

## Test specification E2E OAT

| TC-ID    | Testcase   | Description  | Manual test steps   |   |   |
|----------|--|--|---|---|---|
| TXR-2013 | INT_IssApp_Start_WebApp                              | Open the WebApp in Browser   | Step  | Input/Data  | Expected Results  |
|          |  |  | 1 Open Browser  | <a href="https://dgca-issuance-web.cfapps.eu10.hana.ondemand.com">https://dgca-issuance-web.cfapps.eu10.hana.ondemand.com</a> | WebApp is starting  |
| TXR-2017 | INT_IssApp_Create_QR-Code                            | Insert relevant Data in Issuer App. Send inserted Data to national backed.   | Step  | Input/Data  | Expected Results  |
|          |  |  | 1 open the data entry mask  |   | Data Entry Mask is shown  |
|          |  |  | 2 insert Family name in textfield "Family name"   |   | "Family name" is shown in textfield   |
|          |  |  | 3 insert given name in textfield "Given name"   |   | "Given name" is shown in textfield  |
|          |  |  | 4 insert date of birth in textfield with picker 'Date of Birth'                                 |   | date is shown in textfield  |
|          |  |  | 5 insert "Disease/Agent*" in textfield Disease/Agent*   |   | "Disease/Agent*" is shown in textfield  |
|          |  |  | 6 choose vaccination type in combo box 'Vaccine/Prophylaxis*'                                   |   | vaccination type is shown textfield   |
|          |  |  | 7 choose medical product in combo box 'Medicinal Product*'                                      |   | medical product is shown in textfield   |
|          |  |  | 8 choose Organisations Management System* in combo box 'Organisations Management System*'       |   | Organisations Management System is shown in textfield                                       |
|          |  |  | 9 insert dose number in Textfield "Dose Number*"  |   | dose number is shown in textfield   |
|          |  |  | 10 insert total series of doses in Textfield "Total Series of Doses*"                           |   | total series of doses is shown in textfield   |
|          |  |  | 11 insert vaccination date in textfield with picker 'vaccination date'                          |   | vaccination date is shown textfield   |
|          |  |  | 12 choose Issuer country in combo box 'Issuer Country*'   |   | issuer country is shown in textfield  |
|          |  |  | 13 insert certificate issuer in textfield "Certificate Issuer*"                                 |   | Certificate Issuer is shown in textfield  |
|          |  |  | 14 push "next" button   |   | QR-code will be generated with inserted data  |
| TXR-2019 | INT_IssApp_Request_signed_QR-Code                    | send unsigned QR-code to national Backend, which signs it and send it back to the Issuer App. The signed QR-code will be displayed on screen | Step  | Input/Data  | Expected Results  |
|          |  |  | 1 Send created QR-Code to national backend via "finish process" button                          |   | QR-Code will be send - national backend returns signed QR-Code                              |
| TXR-2020 | INT_IssApp_Print_signed_QR-Code                      | print the QR-code/vaccination certificate with included print service(?)   | Step  | Input/Data  | Expected Results  |
|          |  |  | 1 Create signed QR-code<br>2 Push the "Create PDF" Button                                       |   | signed QR-code created<br>A PDF document is created and downloaded with all necessary dates |
| TXR-2028 | INT_WalletApp_Citizen_scans_QR-Code                  | scann the QR-code with the wallet app  | Step  | Input/Data  | Expected Results  |
|          |  |  | 1 open the (internal) QR-codescanner via "scan code"<br>2 position the QR-Code under the camera |   | QR-codescanner starts<br>QR-code is displayed sharply                                       |
| TXR-2029 | INT_WalletApp_shows_the_certificate_on_mobile_device | show the saved certificate on mobile device within the details of the data   | Step  | Input/Data  | Expected Results  |
|          |  |  | 1 open the internal storage<br>2 Choose one QR-code   |   | all scanned QR-codes will be listed<br>QR-code will be displayed on screen                  |
| TXR-2032 | INT_WalletApp_biometric_security                     | on Start the WalletApp a biometric request has to start. To be   | Step  | Input/Data  | Expected Results  |

