OASIS TECHNICAL COMMITTEE

FORMAT OF AUTOMOTIVE REPAIR INFORMATION

Autorepair Requirements Specification

Document Control

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Notes:
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SC1-Dx	Deliverables for sub-committee 1 – Use Cases and Requirements
SC2-Dx	Deliverables for sub-committee 2 – Architecture and Specification
SC3-Dx	Deliverables for sub-committee 3 – Terminology and Vocabulary
SC4-Dx	Deliverables for sub-committee 4 – Accessibility

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Version	Note
1.0	First version
2.0	Working version after the SC1 sub-committee meeting on 18-11-02.
3.0	Version agreed by the SC1 sub-committee at their meeting on 28-11-02.
4.0	Final version with the text agreed by the SC1 sub-committee at their meeting on 28-11-02. Re-numbered and re-organised following the earlier drafts, with cross reference to original numbering. • Added first paragraph defining what the requirements are • [2.2.1.3] Filled out priority to 'E' • [2.2.7.1] to [2.2.7.5] Filled out priorities to 'E' • [2.2.8.1] to [2.2.8.5] Filled out priorities to 'E'
5.0	Final version agreed by full Technical Committee on 29-11-02, with references to old numbering removed (numbering is the same as V4, which should be used as the cross reference point between the old numbering and new numbering). • Reworded first paragraph • Added note N2, renumbered subsequent notes
6.0	Amended following feedback from voting process and meeting on 10-01-2003

Contents

This document is a Requirements Specification that will be used to direct the development of a technical specification by this Technical Committee.

Requirements may be categorised according to their priority:

E   essential   The Specification must implement this requirement to be accepted.
I   important   The Specification should implement this requirement; some deviation from the requirement as stated may be acceptable.
D   desirable   The Specification should implement this requirement, but may be accepted without it.
N   Nice-to-have   An optional feature that would enhance the solution but is not significant for acceptance of the Specification.

1. General Statements

Ref.	Statement
1.1	Note that these requirements do not make reference to any timescales for implementation or adoption of the requirements. The timescale for implementation may be decided by the Commission or by voluntary agreement (guided by the Commission), subject to input from all parties.
1.2	Information should only be provided if it is required for repair and only so far as available to authorised dealers/repairers and excluding information which might compromise vehicle integrity or security.
1.3	Terms such as 'reasonable' and 'normal' are included in this document, but are left for future interpretation.
1.4	The term 'repair' is used throughout this document to refer to repair, diagnosis and maintenance.
1.5	**Manufacturers will not be required to change their internal systems or the way they provide information to their franchised dealers / authorised workshops. However, manufacturers recognise that they may need to change interfaces to consumers in order to implement the OASIS technical specification that results from this requirements document.**

2. Information Production

2.1 Information Scope and Types

Ref.	Requirement	Priority
2.1.1	Information must cover all passenger cars and light commercial vehicles which are covered by the OBD directive, from a date to be agreed. Note that these requirements do not make reference to any timescales for implementation or adoption of the requirements.	E
2.1.2	Emission-related service information must be provided, in the	E

Ref.	Requirement	Priority
	frame of the Directive 98/69/EC, at a minimum.	
2.1.3	Information provided should include: • -The meaning of DTC's, including manufacturer-specific codes • Information on mechanical hydraulic electrical and electronic components which are likely to impact vehicle emissions (identification, diagnosis, removal & fitting, test) – see section 3.5.1 • Diagnosis information – see section 3.5.2 • Training-related information – see section 3.6 • Location of diagnostic connector – diagram • This requirement should cover the definition of repair information in Annex XI 2.19 of OBD Directive 98/69/EC	E
2.1.4	Re-initialisation and Re-programming • Information on which tools and procedures are required for re-initialising and re-programming, subject to 3.5.6 See Note N1	E
~~2.1.5~~	~~Information needs only to be supplied if it is also supplied to authorized dealers.~~	~~E~~

Note N1

There are further requirements and issues related to 2.1.4 which have not been agreed by this sub-committee and are documented under reference F1 in Section 4.

2.2 Information Formats

These requirements relate to the formats in which information is produced and then supported by User Agents (ie the devices used to access information). Since information should be supplied over the Internet (2.3.1), the web browser is assumed to be the standard user agent.

