



BSI Standards Publication

# Road vehicles - End-of-life activation of in-vehicle pyrotechnic devices

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Part 1: Application and communication interface

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## National foreword

This British Standard is the UK implementation of ISO 26021-1:2022. Together with BS ISO 26021-3:2022, it supersedes BS ISO 26021-1:2008, BS ISO 26021-2:2008, BS ISO 26021-4:2009 and BS ISO 26021-5:2009, which are withdrawn.

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# Road vehicles — End-of-life activation of in-vehicle pyrotechnic devices —

## Part 1: Application and communication interface

*Véhicules routiers — Activation de fin de vie des dispositifs  
pyrotechniques embarqués —*

*Partie 1: Interface des couches application et communication*



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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 31, *Data communication*.

This second edition cancels and replaces the first edition (ISO 26021-1:2008, ISO 26021-2:2008, ISO 26021-2:2008/Cor 1:2009, ISO 26021-4:2009, ISO 26021-5:2009), which have been technically revised.

The main changes are as follows:

- restructuring of four parts into a single document including use cases and application requirements;
- introduction of requirement structure with numbering and name;
- support of ISO 13400 DoIP (diagnostic communication over Internet Protocol);
- support of ISO 13400-4 DoIP diagnostic connector.

A list of all parts in the ISO 26021 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

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## Introduction

End-of-life deployment activation of on-board pyrotechnic devices is a part of a wider regime designed to ensure that road vehicles are scrapped in a safe and environmentally acceptable condition after their use.

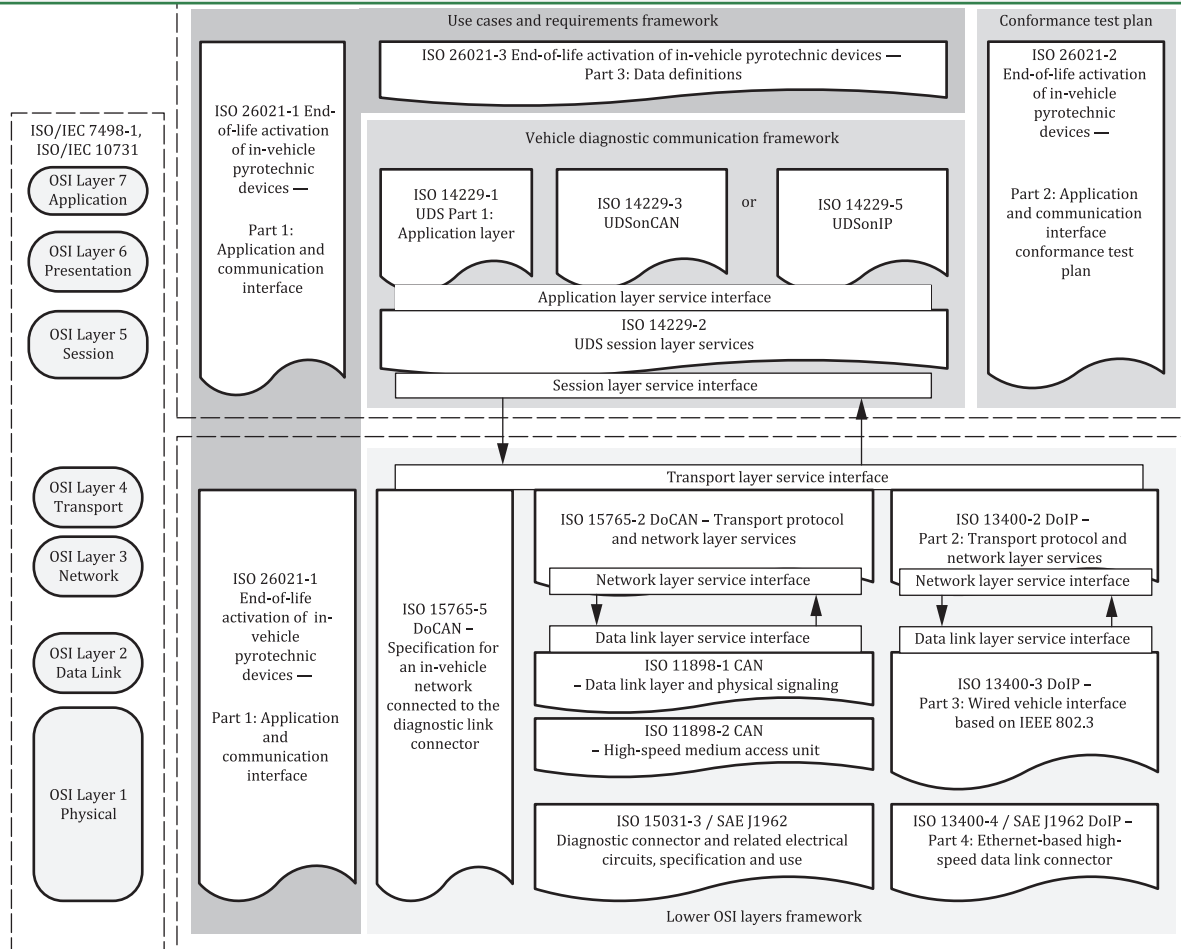
Newly designed products implement new security features like the authentication service. Such vehicle PCU(s) can not be supported by pyrotechnic device deployment tools (PDTs) without security implementation.