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|          |   | sure that a verified person get access to WalletApp Data   | 1 open WalletApp on Mobile Device   |            | biometric data are requested   |
|          |   |  | 2 scan your biometric data  |            | WalletApp starts   |
| TXR-2033 | INT_WalletApp_negative_biometric_security                   | on Start the WalletApp a biometric request has to start. To be sure that a verified person get access to WalletApp Data  | Step  | Input/Data | Expected Results   |
|          |   |  | 1 open WalletApp on Mobile Device   |            | biometric data are requested   |
|          |   |  | 2 scan wrong biometric data   |            | Error: Access denied   |
| TXR-2075 | INT_VERIAPP_verify_qr_code_for_a_valid_dgc                  | A Digital Green Certificate with:<br>1) a valid QR Code;<br>2) valid Payload;<br><br>3) valid Attributes.<br>is presented for offline verification. The Verifier App confirms that the DGC is valid. It also tests that the same DGC can be verified twice by the same VeriApp instance.       | Step  | Input/Data | Expected Results   |
|          |   |  | 1 VeriApp scans QR-Code.  |            | QR-Code is approved as verified.   |
|          |   |  | 2 VeriApp scans the same QR-Code for a second time.   |            | QR-Code is again approved as verified.   |
| TXR-2077 | INT_VERIAPP_neg_verify_qr_code_with_invalid_signature       | A Digital Green Certificate (DGC) with invalidly signed QR-Code is presented for offline verification.<br>The Verifier App evaluates the DGC as invalid.   | Step  | Input/Data | Expected Results   |
|          |   |  | 1 VeriApp scans QR-Code.  |            | The VeriApp evaluates the DGC as invalid.  |
| TXR-2079 | INT_VERIAPP_neg_verify_qr_code_with_invalid_payload_syntax  | A Digital Green Certificate with correct signature but syntactically invalid payload (e.g. missing name etc.)<br><br>is presented for verification. The signature is validated but the DGC is evaluated as invalid due to invalid Payload.<br><br>An Error Code "Invalid Payload" is returned. | Step  | Input/Data | Expected Results   |
|          |   |  | 1 VeriApp scans QR-Code.  |            | QR-Code signature is approved as valid.  |
|          |   |  | 2 VeriApp reads payload.  |            | The DGC is evaluated as invalid.<br>An Error Code "Invalid Payload" is shown.  |
| TXR-2084 | INT_VERIAPP_render_dgc_for_type_PCRtest                     | A validly signed Digital Green Certificate of type (PCR) TEST is presented for verification. The testcase tests presentation of the DGC Data for the DGC of type test, independently of test result (positive or negative).  | Step  | Input/Data | Expected Results   |
|          |   |  | 1 VeriApp scans QR-Code.  |            | The DGC is approved as valid and the Contents Data is presented for type TEST.<br><br>The content is presented as a positive or negative quick test. |
| TXR-2085 | INT_VERIAPP_render_dgc_for_type_vac                         | A valid Digital Green Certificate of type VAC (owner has been vaccinated) is presented for verification. The testcase tests presentation of the DGC Data.  | Step  | Input/Data | Expected Results   |
|          |   |  | 1 VeriApp scans QR-Code.  |            | The DGC is approved as valid and the Contents Data is presented for type VAC.  |
| TXR-2086 | INT_VERIAPP_render_dgc_for_type_rec                         | A valid Digital Green Certificate of type REC (owner has recovered) is presented for verification. The testcase tests presentation of the DGC Data.  | Step  | Input/Data | Expected Results   |
|          |   |  | 1 VeriApp scans QR-Code.  |            | The DGC is approved as valid and the Contents Data is presented for type REC.  |
| TXR-2087 | INT_VERIAPP_fetch_and_use_manually_triggered                | The Verifier App has to support the manual triggering of the synchronisation process.  | Step  | Input/Data | Expected Results   |
|          |   |  | 1 The VerifierApp has been installed.<br>Internet connection is available.<br>It has been less than 24 hours since the last synchronisation.<br>The user triggers the synchronisation manually. |            | A Synchronisation process has been triggered and the keys have been updated.   |
| TXR-2088 | INT_VERIAPP_fetch_and_use_resynchronise_after_offline_state | This testcase examines the case where no synchronisation has taken place in the last 24 hours due to missing internet connection. As soon as the internet connection is available again, the verifier app should initiate synchronisation.   | Step  | Input/Data | Expected Results   |
|          |   |  | 1 The VerifierApp has been installed and at it is has been 24 hours since the installation.   |            | A Synchronisation process has been triggered and the keys have been updated within the last 24 hours.  |