Ref.	Requirement	Priority
2.2.1	The following open text formats should be supported by the User Agents (ie the devices used to access information): • **Plain text** (ASCII) • HTML • XML ~~in defined format~~ **with style sheet** • PDF • RTF • RDF See Note N2	E
2.2.2	The following open graphics formats should be supported by	E

Ref.	Requirement	Priority
	the User Agents (ie the devices used to access information): • SVG • JPEG • GIF • TIF • PDF • PNG • ~~CGM~~ See Note N2	
2.2.3	Information should be made available by information producers in at least one of the open text or graphics formats	E
2.2.4	Information which cannot ~~reasonably~~ be made available in one of the open text or graphics formats, ~~may~~ **should** be made available through the use of browser plug-ins **(except for information covered by 2.2.6**)~~.~~	E
2.2.5	Any plug-ins used must be freely available and instructions on how to download and install them must be provided with the information	E
2.2.6	Some guided diagnostics can only be provided through tool manufacturers. The information supplied to tool manufacturers is accepted in any **usable** form. If a standard is agreed for diagnostic information (eg ODX) it should be considered.	E
2.2.7	Meta data should be made available in a standard format, to **be** agreed in the technical specification of this Technical Committee. **It is not required that meta data be added to manufacturers' internal systems, but that meta data, in a standard format, will assist access to information by consumers (see Statement 1.5).** **No assumption is made about who will produce or provide these meta data.**	E

Note N2

The lists of formats in 2.2.1 and 2.2.2 are not exhaustive and do not define the versions or variations of each format. The Technical Specification will contain the definitive list of formats and their technical detail (eg version). This definitive list may include (for example) SGML as an open text format.

2.3 Information Access

Ref.	Requirement	Priority
Information must be provided through		
2.3.1	• Internet	E
2.3.2	• Training information may be made available on CD ROM/DVD , as an alternative to internet	D
2.3.3	• Pass-through-programming where it is the only means to re-initialise or re-programme the vehicle (see 2.1.4)	E
2.3.4	• Remote diagnostics**, provided that this is made**	I

Ref.	Requirement	Priority
	available to all franchised dealers. (See Note N2a)	
2.3.5	Wherever the vehicle manufacturer makes use of the internet for diagnostics, maintenance and repair the information should be made available	I
2.3.6	It must be possible to specify the type of consumer for which access is granted to a particular item of information	E

Note 2a.

> **Requirement 2.3.4 is intended to cover remote diagnosis that is part of the normal procedures for vehicle diagnosis. It is not intended to cover ad hoc connections and remote diagnosis that may be made from time to time between franchised dealers and manufacturers to avoid buy back of vehicles that are under warranty.**

2.4 Frequency of Access and Production

Ref.	Requirement	Priority
2.4.1	Frequency of access: • Upon request Information **provided through the Internet** must be available every day of the year, 24x7, subject to normal and reasonable Internet Service Level Agreement	E
Frequency of production:		
2.4.2	~~Frequency of production:~~ • Manufacturers are required to update the Internet information within 3 months of introducing or modifying the information given to their franchised dealers.	E
2.4.3	• **Manufacturers are required to make training material available to consumers at the time it is made available to franchised workshops.**	**E**

2.5 Charging Models

Ref.	Requirement	Priority
2.5.1	Must support a range of charging models, which could include but is not limited to: • FREE (See Note N3) • "Pay-per-view" -and/or Payment for web access time • Subscription • Payment for a CD/DVD • Payment by job	E

Ref.	Requirement	Priority
2.5.2	• Information must be available in chargeable units which are reasonable in comparison to the nature of the repair**. When the manufacturer only holds historical information in hard copy format or (for example) a large PDF file, it may be reasonable to only provide the whole document**	E
2.5.3	• **For registered users,** ~~T~~the payment method must enable a user to gain information immediately in a volume commensurate with the job in hand.	E
2.5.4	• There must be a method to identify and restrict access to bona fide consumers of the information	E
2.5.5	• If subscription charging is offered, it must support a range of subscription periods (eg hour, day, week, year), so that the charge is reasonable in comparison to the nature of the repair.	E
2.5.6	• **It must be possible for a bonafide new user to register and gain access within a reasonable period of time.**	**E**

Note N3

Some information might always be free. Some manufacturers might include the cost of repair information in the price of the vehicle.

Note N4

The question of the easiness of payment is crucial in the frame of a professional activity: if the use of a credit card remains, probably the most flexible one, it is not necessarily the most convenient one (need to get the credit card number for every operation, the user is not always the owner of the card, security problems, not all repairers are using a professional credit card…). Internet credit services may also be used.

