UN/ESCAP
Nepal Workshop

Verifiable Credentials
for
Cross-border trade

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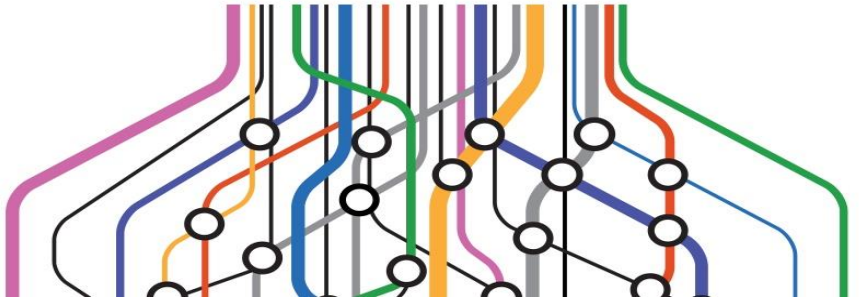
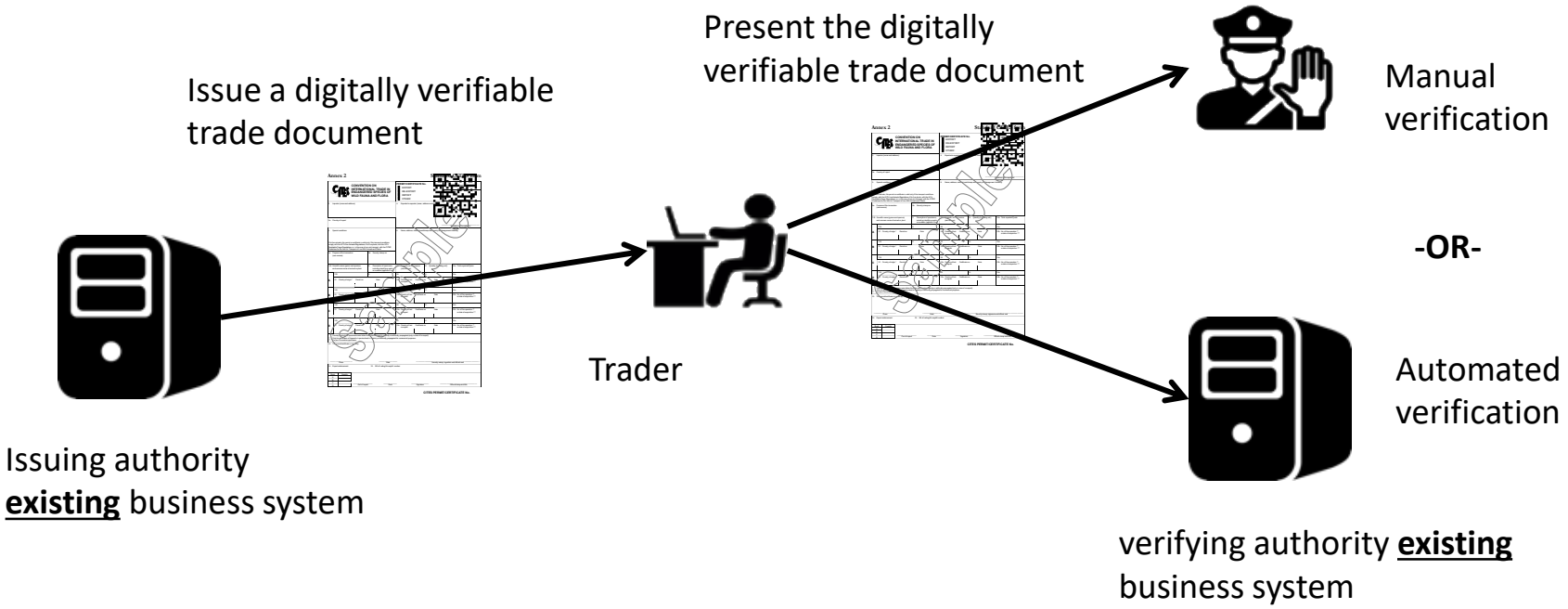
UNECE

