GENERAL ASSEMBLY

July 13-14, 2022

New York, NY

velocity

Demystify Inspection: Product design decisions and considerations

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The Velocity Network enables two things to happen:

- Issuing bodies issue verifiable credentials to individuals
- Individuals disclose verifiable credentials to relying parties, who can verify them

That’s all we do.

How you decide to integrate these activities into the flow of your technology and services is totally up to you.

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Disclosure & Verification – Definition

Disclosure is a process by which an organization (Relying Party) provides a request to an individual (Holder) and the individual shares credentials with the organization.

Verification is the process in which, by reading from the Distributed Ledger, a Relying Party who received a verifiable credential through disclosure confirms that such verifiable credential has not been modified, has been issued by a trusted authority, and hasn't been revoked or expired.

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Glossary of Terms

https://www.velocitynetwork.foundation/main2/glossary-and-actors

Issuing | Process by which an organization asserts the claims about a Holder to whom a verifiable credential is issued. Such verifiable credential is shared with the Holder through a direct, peer-to-peer connection and the verifiable credential's metadata is written to the Velocity Ledger.

Disclosure Request | request to share specific credentials or claims sent by a Relying Party to the Holder, which a Holder must consent to. Specifies the purpose for which the personal data is required and the duration that verifiable credentials will be retained as well as all related terms and conditions pertaining to the disclosure.

Inspection | process by which a Relying Party sends a disclosure request to the Holder and processes the credentials sent back by the Holder.

Verification | process in which, by reading from the Distributed Ledger, a Relying Party who received a verifiable credential through inspection confirms that such verifiable credential has not been modified, has been issued by a trusted authority, and hasn't been revoked or expired.

Revocation | The act of an Issuer revoking the validity of a credential.

The Ledger | The distributed blockchain-based, continuously-replicated, global cryptographic database maintained by Stewards operating nodes communicating with the Velocity consensus protocol.

Node | A computer network server running an instance of the code necessary to operate the blockchain-based Ledger.

Glossary of Terms (cont.)

https://www.velocitynetwork.foundation/main2/glossary-and-actors

Velocity Protocol |The standard protocol for communicating between Credential Agents and credential wallets, performing transactions with the Velocity Ledger.

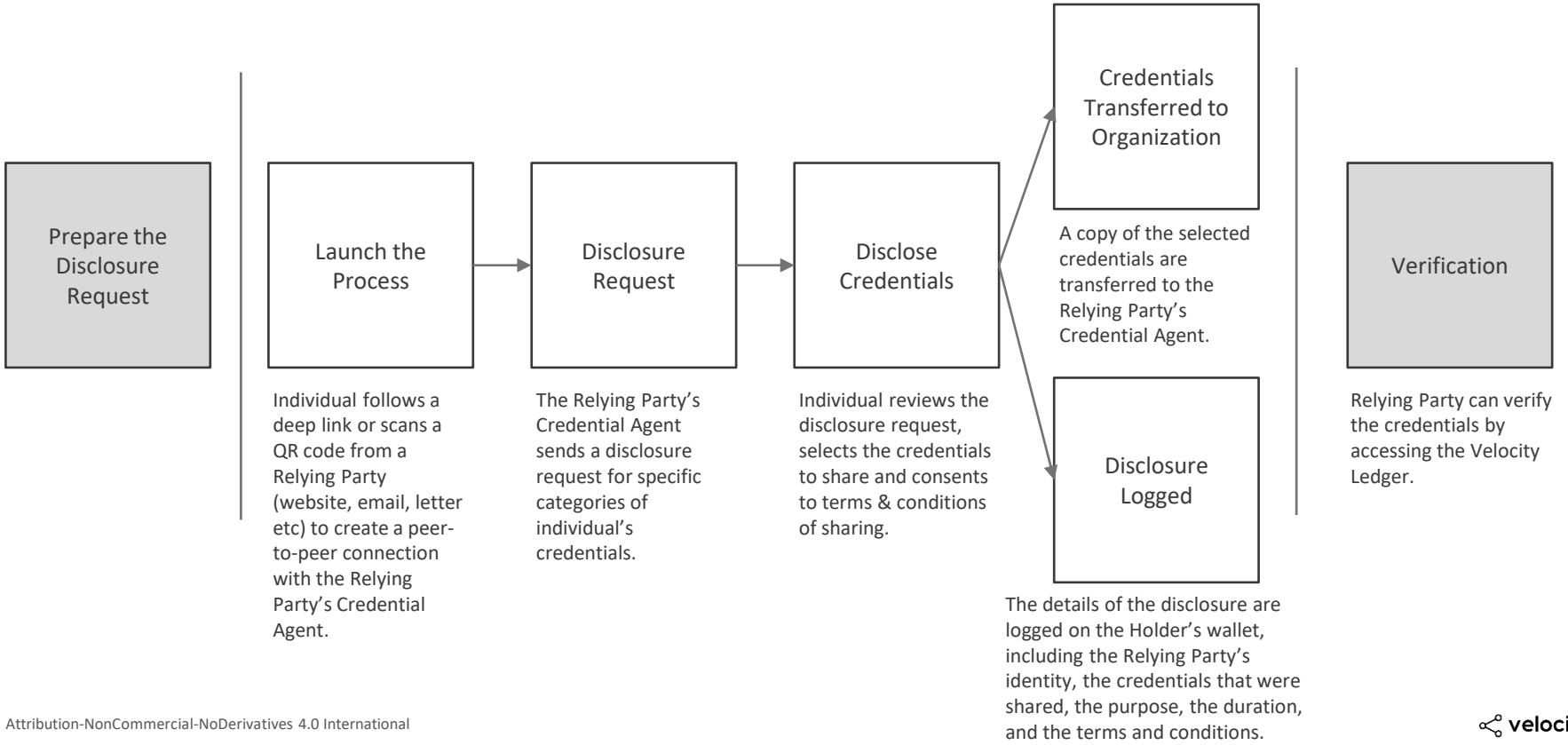
Velocity Network™ | The Velocity Ledger and its nodes, plus all Credential Agents that communicate with the Velocity Ledger and with wallets using the Velocity protocol. Velocity Network is a private-permissioned distributed network. Operating a node and writing to the Velocity Ledger requires permission from the Foundation.

