Web3‑based Decentralized Identifiers (DIDs) are now fully recognized as an open, W3C‑endorsed standard (DID Core v1.0, June 30, 2022)[GitHub+14W3C+14Decentralized Identity Foundation+14](https://www.w3.org/press-releases/2022/did-rec/?utm_source=chatgpt.com). These open standards underpin interoperable, self‑sovereign identity systems. Here's an overview of **open‑source, W3C‑centric DID platforms and ecosystems**, plus notable projects and methods:

**🔧 주요 오픈소스 DID 제공업체 및 기술**

**1. Decentralized Identity Foundation (DIF)**

* DIF is a core W3C‑aligned open source community.
* Notable tools: **universal-resolver** (resolves many DID methods), **veramo** (JavaScript DID/VC framework), **did‑resolver**, **did-jwt(-vc)**, **didcomm-messaging**, **presentation-exchange**, and **sidetree** spec and implementations[GitHub](https://github.com/decentralized-identity?utm_source=chatgpt.com).
* Widely adopted by developers building interoperable DID/VC solutions.

**2. Identity.com / identity ecosystem**

* Focused on **Web3 Identity**, built using W3C DID and Verifiable Credentials standards.
* Open-source, interoperable, privacy-first identity verification framework[Decentralized Identity Foundation+14GitHub+14W3C+14](https://github.com/w3c/did-imp-guide?utm_source=chatgpt.com)[GitHub+7Identity+7Interexy | Mobile applications+7](https://www.identity.com/digital-identity-why-it-matters-in-web3/?utm_source=chatgpt.com)[Nokia.com](https://www.nokia.com/innovation/technology-vision/on-the-road-to-web3/?utm_source=chatgpt.com).

**3. Dock – Web3 ID**

* Launching **Web3 ID** system in 2022.
* Open‑source based on W3C DID and VCs, supporting selective disclosure and ZKP.
* Enables user‑controlled identifiers and credentials via blockchain‑based identity wallet[GitHub](https://github.com/Web3ID/Web3-Infrastructure/?utm_source=chatgpt.com)[Identity+4Dock Labs Blog+4Interexy | Mobile applications+4](https://blog.dock.io/web3-identity1/?utm_source=chatgpt.com).

**DID Methods (W3C‑standard methods or emerging open‑source)**

**• did:web**

* W3C‑supported DID method using standard HTTPS servers.
* DID documents are hosted at https://<domain>/.well‑known/did.json.
* No blockchain; leverages web infrastructure and TLS for security[Decentralized Identity Foundation+15Web of Trust Map+15arXiv+15](https://www.weboftrust.org/didmethod/web-1738169385604?utm_source=chatgpt.com).

**• did:self (new registry‑less method)**

* From April 2025: lightweight, no central registry, supports implicit DIDs (e.g. derived from JWT or X.509).
* Prioritizes privacy, IoT use cases, controlled delegation, lightweight identity systems[arXiv](https://arxiv.org/abs/2504.20767?utm_source=chatgpt.com).

**• CNS / Web3‑Identity ecosystem**

* Projects under **web3-identity** org: e.g. CNS contracts, metadata service, web3ns.js, resolver tools.
* Provides universal DID protocols and tooling, primarily blockchain‑based implementations[GitHub](https://github.com/web3-identity?utm_source=chatgpt.com)[W3C](https://www.w3.org/TR/did-imp-guide/?utm_source=chatgpt.com).

**🧩 DID/Ecosystem Summaries**

| **프로젝트 / 조직** | **초점 / 오픈소스 요소** | **특징** |
| --- | --- | --- |
| DIF | universal-resolver, Veramo, DID/V-C libraries | W3C aligned, broad tool ecosystem |
| Identity.com | Web3 Identity standards + verification stack | Open-source, interoperable verification |
| Dock (Web3 ID) | DID wallet, selective disclosure, ZKP | Blockchain-based identity system |
| did:web | Domain-based DID method | Simple, low-cost, utilizes standard web hosting |
| did:self | Registry-less DID method (2025) | Lightweight, implicit DIDs, strong privacy |
| Web3‑Identity / CNS | DID protocol & tooling | Suite of libraries, blockchain-native resolver |

**✅ 왜 이들에 주목해야 할까요?**

* **W3C DID 1.0**이 완전한 Recommendation 상태로 제정되었으며, 이는 이제 기술이 성숙 단계에 접어들었음을 의미합니다[Decentralized Identity Foundation+1GitHub+1](https://blog.identity.foundation/w3cdidspec-2/?utm_source=chatgpt.com)[Decentralized ID+4Identity+4Dock Labs Blog+4](https://www.identity.com/digital-identity-why-it-matters-in-web3/?utm_source=chatgpt.com)[web3idcoalition.org+4Dock Labs Blog+4GitHub+4](https://blog.dock.io/web3-identity1/?utm_source=chatgpt.com)[Open DID Foundation+2Web of Trust Map+2Identity+2](https://www.weboftrust.org/didmethod/web-1738169385604?utm_source=chatgpt.com)[arXiv](https://arxiv.org/abs/2504.20767?utm_source=chatgpt.com)[Open DID Foundation](https://www.opendidfoundation.org/?utm_source=chatgpt.com)[GitHub](https://github.com/web3-identity?utm_source=chatgpt.com).
* 오픈소스 중심의 도구와 프레임워크가 빠르게 발전 중이며, **DIF 커뮤니티**는 그 중심에 있습니다.
* DID 메서드 간 상호운용성(interoperability)을 위한 universal resolver 등 기반 인프라가 마련되어 있음.
* 다양한 수준의 블록체인 의존도‑기반 옵션(did:web, did:self) 제공 → 사용 사례에 따라 선택 가능.

**🔭 추가 참고 링크**

* W3C **DID Implementation Guide v1.0**: 디테일 구현 가이드라인 및 메서드 작성 기준[Chainyard+7identity.foundation+7Blockworks+7](https://identity.foundation/didwebvh-implementations/?utm_source=chatgpt.com)[Dock Labs Blog+14W3C+14GitHub+14](https://www.w3.org/TR/did-imp-guide/?utm_source=chatgpt.com)[Open DID Foundation+3GitHub+3Web of Trust Map+3](https://github.com/w3c/did-imp-guide?utm_source=chatgpt.com).
* Polygon ID vs Concordium Web3ID 비교 사례 (issuer 모델, finality 시간 등)[concordium.com](https://www.concordium.com/article/learning-series-2-deciphering-concordium-web3id-and-polygon?utm_source=chatgpt.com).

이와 같은 오픈소스 중심의 DID 플랫폼과 메서드를 활용하면, W3C 표준 기반으로 확장 가능하고 상호운용성 있는 Web3 아이덴티티 솔루션을 구축할 수 있습니다. 특정 구현 사례나 SDK, 적용 플랫폼에 대해 더 알고 싶다면, 알려 주세요!