

5 Development Questionnaire

Based on the enquiry in chapter 4 a questionnaire has been developed, which considers all identified requirements. The questionnaire is divided into two main parts:

1. Core Questionnaire (Part A)

Part A asks for some general information for all groups of independent operators and furthermore for specific information based on the special requirements of tool manufacturers and independent publishers.

Part A is obligatory for every recipient of the request. If there are differences concerning the granted access to technical information between the eight different countries involved in this investigation, the respective manufacturers are requested to fill in a questionnaire Part A for each of these countries (e.g. a questionnaire Part A for Poland and a questionnaire Part A covering the other seven countries).

2. Information Medium (Part B)

Part B enquires whether the requirements of independent workshops are fulfilled by the different information systems. Since the group of independent spare part distributors has similar requirements, these demands are also considered.

Part B is split into three different questionnaires, which are related to the manufacturers respective information system. The redelivery of one Part B is also obligatory for every recipient of the request. If a manufacturer is providing technical information via Internet, Part B1 has to be filled-in, if he is granting access to technical information by CD/DVD, Part B2 has to be used and if the information system is paper based, Part B3 has to be filled-in. If a manufacturer provides access by more than one of the listed media, additional questionnaires have to be completed (e.g. Part B1 and Part B2, if access to technical information is granted via Internet and CD/DVD). With differences between the eight different countries, again additional forms have to be completed.

The structure of the questionnaires is provided below. The complete versions are appended.

• Part A – Core Questionnaire

1. Arrangements relating to independent repairers, roadside assistance operators and automobile clubs
 - 1.1. Information provision
 - 1.2. Diagnostic tools
 - 1.3. Operations relating to ECU's
 - 1.4. Special Tools excluding diagnosis tools

- 1.5. Actualisation of information
 - 1.6. Training information
 - 1.7. Price discounts and rebates for authorised repairers
 2. Arrangements enabling diagnostic tool manufacturers to produce devices with the same functions as manufacturers' devices
 - 2.1. Information provision
 - 2.2. Test and diagnosis of information
 - 2.3. Communication Protocol Information
 3. Arrangements relevant for publishers
 - 3.1. Information provision
- **Part B – Information Medium (Internet (B1), CD/DVD (B2), Paper (B3))**
1. Arrangements relevant to independent repairers, roadside assistance operators and automobile clubs
 - 1.1. Registration and access conditions
 - 1.2. Registration costs
 - 1.3. Cost models
 - 1.4. Payment
 - 1.5. Number of users
 - 1.6. Covered vehicles and update periods
 - 1.7. Hard- and software requirements
 - 1.8. Languages
 - 1.9. Information structure
 2. Scope of Technical Information
 - 2.1. Vehicle identification
 - 2.2. Search Criteria
 - 2.3. Display of search results
 - 2.4. Information scope















3. Test Cases

3.1. Replacement of a defective engine ECU








3.2. Maintenance and service instructions

4. Differences of the information systems provided to authorised operators and those to independent operators

Some questions ask for information relating to one specific vehicle. In the passenger car sector a common mid-size vehicle was chosen and in the truck sector a heavy-duty truck. These vehicles are described in Tab. 5-1 and Tab. 5-2.

Company	Brand	Model	
BMW	BMW		3 Series
Fiat	Alfa		156
Fiat	Fiat		Stilo
Ford	Ford		Mondeo
Ford	Jaguar		X-Type
Ford	Volvo		V40/S40
DaimlerChrysler	Mercedes		C-Class
DaimlerChrysler	Smart		fortwo coupé
GM	Opel/Vauxhall		Vectra
PSA	Citroën		C5
PSA	Peugeot		406
Renault	Renault		Laguna
Toyota	Toyota		Avensis
Volkswagen	Volkswagen		Passat

Tab. 5-1: Overview of passenger car models for specific information questions

Company	Brand	Model	
DAF	DAF		XF
DaimlerChrysler	Mercedes		Actros
Iveco	Iveco		Stralis
MAN	MAN		TGA
Renault	Renault		Magnum/Premium
Scania	Scania		R Series
Volvo Trucks	Volvo		FH

Tab. 5-2: Overview of truck models for specific information questions

After approval, the questionnaire was sent out by the Commission as request for information pursuant to Article 11 of Regulation 17 to the above-mentioned addressees. Based on these questionnaires completed by the manufacturers, the different measures and systems, which have been introduced to grant independent operators effective access to all relevant repair information, are described comprehensively in the following chapters. The given information is mainly based on the questionnaires, which were filled in by the different manufacturers. Any inconsistent or unclear replies have been crosschecked with the respective information medium provided by the manufacturer. On a spot check basis all other information have also been reviewed. If necessary the manufacturer replies have been adjusted.

The systems and measures, put in place by the motor vehicles manufacturers, are evaluated in the chapters 17 - 18.

6 Passenger Car Manufacturers - General Information (Part A)

At the beginning of Part A of the questionnaire, each manufacturer has to provide the percentage of vehicles, for which information has been made available for independent operators. Apart from Peugeot (94%), each manufacturer has covered 100% of their vehicle fleet produced within the last 10 years.

The second question deals with the used medium to provide repair information. The majority has chosen an Internet-based concept. As shown in Tab. 6-1, few manufacturers use CD/DVD's.

The last question of this paragraph refers to the information policy concerning the authorised dealer network. The majority provides information on CD/DVD to their own network.

		BMW	Fiat / Alfa	Ford	Jaguar	Volvo Cars	Mercedes	Smart	Opel / Vauxh.	Peugeot	Citroen	Renault	Toyota	VW
1.1.1	% covered	100	100	100	100	100	100	100	100	94	100	100	100	100
1.1.2	Internet	100	0	90	100	97	0	0	100	75	0	50	0	100
1.1.3	CD/DVD	0	40	0	0	97	100	100	100	76	88	30	36 ¹	100
1.1.4	Paper	0	60	10	0	3	0	0	100	25	12	20	100	0
1.1.7	Medium for authorised dealer	all forms	CD, Paper	Internet	Internet	CD, DVD	CD, DVD	CD, DVD	CD, DVD	all forms	CD, DVD	CD, DVD	CD, Paper	CD, DVD, Intern.

Tab. 6-1: Information Provision¹

6.1 Diagnostic Tools (1.2)

At the beginning of this paragraph the manufacturers have to state the prices for the most costly diagnostic tools. The diagnostic tools from DaimlerChrysler (Mercedes and Smart) are the most expensive (EUR 15.000,-). The figures for the other manufacturers can be drawn from Fig. 6-1. The average costs for the most costly diagnostic tool from the other manufacturers are EUR 5.000,-.

Apart from reading and resetting the fault memory, the most expensive diagnosis tool offered by the manufacturers also usually provides profound repair information. Therefore, a higher price in comparison to the standard tool, which predominantly only provides fault code reading, is inevitable.

¹ In Italy 36% of the repair information is also available on CD/DVD

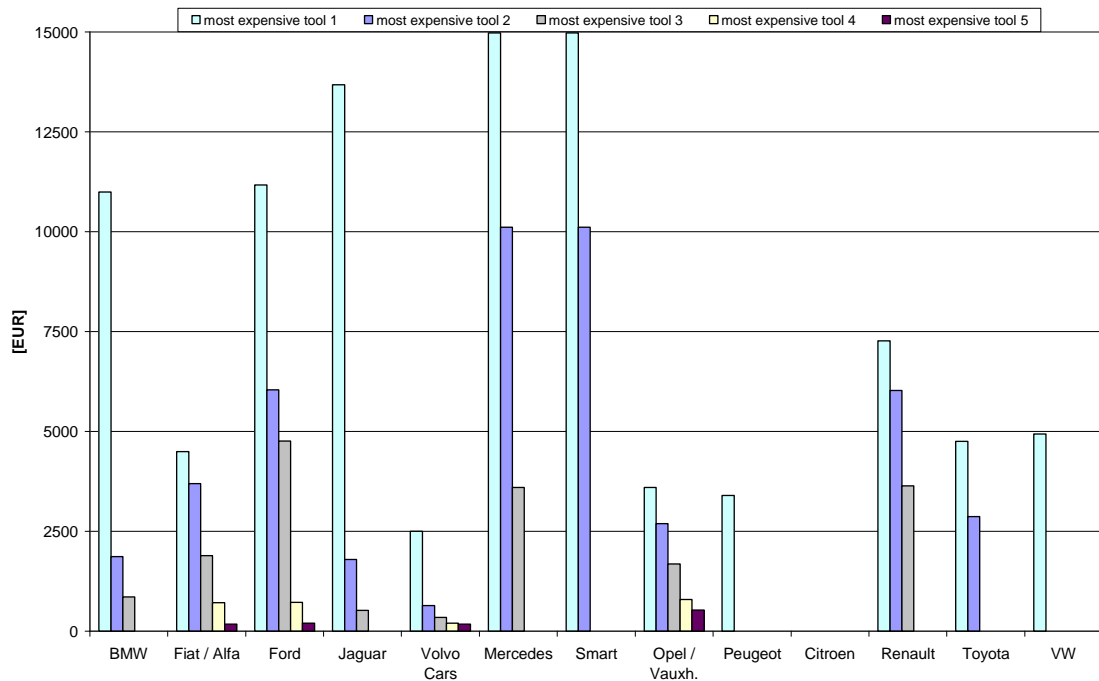


Fig. 6-1: Five most costly diagnosis tools

Fig. 6-2 shows the prices for common brand independent diagnosis tools. These tools are for instance able to read and to reset the fault memory of the engine control, the brake system, the transmission control or the AC system. Furthermore, these tools provide repair information to certain vehicles. A great discrepancy concerning the number of covered vehicles by each tool exists. Additionally the extent of their functionality is different (see Fig. 6-3), which precisely explains the need of independent tool manufacturers in order to produce multi-brand scan tools, which are able to access all different vehicle systems.

