Demonstration of using Verifiable Credentials from 3 different issuers to perform a transaction with a verifier

The screenshots show how to purchase a car parking permit online from a county council, using 3 verifiable credentials:
- one from the car licensing authority to prove you own the car
- one from your local council to prove you live at the claimed address
- one from your bank containing your credit card details

Kent County Council

In order to purchase your **car parking permit** online you will need to provide the following:

🏛 Driver & Vehicle Licensing Agency	**canterbury** city council	💳
Proof of **car ownership**, provided by the DVLA	Proof of **name** and **address** issued by the Canterbury City Council	A **credit** or **debit** card issued by Visa, Mastercard or American Express
→ Go to DVLA site	→ Go to city council site	→ Go to Big Bank site → Go to Small Bank site

Proceed to purchase

CLICK HERE to Register with Issuer

Assuming the user has not already registered with the trusted issuers, then he/she must do this before performing the transaction
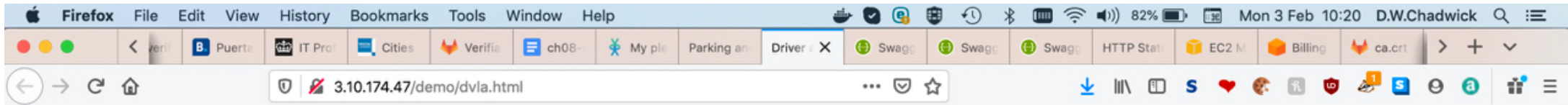
Driver and Vehicle Licensing Agency

Welcome to the DVLA Page. If you are here to get proof of car ownership, click continue below.

CLICK HERE

Continue

How the user registers with a VC Issuer is out of scope of the W3C standard, and VC Issuers may use any mechanism they deem appropriate, for example:
- send the user some one time credentials in the post
- ask them to visit a local office/branch of the issuer
- ask them to provide various government issued documents, etc.

Our implementation can cater for all of the above and more
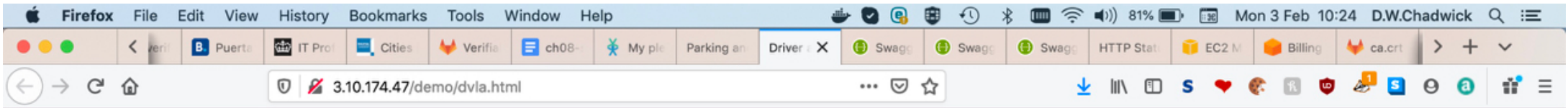
Driver and Vehicle Licensing Agency

Get your credentials below

In order to get your **vehicle registration number**, you must authenticate below with your **username** and **one-time password** sent to you in the post:

Username:

One-time password:

Get your credentials

ENTER
test
123456
Then
CLICK
HERE

User Consent

In Non-Automatic Mode, the User is asked to select which attributes may appear in the VCs the Issuer will subsequently issue

Select the details you want https://verifiablecredentials.co.uk/mobiles to put on your VehicleRegistrationCer...

☐ Select All

☐ regNo: DWC 1

☐ colour: Silver

☐ keeper: Dr David Walter Chadwick

☐ model: Silver Shadow

☐ make: Rolls Royce

address

☐ streetAddress: 10 Rue de Chose

☐ postalCode: CT1 1AA

☐ addressLocality: Canterbury

☐ addressCountry: GB

OK – Select these   Skip

The User
can
consent to
All

Select the details you want https://verifiablecredentials.co.uk/mobiles to put on your VehicleRegistrationCer…

☑ Select All

☑ regNo: DWC 1

☑ colour: Silver

☑ keeper: Dr David Walter Chadwick

☑ model: Silver Shadow

☑ make: Rolls Royce

address

☑ streetAddress: 10 Rue de Chose

☑ postalCode: CT1 1AA

☑ addressLocality: Canterbury

☑ addressCountry: GB

OK – Select these   Skip

Or a subset,

and may have multiple potential VCs to choose from

Select the details you want https://verifiablecredentials.co.uk/mobiles to put on your VehicleRegistrationCer...

☐ Select All

☑ regNo: 2389 XYZ

☐ colour: Beige

☑ keeper: Dr David Walter Chadwick

☑ model: Anglia

☑ make: Ford

address
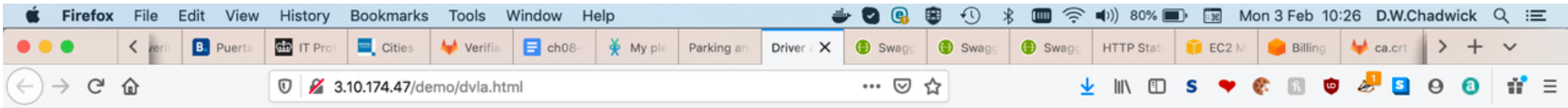☐ streetAddress: 10 Rue de Chose

☐ postalCode: CT1 1AA

☐ addressLocality: Canterbury

☐ addressCountry: GB

After making his/her selection the user completes the registration process by accepting or rejecting each VC
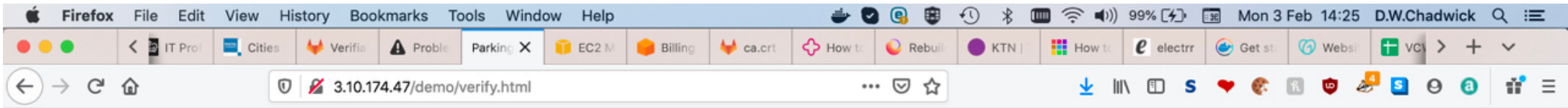
OK – Select these

