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Intelligent transport systems — Automated valet parking systems (AVPS) —

Part 1: System framework, requirements for automated driving and for communications interface

Systèmes de transport intelligents — Systèmes de parking avec voiturier automatisé (AVPS) —

Partie 1: Cadre du système, exigences relatives à la conduite automatisée et à l'interface de communication

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Foreword

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

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Introduction

The aim of this document is to contribute to the realization of safe and reliable level 4 driverless operation of vehicles within parking facilities, and to support a fast and smooth market introduction by achieving interoperability among vehicles provided by different manufactures and within different parking facilities managed by different organizations.

An automated valet parking system (AVPS) will automatically operate unoccupied vehicles from the drop off area (where the driver and passengers leave the vehicle) to a parking destination, and will also send the vehicle to a pickup area upon the user's request.

An AVPS will not only provide enhanced user experiences, but is also expected to contribute to accident reduction, lowering energy consumption and CO_2 emissions of vehicles searching for available parking spaces, and effectively utilize land by densely parking vehicles in the available space.

An AVPS can be utilized in places such as the large-scale public parking facilities of shopping malls, airports, large apartment buildings, time-based small public parking lots, or fleet management carpools. By implementing the system in parking facilities, the service provider will gain the opportunity to add other related services such as moving electric vehicles to and from charging stations or providing access to the trunk for the delivery of goods. Rather than having fully-automated vehicles driving around and searching for space, the system allows the service provider to govern the vehicles for improved traffic management.

In order to contribute to the realization of safe and reliable level 4 driverless operation, the requirements specified in this document are based on the performance of state-of-the-art technologies that are available at the time of publication. Thus, this document will be revised in the future in accordance with relevant technology enhancement.

Within this document, specific technological solutions for the communications interface (e.g. communication method, message protocol) are intentionally left open due to differences in available and commonly-used technology (e.g. spectrum allocation) around the world. Therefore, it is recommended that the communications interface be further discussed at the national/regional level to ensure interoperability.