

W3C Verifiable Credentials Working Group Specifications

Ivan Herman



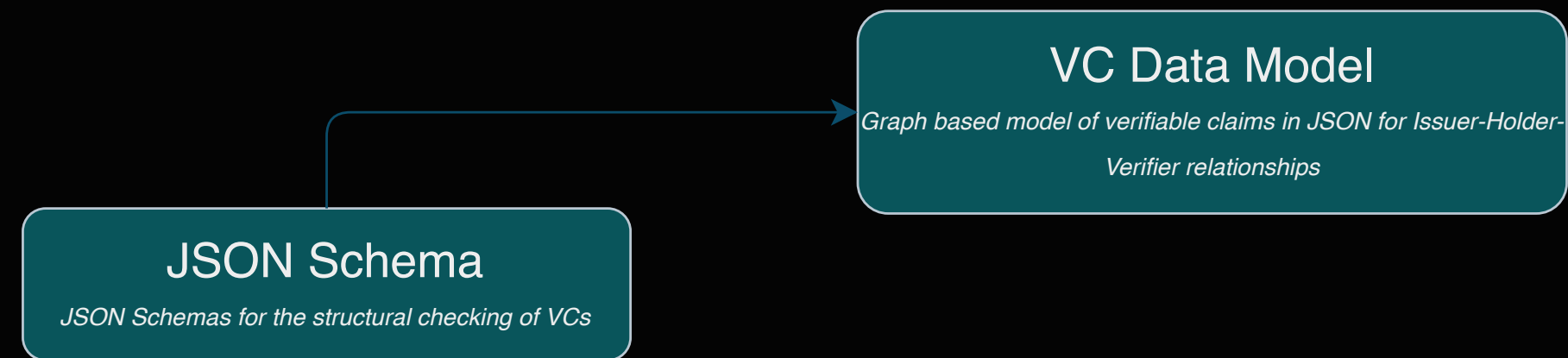
It starts with a data model...

VC Data Model

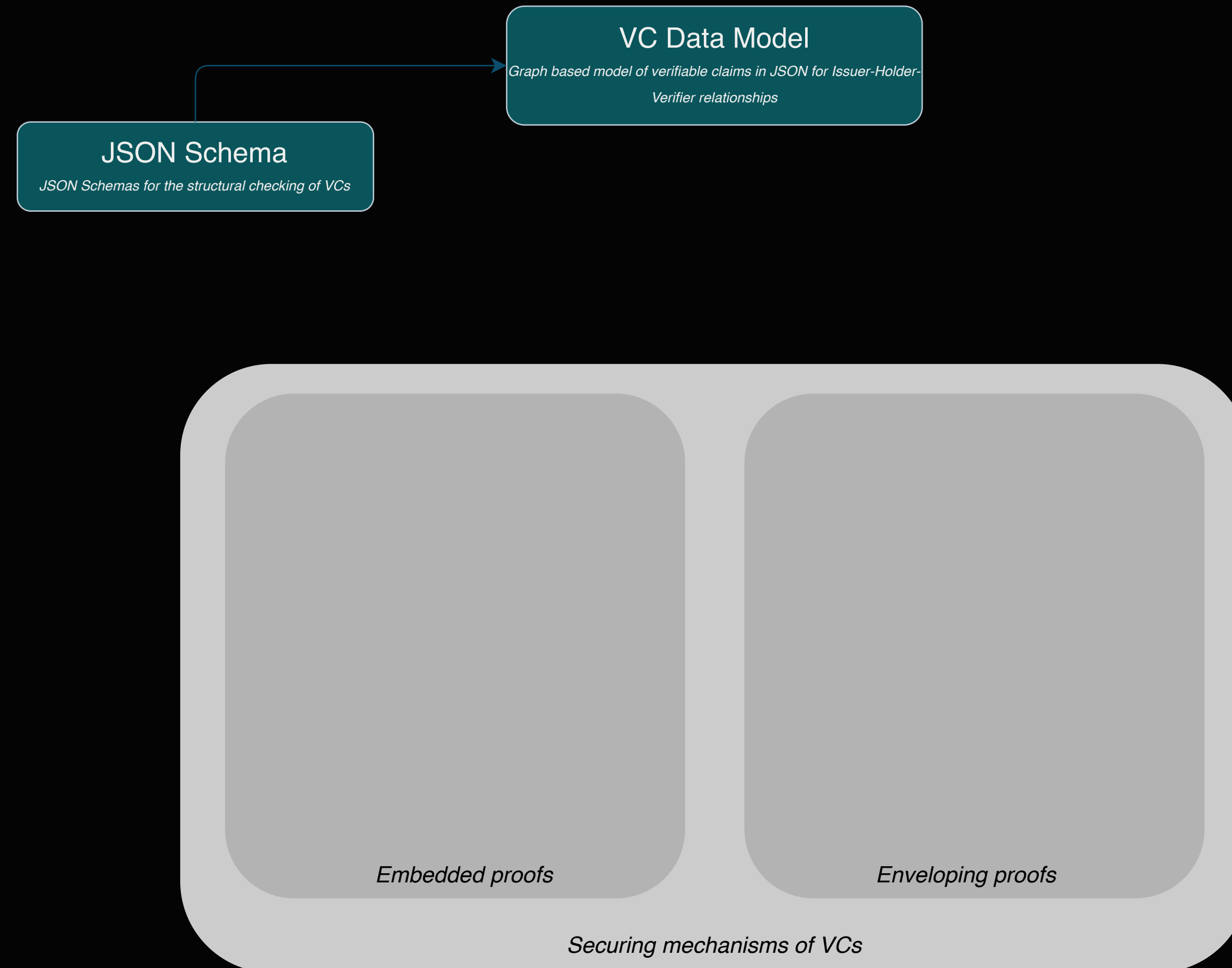
*Graph based model of verifiable claims in JSON for Issuer-Holder-
Verifier relationships*