Schema | The machine-readable format for specific attributes, claims, and credential that can be used in a verifiable career credential; a template for creating credentials of this type.

Credential Agent | A software program or process approved by the Foundation used by or acting on behalf of an Issuer, Notary or Verifier to communicate with the Velocity Ledger and Credential Wallets.

Relying Party | An entity that requests a credential from a Holder and verifies it using the Velocity Network™ Distributed Ledger

Disclosure & Verification - High Level Flow



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Key product decisions for disclosure & verification

Identity Credentials

- If you are matching the individual to an existing record of a person, how do you confidently match the identity credentials that you receive with the identity information you have on record?
- Decide which types of identity credentials you want to request from the individual.

Career Credentials

- What types (schemas) of credentials do you want to request the individual to disclose?

Privacy

- Need to provide a privacy policy (as an external link)
- Need to define the purpose and duration of holding the data for each type of disclosure.

Verification Trigger

- Decide if you verify the received credentials upon receipt (one-step process) or receive the verifiable credentials, store them, and later trigger a verification process (two-step process).
- If choose a two-step process – need to have a UX trigger to run the verification process.

UI for Verification

- Design UI to be able to show the different status of the credentials (self reported, verifiable, verified and passed, verified and did not pass, verified and revoked)

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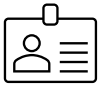
Key product decisions for disclosure & verification

Identity Credentials



Identity Credentials

- Decide which types of identity credentials you want to request from the individual.
- If you are matching the individual to an existing record of a person, how do you confidently match the identity credentials that you receive with the identity information you have on record?

Note | Some disclosure use cases create a new individual profile, in which case identity credentials are used to create the profile and no matching takes place. Some disclosure use cases augment an existing profile, in which case the identity credentials received need to be matched with exiting records.

Note | The following kinds of credential types are supported for identification purposes:

Email

Phone

ID document, which can be a passport, driver’s license, or national ID card

Verification identifier

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Key product decisions for disclosure & verification

Types of career credentials to request

Career Credentials

- What types (schemas) of credentials do you want to request the individual to disclose?