UN / CEFACT



A new data exchange framework



Using some new technology standards

From the world's leading web standards body:

Two key technology standards

Verifiable Credentials
https://www.w3.org/TR/vc-data-model/

Decentralised Identifiers
https://www.w3.org/TR/did-core/

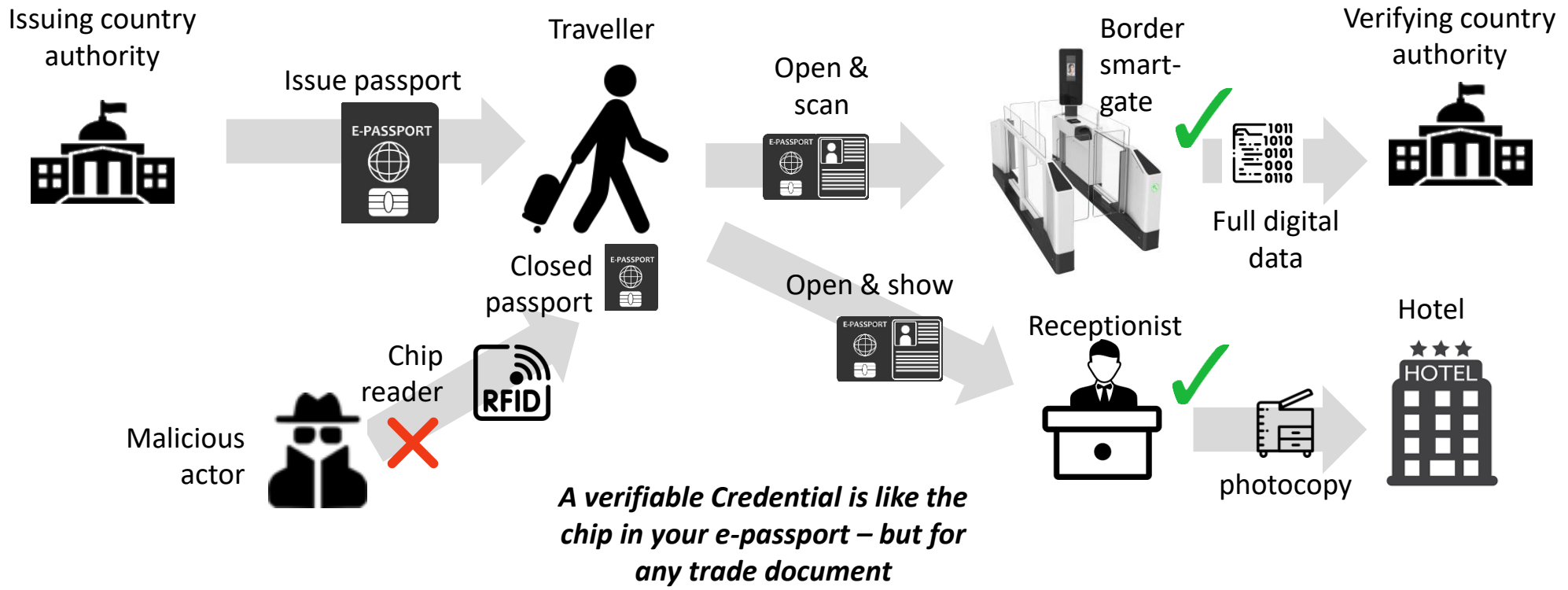
And from the world's leading digital trade standards body:

A white paper that explains why they are important and how to use them

VCs for cross border trade

https://unece.org/sites/default/files/2022-09/WhitePaper_VerifiableCredentials-CBT.pdf

