services and new business models.

Independent operators cannot conduct a sustainable business without precisely knowing what data they get and in what quality and conditions or if this data has already been filtered/aggregated by the vehicle manufacturer. They have to work with the end-results offered to them instead of fresh and unprocessed raw data. Either the data is already "processed" by the vehicle manufacturer or it is too old (i.e. not real time data). Their own business model becomes fully dependent on the business model of their competitors in the secondary market.

On the other side, due to the unlimited access to all vehicle generated data and the possibility to process this data in the telematics system, vehicle manufacturers have 100 % of the data available at any time (data quantity and quality). Vehicle manufacturers would be able – due to the data collection on their own servers – to decide on access, waiting times, nature, quality and functionality of the data. This would also complicate the development of services for third parties – if not making it entirely impossible. If the access to data is denied, limited (data packets) or only delayed, this represents a clear restriction of competition at the expense of third parties who need certain data swiftly to carry out their business activities efficiently.

9.1 "B2B freedom of contracting" versus "role for the EU legislator"?

The risk of unfair competition is inherent (better/more data available or available sooner to the vehicle manufacturers than to their competitors). Vehicle manufacturers are competitors with a whole range of other service providers, in areas such as diagnostics, repair and maintenance, part sales, road side service, insurance and leasing. This creates a direct conflict of interest when vehicle manufacturers control in-vehicle data via their proprietary servers. It is immediately evident this would cause an unjustified disadvantage to competing market players whilst expressly benefitting the vehicle manufacturer at the same time - vehicle manufacturers cannot be the controller and the competitor at the same time. In other words a B2B freedom of contracting does not exist in this scenario. The vehicle manufacturer is always in a better position to offer his services and able to regulate any competition at his free discretion down to a minimum level.

Also the following practical issues and conditions of the concept have to be taken into account and clearly create conflicts against it from the perspective of fair competition:

9.2 Exclusion of market players by means of telematics contracts

Concluding a so-called telematics contract with the vehicle manufacturer is the precondition for using all telematics services. If the user does not sign this contract, the external communication of the vehicle is deactivated by the vehicle manufacturer. These telematics contracts are presented to the customer for signature along with the sales contract and often include various mandatory services. Due to the link with services offered by the manufacturer – requested by the customer or not – third parties have effectively no more opportunity to afterwards offer their comparable services to the consumer. The initial contact to the customer and the content of the telematics contract **(bundling)** thus represent a considerable competitive advantage for vehicle manufacturers. As a result, consumers are effectively dependent on a contract and monopolistic offer by the vehicle manufacturer. Consequently, innovation and competitiveness in the aftermarket are significantly restricted.

9.3 Exclusion of market players by means of exclusivity agreements

Vehicle manufacturers could moreover conclude exclusivity agreements with single providers which would make it impossible for competitors to access certain vehicle data. Third parties would thus be substantially dependent on the commercial policy and the business models of vehicle manufacturers and would have to adapt their business activities accordingly. The consequence would be a significant restriction of the competitiveness in the aftermarket.

9.4 Control and supervisory options

By channelling all data through their own servers, vehicle manufacturers could not only analyse the customer and competitors' behaviour but also see their prices and react accordingly. Moreover, they could analyse the customers' buying habits and their willingness to pay for certain products and services. On that basis, they could fix prices for certain groups of customers. The consequence would be unacceptable data-related price discrimination.

The afore-mentioned examples clearly emphasise how competition would be substantially restricted in case of the implementation of the extended vehicle concept. Additionally, the market-dominating position of the vehicle manufacturers regarding vehicle generated data would be manifested. The extended vehicle concept would be at the detriment of third parties which are looking forward to innovate but also, and above all, of the customers who would lose their freedom of choice for competitive services.

10 Liability Issues

By following the appropriate communication and security strategies, there is no difference in terms of liability to what is being done today with the latest ADAS (Advanced Driver Assistance Systems) systems on modern vehicles. Remote verification of a vehicle's software at start-up prior to the vehicle being driven, together with pass-through programming can also be used to monitor and control who is conducting

what work on a vehicle. Vehicles could also be equipped with a fingerprint system to register what work has been conducted.

Vehicle manufacturers are already working with 3rd party server providers who work to an agreed security framework – this can be emulated by independent operators who can be independently verified to comply with the appropriate security strategy (e.g. HTTPs, VPN's, certificate exchange etc.).

Already today the independent operators are "together in one boat" with the vehicle manufacturers when it comes to questions of cyber security of their independent solutions. The independent operators have the same interest in appropriate security levels and according certification of their hardware and services provided to the end customers.

Moreover, data security is even more put at risk when all data is stored centrally in one server. Decentralized access to information in the aftermarket would also spread the risk of cyber-attacks and their overall impact. Putting all eggs in one basket is clearly not a solution which increases the security of the data.

11 A robust legal framework needed for factual access to in-vehicle data and for digital interoperability of vehicles

To ensure effective competition and innovation on the automotive aftermarket as well as on mobility and connectivity service markets „around the car", the factual "free flow of data" and interoperability of in-vehicle telematics systems must be established.