Manufacturer	Tool name	Purchase Price	Annual Price
AVL	DiScan 8000 E	EUR 3530,-	EUR 518,-
Tecno	Reflex 3130 Y	EUR 4551,-	EUR 681,-
Bosch	KTS 520	EUR 1695,- (additional PC required)	Depends on information scope: E. g. Engine diagnostics: EUR 430,-
	KTS 650	EUR 7200,-	
BrainBee	ST 6000	EUR 2800,-	EUR 379,- (after 1. year)
Gutmann	Mega Macs	EUR 8380,-	EUR 490,-
Sun	PDL 1000	EUR 1042,-	
	PDL 2000	EUR 1025,-	
	Modis	EUR 6700,-	
Texa	Axone 2000	EUR 3200,-	EUR 500,- (after 1. year)
Würth	WoW! Pro	EUR 4299,-	Depends on information scope: EUR 348 - 1.668,-

Fig. 6-2: Prices for common brand independent diagnosis tools

The more expensive versions are equipped with instruments, to measure voltage and electric current, or with oscilloscopes to record oscillating signals. The prices for these tools vary in a range from EUR 950,- to EUR 8.380,- plus annual software and license costs and correspond to the prices of the brand dependent diagnosis tools. Only the prices for the tools from DaimlerChrysler and Jaguar are outstanding.

	DiScan 8000	Tecno Reflex 3130	Bosch KTS 650	Brain Bee ST 6000	Gutmann Mega macs 55	Sun Modis	Texa Axione 2000	Wuerth WoW	Mercedes Star Diagnosis
engine electronics	EOBD	EOBD	(I, F, FR)	I, F, FR, AV, AT	I, F, FR, AV	EOBD	EOBD	I, F, FR, AV	I, F, FR, AV, AT
brake system	Vehicle not listed	Vehicle not listed	(I, F, FR)		I, F, FR, AV	Vehicle not listed	Vehicle not listed		I, F, FR, AV, AT
airbag			(I, F, FR)		I, F, FR, AV			I, F, FR	I, F, FR, AV, AT
instruments			(I, F, FR)						I, F, FR, AV, AT
transmission control			(I, F, FR)						I, F, FR, AV, AT
heating/ac			I, F, FR, AV, AT		I, F, FR, AV			I, F, FR	I, F, FR, AV, AT
immobiliser									I, F, FR, AV
headlamp levelling			I, F, FR, AV, AT						I, F, FR, AV, AT
comfort systems			I, F, FR, AV, AT		I, F, FR, AV				I, F, FR, AV, AT
central locking system									I, F, FR, AV, AT
ignition control			(I, F, FR)						I, F, FR, AV, AT
park assistant			I, F, FR, AV, AT						I, F, FR, AV, AT
seat control			I, F, FR, AV, AT						I, F, FR, AV, AT
roof electronics			(I, F, FR)						I, F, FR, AV, AT

Legend: I: Identification F: Fault Reading FR: Fault Reset AV: Actual Values AT: Actuator Test (...): System not clearly identified

Fig. 6-3: Scope of multi-brand tools vs. manufacturer tools (Mercedes Star Diagnosis)
(Vehicle: Mercedes C220 CDI, 09/2003)

Source: Kfz-Betrieb

Apart from Peugeot, Citroën and Volkswagen, the manufacturers offer the diagnostic tools for the same price to independent operators in comparison to their own network (Fig. 6-4). The main diagnostic tool from Peugeot is not available for free operators. For them, Peugeot offers a reduced version of the main diagnostic tool with less functionalities and a price reduction of EUR 1.000,-. This tool is for example not able to reset the security system. PSA uses a similar policy for Citroën. As one exception to the general rule, the Regulation specifies, that it is legitimate and proper for a supplier to withhold access to technical information, which might allow a third party to bypass or disarm on-board anti-theft devices. However, tools exist, which enable to reset the security system without allowing a third to “crack” anti-theft devices. The facility “Pass-Through Programming” is able to program manufacturer specific electronic control modules using a standard PC connected to the Internet. Free operators are in favour of this approach.

		BMW	Fiat / Alfa	Ford	Jaguar	Volvo Cars	Mercedes	smart	Opel / Vauxh.	Peugeot	Citroen	Renault	Toyota	VW
1.2.2	same price ind op/auth op	yes	yes	yes	yes	yes	yes	yes	yes	no	no	yes	yes	no
1.2.5	diff. in deliv. betw. ind/auth op.	no	no	no	no	no	no	no	no	no	no	no	no	no
1.2.6	special finance models	no	no	no	no	no	yes	yes	no	no	no	yes	no	yes
1.2.7	tools available from other prod./sources	yes	yes	no	no	no	no	no	no	no	yes	no	no	no

Fig. 6-4: Policy of distributing diagnosis tools

The Volkswagen tool for independent workshops is EUR 436,- more expensive for the following reasons:

- The scope of delivery is larger (additional diagnosis cable and compatibility to Internet system, different screen resolution).
- The different scope of delivery is necessary, as the additional items of equipment are already in use at authorised workshops.
- The handling costs for the importer are higher (set-up of the customer number and administration)

The manufacturers indicate a delivery period between 5 and 90 days for their diagnostic tools and only minor differences exist between the authorised workshops and independent operators (Fig. 6-4).

All manufacturers correspond, that there is no specific condition that independent operators have to fulfil such as training, professional experience or other qualification to purchase information for diagnostic tools (Fig. 6-4). Jaguar mentions an administration fee of 10% for independent operators, but the service provided for this fee has not been explained.

Four brands offer special financing models to purchase diagnosis tools. Independent operators can either buy or rent the Mercedes/Smart diagnosis hardware. For authorised repairers, only renting of this equipment hardware is offered. Volkswagen offers a leasing concept, e.g. in Germany via the Volkswagen Financial Services AG. Renault only answers, that they offer special financing models (Fig. 6-4).

For four manufacturers the diagnostic tools are also available from other producers. For example the Pass-through programming tool for BMW from an independent tool manufacturer has been tested with BMW interfaces and is officially validated as a supported tool. Other Pass-through tools can also be supported due to the SAE J2534 specification. Furthermore, the vehicles from Fiat can be connected with tools from different producers (Fig. 6-4).

The PSA Group does not sell tool devices themselves. Therefore, this manufacturer enumerates different tools producers, which support vehicles from Peugeot and Citroën.

The contact points of the manufacturers can be drawn from the appendix.

6.2 Operations relating to ECU's (1.3)

The possibility to provide operations to ECU's is a prerequisite for the independent operators to guarantee their competitiveness vis-à-vis the authorised network. Today, a usual mid-size vehicle is equipped with over 80 ECU's. These components are responsible for a great number of breakdowns. Solving this issue usually involved the car owner driving to a

workshop, where a diagnostic tool is connected with the car. In the workshop, the following operations may be executed:

1. Software Update: The download of a redeveloped software version.
2. Variant coding: This operation consists of assigning parameters of a hardware component to the software of an ECU. The operation is necessary after flashing a new software version as well as after replacing a hardware component.
3. Initialisation/Reinitialisation: During this operation, e.g. a sensor and the relevant controller are accustomed to a certain extent together. The data of the initialisation is stored in the EPROM of the controller. Every time the sensor or the controller is replaced or dismantled, a new initialisation is necessary.
4. Pass-Through Programming: This facility is able to program manufacturer specific electronic control modules using a standard PC connected to the Internet. The new Block Exemption Regulation does not prescribe such a facility.
5. Reset security system: Normally the engine ECU or other components are connected with the vehicle immobiliser. After the replacement of such a component it is often necessary to reset the security system.

In this paragraph of the questionnaire the vehicle manufacturers have been asked, if independent operators are able to execute the mentioned operations. The answers can be drawn from Fig. 6-5.