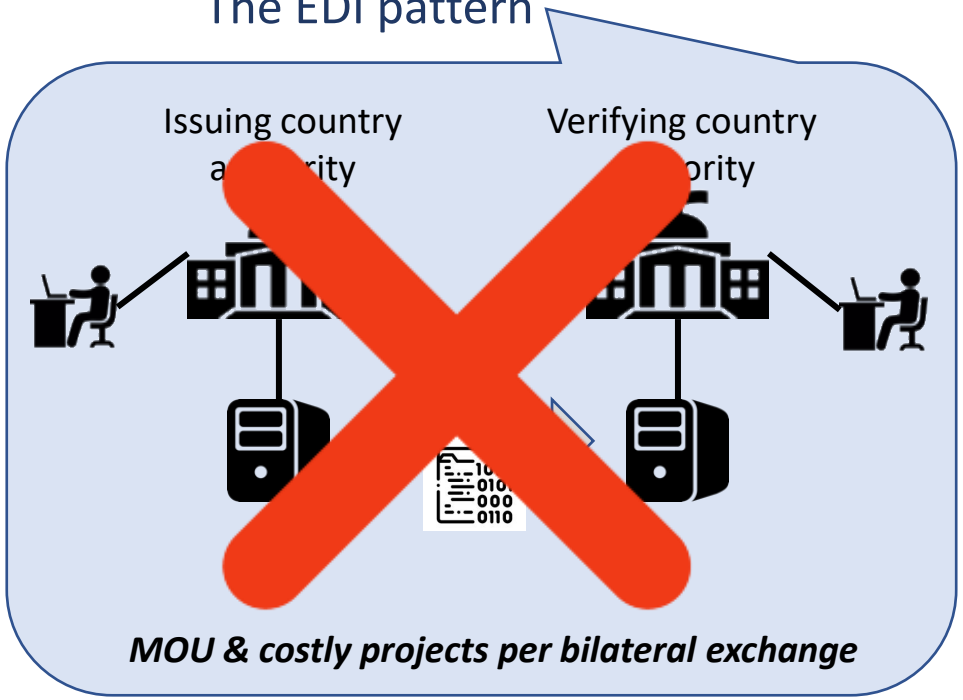
Which are best understood with an analogy



A verifiable Credential is like the chip in your e-passport – but for any trade document

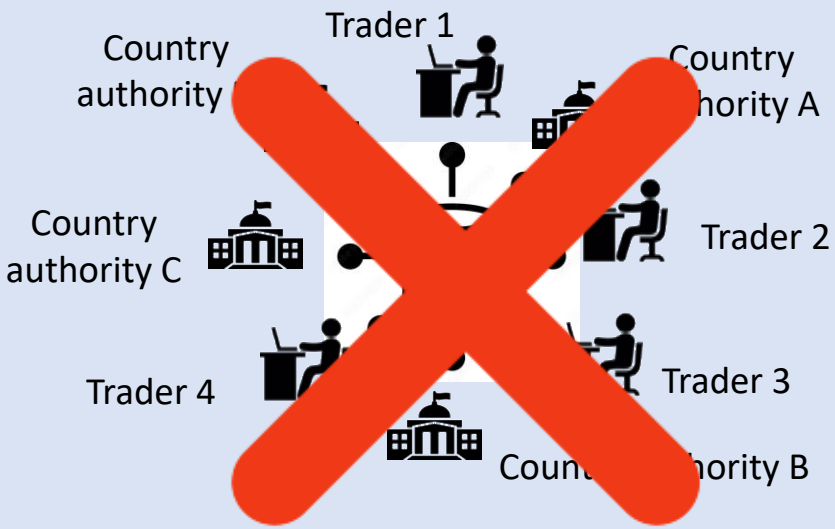
They are cheaper and simpler than alternatives

