

Persistent Infrastructure Identity (PIID) Standard v1.1 Released

The Identity Layer for the Built World

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Establishing the Identity Layer for the Built World

Modern infrastructure generates vast amounts of information across its lifecycle. From early planning and engineering through construction, operations, maintenance, inspections, system upgrades, and ownership transitions, buildings and infrastructure assets continuously produce information that helps organizations understand how the built environment evolves over time.

Despite the increasing digitization of infrastructure systems, most buildings lack one critical element required to maintain continuity across this lifecycle:

A Persistent Identity

Infrastructure information is often created by many different organizations using many different systems over decades. Without a consistent identity framework connecting those records to the same physical structure, information associated with infrastructure assets can become fragmented, difficult to reconcile, or permanently lost.

To address this structural gap, **UMIP Inc. introduced the Persistent Infrastructure Identity (PIID) framework**, designed to establish a universal identity system for buildings and infrastructure assets.

Today UMIP Inc. announces the release of **Persistent Infrastructure Identity (PIID) Issuance Standard v1.1**, alongside the establishment of the **Foundational Persistent Infrastructure Identity Registry**, initiating the national issuance process for persistent infrastructure identities beginning with approximately 160 million addressable structures across the United States.

This initiative represents the first coordinated effort to establish a persistent identity layer for the built world.

Persistent Infrastructure Identity (PIID)



Recorded to the Asset Identity Over Time

PERSISTENT INFRASTRUCTURE IDENTITY REGISTRY

Operated by UMIP

PIID-1234567890



Governed Access & Audit Log



Neutral & Secure Registry



Controlled Identity Issuance



Full Audit Trail

Verified Asset Histories for All Asset Holders

The Infrastructure Identity Gap

Across the built environment today, information about buildings and infrastructure assets is created and maintained by many different stakeholders over long periods of time.

Architects and engineers generate design documentation during planning phases. Construction teams create records as infrastructure is built. Regulatory authorities issue permits and inspections throughout development and renovation. Insurance organizations evaluate risk and document claims over time. Facility operators manage maintenance and operational systems, while ownership records change as properties are transferred between individuals, organizations, and institutions.

Each of these activities produces information that contributes to the history of a structure.

However, these records are typically created within independent systems that do not share a consistent identity reference for the underlying infrastructure asset.

As buildings evolve through decades of upgrades, renovations, and ownership transitions, the information associated with those structures often becomes distributed across numerous systems and organizations.

Without a persistent identity connecting these records, it can become difficult to reliably associate infrastructure information with the same physical structure over time.

This fragmentation can create operational challenges for many stakeholders involved in the lifecycle of infrastructure assets. Information that would otherwise provide valuable insight into the history and condition of a building may be incomplete, difficult to reconcile, or unavailable when needed.

As infrastructure systems have become increasingly digital, the absence of a consistent identity framework for buildings has emerged as a structural limitation across the built environment.

Researchers and industry observers increasingly describe this challenge as the **Infrastructure Identity Gap**, a condition in which the lifecycle information associated with infrastructure assets lacks a persistent identity capable of connecting records across time, systems, and organizations.

Persistent Infrastructure Identity (PIID) is intended to address this structural gap by introducing a consistent identity framework for physical infrastructure assets.

Why Infrastructure Requires Persistent Identity

Persistent identity systems have historically played a foundational role in enabling interoperability across complex industries.

In sectors where assets move through multiple organizations, systems, and regulatory environments over long periods of time, a consistent identity framework allows information associated with those assets to remain connected throughout their lifecycle.

For example, in transportation, **Vehicle Identification Numbers (VINs)** provide every automobile with a permanent identity that remains consistent across manufacturing, ownership transfers, regulatory oversight, maintenance records, and insurance systems.

Across the internet, **IP addressing** provides devices with a unique identity that allows networks and systems to communicate reliably across a global digital infrastructure.

In each of these cases, the identity system does not replace the underlying operational systems used by different organizations. Instead, it provides a **common reference layer** that allows those systems to associate information with the same underlying asset.

Despite the increasing digitization of the built environment, most buildings and infrastructure assets do not currently maintain a comparable persistent identity.

Information about infrastructure is often recorded at different points in time by different stakeholders using different systems, with no consistent identity framework linking those records together over the decades-long lifecycle of physical structures.

As infrastructure systems continue to evolve, the absence of a persistent identity framework has become a structural limitation across the built environment.

Persistent Infrastructure Identity (PIID) introduces the identity layer required to enable interoperability across infrastructure data systems.

By establishing a consistent identity reference for physical structures, the PIID framework is designed to allow lifecycle information associated with infrastructure assets to remain connected to the same structure across design, construction, operations, maintenance, insurance evaluation, and ownership transitions.

The Foundational Persistent Infrastructure Identity Registry

Alongside the release of **Persistent Infrastructure Identity (PIID) Issuance Standard v1.1**, UMIP Inc. has established the **Foundational Persistent Infrastructure Identity Registry**, initiating the national issuance process for persistent infrastructure identities.

The registry initiative begins with the incorporation of approximately **160 million addressable structures across the United States**. These structures represent the initial foundation of an emerging infrastructure identity layer designed to support the long-term lifecycle of buildings and infrastructure assets.

Persistent Infrastructure Identity Numbers (PIIDs) are intended to serve as **neutral, persistent identifiers** for physical infrastructure assets. By establishing a consistent identity reference for buildings, PIIDs provide a framework through which information generated across different systems and organizations can remain connected to the same structure over time.

Infrastructure assets frequently experience decades of evolution, including renovations, system upgrades, regulatory inspections, maintenance cycles, operational changes, and ownership transitions. Without a persistent identity framework, the information associated with these changes can become distributed across multiple systems without a reliable mechanism for maintaining continuity.