Structural check of a document

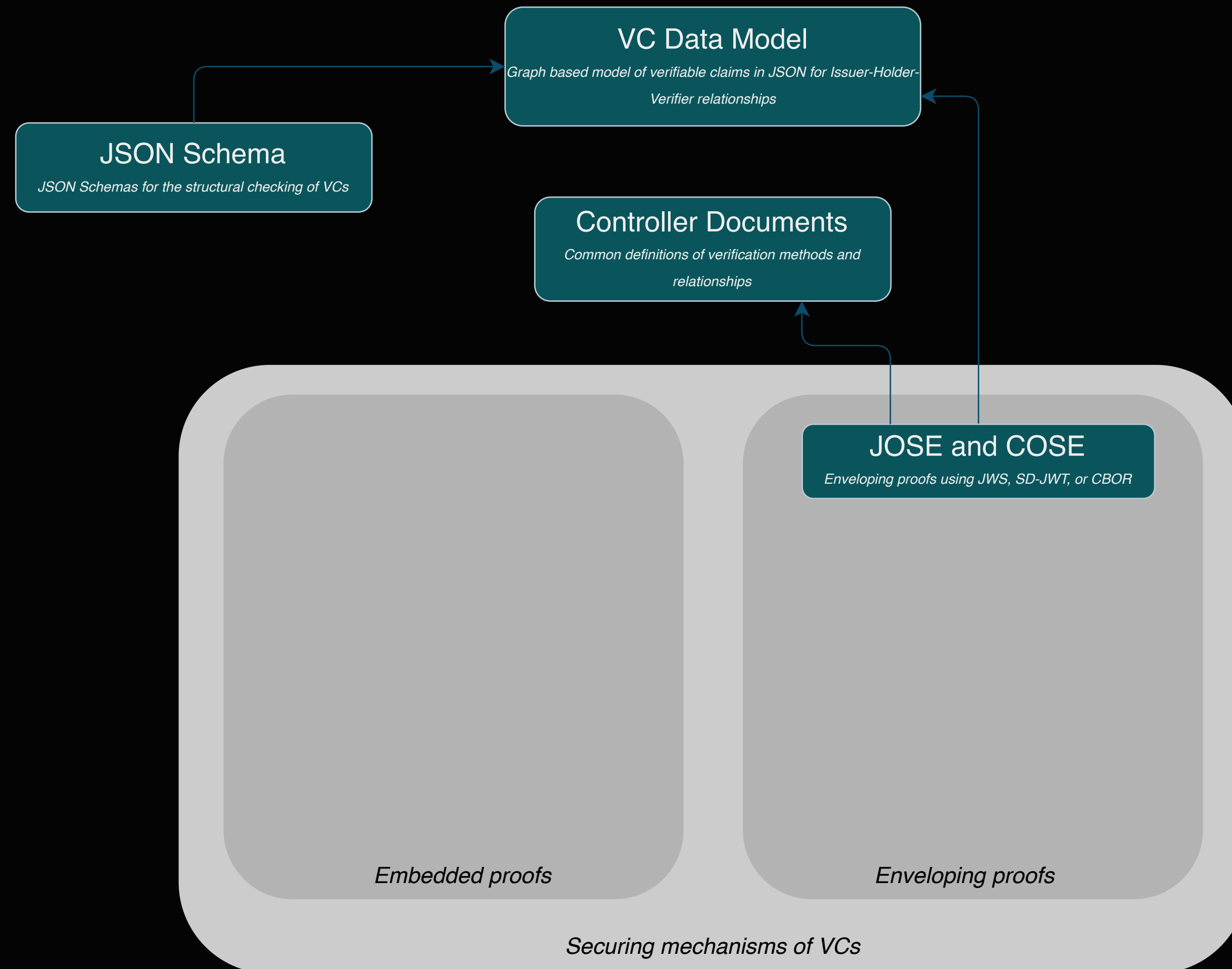


Credentials should be secured