		BMW	Fiat / Alfa	Ford	Jaguar	Volvo Cars	Mercedes	Smart	Opel / Vauxh.	Peugeot	Citroen	Renault	Toyota	VW
1.3.1	possibility to update software/reprog.	yes	no	no	yes	yes	yes	yes	no	no	no	yes	yes	yes
1.3.2	possibility variant coding	yes	yes	no	yes	no	yes	yes	no	no	no	yes	no	yes
1.3.3	possibility initialisation/reinit.	yes	yes	no	yes	yes	yes	yes	no	no	no	yes	yes	yes
1.3.4	possibility pass-through programming	yes	no	no	no	yes	no	no	no	no	no	no	no	no
1.3.5	possibility reset security systems	no	no	no	yes	yes	no	no	no	no	no	yes	no	yes

Fig. 6-5: Possible ECU operations

In case of affirming the relevant operation, the vehicle manufacturers have to name the needed tool/software and their prices. Due to the variability of the provided answers, each manufacturer is treated separately.

Except operations relating to anti-theft, it is possible for BMW, Jaguar, Mercedes, Smart, Renault and VW to completely execute the required ECU operations.

6.2.1 BMW

Apart from resetting the security system, it is possible for independent operators to execute the required ECU operations for BMW vehicles. The needed tool (Group Tester One) can be used on all model series of BMW and MINI cars including all required functionalities. The price depends on the specific EU-country and varies in a range from EUR 8.700,- to EUR 13.300,- (average EUR 11.000,-). In case an independent operator has bought the tool, the relevant software is distributed every three months and can be purchased for EUR 1.800,- annual.

The possibility to reset the security system exists neither for authorised BMW operators nor for independent operators. It is possible for independent operators as well as for authorised workshops, under the application of the corresponding diagnostic tool, to reset the vehicle immobilisation. Resetting of the security system requires a replacement of the vehicle immobilisation control unit, in terms of the alignment with the engine control unit. Independent operators can order the immobilisation control units via authorised dealerships evidencing the original customer vehicle documents.

6.2.2 Fiat/Alfa

Independent operators can only execute variant coding and reinitialisation procedures for Fiat/Alfa vehicles. The price for the needed tool for both operations is EUR 3.700,- (Netherlands EUR 5.400,-). For the relevant software the independent operators have to pay EUR 400,-.

6.2.3 Ford

Independent operators cannot execute ECU operations with Ford vehicles.

6.2.4 Jaguar

It is possible for independent operators to execute the required ECU operations for Jaguar vehicles. The facility Pass-Through Programming is not provided. The price for the needed tool is EUR 13.684,- and includes the software.

6.2.5 Volvo Cars

Apart from variant coding, it is possible for independent operators to execute the required ECU operations for Volvo vehicles. The price for the needed tool is EUR 1.050,-. For the relevant software the independent operators have to pay EUR 2.200,- annually.

6.2.6 Mercedes

Apart from resetting the security system, it is possible for independent operators to execute the required ECU operations for Mercedes vehicles. The facility Pass-Through Programming is not provided.

For Mercedes, DaimlerChrysler offers a tool for EUR 3.600,- (Poland EUR 4.140,-; Denmark EUR 3.960,-) and a tool for EUR 10.116,- (Poland EUR 11.128,-; Denmark EUR 11.634,-) to execute ECU operations. For the relevant software the independent operators have to pay between EUR 1.704,- (Netherlands) and EUR 2.000,- (Denmark) annually.

6.2.7 Smart

For Smart, DaimlerChrysler follows the same policy as for Mercedes. Apart from resetting the security system, it is possible for independent operators to execute the required ECU operations. The facility Pass-Through Programming is not provided.

DaimlerChrysler does not offer two versions of a suitable tool for Smart. Only the more expensive tool is suitable for Smart and can be purchased for EUR 10.116,- (Poland EUR 11.128,-). For the relevant software the independent operators have to pay EUR 1.295,- annually (Poland EUR 1.332,-) plus a one-time subscription fee of EUR 352,-.

6.2.8 Opel/Vauxhall

Independent operators cannot execute ECU operations with Opel/Vauxhall vehicles.

6.2.9 Peugeot

Independent operators cannot execute ECU operations with Peugeot vehicles.

6.2.10 Citroën

Independent operators cannot execute ECU operations with Citroën vehicles.

6.2.11 Renault

It is possible for independent operators to execute the required ECU operations for Renault vehicles. The facility Pass-Through Programming is not provided. The price for the needed tool is EUR 3.641,-. For the relevant software the independent operators have to pay EUR 392,- (UK EUR 1.014,-) annually.

6.2.12 Toyota

Independent operators can only flash software updates and execute reinitialisation procedures for Toyota vehicles. The facility Pass-Through Programming is not provided. The price for the needed tool for both operations varies in a range from EUR 2.350,- to EUR 3.650,- depending on the country. The relevant software is included.

6.2.13 VW

It is possible for independent operators to execute the required ECU operations for VW vehicles. The price for the needed tool is EUR 4.936,-. To use the tool, an online access to the VW server is necessary. Therefore, VW charges for handling (EUR 116,-), a secure software client (EUR 1.170,- for 3 years) and an access per car type (EUR 56,-). The facility Pass-Through Programming is not provided.

6.3 Special Tools (1.4)

In order to clarify, at what price the free operators have to purchase special tools to enable an appropriate repair, the vehicle manufacturers have been asked to deliver specific information on the workshop equipment in use (excluding diagnosis tools). At first, the vehicle manufacturers have to name the five most used special tools over EUR 150,-, their prices and the frequency of use (assuming that a garage services 100 cars per month). The prices of these five tools for each manufacturer can be drawn from Fig. 6-6.

The manufacturers mainly enumerate releasing tools, gauges, removers, alignment kits or tensioning devices. Only Volvo has not answered these questions, because according to their statement they do not use special tools over EUR 150,-. The majority of the mentioned tools from the other manufacturers vary in a price range from EUR 150,- to EUR 500,-. Above average are the following special tools:

- Fiat/Alfa: rotating stand for engine overhaul for EUR 1.441,-
- Jaguar: locking Wheel Nut Kit for EUR 816,-
- Peugeot: engine repair box for EUR 820,-
- Citroën: multi function gauge: for EUR 1.140,-
- Renault: battery tester for EUR 840,43
- Toyota: MAD kit for EUR 4.548,- (not explained); brake disk grinding for EUR 3.000,-; spring tensioner for EUR 920,-; puller bearing set for EUR 913,-; puller b set for EUR 836,-
- VW: engine support bracket for EUR 809,89 (DK) and EUR 504;19 (I)

Due to the fact, that only few manufacturers have been able to estimate the frequency of use of their special tools, only the absolute costs of the tools can be compared. The analysis concerning the given answers can be drawn from Fig. 6-6.

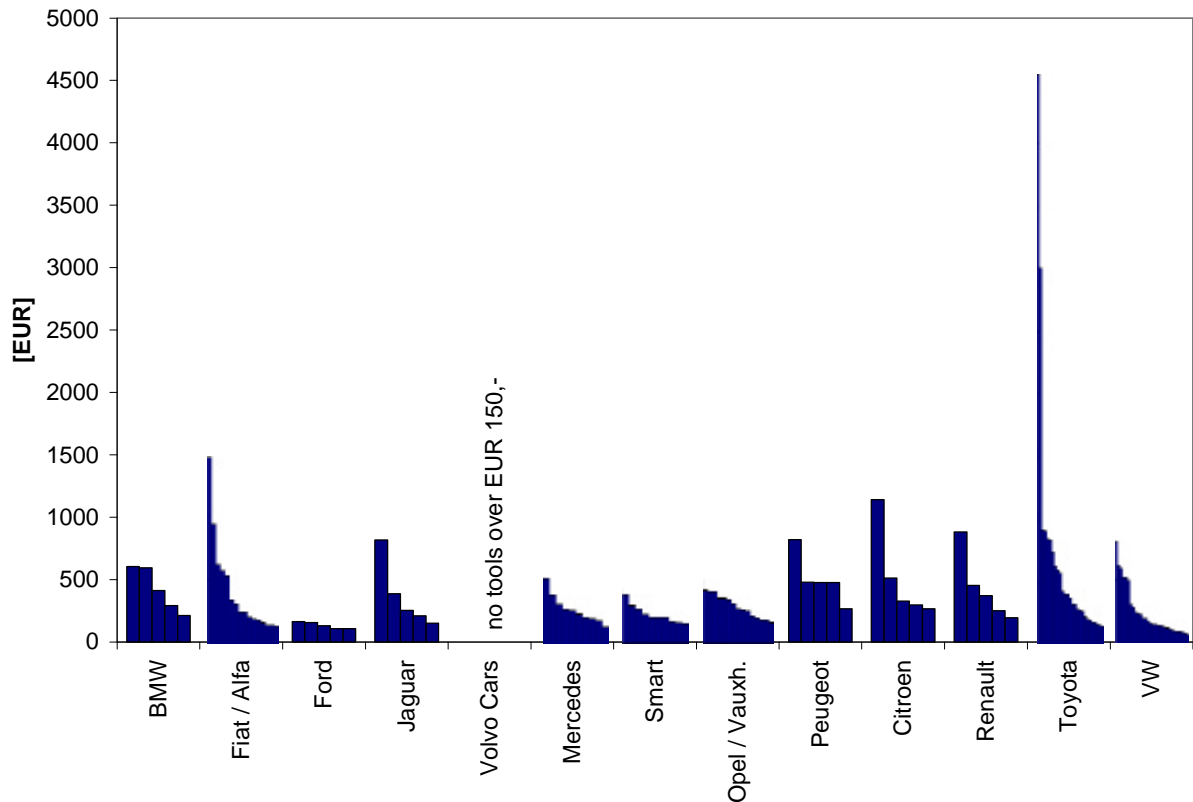


Fig. 6-6: Prices for five most used tools (over EUR 150,-)²

Furthermore, the vehicle manufacturers have to name the five most expensive special tools, their prices and the frequency of use, again assuming that a garage services 100 cars per month. The prices of these five tools for each manufacturer can be drawn from Fig. 6-7.