3. Information Consumption

3.1 Vehicle Identification

Ref.	Requirement	Priority
3.1.1	Initially, the user is required to give the following vehicle identification information: • VIN Or a minimal set of information, for example: • Make • Model • Model year • Engine – Code • Engine capacity or horse power (hp, PS or KW) if code not known replace	E

Ref.	Requirement	Priority
	• Fuel – Type	
3.1.2	The information provider may respond with requests for information, including a request for information from the vehicle ECU**(s)**. As an indication, some of the following vehicle identification information may also be requested • Make • Model • Derivative • Vehicle Identification Number • Trim level • Body Style (Sedan, Estate, Coupe, Convertible) • Body Style –Number of doors • Engine – Code • Engine – Number of cylinders • Engine – Capacity (cc) • Engine – Camshaft • Engine – Valves per cylinder • Engine – Horse power (hp, PS or kW) • Engine – ECU (Brand and type) • Fuel – Type • Fuel – Aspiration • Fuel – Catalyst fitted • Transmission – Number of gears • Transmission – Drive • Transmission – Manual or Auto • Multiplex – Type • Introduction Date • Termination Date Original or optional vehicle equipment which may have an influence on emissions. e.g. : air conditioning	E
3.1.3	We may pay attention to the differences of car specifications, name, equipment or body type existing within a same range of vehicles	E

3.2 Information Search Criteria

Ref.	Requirement	Priority

Ref.	Requirement	Priority
It must be possible to search for information, constrained by the following information types:		
3.2.1	DTC	E
3.2.2	Symptoms	I
3.2.3	Remote diagnostics	E
3.2.4	Maintenance	E
3.2.5	Training	E
3.2.6	Component names in accordance with ISO15031 Part 2 (See Note N5)	I

Note N5

> Requirement 3.2.6 is currently agreed to be Important (I), but see issue F2 in section 4.

3.3 General Information

Ref.	Requirement	Priority
The following information must be provided when it is relevant to a repair		
3.3.1	• Emissions-related re-calls - we can help to alert customers	N
3.3.2	• Emissions-related Technical Service Bulletins • Common OBD and emissions-related faults – their symptoms and remedies	E
3.3.3	• Emissions-related training material – see section 3.6 Training-related Information	E
3.3.4	• Owner's handbook, which should include part of OBD-related information (especially the OBD plug location, OBD malfunction indicator signification, how to behave in case of activation of this indicator…)	I
3.3.5	• All **other** information which ~~has traditionally been contained in the Repair Manual~~ **is required to complete a repair.**	E

3.4 Indexing for Vehicle Specific Identification

Ref.	Requirement	Priority
3.4.1	Given the vehicle identification ~~and problem identification~~, repair information should be indexed in such a way that the repairer can obtain: • The location of the repair information (scope in 2.1) • The format of the repair information (2.2) • Information access method (2.3) • Charging information (2.5)	E

Note N6

Normally, vehicle identification information (3.1) should be included in the information indexing, there should be some consistency between these data.

Note N7

Variations of vocabulary between manufacturers: the sub-committee SC3 is working on the development of a standard covering that area (see document SC3-D1).

3.5 Component and Vehicle Information

Ref.	Requirement	Priority
3.5.1	Identification of the faulty part The following information must be provided for each component: • An image of the component • An image and description of the part location • A wiring schematic and circuit diagram showing its connections to the ECU and ground. - if electrical • A diagram showing its connections - if mechanical/hydraulic • A description of its major functions followed by its ancillary functions • Vehicle manufacturer part number / part name according to ISO 15031-2 and ISO 15031-6. • Part fitting and removal processes (including access information - what parts have to be removed to reach the component) (Subject to the condition that this information needs only cover information supplied to authorized dealers)	E