The EDI pattern



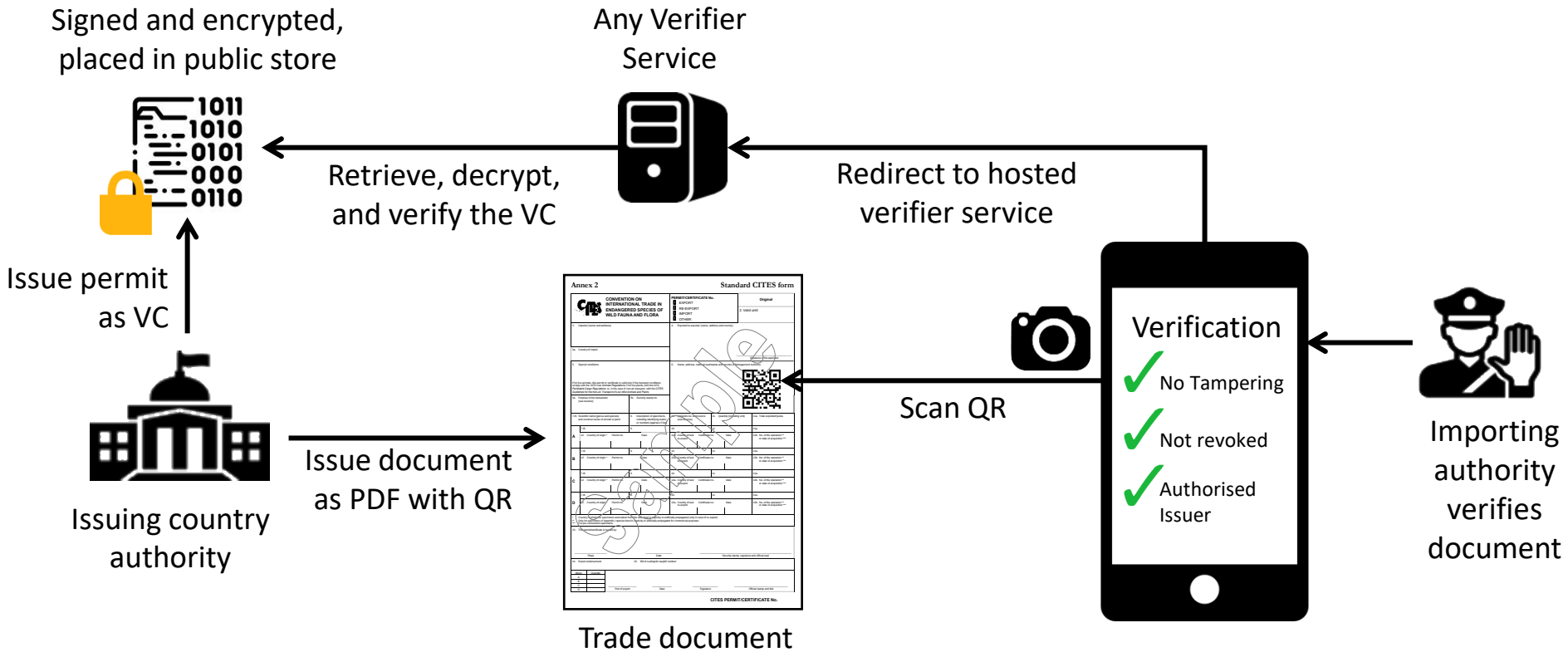
MOU & costly projects per bilateral exchange

