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Intelligent transport systems — Partially Automated In-Lane Driving Systems (PADS) — Performance requirements and test procedures

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Foreword

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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

PADS is fundamentally intended to provide partially automated driving by longitudinal and lateral control of equipped vehicles while travelling on roads where non-motorized vehicles and pedestrians are prohibited. Free-flowing as well as congested traffic conditions could be addressed by PADS. The functionality of the longitudinal control is standardized in accordance with ISO 15622. The intention of the lateral control is to keep the vehicle in the lane and not to perform lane changes.

The main system function of a Partially Automated In-Lane Driving System (PADS) is to support the driver in keeping the vehicle within the current lane and to keep the vehicle speed below a set maximum or to control vehicle speed adaptively to a forward vehicle by using information about:

a) distance to forward vehicles,

b) the motion of the subject (PADS equipped) vehicle,

c) the position of the subject vehicle within the lane, and

d) driver commands (see Figure 1).

Based upon the information acquired, PADS sends commands to actuators that carry out its longitudinal and lateral control strategy, and sends status information to the driver.

The goal of PADS is partial automation of longitudinal and lateral vehicle control to reduce drivers' workload.

This document may be used as a system level standard by other standards, which extend the PADS standard to a more detailed standard, e.g. for specific detection and ranging sensor concepts or higher levels of functionality. Specific requirements for the detection and ranging sensor function and performance or communication links for co-operative solutions are not considered in this document.