Skip

Once the user has registered at the 3 VC issuers then he/she is ready to proceed with the purchase

3.10.174.47/demo/verify.html

Kent County Council

In order to purchase your **car parking permit** online you will need to provide the following:

<table>
<tr>
<td>
Driver & Vehicle Licensing Agency

Proof of **car ownership**, provided by the DVLA

→ Go to DVLA site
</td>
<td>
canterbury city council

Proof of **name** and **address** issued by the Canterbury City Council

→ Go to city council site
</td>
<td>
A **credit** or **debit** card issued by Visa, Mastercard or American Express

→ Go to Big Bank site
→ Go to Small Bank site
</td>
</tr>
</table>

Proceed to purchase ←——————— CLICK HERE

What happens now?

- In the background, the VC Holder app that is running on the user's device picks up the policy of Kent County Council (the verifier). This says which VCs from which trusted VC Issuers are needed to purchase a car parking permit.
- The app checks to see if the user has already registered with the trusted VC issuers, and if they have, then
    - in automatic mode, it connects to each VC Issuer in turn and requests the required VC(s) to be issued
    - In non-automatic mode the app asks the user to choose between the alternative VCs that are available to him/her (e.g. visa or mastercard credit card)
- Selective Disclosure is automatic, since the verifier only asks for the VCs to contain the information that is required for the transaction
- If the user has not registered with sufficient trusted VC Issuers, then the user will be asked to register with them before proceeding, or
- If the user has registered with sufficient trusted VCs but did not consent to sufficient attributes being released, then the user will be asked to re-register with one or more VC Issuers

In non-automatic mode, the User is Presented with the Sets of VCs to choose from.

Placing the cursor on a VC reveals the attributes the SP has requested

Choose the card details you want to send to https://canterbury.gov.uk...

○ VisaCard from https://verifiablecredentials.co/VCissuer/   ○ ResidencyCredential from https://verifiablecredentials.org/VCs   ○ VehicleRegistrationCertificate from https://verifiablecredentials.co.uk

OR   AND

regNo: "DWC 1"; keeper: "Dr David Walter Chadwick"; model: "Silver Shadow"; make: "Rolls Royce";

○ Mastercard from https://verifiablecredentials.co/VCissuer/   ○ VehicleRegistrationCertificate from https://verifiablecredentials.co.uk

Submit   Cancel

What happens next?

- Once the app has collected the required VCs, it creates a Verifiable Presentation (VP) containing the 3 VCs and signs them with the user's private key (especially created for this transaction)

- The app sends the VP to the verifier, which checks that it contains the 3 VCs required to purchase the car parking permit, and that all these VCs belong to the owner of the private key that signed the VP

- Assuming all is OK, the verifier extracts the necessary information from the 3 VCs and displays them back to the user to confirm the purchase

Kent County Council

Your Car Parking Permit Details	
Name	Dr David W Chadwick
Address	10 Rue De Chose Canterbury CT1 1AA GB
RegNo	DWC 1
Card Number	***********2345
Price	£23.00

Confirm Purchase ← CLICK HERE

3.10.174.47/demo/verify.html

Kent County Council
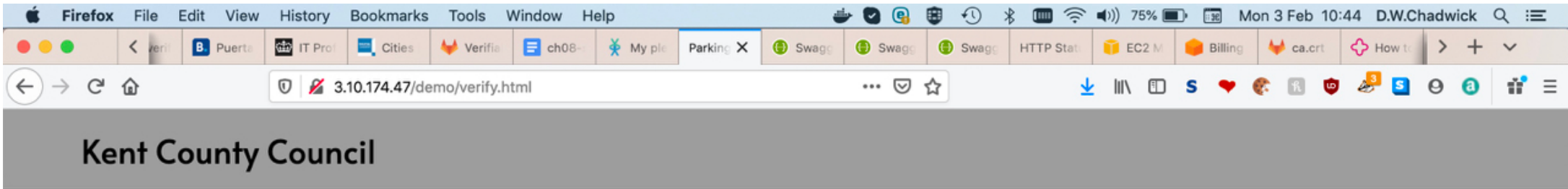
Congratulations on purchasing your car parking permit online! Press the button below to print it

Print