For this question, only few manufacturers have also been able to estimate the frequency of use of their special tools. Therefore, only the absolute costs can be compared. It is obvious, that Mercedes (EUR 4.284,-) and Toyota (EUR 4.518,-) have the most expensive special tools. The most expensive special tools from Volvo, Ford and Opel/Vauxhall can be purchased for under EUR 500,-. For the other manufacturers, the prices for the most expensive special tool vary in a range from EUR 809,89 (VW) and EUR 2.235,- (Citroën). The functions of special tools over EUR 1.500,- can be drawn from the following explanations:

² Mercedes, Smart, Toyota, VW and Opel/Vauxhall provide country-specific analysis. For these manufacturers, the diagram does not only content the prices for five special tools, but also for all enumerated prices for a special tool.

- BMW: chassis and hydro-lifter for EUR 1.740,-
- Mercedes: portal frame for EUR 4.284,15; valve seat turning kit for EUR 3.738,58; tester for power steering pump for EUR 2.916,82; welding gauge for EUR 2.759,69; hydraulic press for EUR 2.248,98 (all prices for Poland)
- Smart: gage for adjusting A-pillar for EUR 2.056,41
- Peugeot: material to repair electric components EUR 1.841,-
- Citroën: tools allowing the dynamometric engine components for EUR 2.235,-
- Toyota: MAD kit for EUR 4.548,- (not explained); brake disk grinding for EUR 3.000,-

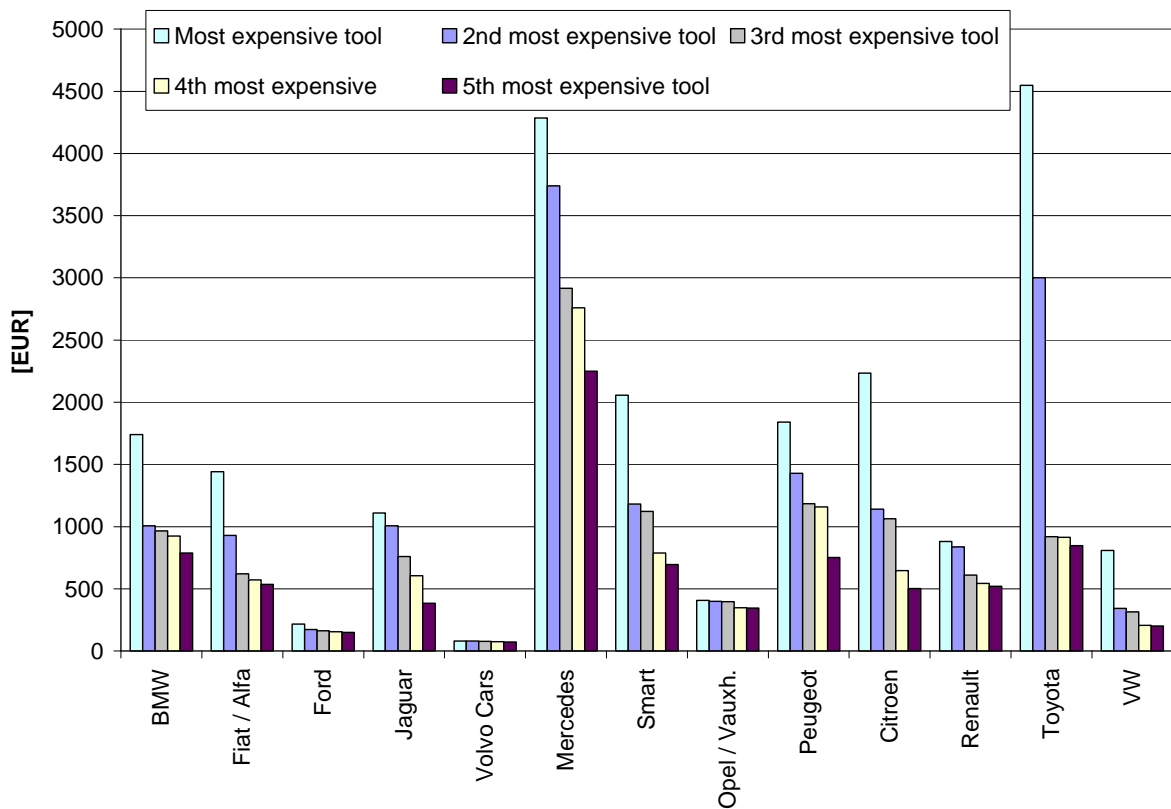


Fig. 6-7: Prices for the five most expensive special tools ³

³ Mercedes, Smart, Toyota, VW and Opel/Vauxhall provide country-specific analysis. For these manufacturers, the diagram contains the prices for the country, where independent operators have to pay most for the special tool in scope.

At the end of this paragraph the manufacturers have been asked, if they provide special financing models, like leasing of their special tools. All passenger car manufacturers negate this question.

6.4 General Information (1.5)

This paragraph deals with the information policy of the vehicle manufacturers. It is a prerequisite, that free operators get information on common faults, recall campaigns or technical bulletins (refer to updates of and supplements to the existing workshop manuals), because otherwise safety related problems of a specific vehicle cannot be adequately considered to secure customers' security. Furthermore, the free operators cannot keep pace with the authorised dealers, if they do not have access to the latest spare part numbers, information on modified parts or information on software updates. Fig. 6-8 shows, that no manufacturer delivers the same information to independent operators as to its authorised network.

		BMW	Fiat / Alfa	Ford	Jaguar	Volvo Cars	Mercedes	Smart	Opel / Vauxh.	Peugeot	Citroen	Renault	Toyota	VW
1.5.1	get ind. op. same inf. on common faults	n/a	no	no	yes	yes	yes	yes	no	yes	n/a	yes	yes	yes
1.5.1.2	get ind. op. inf. at same time	yes	n/a	n/a	yes	no	no	no	n/a	yes	n/a	yes	no	no
1.5.2	get ind. op. same inf. on recall campaigns	no	no	no	yes	no	yes	yes	no	no	no	no	no	no
1.5.2.2	get ind. op. inf. at same time	n/a	n/a	n/a	yes	n/a	no	no	n/a	n/a	n/a	n/a	n/a	n/a
1.5.3	get ind. op. same techn. bulletins	yes	no	no	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
1.5.3.2	get ind. op. inf. at same time	yes	n/a	n/a	yes	yes	no	no	no	yes	yes	yes	no	no
1.5.4	get ind. op. same inf. on mod. parts	yes	yes	yes	no	no	yes	yes	yes	yes	yes	yes	yes	yes
1.5.4.2	get ind. op. inf. at same time	yes	yes	no	n/a	n/a	yes	yes	yes	yes	yes	yes	no	no
1.5.5	provide inf. on updates sparepart numbers	yes	yes	no	no	no	yes	yes	yes	yes	yes	yes	yes	yes
1.5.5.2	get ind. op. inf. at same time	yes	yes	n/a	n/a	no	yes	yes	yes	yes	yes	yes	no	yes
1.5.6	get ind. op. same inf. on software updates	yes	yes	yes	yes	yes	yes	yes	yes	no	no	yes	yes	yes
1.5.6.2	get ind. op. inf. at same time	yes	yes	yes	yes	yes	yes	yes	yes	n/a	n/a	yes	no	no
1.5.7	provide hotline support on techn. quest.	yes	no	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
1.5.7.1	get ind. op. the same inf.	yes	n/a	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

Fig. 6-8: Actualisation of information

Due to the variability of the provided answers, each manufacturer is treated separately.

6.4.1 BMW

There is a confidential exchange of information between BMW and its authorised operators in both ways, which includes “common faults”. According to BMW, this is applied as a discussion platform in cases, where no reliable repair method is yet available or no experience exists. Such confidential or yet unconfirmed information on common faults is not shared with independent operators.

Furthermore, BMW does not provide any information on recall campaigns and have not delivered any reason for this lack in their information policy in the questionnaire.

According to BMW, all other available information on repair of vehicles will be forwarded to the independent operator using the same Internet platform as authorised operators.

6.4.2 Fiat/Alfa

Fiat/Alfa does also not provide information on common faults, recall campaigns and technical bulletins. They have not delivered any reason for this lack in their information policy in the questionnaire.

Fiat/Alfa only have a helpdesk office to share best practice with authorised dealers to solve new problems, but they do not offer this service for independent operators. According to Fiat/Alfa, all other available information is forwarded to the independent operator in the same form and at the same time as for authorised operators.