The Foundational Persistent Infrastructure Identity Registry is designed to provide the initial reference layer through which persistent infrastructure identities can be associated with existing structures.

As the registry expands, the Persistent Infrastructure Identity framework is expected to support the integration of additional lifecycle information associated with infrastructure assets, including documentation, inspection history, operational records, and other forms of infrastructure data generated throughout the lifespan of physical structures.

While the initial issuance initiative focuses on existing structures within the United States, the Persistent Infrastructure Identity framework has been designed to support identity issuance for infrastructure assets globally as the infrastructure identity registry expands over time.

What Persistent Infrastructure Identity Enables

Establishing persistent identity for infrastructure assets creates the foundation required for long-term interoperability across infrastructure systems.

With a consistent identity framework in place, information generated throughout the lifecycle of a building can remain connected to the same physical structure across multiple systems and over extended periods of time. This continuity allows infrastructure stakeholders to reference the same asset identity when recording, accessing, or evaluating information related to that structure.

Persistent infrastructure identity has the potential to support improved continuity across several important areas of the built environment, including:

- Infrastructure lifecycle documentation
- Maintenance and operational records
- Inspection and compliance history
- Infrastructure system upgrades and modifications
- Insurance risk evaluation and claims documentation
- Long-term asset management and ownership transitions

By establishing a consistent identity layer for the built environment, the PIID framework provides the structural foundation required for infrastructure data systems to reference a common identity for physical assets.

This identity layer does not replace the systems used to design, construct, insure, operate, or maintain infrastructure. Instead, it allows those systems to associate the information they generate with a consistent infrastructure identity over time.

As infrastructure systems continue to evolve, the presence of a persistent identity framework may support improved coordination across the organizations responsible for the development, operation, and stewardship of the built environment.

Industry Participation and Collaboration

The development of Persistent Infrastructure Identity is intended to support collaboration across the broader infrastructure ecosystem.

Buildings and infrastructure assets interact with many different stakeholders throughout their lifecycle. Engineers, contractors, inspectors, asset owners, insurers, operators, regulators, and technology providers all generate information related to the development and operation of physical structures.

Each of these participants contributes valuable data that helps describe the history, condition, and evolution of infrastructure assets over time.

Persistent Infrastructure Identity provides a neutral framework through which these stakeholders can reference a consistent identity for physical structures while continuing to operate within their existing systems and processes.

By introducing a shared identity reference for infrastructure assets, the PIID framework is designed to support improved coordination across organizations that interact with the built environment.

The development of persistent infrastructure identity is expected to evolve through ongoing engagement with stakeholders across the infrastructure sector. Input from organizations responsible for designing, constructing, insuring, operating, and maintaining infrastructure will help inform the continued refinement of the PIID framework and the expansion of the infrastructure identity registry.

UMIP Inc. will continue working with participants across the built environment to support the responsible development of persistent infrastructure identity and the long-term growth of the infrastructure identity registry.

Future Development of the PIID Framework

The release of Persistent Infrastructure Identity (PIID) Issuance Standard v1.1 represents an early milestone in the development of persistent infrastructure identity for the built environment.

As infrastructure systems continue to evolve, the role of identity frameworks in connecting lifecycle information across organizations and technologies is expected to become increasingly important. The PIID framework has been designed to support continued development as infrastructure stakeholders explore how persistent identity can support improved continuity across the lifecycle of physical assets.

Future phases of the initiative are expected to focus on expanding the infrastructure identity registry while supporting the integration of additional lifecycle information associated with infrastructure assets. Over time, the registry may support a broader range of infrastructure data associated with buildings and physical structures as they move through design, construction, operations, maintenance, and ownership transitions.

The long-term objective of Persistent Infrastructure Identity is to enable infrastructure assets to maintain continuity across the many systems and organizations that interact with them over time.

As the infrastructure identity registry grows, the PIID framework is intended to provide a stable identity foundation through which infrastructure information can remain connected to the same structure across decades of change.

Toward a Global Infrastructure Identity Layer

The release of Persistent Infrastructure Identity (PIID) Issuance Standard v1.1 and the initiation of the Foundational Persistent Infrastructure Identity Registry represent early steps in the development of a persistent identity framework for physical infrastructure.

Across many industries, identity systems have emerged as foundational components of modern digital infrastructure. These systems provide a consistent reference layer that allows information associated with assets to remain connected across organizations, technologies, and long periods of time.

As the built environment continues to become more data-driven, the ability for buildings and infrastructure assets to maintain a persistent identity may play an increasingly important role in enabling coordination across the systems used throughout the lifecycle of physical structures.

The initial registry initiative beginning with existing structures within the United States represents an early milestone in establishing persistent infrastructure identity. Over time, the framework has been designed to support broader participation as infrastructure stakeholders explore the role of persistent identity within the built environment.

Persistent Infrastructure Identity introduces a structural foundation through which infrastructure assets may maintain continuity across their lifecycle, supporting improved interoperability across the organizations and systems responsible for the development, operation, and stewardship of the built world.

About UMIP Inc.

UMIP Inc. introduced the **Persistent Infrastructure Identity (PIID) framework** to establish the identity layer required for the built environment.

The company is focused on advancing infrastructure identity standards and registries designed to enable interoperability across the systems that design, construct, insure, operate, and maintain infrastructure assets.

UMIP works with stakeholders across the infrastructure ecosystem to support the development of persistent identity frameworks that can help connect lifecycle information associated with buildings and physical infrastructure.

Additional information about Persistent Infrastructure Identity and the PIID issuance framework can be found through the UMIP website.

For media inquiries regarding Persistent Infrastructure Identity (PIID) and the infrastructure identity registry initiative, please contact:

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