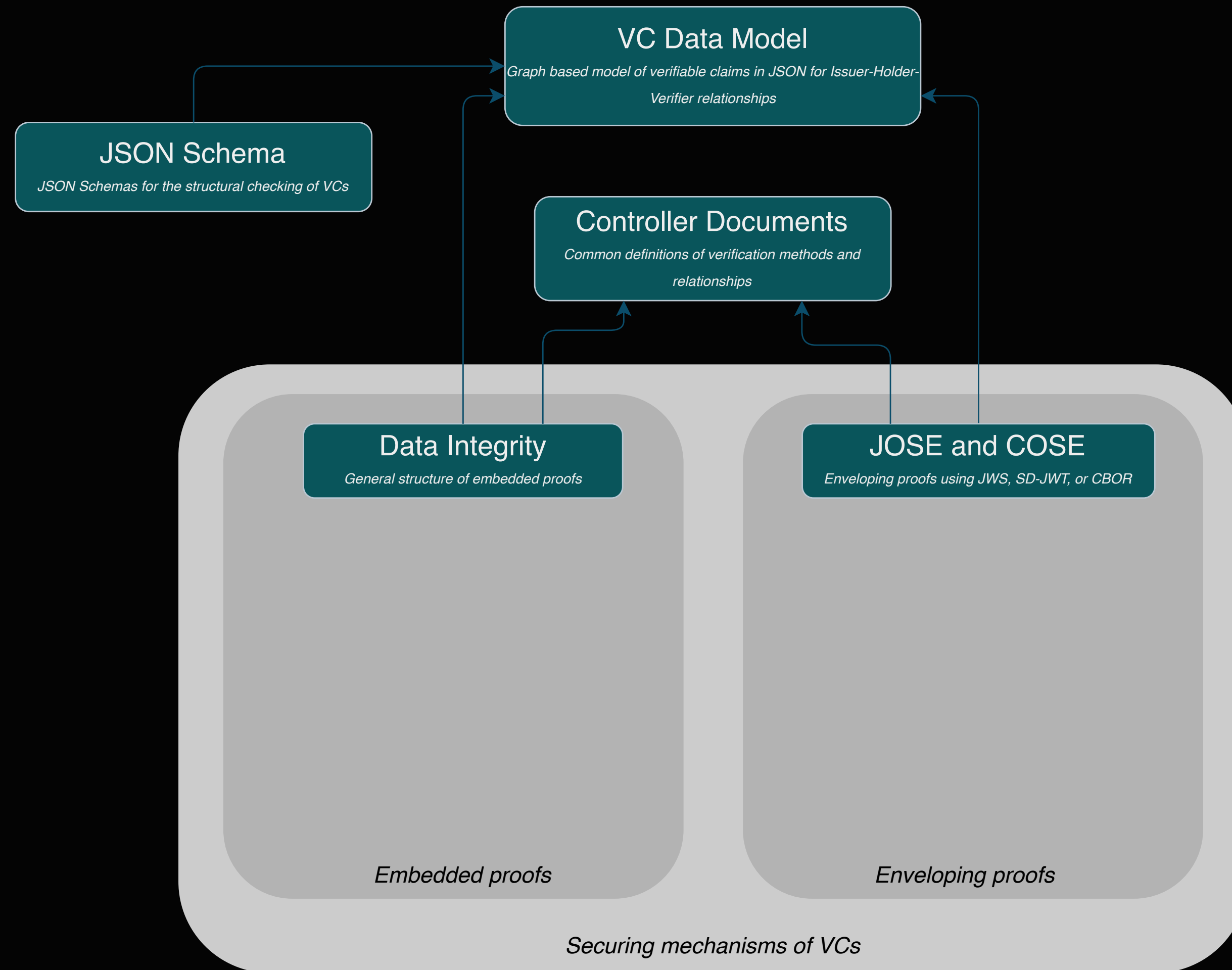


Securing through JSON Web Tokens & Co.