6.4.3 Ford

Ford does also not provide information on common faults, recall campaigns and technical bulletins. According to their answer, they do not carry out any silent or hidden recalls. They add, that their authorised repairers carry out owner-notified and non-owner notified programs as well as updates prior to sales. However, input or bulletins provided by authorised repairers are included in repair instructions available via Internet.

The Internet update on modified parts for independent repairers can be more current than the DVD media, delivered to authorised repairers, due to the lead time for production and shipment. Concerning updated spare part numbers the situation is the same. The part numbers are updated via Internet and in the parts catalogue, accessible to authorised and independent repairers.

According to Ford, all other available information is forwarded to the independent operator in the same form and at the same time as for authorised operators and the hotline support also exists for both parties.

6.4.4 Jaguar

Apart from the information on modified parts and on updated spare part numbers, Jaguar uses the same information policy for independent operators and for the authorised network. Further information has not been provided.

6.4.5 Volvo Cars

According to Volvo, information on common faults is issued via a technical helpdesk available for each dealer and independent operators. The information supply is depending on the inquiry at the helpdesk and can deviate in comparison to authorised dealers.

Volvo does not provide information on recall campaigns or on modified parts. They have not given any further explanations in this context.

Superseded part numbers are indicated when the dealer is ordering a part by the parts ordering system. According to Volvo, part numbers change every day and this is the main and only secure way to have the right part numbers at the time of ordering. Volvo's generic parts catalogue is not able to follow all daily "supersessions" and is updated by the usual way, 6 times annual.

Furthermore, Volvo indicates, that they have not received any contacts or requests for the existing hotline support up to now from any independent operator.

6.4.6 Mercedes

According to Mercedes the independent operators get information on common faults, recall campaigns and technical bulletins, but not at the same time as authorised dealers. Between the monthly updates of the information system, very urgent information is distributed to the authorised network separately (e.g. via mail). Independent operators will receive the same information with the next monthly update of the information system.

All other available information is forwarded by Mercedes to the independent operators in the same form and at the same time as for authorised operators and the hotline support also exists for both parties.

6.4.7 Smart

Smart uses the same information policy as Mercedes.

6.4.8 Opel/Vauxhall

Opel/Vauxhall does not provide information on common faults and recall campaigns. Technical bulletins are only applicable to the UK market. According to Opel/Vauxhall, independent repairers are not in the mailings list, but information is provided on request.

Opel/Vauxhall forwards all other available information to the independent operators in the same form and at the same time as for authorised operators and the hotline support also exists for both parties.

6.4.9 Peugeot

Peugeot does not provide information on recall campaigns and software updates. Peugeot forwards all other available information to the independent operators in the same form and at the same time as for authorised operators. The hotline support also exists for both parties, but with some restrictions. Information on safety relevant systems, on emission relating systems and the on the immobiliser are not given to independent operators.

6.4.10 Citroën

Citroën does not provide information on recall campaigns and software updates. Information on common faults is given to all repairers, who subscribe the technical assistance. Citroën forwards all other available information to the independent operators in the same form and at the same time as for authorised operators. The hotline support also exists for both parties.

6.4.11 Renault

Apart from recall campaigns, Renault provides all the required information.

6.4.12 Toyota

Apart from information on recall campaigns, Toyota provides all the required information. They do not distribute the information to independent operators and to the authorised network at the same time, but a copy of the relevant technical bulletin is available upon request (free of charge).

6.4.13 VW

Apart from information on recall campaigns, VW provides all the required information. They do not distribute the information to independent operators and to the authorised network at the same time, because time differences exist, concerning availability due to the different information routes. If independent workshops use the hotline number or the hotline fax, they receive technical information via fax. Authorised partners receive technical information within the Volkswagen IT architecture. This requires them to fulfil the manufacturer's IT standards.

6.5 Training Information (1.6)

This chapter deals with the provided training programmes to study further the involved staff at the workshop. The questionnaire mainly asks for the information medium and for price divergences between authorised workshops and independent operators (Fig. 6-9).

		BMW	Fiat / Alfa	Ford	Jaguar	Volvo Cars	Mercedes	Smart	Opel / Vauxh.	Peugeot	Citroen	Renault	Toyota	VW
1.6.1	provide remote training progr.	yes	no	no	yes	no	yes	yes	yes	yes	yes	yes	no	yes
1.6.1.1	get ind. op. the same inf.	yes	n/a	n/a	yes	n/a	yes	yes	yes	yes	yes	yes	n/a	yes
1.6.1.2	ind. op. pay same price	yes	n/a	n/a	yes	n/a	yes	yes	no	yes	yes	yes	n/a	no
1.6.2	provide classroom training	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
1.6.2.1	can ind. op. participate in same lessons	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
1.6.2.2	ind. op. pay same price	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
1.6.3	access to exterior train.	yes	yes	yes	n/a	n/a	yes	yes	yes	yes	yes	yes	yes	yes
1.6.3.1	price in EUR per day for external training on engine management	210		160	135 - 250	160 in DK			115 - 200	150 - 380	71 - 345	175 - 500	80 - 150	120 - 270

Fig. 6-9: Training information

All manufacturers provide the same classroom training for independent operators at the same price as for authorised operators. Apart from Fiat/Alfa, Ford Volvo and Toyota, they also offer remote training programmes on CD/DVD or via Internet.

Ford has currently no remote training programmes available, but there is a plan to install it in the foreseeable future.

Opel/Vauxhall uses a different accounting scheme concerning the online-based training for independent operators and for authorised workshops. Authorised repairers have to pay Euro 80,- per each trainable employee. The minimum number of trainable employees is three technicians according to the standard within the authorised repairers agreement. Due to the fact, that Opel/Vauxhall does not want to ask the independent operators to pay Euro 80,- for all of their employees, they charge Euro 150,- per individual usage in this case. This price policy does only not exists in Germany and both parties have to pay Euro 150,- for each trainable employee. In Poland, training information for independent operators is yet not available.

VW's authorised service dealers have to buy all technical information that is available. The independent workshop does not have to purchase the full package of information. These workshops can purchase information according to their specialisation.

Furthermore, it has been asked, if independent operators also have access to training carried out by authorised repairers or external training institutions, in case of not provided by the manufacturer itself. Jaguar and Ford have not provided a specific answer to this question,

but due to the fact, that they offer training information themselves, they cannot be blamed for this. Toyota generally carries out their training themselves. In Denmark and Italy occasionally training can be provided through a training institution.

Finally, the manufacturers have to give the price for a training unit on engine management, provided by an authorised repairer or an external training institution. Although Jaguar and Ford have not provided a specific answer on the preceding question, they have filled in a price. Mercedes and Smart explain, that they do not offer training units on engine management up to now. The provided prices from the other manufacturers sometimes vary from country to country. For these manufacturers, Fig. 6-9 contents the lowest and the highest price. The given prices of all manufacturers are all in a similar range.

6.6 Price Discounts and Rebates for Authorised Repairers

The questionnaire has asked for discounts and rebates for authorised repairers, because this could be a possibility to bypass the Block Exemption Regulation. Manufacturers may charge independent operators and authorised dealers the same price for technical information and afterwards they could refund an amount to authorised dealers. In this way manufacturers could pretend to follow the Block Exemption Regulation.

Toyota reimburses technical training costs in case of successful completion and certification of Toyota's specific qualification scheme. This should increase the motivation of repairers to invest in staff qualification and staff retention. According to the provided answers, the other manufacturers do not offer price discounts and rebates for authorised repairers (Fig. 6-10).

		BMW	Fiat / Alfa	Ford	Jaguar	Volvo Cars	Mercedes	Smart	Opel / Vauxh.	Peugeot	Citroen	Renault	Toyota	VW
1.7.1	special price discounts for auth. rep.	no	no	no	no	no	no	no	no	no	no	no	yes	no

Fig. 6-10: Price discounts and rebates

6.7 Information for Diagnostic Tool Manufacturers (2)

In this paragraph it has been asked for the arrangements, enabling diagnostic tool manufacturers to produce devices with the same functions as manufacturers. Before the introduction of the new Block Exemption Regulation, the diagnostic tool manufacturer sometimes had a number of arrangements with vehicle manufactures, where they were treated as a dealer and received the same technical literature a dealer received (often free of charge or at least at the standard deal charge rate). Since the introduction of the new Block Exemption Regulation, and often coinciding with a change of technology for data transfer, the diagnostic tool manufacturers have been moved to the status of an independent repairer.

Some tool manufacturers have not been willing to cooperate with the authors of this study, because they fear further restrictions from the vehicle manufacturers.

6.7.1 Information Provision (2.1)

This new situation is quite obvious by analysing the first answers of the vehicle manufacturers in the section of the questionnaire dealing with the information policy for diagnostic tool manufacturers. Fig. 6-11 shows the percentage of covered vehicles produced within the last 10 years, for which the manufacturers provide special information for tool manufacturers. Apart from Ford and Jaguar, no manufacturer has made information available for all vehicles. The information from Renault (20% for one specific vehicle produced since 2002) and Toyota (70%) is not complete. The rest delivers no information.