Note |Currently supported Layer 1 career credential schemas:

Assessment | AssessmentV1.1

Badges | OpenBadgeV2.0, BadgeV1.1, *OpenBadgeV3.0 coming soon*

Certifications | CertificationV1.1

Licenses | LicenseV1.1

Courses | CourseRegistrationV1.1, CourseAttendanceV1.1, CourseCompletionV1.1

Education Degrees | EducationDegreeRegistrationV1.1, EducationDegreeStudyV1.1, EducationDegreeGraduationV1.1

Employment | EmploymentCurrentV1.1, EmploymentPastV1.1

Note| If Relying Party would like to receive any Layer 2 career credential schemas, these can be included in the disclosure request (e.g. CLRs)

JSON file for identification disclosure request:


```
{
"types": [{"type": "PassportV1.0"},{"type": "EmailV1.0"},{"type": "PhoneV1.0"}],
"vendorEndpoint": "issuing-identification",
"purpose": "Id Check",
"duration": "6m",
"termsUrl": "https://www.lipsum.com/feed/html",
"activationDate": "2021-06-01T00:00:01Z"
}
```

Key product decisions for disclosure & verification

Disclosure request privacy

- Need to provide a privacy policy (as an external link)
- Need to define the purpose and duration of holding the data for each type of disclosure.

Documentation on Identification Disclosure Request:
https://www.velocitynetwork.foundation/main/developers-guide-issuing#identification-disclosure-request

JSON file for identification disclosure request:


```
{
"types": [{"type": "PassportV1.0"},{"type": "EmailV1.0"},{"type":
"PhoneV1.0"}],
"vendorEndpoint": "issuing-identification",
"purpose": "Id Check",
"duration": "6m",
"termsUrl": "https://www.lipsum.com/feed/html",
"activationDate": "2021-06-01T00:00:01Z"
}
```


Privacy policy should be stored as URL on public location.

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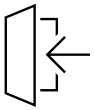
Key product decisions for disclosure & verification

Trigger verification process



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- Decide if you verify the received credentials upon receipt (one-step process) or receive the verifiable credentials, store them, and later trigger a verification process (two-step process).
- If choose a two-step process – need to have a UX trigger to run the verification process.

Note |As the verification process requires having vouchers to pay for the verification, you need to design your business process to ensure that you will not get stuck in the process.

Note |If you are a Credential Agent Operator providing disclosure & verification solutions to your customers you should consider that different customers may have different preferences on automatic or user triggered verification. Your solution should enable configuration of different policies.

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Key product decisions for disclosure & verification

UI for verification results

UI for Verification

- Design UI to be able to show the different status of the credentials (self reported, verifiable, verified and passed, verified and did not pass, verified and revoked)
- Design UI to present alert if VOUCHER_RESERVE_EXHAUSTED

Note | When running a verification of a presentation, the credential agent returns specific values for each of the 4 checks it performs.

UNTAMPERED – PASS
TRUSTED_ISSUER – PASS
UNREVOKED – FAIL
UNEXPIRED - PASS

The verifying organization (Relying Party) needs to decide how to compile the results of these values and how to present them to the end user in the user interface.

- Show one indicator if all checks are Pass?
- Show indicators for each check separately?

CHECK	SUMMARY	VALUES
UNTAMPERED	Proves the credential hasn't been tampered with by intermediaries since issuing (including the Holder)	**PASS** - The credential hasn't been tampered with **FAIL **- The credential has been tampered with **VOUCHER_RESERVE_EXHAUSTED** - Checks can't be run until vouchers are purchased
TRUSTED_ISSUER	The Credential was issued by a certified Issuer of Velocity Network. The signature on the Issuer-VC within the metadata block must verify using the organization's Issuing metadata key. The organization's VNF VC must contain "Issuer" as an approved Service Category	**PASS**- The Issuer is trusted **SELF_SIGNED** - The data was attested to by the Holder **FAIL** - The Issuer is not a VNF-certified Issuer **VOUCHER_RESERVE_EXHAUSTED**- Checks can't be run until vouchers are purchased
UNREVOKED	Issuers can revoke credentials without the Relying Party having to check with the Issuer directly so as not to expose the Holder's privacy.	**PASS** - The credential hasn't been revoked **FAIL** - The credential has been revoked **VOUCHER_RESERVE_EXHAUSTED** - Checks can't be run until vouchers are purchased
UNEXPIRED	The credential is still within its validity period.	**PASS**- The credential hasn't expired **FAIL** - The credential has expired

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Thank You

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