
**Intelligent transport systems —
Partially automated parking systems
(PAPS) — Performance requirements
and test procedures**

*Systèmes intelligents de transport — Systèmes de stationnement
partiellement automatisés — Exigences de performance et modes
opératoires d'essai*



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Published in Switzerland

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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).

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This document was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*.

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.

Introduction

Partially Automated Parking Systems (PAPS) perform parking manoeuvres controlling both longitudinal and lateral movement of the vehicle to mitigate the driver's burden. Information about the intended parking space should be available by on-board sensors and potentially from external infrastructural information sources prior to starting the system operation to determine the strategic path to follow.

The system consists of driver command input device(s) and non-contact sensors to acquire external information. In addition, the system consists of automatic control of propulsion, brake, transmission and steering which manoeuvre the vehicle into intended relative position and stop within certain tolerances without the driver's direct manipulations.

A human machine interface (HMI) provides system information to the driver. The system function is initiated by a driver command. The system monitors the vicinity of the vehicle to detect and avoid hazards. The vehicle behaviour and safety conditions are supervised by the driver.

The driver is able to cancel / halt the system operation at any time necessary.

Intelligent transport systems — Partially automated parking systems (PAPS) — Performance requirements and test procedures

1 Scope

This document addresses light vehicles^[1], e.g. passenger cars, pick-up trucks, light vans and sport utility vehicles (motorcycles excluded), equipped with partially automated parking systems (PAPS).

This document establishes minimum functionality requirements that the driver can expect and the manufacturer needs to take into account.

Possible system configuration includes the following two types:

- Type 1: System supervised by the conventional driver located in the driver's seat;
- Type 2: System supervised by the remote driver (present within or outside the vehicle) that is not necessarily located in the driver's seat. The vehicle remains in the line of sight of the remote driver.

For both types, minimum requirements and conditions of safety, system performance and function including HMI information content and description of system operating states are addressed.

The requirements include the driver who supervises the safety throughout the system manoeuvres.

System test requirements are also addressed including test criteria, method, and conditions.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1

partially automated parking system PAPS

system capable of measuring the dimensions of a *parking space* (3.2)/*slot* (3.3)/*garage* (3.4), calculating an applicable trajectory, performing lateral and longitudinal (longitudinal in both directions) control of the vehicle while manoeuvring into the space/slot/garage and providing needed instructions to the driver

3.2

parking space

area which exists between two bordering vehicles and is available for parking

3.3

parking slot

allotted place which is delineated by lines or markings and is available for parking