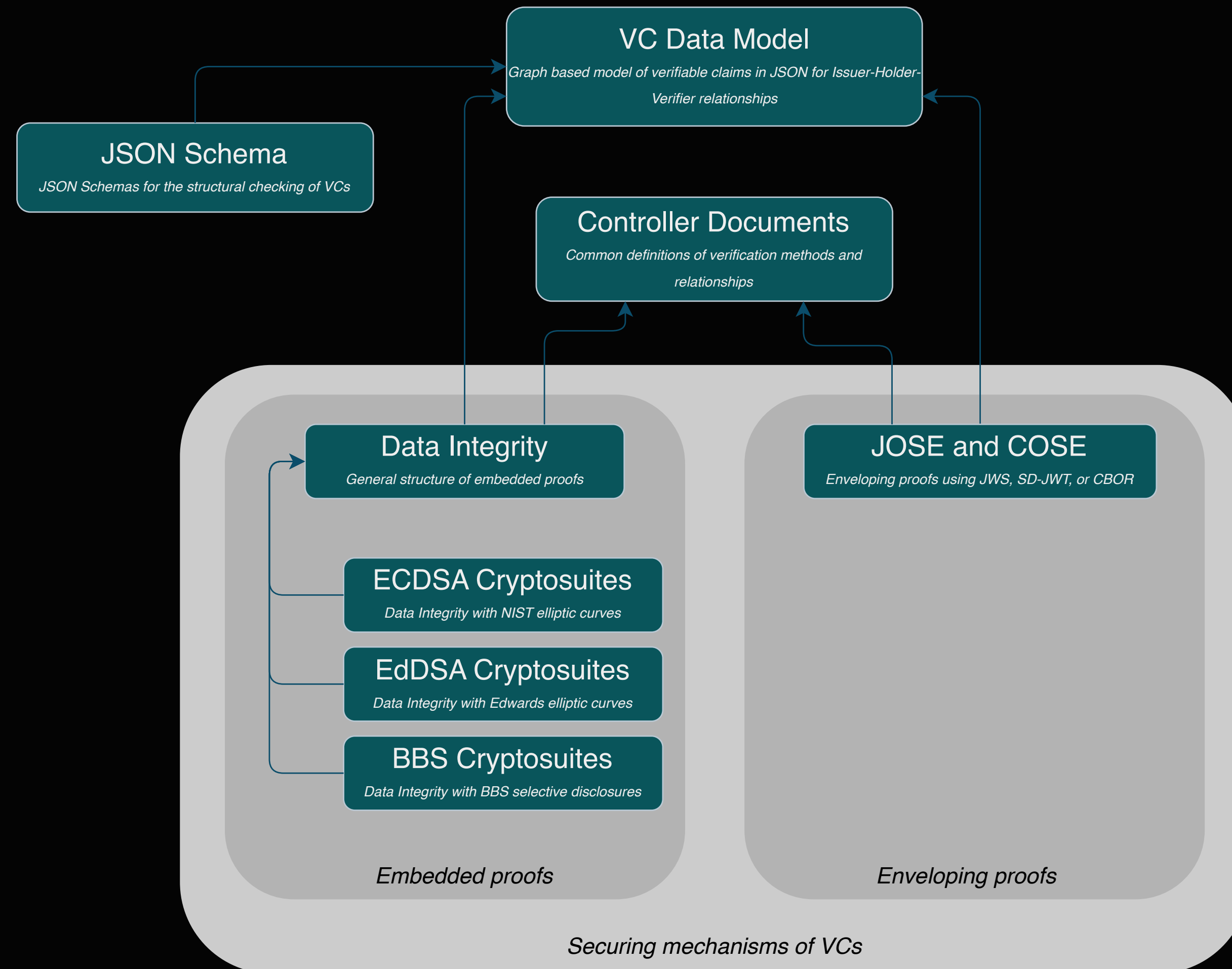
5



Securing “within” the Credential...