The Hub pattern

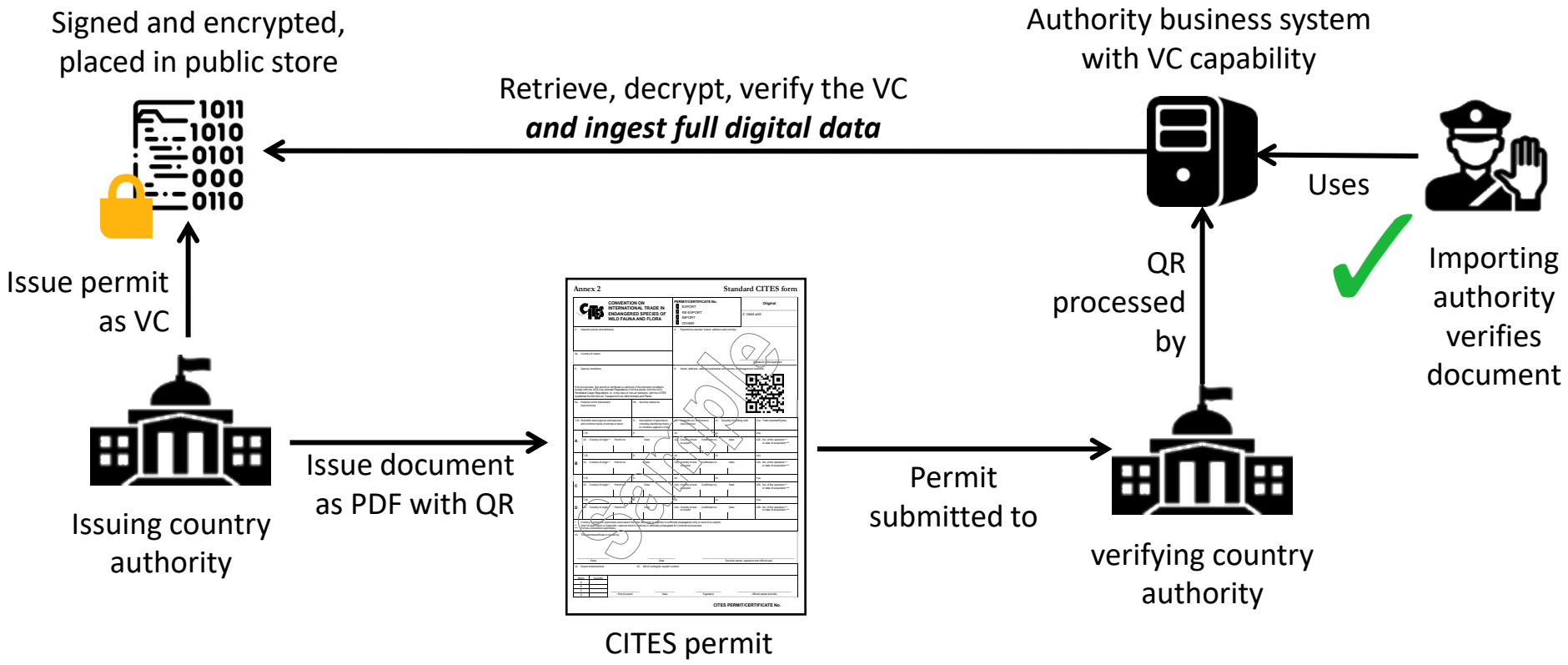


Costly central infrastructure and cyber honey-pot

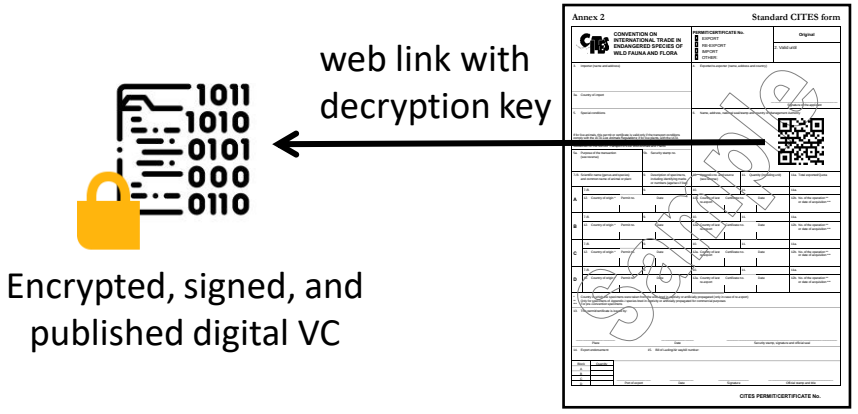
VCs can be verified simply by scanning a QR



But advanced verifiers can still get all the data.