The issue is the possibility for independent market participants to communicate wirelessly and directly (real time data) with the vehicle. To avoid that vehicles are technically foreclosed, the following requirements must therefore apply to the deployment of the automobile telematics technology:

- Direct access for independent operators to in-vehicle generated real-time (live) data, unmonitored by the vehicle manufacturer as data controller and direct competitor.
- Possibility to apply own applications/functionalities/know-how.
- Same access conditions as the vehicle manufacturers in terms of data and latency and same access conditions for in-vehicle generated data with the possibility to implement embedded applications to evaluate and aggregate that data in the vehicle telematics system
- Availability of the data via a standardised interface, „interoperability by design"
- Same possibility as the vehicle manufacturer to present services directly via the in-vehicle display to the automobile consumer ("Who owns the dashboard/HMI")
- No disclosure of customer data to the vehicle manufacturer

To ensure that the provisions that already exist today and concern access to maintenance and repair information and the related intentions of the European legislator will not become ineffective, it is therefore

necessary to find a legislative solution which will enable also the independent market participants to directly and permanently communicate with the vehicle (real-time data), apply their own know-how (algorithms – both embedded or server based) and at the same time provide protection against any interference by the vehicle manufacturer with the customer relationship and the business model in each case. In particular, this presupposes the obligation of manufacturers to create data interfaces to the vehicle ("intelligence in the vehicle") as well as the standardisation (or at least as a first step) access to the necessary communications and data parameters. This must of course be accompanied by respective rules and security requirements.

The independent SME market participants cannot reasonably be expected to tediously fight for many years against every individual vehicle manufacturer and in view of every single product and every single service to safeguard their continued future participation in competition through individual actions and complaints under competition law, based on the accusation of an abuse of a market-dominating position. Especially small and medium-sized undertakings will in any case be unable to do so for organisational and cost reasons. In addition, there is the fact that experience shows that even the bigger undertakings will hesitate to take legal action under competition law against their main customers, the vehicle manufacturers. Also, an action or complaint under competition law can always concern only a certain product group or a certain service without providing any legal certainty with regard to future technical developments. The risk of "Litigation to Death" is evident; many independent market participants could not financially survive such a scenario.

The connected car is a textbook example that shows that developments regarding the Internet of Things make steering legislative action on the aftermarkets necessary in order to make competition through innovation possible. Without such legislative action, the vehicle manufacturers' communications "sovereignty" over connected cars will cause the market for the maintenance and repair of motor vehicles in Europe with an annual volume of EUR 200 billion (services and parts) to become imbalanced. Other providers will be excluded from the development of innovative products and services.

There is thus an urgent need for legislative action to ensure a factual "Free Flow of Data – and Interoperability" in the rapidly progressing digitilisation of the automotive industry.

Data from connected cars must be freely available in the interest of innovation in the market. Only the customer / user concerned in each case should decide who is to be allowed to access data from the vehicle. Legislation should therefore at least mandate the following key functionalities of the in-vehicle telematics system:

"Interoperability by design" - The interoperable telematics platform as solution

This is technically possible with the interoperable, standardised, secure and open-access telematics platform, as referenced in the eCall Regulation.

What is an interoperable platform? A fully integrated vehicle network interface, allowing access to the in-vehicle resources and real time vehicle generated data. Using an application programming interface

(API) running directly in the platform, multiple applications can be run concurrently safely and securely in the vehicle. A standardised software developer kit would facilitate the independent verification of applications. This would allow for a full range of competitive services to be developed and offered to the vehicle driver via the in-vehicle display (HMI).

The main advantages:

- Independent direct and remote access to real-time in-vehicle-data generated data, functionalities and resources.
- Data Privacy and full control of the data transfer by the vehicle owner / driver.
- New business opportunities for App-Developers and Service Providers without control and monitoring by their competitors (vehicle manufacturers), also for real-time data.
- A standardised on-board application platform supports the “write once, implement everywhere” principle.
- Allows the use of in-vehicle resources to display the choice of service providers via the in-vehicle display (HMI) and consequently ensure transparent authorisation of services and equal competition.
- Non-monitoring and control of data/information use by competitors.

12 Parallels to the European Software Directive 2009/24/EG

The general strive of the European legislator to provide for interoperability of otherwise foreclosed IT systems has been already expressed in the so called “Software directive” as promulgated by the EC on 23 April 2009.

The directive i.a. justifies activities which are required to create compatibility with third party software.

According to Art. 6 of the directive

> *“the authorisation of the right holder shall not be required where reproduction of the code and translation of its form within the meaning of points (a) and (b) of Article 4(1) are indispensable to obtain the information necessary to achieve the interoperability of an independently created computer program with other programs”.*

Art. 6 is complemented by Article 5 (3.) of the directive 2009/24/EG that states that

> *“the person having a right to use a copy of a computer program shall be entitled, without the authorisation of the right holder, to observe, study or test the functioning of the program in order to determine the ideas and principles which underlie any element of the program if he does so while performing any of the acts of loading, displaying, running, transmitting or storing the program which he is entitled to do.”*

Both paragraphs are an expression for the considerations of the directive whereas principles which underlie any element of a program, including those which underlie its interfaces, are not protected by copyright under this directive. This thought has been defined in number (11) of the considerations to the directive. On the one hand the directive pursues the goal to protect computer programs and on the other hand it creates an economic environment that promotes competition and innovation.

Both paragraphs guarantee progress by reducing certain copyrights. By creating a certain standard, products will be easier accessible to a broad mass, easier to understand and use and will finally be cheaper for the consumer. The legislator consciously allows competitors to understand products by reverse analysis and even decompiling to achieve this goal.

Conclusion: While the access to data by independent operators is not immediately comparable to the above norm, the general ratio behind the norm applies *mutatis mutandis* to the extended vehicle concept: As the creation of interoperable and complementing products in the software copyright scenario is deemed to be a generally desired activity from the competition perspective, the same can apply *a fortiori* to the access to in-vehicle raw data which is not even subject to a copyright or other IP protection.

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23nd December 2016