

An Overview of the DIF Identifiers & Discovery Working Group

Note: This document is an adaptation of the article originally published here:

<https://blog.identity.foundation/an-overview-of-the-dif-identifiers-discovery-working-group/>

I would like to take this opportunity to write a few words about the [Identifiers & Discovery Working Group](#) at the [Decentralized Identity Foundation \(DIF\)](#), which is a group where I have been contributing as co-chair for many years.

The fundamental role of the DIF I&D WG

DIF was established in 2017, and has grown a lot in terms of members, working groups, and work items. The I&D Working Group is one of the working groups that has existed since the beginning DIF, unlike many others which were added later. The reason for that, I would argue, is the fact that the concepts of “identifiers” and “discovery” are fundamental to pretty much any digital identity system.

In digital identity, we always need identifiers—digital addresses that we can use to refer to individuals, organizations, and things. Without identifiers for participants of a network, and without the ability to discover metadata about such identifiers, we cannot express connections or relationships, we cannot share data or exchange messages, and without that, we cannot establish higher level concepts such as reputation and trust. Another factor for establishing this working group was the (back then) new technology that became Decentralized Identifiers (DIDs) and would later be standardized at the W3C. So in the early days of DIF, it was logical to dedicate one of the initial working groups to the topic of identifiers.

The scope of the DIF I&D WG

The scope of this working group is defined in its [Charter](#). It includes pretty much any topic related to the specification and implementation of decentralized identifiers (including, but not limited to [W3C DIDs](#)). For example, topics include the creation and resolution of DIDs, discovery data formats and protocols, relationships between different identifier systems (e.g. DIDs and domain names), the establishment of control authority over an identifier, security and trust in identifier infrastructure, and the work on concrete [DID methods](#).

Explicitly out-of-scope are complex higher-level topics and protocols that use identifiers but are not primarily about the identifier infrastructure themselves, for example authentication or credential exchange protocols. For those topics, there are other exciting DIF [working groups](#)!

Noteworthy work items of the DIF I&D WG

The working group maintains a [list of work items](#) it has worked on in the past or is currently working on. In general, work items may be specifications or code or anything else that falls within the working group's scope. Here is a non-exhaustive list of some of our work items:

- The [Universal Resolver](#) is one of the best-known work items that has existed since the beginnings of DIF. It provides resolution capabilities for many DID methods developed by the decentralized identity community.
- The [well-known DID Configuration](#) specification provides a way of linking a DID to a web origin.
- The [DID Registration](#) specification defines functions for creating, updating, and deactivating DIDs in an interoperable way.
- The [Linked Verifiable Presentation](#) specification defines how to discover Verifiable Presentations using simple DID Resolution, without requiring more complex protocols such as OpenID or DIDComm.
- Work items also include various open-source tools and libraries, such as [did-resolver](#) (JavaScript), [did-jwt](#) (JavaScript), [did-common-java](#) (Java), [did-key.rs](#) (Rust).
- Concrete DID methods [did:peer](#) and [did:ion](#) have also been developed in this working group.

Interesting topics in the DIF I&D WG

Besides “formal” work items such as the ones listed above, our working group also frequently discusses various topics related to decentralized identifiers, or receives guest presentations. In the past, such topics have for example included:

- Presentations about new DID methods, e.g. `did:dht`, `did:oyd`, `did:self`, `did:webs`, `did:key`, `did:bid`, `did:plc`, `did:algo`, `did:polygonid`, `did:cheqd`, and others.
- Management of DIDs over time, rotating keys, referencing historical versions of DIDs.
- Trust in DIDs and the DID Resolution process, DID document validation, and the relationship between DIDs and existing trusted infrastructures such as domain names or X.509 certificates.
- Proposals for new functionalities related to DIDs, such as Linked Resources, service profiles, DID method enumeration, and much more.

We have recently also seen demonstrations of browser plugins, and even a ChatGPT plugin that can resolve DIDs! And we are always happy to receive suggestions for new topics.

How this work related to European projects

In general, the EU is currently funding or otherwise supporting a number of initiatives in the area of decentralized identity that align with the scope of the DIF I&D WG. For example, this includes the European Digital Identity Wallet project based on the eIDAS 2.0 regulation, the European Blockchain Service Infrastructure (EBSI), and various past and current programs such as NGI ESSIF-Lab, NGI Sargasso, NGI Trustchain, EBSI-VECTOR, EBSI-TRACE4EU, the European Wallet Consortium, and more. All of these use decentralized identity technologies in various ways.

More concretely, the work items and topics of the DIF I&D WG can be useful to European projects in the following ways:

- The DIF I&D WG frequently discusses technical features of Decentralized Identifiers that are highly relevant to the did:ebsi method used by EBSI, for example the ability to reference specific historical versions of a DID document (using the “versionId” and “versionTime” parameters).
- The [Universal Resolver](#) as well as [Universal Registrar](#) work items, which are maintained by the DIF I&D WG, include support for the did:ebsi method, which helps with interoperability with other DID methods and networks.
- The DIF I&D WG has developed a work item on [Linked Verifiable Presentations](#), which can help multiple EBSI-based projects in their work to establish digital identities for legal entities. For example, EBSI-VECTOR is planning a pilot where legal entities from multiple EU member states will be onboarded to receive a verifiable, organizational digital identities, sometimes also referred to LPIDs.
- That same work item on Linked Verifiable Presentations can also be useful in ongoing efforts to implement Digital Product Passports (DPP), since a DPP can be modeled as a DID that points to one or more Verifiable Presentations and Verifiable Credentials that contain attestations about a product by different Issuers. DPP is currently one of the focus topics of the [StandICT.eu program](#) and has been the subject of a number of webinars.
- In the [EBSI-TRACE4EU](#) project, there is a task that explores various interoperability topics, including support for DID methods other than did:ebsi. In order to achieve this, the DIF I&D WG work items Universal Resolver/Registrar can potentially be used.
- The [EBSI reference resolver implementation](#) of its blockchain-based DID method did:ebsi uses the [did-resolver TypeScript library](#) as a dependency, which is another work item of the DIF I&D WG.

How to participate in the DIF I&D WG

Easy! [Join DIF](#) and participate in our working group. We have a Slack channel and bi-weekly meetings where we can discuss any topic related to decentralized identifiers and discovery!

Our working group page is [here](#), and our agenda including recordings and notes is [here](#).

We welcome you!

The activities of the author in the DIF I&D WG are carried out with the support of [BlockStand](#) funds. BlockStand aims to create an online blockchain community that shall engage in continuous collaboration and exchange of ideas to bolster the European Union's leadership in the field.