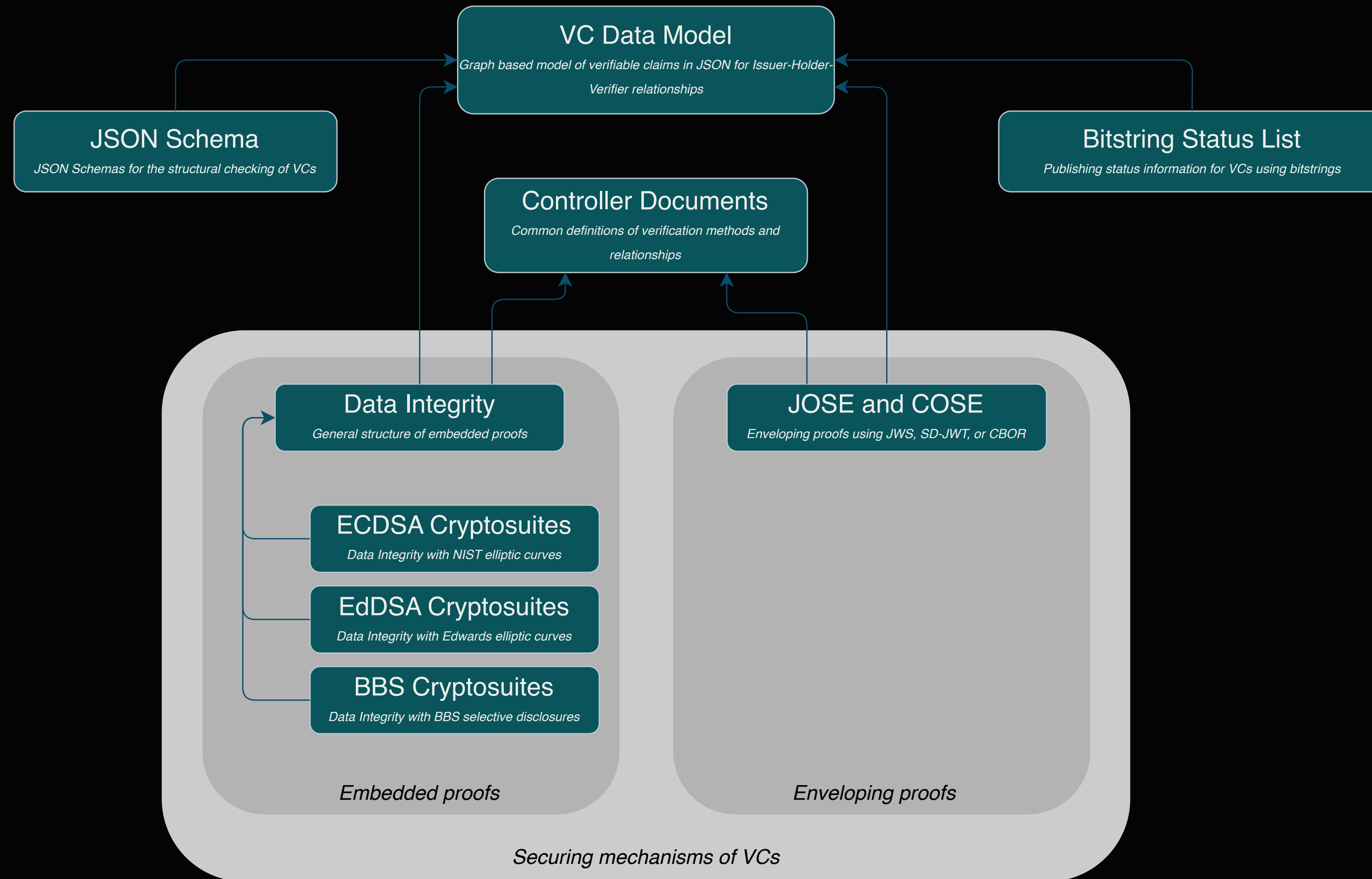


...with specific cryptosuites

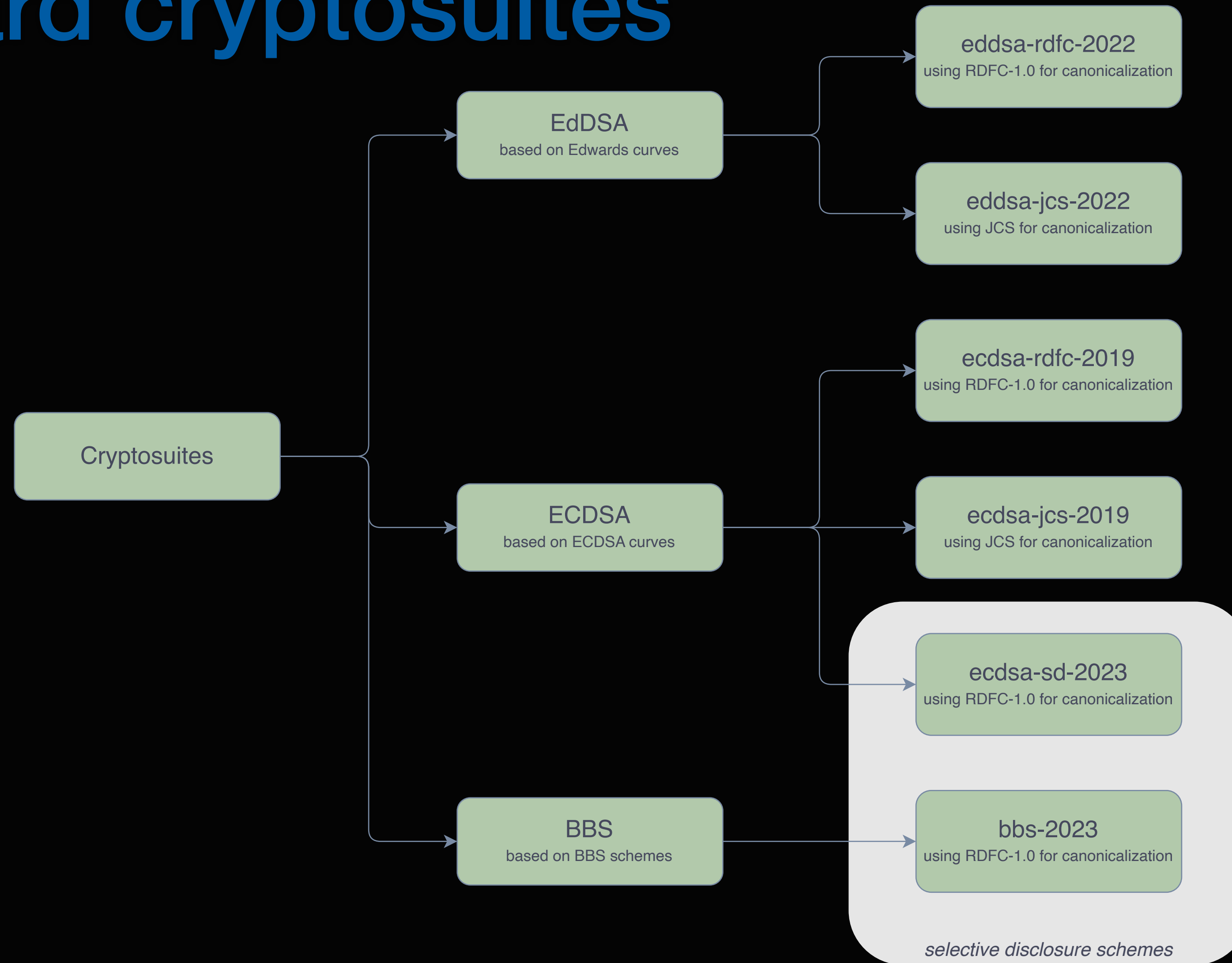


Manage suspension/revocation of credentials

8



Standard cryptosuites



Example: Basic credential...

```
{
  "@context": [
    "https://www.w3.org/ns/credentials/v2",
    "https://www.example.org/vocabs/alumni"
  ],
  "id": "https://uni.example/Credential12",
  "type": ["VerifiableCredential", "ExampleAlumniCredential"],
  "issuer": "did:example:2g55q91",
  "credentialSubject": {
    "id": "https://www.example.org/persons/pat",
    "name": "Pat",
    "alumniOf": {
      "id": "did:example:c276e12ec21ebfeb1f712ebc6f1",
