

ETSI GS PDL 028 V1.1.1 (2025-06)



**Permissioned Distributed Ledger (PDL);
Specification utilizing PDL to Standardized IoT Service Layer
Platform oneM2M**

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Reference

DGS/PDL-0028_Study_SLP_oneM2M

Keywords

blockchain, IoT, PDL

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Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° w061004871

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Foreword

This Group Specification (GS) has been produced by ETSI Industry Specification Group (ISG) Permitted Distributed Ledger (PDL).

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Executive summary

The present document investigates the integration of Permitted Distributed Ledger (PDL) technology with the oneM2M IoT service layer platform to address security and data integrity challenges in centralized IoT systems. It examines how PDL's decentralized architecture can enhance data security, provide tamper-proof record-keeping, and implement robust access control mechanisms within IoT environments. The present document provides a detailed proof of concept demonstrating PDL-based access authentication for IoT systems, focusing on ticket validation and smart gate control. Through practical implementation examples and architectural analysis, it establishes the feasibility and benefits of standardized interworking between oneM2M and PDL platforms, offering insights for future development of secure, scalable IoT infrastructure with Blockchain integration.