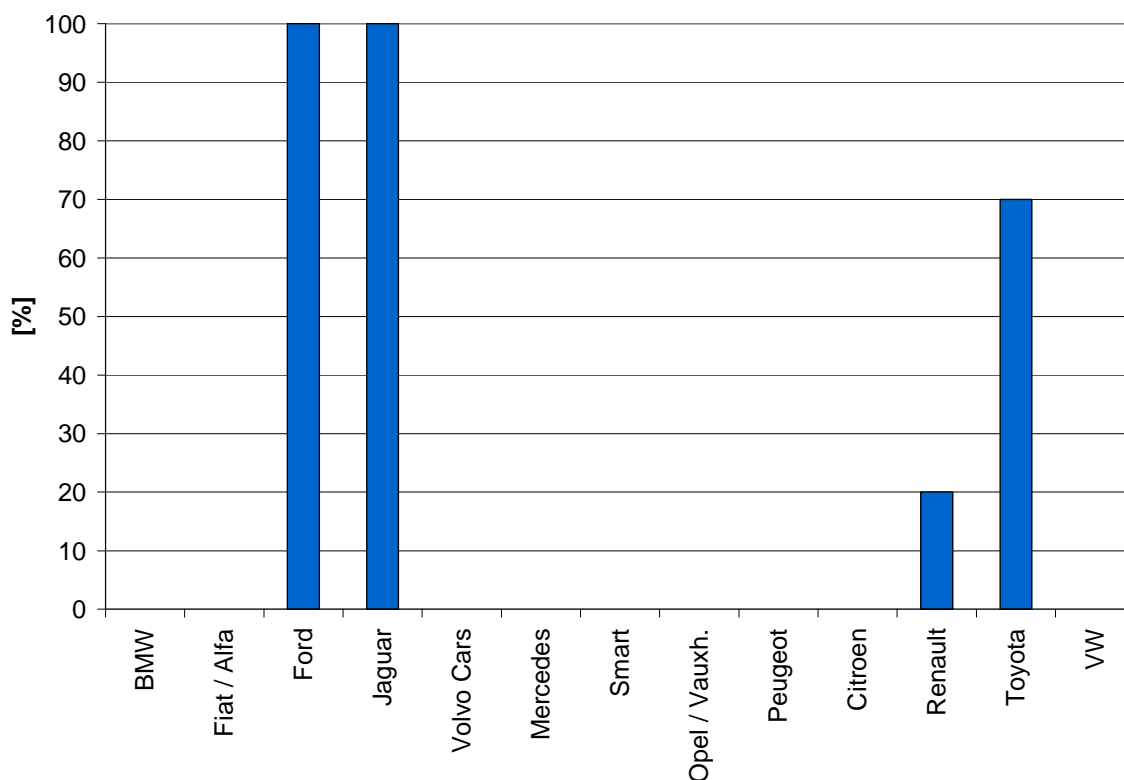


Fig. 6-11: Covered vehicles with specific information for tool manufacturers

According to a statement from Volkswagen, mentioned in the enclosure to the questionnaire, they do not supply manufacturers of diagnosis units with any additional information. VW explains, that these companies do have the same access to all technical information as the independent workshops. VW is of the opinion, that the independent diagnosis tool manufacturers can develop their own units using this information. Toyota explains, that they have not received any request.

This is rather contradictive to the statement of a representative from GEA⁴. According to his point of view, information on communication protocols and component tests is increasingly important and can only be obtained by purchasing vehicle manufacturer's tools cost effectively.

According to BMW, they treat diagnostic tool manufacturers not different than other types of independent operators and therefore they do not receive technical support exceeding the support provided to other independent operators. The cooperation with a licensed diagnostic tool manufacturer starts before they provide information to independent operators.

Due to the fact, that only four manufacturers provide special information for tool manufacturers, the answers for chapter 2.1 of the questionnaire are summarised shortly in the following:

Information media:	Ford: Internet and paper Jaguar: Internet Renault: Paper and software (not explained) Toyota: Paper and Microsoft Office
Information packages:	Only Renault has answered. They use the following packages: <ol style="list-style-type: none"> 1. Communication between tool and vehicle 2. Auto-diagnostic of the ECU's 3. Methods for diagnostic and repair 4. Repair of electronic components
Price policy:	Some vehicle manufacturers indicate the price of information relevant for independent repairers, if they do not provide information especially for tool manufactures. These answers are not useful in this chapter. Although Renault has a low coverage rate, independent tool manufacturers have to pay EUR 3.390,- for the information. Ford charges EUR 990,- for all vehicles and EUR 170,- for a midsize vehicle.
Date of information:	No vehicle manufacturer has answered, if the independent diagnostic tool manufacturers get information at the same time as licensed providers.

⁴ GEA: Garage Equipment Association Ltd.

Entity of provision: Only Renault and Toyota have answered this question. Both have explained that they provide the information by a centralised entity, which has the mandate to decide, which information will be provided.

Technical support: Only BMW and Renault provide technical support to the diagnostic tool manufacturers.

A summary of the provided answers can be drawn from Fig. 6-12. The vehicle manufacturers, which provide special information for diagnostic tool manufacturers are marked in yellow colour.

		BMW	Fiat / Alfa	Ford	Jaguar	Volvo Cars	Mercedes	Smart	Opel / Vauxh.	Peugeot	Citroen	Renault	Toyota	VW
2.1.3	are there inf. packages	no	no	no	no	no	no	no	no	n/a	n/a	yes	no	no
2.1.6	get ind. diagn.toolmanuf. inf. at same time	n/a	no	no	no	n/a	no	no	no	n/a	n/a	no	no	no
2.1.8	distribution by central entity	no	no	no	no	n/a	no	no	no	n/a	n/a	yes	yes	no
2.1.8.1	has entity mandate to dec. which inf. will be prov.	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	yes	yes	no
2.1.9	prov. techn. support for tool manuf.	yes	no	no	no	n/a	no	no	no	n/a	n/a	yes	no	no

Fig. 6-12: Information provision to diagnostic tool manufacturers

6.7.2 Test and Diagnosis information

In this chapter of the questionnaire the vehicle manufacturers have been asked, if they provide information enabling tool manufacturers to install test procedures for specific cars in their tools. Therefore, the following information is indispensable:

- Any procedure to test and diagnose vehicle systems and components
- Descriptions and values of any parameter, which is necessary to perform the procedures
- Values expected under certain driving conditions (e.g. voltage of a sensor)
- Failure mode diagnostic sequences, including fault trees and guided diagnostic elimination
- Information on ECU and component initialisation

Some vehicle manufacturers have answered these questions, although they do not offer special information for diagnostic tool manufacturers (the vehicle manufacturers, which provide special information for diagnostic tool manufacturers are marked in yellow colour in Fig. 6-13). This means, that these manufacturers deliver this information together with their “regular” information to independent operators.

		BMW	Fiat / Alfa	Ford	Jaguar	Volvo Cars	Mercedes	Smart	Opel / Vauxh.	Peugeot	Citroen	Renault	Toyota	VW
2.2.1	prov. descriptions of test procedures (steps)	yes	yes	no	yes	yes	no	no	no	n/a	n/a	yes	yes	no
2.2.2	prov. test parameters	no	yes	no	yes	yes	no	no	no	n/a	n/a	yes	yes	no
2.2.3	prov. connection details incl. MIN/MAX values	no	no	no	yes	yes	no	no	no	n/a	n/a	yes	yes	no
2.2.4	prov. values expected under certain driv. cond.	yes	no	no	yes	yes	no	no	no	n/a	n/a	yes	yes	no
2.2.4.1	if yes: provide failure mode values for scenarios	no	n/a	n/a	yes	n/a	n/a	no	n/a	n/a	n/a	yes	yes	no
2.2.5	electric. values in static/dynamic states	no	yes	no	yes	yes	no	no	no	n/a	n/a	yes	yes	no
2.2.5.1	if : provide failure mode values for scenarios	n/a	no	n/a	yes	yes	n/a	no	n/a	n/a	n/a	yes	yes	no
2.2.6	prov. failure mode diagn. seq. incl. fault trees etc	no	yes	no	yes	yes	no	no	no	n/a	n/a	yes	yes	no
2.2.7	prov. inf. on ECU and component init.	yes	yes	no	yes	yes	no	no	no	n/a	n/a	yes	yes	no

Fig. 6-13: Information on diagnosis to diagnostic tool manufacturers

The answers for chapter 2.2 of the questionnaire are summarised shortly for each manufacturer in the following:

6.7.2.1 BMW

According to BMW, they do not provide any documentation on test procedures (although answered with yes in the questionnaire), but the user of the information system has access to process flows within the runtime system. This information is depending on specific vehicles, as the user has to specify a vehicle by series, model and year of manufacture. There is no global view on test procedures possible. The user is lead through several processes by an interface. There is no explicit description of the test procedures, but an intuitive process flow is offered to the user.

The answers given in the questionnaire also indicate, that BMW provides information on values expected under certain driving conditions and information on ECU plus component

initialisation. All other information, which is also indispensable to develop an appropriate tool, is withheld.