      "name": "Example University"
    }
  },
  ...
}
```



...JSON Schema and status references

```
...
"credentialSchema": {
  "id": "https://uni.example/Credential12-schema-credential",
  "type": "JsonSchemaCredential"
},
"credentialStatus": {
  "id": "https://uni.example/statuslist#123456",
  "type": "BitstringStatusListEntry",
  "statusPurpose": "revocation",
  "statusListIndex": "123456",
  "statusListCredential": "https://uni.example/StatusList"
},
...
```

...and signed using ECDSA

```
...  
"proof": {  
  "type": "DataIntegrityProof",  
  "cryptosuite": "ecdsa-rdfc-2019",  
  "created": "2010-01-01T00:00:00Z",  
  "expires": "2040-01-01T00:00:00Z",  
  "verificationMethod": "did:example:2g55q91#ecdsa-public-key"  
  "proofPurpose": "assertionMethod"  
  "proofValue": "zQeVb...Wx"  
}  
}
```

Further links

- These slides:
 - https://www.w3.org/2017/vc/WG/assets/presentations/VCWG_specifications.html
 - https://www.w3.org/2017/vc/WG/assets/presentations/VCWG_specifications.key
 - https://www.w3.org/2017/vc/WG/assets/presentations/VCWG_specifications.pdf
- Single Overview in SVG:
 - https://www.w3.org/2017/vc/WG/assets/VCWG_specifications.svg
- VC Overview Document (to be published as a WG Note):
 - <https://w3c.github.io/vc-overview/>