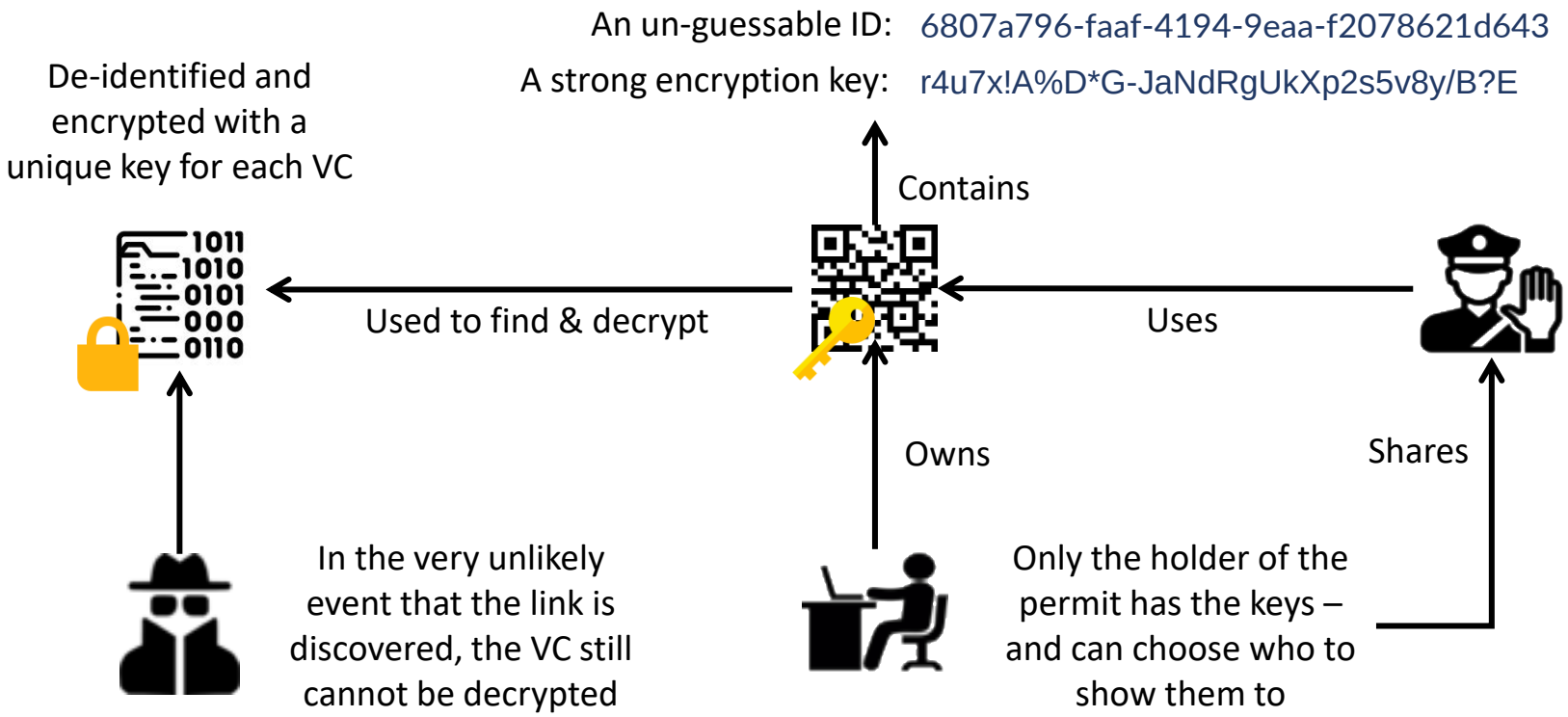


Wait, the same document is both paper and digital?



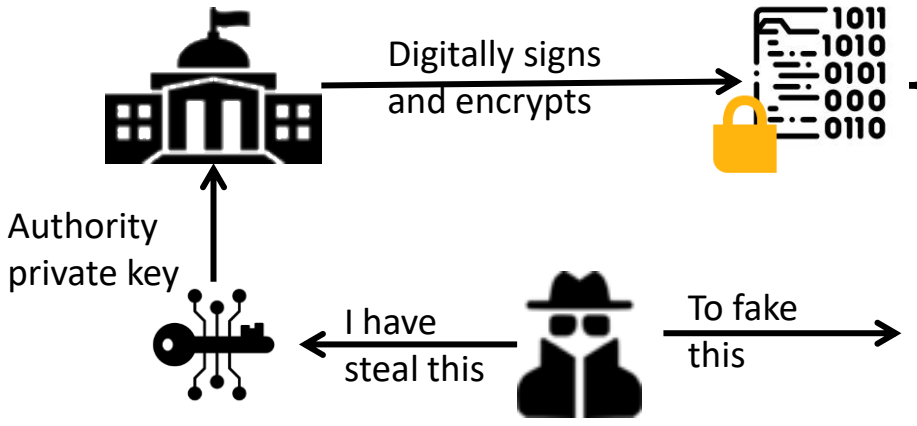
Yes! – and this is the key to scalability. You can go 100% digital without any dependency on verifier digital maturity