6.7.2.2 Fiat/Alfa

Fiat/Alfa has answered these questions with yes in the questionnaire, although they do not offer special information for diagnostic tool manufacturers. According to them, they provide information on test procedures, but only parameters for a few sub-systems. Furthermore, information on electrical values in different states, on failure mode diagnostic sequences and on ECU and component initialisation exists for independent operators. All other information, which is also indispensable to develop an appropriate tool, is withheld.

6.7.2.3 Ford

Although Ford pretends to deliver special information for diagnostic tool manufacturers, they withhold all the required information. Therefore, it is rather impossible for an independent diagnostic tool manufacturer to include Ford in its tools.

6.7.2.4 Jaguar

According to Jaguar, they provide all the required information to diagnostic tool manufacturers.

6.7.2.5 Volvo

Volvo has answered these questions with yes in the questionnaire, although they do not offer special information for diagnostic tool manufacturers. Apart from failure mode values, they provide all the necessary information to include Volvo in a manufacturer independent diagnostic tool.

6.7.2.6 Mercedes

Mercedes does not provide any of the required information.

6.7.2.7 Smart

Smart does not provide any of the required information.

6.7.2.8 Opel/Vauxhall

Opel/Vauxhall does not provide any of the required information.

6.7.2.9 Peugeot

Peugeot does not provide any of the required information.

6.7.2.10 Citroën

Citroën does not provide any of the required information.

6.7.2.11 Renault

According to Renault, they provide all the required information to diagnostic tool manufacturers.

6.7.2.12 Toyota

According to Toyota, they provide all the required information to diagnostic tool manufacturers.

6.7.2.13 VW

VW does not provide any of the required information.

6.7.3 Communication Protocol Information

The only standard covering electronic communication is Directive 98/69/EC, which only applies to emission related vehicle systems. For these systems, e.g. ISO 15031 on protocols is prescribed, in order to achieve a useful, standardised mechanism for developing diagnosis tools. This standard regulates the following items relating to communication:

- ISO 15031-1: general information
- ISO 15031-2 presents a standard nomenclature for vehicle components. It includes the standard names, abbreviations and acronyms that have already been assigned to commonly used components.
- ISO 15031-3 specifies a standard connector between the testing tool and the vehicle, together with the location of the connector within the vehicle.
- ISO 15031-4 specifies the facilities to be provided by a minimal, standard testing tool, which may be used to extract digital information from the vehicle, clear fault codes and request actuator operation.
- ISO 15031-5 specifies the messages, which pass between the vehicle and the testing tool in order to provide a set of basic, standard diagnostic facilities.
- ISO 15031-6 specifies codes to particular vehicle malfunctions, as identified by monitoring facilities within the vehicle.

- ISO 15031-7 specifies the data link security

According to the New Block Exemption Regulation, it must be possible for independent operators to check all electronic vehicle components. For an independent operator it is rather impossible to purchase all manufacturer specific tools. Therefore, there is a need for diagnostic tools, which cover more than one vehicle manufacturer. It is a prerequisite, that independent diagnostic tool manufacturers get information comparable to ISO 15031 to all electronic vehicle components.

The questionnaire asks for the necessary protocol information to manufacture a brand independent diagnostic tool (Fig. 6-14). The vehicle manufacturers, which provide special information for diagnostic tool manufacturers are marked in yellow colour.

		BMW	Fiat / Alfa	Ford	Jaguar	Volvo Cars	Mercedes	Smart	Opel / Vauxh.	Peugeot	Citroen	Renault	Toyota	VW
2.3.1	prov. any add. protocol not covered by ISO 15031	no	no	no	no	yes	no	no	no	n/a	n/a	yes	no	no
2.3.2	prov. inf. on fault code reading/interpretation	no	no	no	no	yes	no	no	no	n/a	n/a	yes	yes	no
2.3.3	prov. live data parameter incl scale inf.	no	no	no	no	yes	no	no	no	n/a	n/a	yes	yes	no
2.3.4	prov. inf. on funct. tests incl device act./control	no	no	no	no	yes	no	no	no	n/a	n/a	yes	yes	no
2.3.5	prov. details how to obtain component/status inf.	no	no	no	no	yes	no	no	no	n/a	n/a	yes	yes	no
2.3.6	prov. inf. on reset/adapt. learns/variant coding	no	no	no	no	yes	no	no	no	n/a	n/a	yes	yes	no
2.3.7	prov. inf. on ECU identification & variant coding	no	no	no	no	yes	no	no	no	n/a	n/a	yes	no	no
2.3.8	prov. access to sec. codes req. for rep.funct.	no	no	no	no	no	no	no	no	n/a	n/a	no	yes	no
2.3.9	prov. inf. how to re-set service lights	no	no	yes	no	yes	no	no	no	n/a	n/a	yes	yes	no
2.3.10	prov. inf. on diagn. connector details	yes	no	no	yes	yes	no	no	no	n/a	n/a	yes	yes	no
2.3.11	prov. inf. for unambiguous veh. identification	no	no	no	no	yes	no	no	no	n/a	n/a	yes	no	no

Fig. 6-14: Communication protocol information

The answers for chapter 2.3 of the questionnaire are summarised shortly for each manufacturer in the following:

6.7.3.1 BMW

BMW itself does not produce nor develop hard- or software relating to technical diagnosis equipment needed for the service of BMW vehicles. A tool manufacturer has exclusively developed the diagnosis application. The transfer of the development results to competitors by BMW has been expressly excluded under a software development agreement. The only information provided by BMW are details on the diagnostic connector.

The manufacturer of the BMW diagnostic tool itself is not subject to any limitations to license its products to its own competitors. Apart from that, the acquisition of data derived from available information allows any other producer of diagnosis equipment to generate computable data for use in other operation systems.

6.7.3.2 Fiat/Alfa

Fiat/Alfa does not provide any of the required information.

6.7.3.3 Ford

Apart from the information how to reset the service light, Ford does not provide any details asked in the questionnaire relevant for diagnostic tool manufacturers.

6.7.3.4 Jaguar

Apart from information on the diagnostic connector, Jaguar does not provide any details asked in the questionnaire relevant for diagnostic tool manufacturers.

6.7.3.5 Volvo

Volvo has answered these questions, although they do not offer special information for diagnostic tool manufacturers. Therefore, the information must be provided together with the information relevant for independent operators.

Apart from withholding access to security codes required for repair functions and control module updating, Volvo delivers all necessary information to tool manufacturers.

6.7.3.6 Mercedes

Mercedes does not provide any of the required information.

6.7.3.7 Smart

Smart does not provide any of the required information.

6.7.3.8 Opel/Vauxhall

Opel/Vauxhall does not provide any of the required information

6.7.3.9 Peugeot

Peugeot has not answered to any of the required questions.

6.7.3.10 Citroën

Citroën has not answered to any of the required questions.

6.7.3.11 Renault

Apart from withholding access to security codes required for repair functions and control module updating, Renault delivers all necessary information to tool manufacturers. According to Renault's cover letter, they are already in contact with the independent tool manufacturers BOSCH, FACOM and ACTIA to answer their requirements.

6.7.3.12 Toyota

Toyota does not provide any additional protocol information not covered by ISO 15031. Furthermore, they withhold any access to security codes required for repair functions and control module updating. According to Toyota, information on ECU identification and variant coding is not provided. All other required information is offered to independent diagnostic tool manufacturers.

6.7.3.13 VW

VW does not provide any of the required information

6.8 Information for Publishers (3)

The New Block Exemption Regulation (BER) calls for the supply of fair and indiscriminate information to the independent operators. Independent publishers are part of the same group as independent repairers, although many of the agreements between publishers and the vehicle manufacturers are based on suppliers licence costs. These costs could be much higher compared to independent repairers. Furthermore some representatives of the publishers are of the opinion that the New Block Exemption Regulation has more restricted information to publishers.

Fig. 6-15 shows the percentage of covered vehicles produced within the last 10 years, for which the manufacturers provide special information for publishers. Fiat/Alfa, Jaguar and Volvo do not offer special information for publishers. For these manufacturers, the informa-

tion must be therefore provided together with the information relevant for the other independent operators.

The special information from Peugeot (they have covered 75% of the vehicles produced within the last 10 years), Citroën (covered 70%) and Toyota (covered 70%) are not complete concerning publishers. The other vehicle manufacturers have covered 100% of the vehicles produced within the last 10 years by their information relevant for publishers.

