Prior Art Timeline

1. Early Classification and Taxonomy Systems

Long-standing institutional systems have relied on standardized classification schemes to reduce ambiguity across industry, trade, and labor. These include industry classifications, goods and trade codes, and occupational taxonomies used for reporting, regulation, and coordination across jurisdictions. Such systems established shared semantic references but were primarily static, document-oriented, and not designed for dynamic, machine-native coordination.

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2. Directory Services and Identity Registries

As computing systems scaled, structured directories and registries emerged to support discovery and lookup. Early directory services enabled hierarchical identity resolution within controlled environments, while global naming systems focused on resolving identifiers without embedding policy or eligibility logic. These approaches introduced machine-readable discovery but typically coupled identity with centralized administration or domain-specific control.

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3. Web Standards and Semantic Interoperability

Web standards introduced formal mechanisms for describing and exchanging structured information across systems. Semantic web technologies and shared metadata schemas sought to enable interoperable description, while cryptographic credential models formalized verifiable claims about attributes, roles, or affiliations. These efforts improved portability of claims but generally left discovery, eligibility evaluation, and outcome determination to individual applications.

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4. Platform-Based Discovery and Access Models

Large-scale digital platforms operationalized discovery and eligibility by embedding classification, ranking, and access decisions within proprietary systems. While effective at scale, these models centralized control and tightly integrated policy, enforcement, and discovery logic. Interoperability across platforms remained limited, and eligibility outcomes were often opaque or application-specific.

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5. Decentralized Registries and On-Chain Identity Models

Decentralized systems introduced registries and naming mechanisms anchored by cryptographic proofs. Identity frameworks explored self-asserted identifiers, attestations, and minimal on-chain data representations, often separating identifiers from underlying data. While these models reduced reliance on centralized authorities, they frequently combined identity, governance, and application logic within tightly scoped domains.

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6. Eligibility and Clearing Logic in Modern Systems

Across domains such as finance, logistics, and automated decision systems, eligibility checks and clearing decisions are typically implemented within individual applications or services. These mechanisms rely on internal schemas, policy engines, and context-specific logic, limiting reuse and consistency across independent systems.

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7. Observed Gap Across Prior Approaches

Across prior approaches, standardized classifications, discovery mechanisms, credentials, and eligibility logic exist, but they are commonly implemented as isolated components or embedded within controlling systems. Semantic description, eligibility signaling, and clearing outcomes are generally coupled to enforcement, governance, or application-specific logic rather than operating as independent coordination elements.