Published & public? But what about privacy?



And how can I be sure that the VC is genuine?

Because it is **digitally signed**
by someone you **trust**



VerifiableCredential

Header
ID: 6807a796-faaf…
Type: cites.org/permit
Issuer: did:web:environment.gov.au
Status: https:environment.gov.au/status
IssueDate : 2022-10-24

Subject
PermitNo: 2022AU04120
Consignee: ACME Handbags …
Permittee: Croc Holdings Pty..
Line1:[
Species: Crocodylidae
Quantity: 50 kg
OriginCountry: AU
Appendix: 11A]
Line2:…

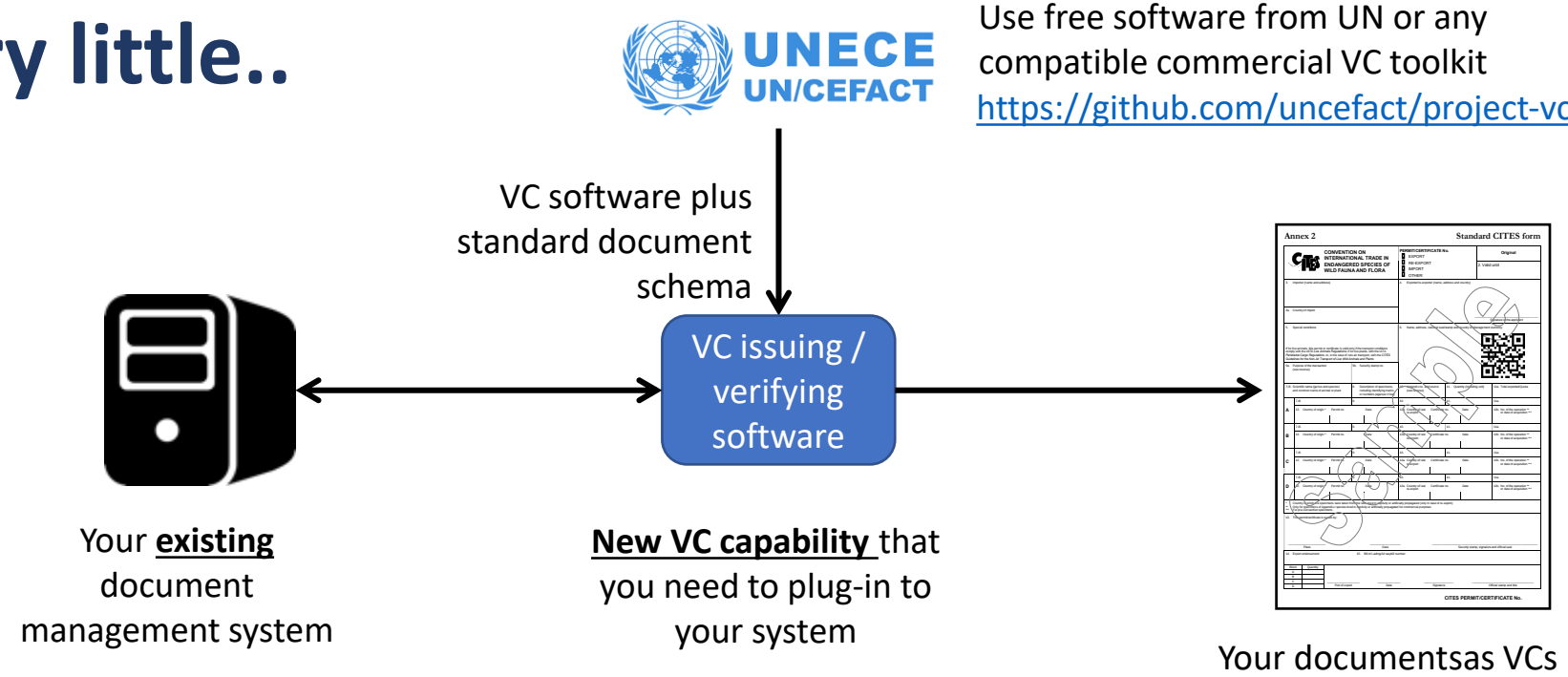
Proof
Type: RsaSignature2018
Created: 2022-10-25T21:08:24Z
Verification: did:web:environment.gov.au
Signature: JhbGciOiJSUzI1NiIsImI2N….