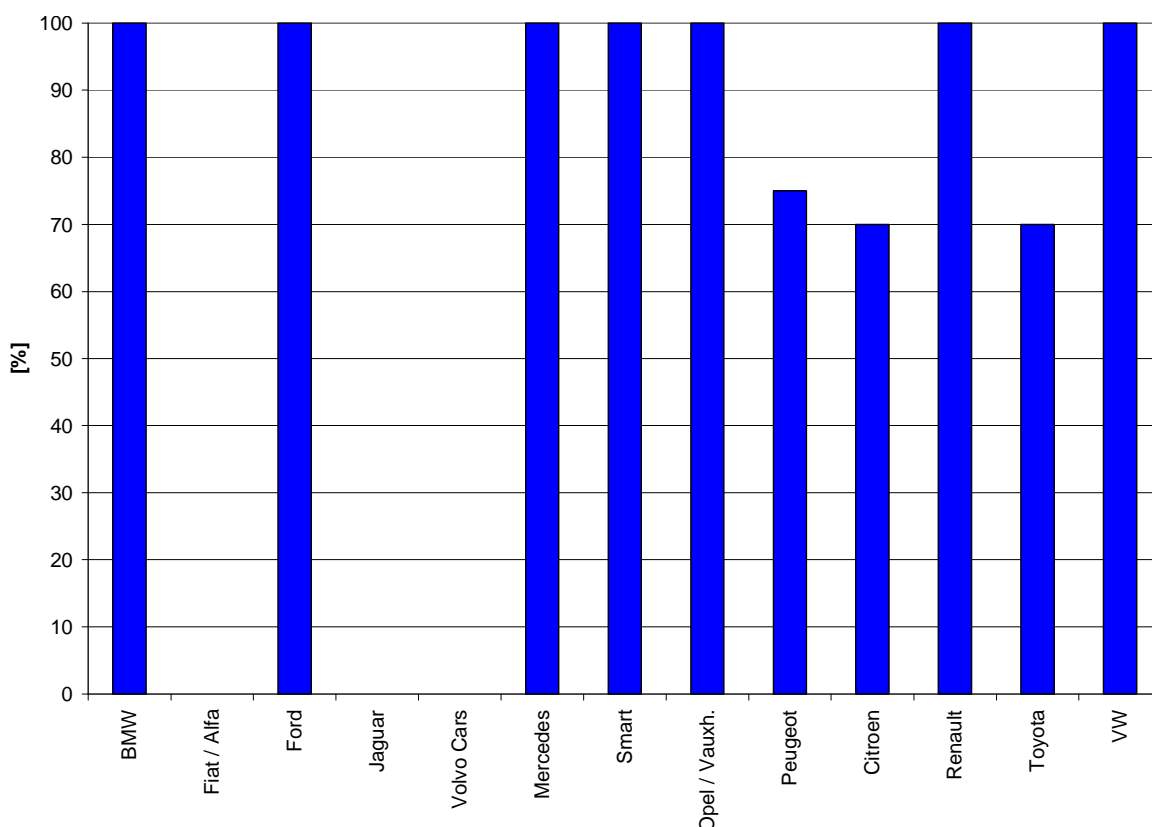


Fig. 6-15: Covered vehicles with specific information for publishers

In the questionnaire, the vehicle manufacturers have to give insight in their information policy concerning publishers (Fig. 6-16). The vehicle manufacturers, which provide special information for publishers are marked in yellow colour.

Most of the vehicle manufacturers providing special information for publishers use Internet, Paper or CD's/DVD's as distribution media.

		BMW	Fiat / Alfa	Ford	Jaguar	Volvo Cars	Mercedes	Smart	Opel / Vauxh.	Peugeot	Citroen	Renault	Toyota	VW
3.12	information media	Inter-net		Inter-net, Paper			DVD	DVD	CD, Video, Paper	CD, DVD	DVD	Inter-net, CD, Paper	Paper	CD, DVD, Internet
3.1.3	information packages	no	no	yes	no	no	yes	no	yes	yes	yes	no	no	no
3.1.6	prov. techn. support for publishers	yes	no	no	no	no	no	no	yes	no	no	no	no	yes
3.1.6.1	has entity mandate to dec. which inf. will be prov.	n/a	n/a	n/a	n/a	n/a	n/a	n/a	yes	n/a	n/a	n/a	n/a	no

Fig. 6-16: Information provision for publishers

It is important for the publishers, that they are able to purchase the relevant information as reasonable packages. Only Ford, Mercedes, Opel/Vauxhall, Peugeot and Citroën provide these packages. Ford does not deliver any deeper information on their used information packages.

Opel/Vauxhall uses different videos and brochures for special repairs such as body welding techniques. Publishers, who want do purchase information on Peugeot vehicles have different options. Packages on replacement parts, repair methods, work time/payment, schematic descriptions and inner vehicle plans exist for all vehicles in 17 languages (as choice).

Publishers, who want to purchase information on Citroën vehicles have two options. The first package contains all the relevant information. The second one is divided in replacement parts, repair methods and work time/payment.

Another important item is the date, when publishers get the information from a new vehicle. Most of the manufacturers have answered, that the information is available one month before or at the same time as the start of sales. The exact figures can be drawn from Fig. 6-17. In this short period, it is rather impossible for publishers to produce an appropriate documentation.

The last part of this paragraph deals with the question, if the vehicle manufacturers provide technical support for publishers. Only BMW, Opel/Vauxhall and VW offer this service. If the service is offered, it is also important that the person at the hotline is in a position to decide, if information can be provided or not. Only Opel/Vauxhall's hotline has the mandate to decide, which information can be provided or not (considering intellectual property rights).

In general, the provided answers according to publishers show quite positive measurements from the manufacturer to feed independent publishers. This is rather contradictive to statements from a representative of a publishing company⁵. According to them, even nine months

⁵ Name of the information source is known by the publisher of this study

after the introduction of the New Block Exemption Regulation, there are some vehicle manufacturers, which have stopped to supply information for publishers at the end of October 2003 and have still not presented conditions or terms to continue.

3.1.5	Date of information provision
BMW	start of sales
Fiat/Alfa	some
Ford	same time than our authorized repairers
Jaguar	1 month before start of sales
Volvo	start of sales
Mercedes	1 month before start of sales
Smart	1 month before start of sales
Opel/Vauxhall	start of sales
Peugeot	1 month before start of sales
Citroen	1 month before start of sales
Renault	start of sales
Toyota	upon request
VW	start of sales

Fig. 6-17: Date of information provision for publishers

6.8.1 Price of Information (3.1.4)

To be able to compare, how much publishers have to pay for information, the questionnaire asks for the prices for the complete information for a mid-size vehicle relevant for 1000 published exemplars of a documentation. Due to the importance of this question, the answers are treated in separate paragraph. According to a statement from a representative of a large publishing company, the prices for publishers are not balanced in comparison to the asked prices for independent operators.

6.8.1.1 BMW

BMW offers the complete information to publishers under a flat rate arrangement. Publishers currently pay a flat rate of 6.000 Euro annual.

6.8.1.2 Fiat/Alfa

Fiat/Alfa does not deliver special information to publishers.

6.8.1.3 Ford

Publishers pay Ford for information an annual license fee of EUR 6.500.- per country, in which the information is sold. This is independent from the individual sales volume, but covers the entire range of information available.

6.8.1.4 Jaguar

Jaguar does not deliver special information to publishers.

6.8.1.5 Volvo Cars

Volvo does not deliver special information to publishers.

6.8.1.6 Mercedes

Mercedes has explained, that they only have individual prices according to the data content needed and published exemplars.

6.8.1.7 Smart

Smart has also explained, that they only have individual prices according to the data content needed and published exemplars.

6.8.1.8 Opel/Vauxhall

Upon request and contractual agreement, profit making publishing companies can purchase Technical Information on CD as a packaged priced of Euro 6.000,- per annual subscription (10 issues). Additional information such as special repairs can be separately purchased on videos and new technical features on hardcopy paper brochures.

6.8.1.9 Peugeot

The price for Peugeot information relevant for publishers is calculated as follows:

- Y: price to be paid by publisher
- X: price of information package
- N: number of published exemplars
- i: coefficient (3 to 25 as function of N)
- B: depends on the information level used by publisher (1 to 4)
- P: Peugeot part of information

Formula : $Y = ((X \times N) / (i \times B)) \times P$

The prices for the information packages (X) are as follows:

EUR 2.500,- for all languages and all vehicles

EUR 1.700,- for one language and all vehicles

EUR 425,- for one language and one vehicle

EUR 1.000,- for replacement parts for all languages and all vehicles

EUR 680,- for replacement parts for one language and all vehicles

EUR 170,- for replacement parts for one language and one vehicle

EUR 250,- for replacement parts for all languages and one vehicle

The other information packages have a comparable price system.

6.8.1.10 Citroën

Citroën uses a comparable price system to Peugeot. The price for Citroën information relevant for publishers is calculated as follows:

Y: price to be paid by publisher

P: price of information package

N: number of published exemplars

i: coefficient (1 to 40 as function of N)

C: other coefficient

Formula : $Y = ((P \times N) / (i \times C))$

The prices for the information packages (X) are as follows:

EUR 465,- for complete information

EUR 60,- for replacement parts

EUR 30,- work times

EUR 375,- repair methods

6.8.1.11 Toyota

Toyota has not yet defined an appropriate pricing.

6.8.1.12 VW

Documents are provided in encrypted form. The prices for the release of a document are the same as for independent workshops. The documents are protected by copyright. Publishers using a document's content must have a usage contract and pay an extra fee of approx. 50% of the document price.