Ref.	Requirement	Priority
3.5.2	**Test and diagnosis** **The following information is required on component tests and diagnosis (See Note N8a):** • A description of tests to confirm its functionality - at the component or in the harness. • Test Procedure including test parameters • Connection details including min/max input /output driving/loading values & or torque settings • Any additional protocol information, not covered by ISO15031, required to enable complete system diagnostics of OBD related components. Including any additional hardware or software protocol information, parameter identification and transfer functions, fault code reading, functional tests (device activation or control), resetting adaptive learns, variant coding and replacement component setup, customer preferences, etc., access/security codes required for repair functions, and control module updating required to effect the repair. • Typical values expected under certain driving conditions including idling • Typical electrical values for the component in its static and dynamic states • Typical failure mode values for each of the above scenarios • Typical failure mode diagnostic sequences including fault trees and guided diagnostics elimination • Re-initialization procedures	E
3.5.3	Job time (see Note N8)	D
The following vehicle-specific information is required:		
3.5.4	• Service Schedules • Maintenance and repair specifications • Control, fitting and removal processes related to service schedules • Information on the location of the OBD plug (for example : plate or sticker under the bonnet) • OBD or emissions related common faults • Re-mobilisation procedures	E
3.5.5	• Repair Times related to service schedules	D
3.5.6	• Security information should be provided if it is required for repair and only so far as it is available to authorised dealers/repairers and is delivered in a way that does not compromise vehicle integrity or security.	E
3.5.7	• OBD or emissions related re-calls	N
3.5.8	• OBD or emissions related TSB's relevant to the context of the repair	E

Note N8
> Requirement 3.5.3 is currently agreed to be Desirable (D), but see issue F3 in Section 4.

Note N8a
> **Subject to the information format requirements in 2.2. Where this information is in a form that can be made available over the Internet it should be, but some may only be available through browser plug-ins or to tool manufacturers.**

3.6 Training Related Information

Ref.	Requirement	Priority
3.6.1	Information on OBD or emissions related training programmes	E
3.6.2	Training programmes content listing for example: • Basic general training programmes dealing with in-board technology for e.g. engine, passenger compartment, OBD multiplex • Brand specific training programmes (for example-: Renault or Ford) or specific function training programmes (for example : engine, lambda sensor…)	E
3.6.3	Training supported-: Two types of training programmes can be proposed: • "Classical": those where a physical presence is required • Remote training programmes	E
3.6.4	Whatever the type of training programmes is, the following information is required-: • Organiser • Subject • Cost • Targeted audience • Skills & knowledge evaluation tools used • Qualification/certification/attendance certificate/ resulting from the training (issued by training provider).	E
3.6.5	Information required on "classical" training programmes-: • Date • Duration • Location ~~(reasonable distance)~~ • Vacancies	E
3.6.6	Information required on remote training programmes • Media used (Internet, CD-Rom, Video,…) • Access methods / conditions	E
3.6.7	**Training materials**	**E**

3.7 Special Tools required for assembly/disassembly

Ref.	Requirement	Priority
The following information is required on special tools:		
3.7.1	Vehicle manufacturer's part number	E
3.7.2	Purpose	E
3.7.3	Cost	E
3.7.4	Ordering procedure	E
3.7.5	Delivery time	E
3.7.6	**Instructions for use and warnings**	**I**

3.8 Electronic tools

Ref.	Requirement	Priority
The following information is required on electronic tools:		
3.8.1	Vehicle manufacturer's part number	E
3.8.2	Purpose	E
3.8.3	Cost	E
3.8.4	Ordering procedure	E
3.8.5	Delivery time	E
3.8.6	**Instructions for use and warnings**	**I**

3.9 Language

Ref.	Requirement	Priority
3.9.1	Information must be available in the languages supplied to authorised dealers	E
3.9.2	On request, provide list of all languages for which an item of information is available	E
3.9.3	ISO 15031-2 and ISO 15031-6 are only available currently in English and French. If these were made available by ISO in other languages they may be useful to this project	D

4. Issues and Requirements For Future Resolution

Ref.	Requirement
F1	The aftermarket requires a facility to re-programme the vehicle or re-set the security system without the use of manufacturer-specific tools, where this is required to complete the maintenance or repair.
	The manufacturers believe that on future vehicles the selection of the correct code to download and the reconfiguration of associated ECUs will be too complex to be performed reliably by an untrained technician.

Ref.	Requirement
F2	Component names in accordance with ISO15031 Part 2 – Aftermarket require this to be essential – JAMA need to check the implications before they can agree to this. Currently it is agreed as being 'important'
F3	Job Times. This requirement has been listed as desirable. The specification should cover how job time information is to be conveyed, but there is no agreement that the information should be provided by manufacturers. Manufacturers believe that this is commercial information, not relevant to repair. The aftermarket believes that job time information is essential for consumer protection.