Any tampering of this data will invalidate the signature

Trusted issuer Signature

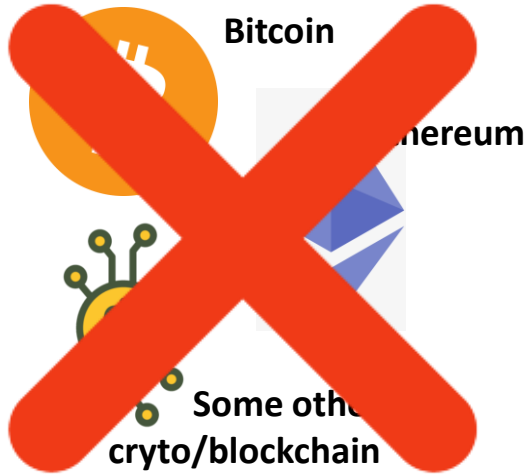
OK, what is it going to cost me to issue these?

Very little..



Wont I need some blockchain stuff?

Some VC solutions do use some blockchain – but it adds very little value.



NOT NEEDED !

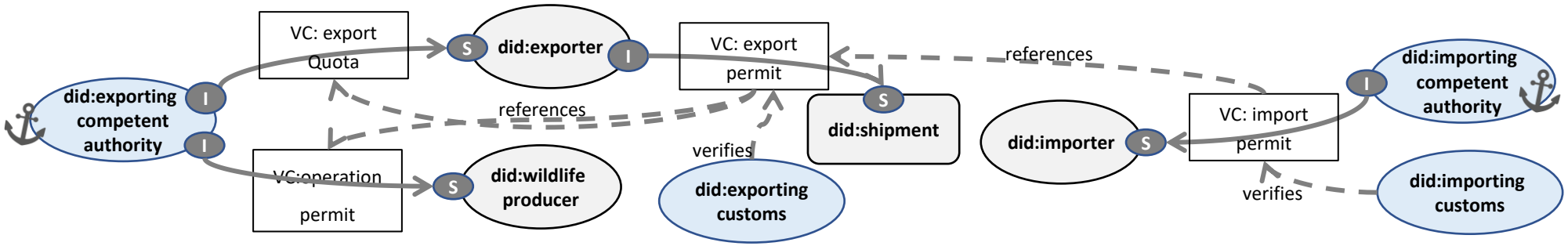
Lets see it working – scan these QR codes

A Valid Certificate

An Invalid Certificate

Note : We use a certificate of Origin as the sample – but could equally be any trade document

An advanced topic to close – trust graphs



VCs can be linked together to form chains of trust. For example an importer permit linked to an export permit that is linked to a quota license and to an authorised wildlife producer. We call the linked set of credentials a **trust graph**. Valuable trust graphs are traceable to a **trust anchor**.

In summary – it’s the best way forward

Verifiable Credentials for global electronic trade

- ✓ Scalability – Go 100% digital without dependencies
- ✓ Cost – No central infrastructure and free software
- ✓ Privacy – No honeypot cyber-threat
- ✓ Integrity – cryptographically verifiable trust

Thanks

Feel free to contact me

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