The ISO 26021 series is based on the Open Systems Interconnection (OSI) basic reference model specified in ISO/IEC 7498-1 and ISO/IEC 10731<sup>[1]</sup>, which structures communication systems into seven layers. When mapped on this model, the application layer protocol and data link layer framework requirements specified/referenced in the ISO 26021 series are structured according to [Figure 1](#).

[Figure 1](#) illustrates a standard-based documentation concept, which consists of the following main clusters:

- vehicle diagnostic communication framework: covers all relevant basic vehicle diagnostic communication specifications of OSI layers 7, 6 and 5;
- vehicle diagnostic communication use case framework: covers the use cases and requirements of the subject matter of OSI layer 7;
- presentation layer framework: covers all data-relevant specifications of OSI layer 6;
- conformance test plan: covers the conformance test plan requirements of the use cases and communication requirements of OSI layers 7, 6 and 5;
- lower OSI layer framework: covers all vehicle diagnostic protocol standards of OSI layers 4, 3, 2 and 1, which are relevant and referenced by the use case specific standard.

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**Figure 1 — ISO 26021 documents reference according to OSI model**

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# Road vehicles — End-of-life activation of in-vehicle pyrotechnic devices —

## Part 1: Application and communication interface

### 1 Scope

This document is applicable to road vehicles, where the electronic vehicle interface of the diagnostic link connector (DLC) is used to perform an end-of-life (EoL) activation of in-vehicle pyrotechnic devices. Apart from actual removal, this is the method to assure that no pyrotechnic substances are left in an EoL vehicle. On-board activation is an effective and safe method.

This document describes use cases and specifies technical requirements in order to support the end-of-life activation of in-vehicle pyrotechnic devices via the electronic communication interface. This document references the ISO 14229 series unified diagnostic services implemented on diagnostic communication over controller area network (DoCAN) and Internet Protocol (DoIP) along with the required provision of data definitions.

This document comprises:

- terminology definitions;
- definition of end-of-life activation of in-vehicle pyrotechnic devices relevant use cases;
- requirements for the establishment of communication between the pyrotechnic device deployment tool (PDT) and the vehicle's pyrotechnic control unit(s) (PCU(s));
- requirements for the optional usage of a credentials-based authentication and authorisation mechanism between the PDT and the vehicle;
- requirements for the protection against tampering of the defined end-of-life activation of in-vehicle pyrotechnic devices;
- PCU-relevant technical requirements.

PDT-relevant requirements are specified in a test equipment-specific standard with PDT-specific requirements.

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 7498-1, *Information technology — Open Systems Interconnection — Basic Reference Model: The Basic Model*

ISO/IEC 9834-1, *Information technology — Procedures for the operation of object identifier registration authorities: General procedures and top arcs of the international object identifier tree — Part 1:*

ISO 11898-1, *Road vehicles — Controller area network (CAN) — Part 1: Data link layer and physical signalling*

ISO 11898-2, *Road vehicles — Controller area network (CAN) — Part 2: High-speed medium access unit*