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Space — Use of GNSS-based positioning for road Intelligent Transport System (ITS) — Mathematical PVT error model

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National foreword

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English version

Space - Use of GNSS-based positioning for road Intelligent Transport System (ITS) - Mathematical PVT error model

Espace - Utilisation du positionnement GNSS pour les systèmes de transport routier intelligents (ITS) - Modèle d'erreur mathématique PVT

Mathematisches PVT-Fehlermodell

This Technical Report was approved by CEN on 8 December 2019. It has been drawn up by the Technical Committee CEN/CLC/JTC 5.

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European foreword

This document (CEN/TR 17447:2020) has been prepared by Technical Committee CEN-CENELEC/TC 5 “Space”, the secretariat of which is held by DIN.

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1 Scope

This document is written in the frame of WP1.3 of GP-START project. It discusses several models to provide synthetic data for PVT tracks and the ways to analyse and compare the tracks to ensure these are similar to the reality.

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.

EN 16803-1:2016, *Space — Use of GNSS-based positioning for road Intelligent Transport Systems (ITS) — Part 1: Definitions and system engineering procedures for the establishment and assessment of performances*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 16803-1:2016 apply.

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

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

4 List of acronyms

ANOVA	Analysis of variance
AR	Autoregressive
ARMA	Autoregressive moving average
CDF	Cumulated distribution function
CET	Central european time
DFT	Direct Fourier transform
DOP	Dilution of precision
FFT	Fast Fourier transform
GNSS	Global navigation satellite system
GPS	Global positioning system
HDOP	Horizontal dilution of precision
HPE	Horizontal position error
IGS	International GNSS service
ITS	Intelligent transport systems
KS	Kolmogorov–Smirnov
MLNN	Multilayer feedforward neural networks
NED	Northeast down
NN	Neural network