
PDL ISG PoC Report Template

B.1 General

The following normative disclaimer shall be included on the front page of a PoC report:

"Submission of this PDL ISG PoC Report as a contribution to the PDL ISG does not imply any endorsement by the PDL ISG of the contents of this report, or of any aspect of the PoC activity to which it refers."

B.2 PDL ISG PoC Report

B.2.1 PoC Project Completion Status

Indicate the PoC Project Status. Can the PoC be considered completed? If this is a multi-stage PoC project, indicate the Reported Stage status and plans for future Project Stages/Milestones.

- Overall PoC Project Completion Status: Completed
- PoC Stage Completion Status (Optional - for Multi Stage projects only): N/A

B.2.2 PDL PoC Project Participants

Specify PoC Team; indicate any changes from the PDL ISG PoC Proposal:

- PoC Project Name: IoT-based access control system using NFT ticket to prevent scalping
- Network Operator/Service Provider: Sejong University Contact: JaeSeung Song / jssong@sejong.ac.kr
- Additional Members: Guarantable, ETRI
 - Contact: Jiho Lee / Sejong University / twozio@sju.ac.kr
 - Contact: DongJoo Lee / Guarantable / kyle@guarantable.com
 - Contact: JungSoo Park / ETRI / pjs@etri.re.kr

B.2.3 Confirmation of PoC Event Occurrence

To be considered complete, the PoC should have been physically demonstrated with evidence provided that the demonstration has taken place.

Provide details on venue and content of PoC demonstration event. Provide pictures and supporting literature where available. Please identify who was present at the demonstration event (optional).

- PoC Demonstration Event Details: October 24rd 2024, Demonstrated PoC.

B.2.4 PoC Goals Status Report

Specify PoC Goals from PDL ISG PoC Proposal (clause A.1.2). Identify any changes from the original PDL ISG PoC Proposal with an explanation as to why the changes were made. Indicate the extent that each goal was met. Provide sufficient information for those not familiar with the PoC goals to understand what has been achieved and/or learned.

- PoC Project Goal #1: Utilization of PDLs in oneM2M using standardised and interoperable interfaces, related to ETSI GS PDL 028
Goal Status (Demonstrated/Met?) Demonstrated
- PoC Project Goal #2: Developing a secure, verifiable, and immutable ticket system using smart contracts, related to ETSI GS PDL 004
Goal Status (Demonstrated/Met?) Demonstrated

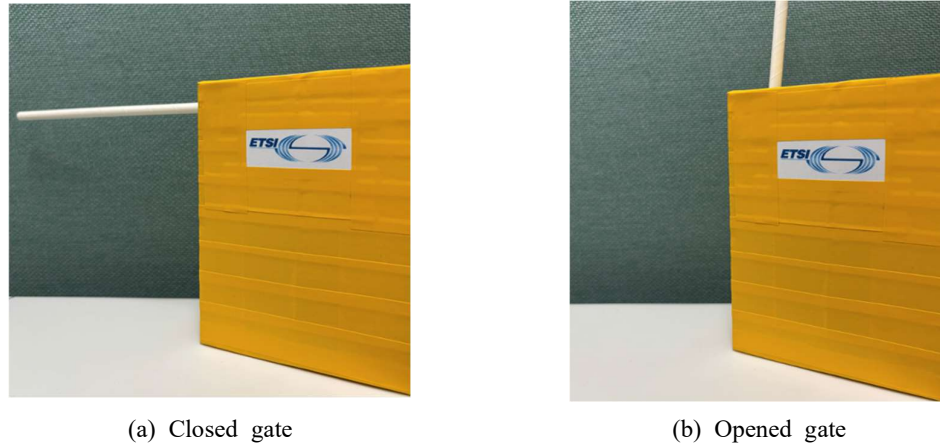


Figure 1. Gate device with oneM2M and PDL used in PDL#19 demo.

The success of the PoC is demonstrated by the verification of the interaction between oneM2M-PDL through the demonstration. It does not include non-functional requirements such as performance or availability goals. Consequently, validation of the functional use case via a demo is sufficient.

The PoC was demonstrated during PDL#19. It showcased that a QR code scanned by a oneM2M QR scanner is stored as a oneM2M resource and then transferred to the PDL system via the developed oneM2M-PDL interworking proxy. After verifying the NFT information retrieved from the QR code, the oneM2M gate control system successfully opened the gate. Fig. 1 shows the demonstrated oneM2M gate device, which is equipped with a gate bar and a QR scanner.

The oneM2M gate control device is implemented using raspberry Pi 3 Model B+, and its operations (e.g., opening/closing the gate) are controlled by the oneM2M platform, specifically using the subscription/notification mechanism of oneM2M resources. In the PDL system, NFT information is extracted from the scanned QR data and validated using a smart contract within the PDL system. Upon successful validation, the transaction hash of the NFT is stored in a oneM2M AE resource representing the access control device. This hash is then transmitted to the access control device through notification. The device processes the command in the notification and activates the servo motor to open the gate bar. Fig. 2 shows the implementation details of the oneM2M gate access control device.

B.2.5 PoC Feedback Received from Third Parties (Optional)

- Where applicable, provide in a free text, feedback received from potential customers, Ecosystem partners, event audience and/or general public.

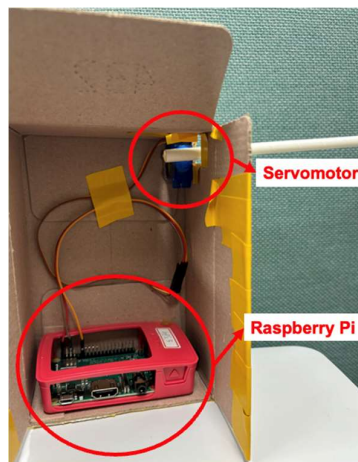


Figure 2. Inside of the gate device