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|          |  |  | 2 After the synchronisation has been done, the internet is switched off for at least 24 hours. |            | No synchronisation of the keys database could take place.   |
|          |  |  | 3 The internet connection is available again.  |            | The verifier app initiates synchronisation (fetch and use) within the next 24 hours.                  |
| TXR-2089 | INT_VERIAPP_fetch_an_use_daily_synchr<br>onisation                 | The Verifier App has to synchronise its public key database daily with the backend. Internet Connection is available.  | Step   | Input/Data | Expected Results  |
|          |  |  | 1 The VerifierApp has been installed and at it is has been 24 hours since the installation.    |            | A Synchronisation process has been triggered and the keys have been updated within the last 24 hours. |
| TXR-2094 | INT_VERIAPP_render_dgc_for_test_result<br>positive                 | A validly signed Digital Green Certificate of type POSITIVE TEST (owner has tested positive) is presented for verification. The testcase tests presentation of the DGC Data.   | Step   | Input/Data | Expected Results  |
|          |  |  | 1 VeriApp scans QR-Code.   |            | The DGC is read and a positive test result is displayed.  |
| TXR-2103 | INT_WalletApp_register_QR-<br>Code_with_TAN                        | The QR-code is only allowed to save on one device. Therefor the citizen gets a TAN wich can be used only one time. After the registration, the TAN can't be used twice.  | Step   | Input/Data | Expected Results  |
|          |  |  | 1 scann QR-code with integrated barcode-scanner  |            | Barcode will be shown on screen   |
|          |  |  | 2 push save button   |            | TAN will be requested   |
|          |  |  | 3 insert valid TAN   |            | scanned QR-code will be saved   |
| TXR-2105 | INT_WalletApp_start_WalletApp_with_PIN                             | If the citizen has no biometric data on his mobile device it should be possible to start the device by PIN   | Step   | Input/Data | Expected Results  |
|          |  |  | 1 start the WalletApp on mobile device   |            | biometric data are requested  |
|          |  |  | 2 user push cancel   |            | a user PIN is requested   |
|          |  |  | 3 insert the correct PIN   |            | WalletApp starts  |
| TXR-2106 | INT_WalletApp_negative_register_QR-<br>Code_with_TAN_-_TAN_expired | The QR-code is only allowed to save on one device. Therefor the citizen gets a TAN wich can be used only once for a defined time after creation. (Expirationtime has to be defined)<br><br>After this time, the TAN can't be used anymore. | Step   | Input/Data | Expected Results  |
|          |  |  | 1 scann QR-code with integrated barcode-scanner  |            | Barcode will be shown on screen   |
|          |  |  | 2 push save button   |            | TAN will be requested   |
|          |  |  | 3 insert expired TAN   |            | An error occurred: TAN expired QR-code will not be saved  |
| TXR-2107 | INT_WalletApp_negative_register_QR-<br>Code_with_TAN_wice          | The QR-code is only allowed to save on one device. Therefor the citizen gets a TAN wich can be used only one time. After the registration, the TAN can't be used twice.  | Step   | Input/Data | Expected Results  |
|          |  |  | 1 scann QR-code with integrated barcode-scanner  |            | Barcode will be shown on screen   |
|          |  |  | 2 push save button   |            | TAN will be requested   |
|          |  |  | 3 insert valid TAN a seconed time  |            | an error occurred: TAN can't be used twice  |
| TXR-2113 | INT_IssApp_Create_corrected_QR-Code                                | Insert relevant Data in Issuer App with wrong birthdate. Start creation of QR-code.<br>Get QR-code with wrong birthday. proof data in QR-code and find the misstake.<br>correct birthday in Issuer App and create new QR-code.             | Step   | Input/Data | Expected Results  |
|          |  |  | 1 open the data entry mask   |            | Data Entry Mask is shown  |
|          |  |  | 2 insert Family name in textfield "Family name"  |            | "Family name" is shown in textfield   |
|          |  |  | 3 insert given name in textfield "Given name"  |            | "Given name" is shown in textfield  |
|          |  |  | 4 insert wrong date of birth in textfield with picker 'Date of Birth'                          |            | date is shown in textfield  |
|          |  |  | 5 insert "Disease/Agent*" in textfield Disease/Agent*  |            | "Disease/Agent*" is shown in textfield  |
|          |  |  | 6 choose vaccination type in combo box 'Vaccine/Prophylaxis*'                                  |            | vaccination type is shown textfield   |

|          |   |   |    |   |            |  |
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|          |   |   | 7  | choose medical product in combo box 'Medicinal Product*'                                |            | medical product is shown in textfield  |
|          |   |   | 8  | choose Organisations Management System* in combo box 'Organisations Management System*' |            | Organisations Management System is shown in textfield  |
|          |   |   | 9  | insert dose number in Textfield "Dose Number*"  |            | dose number is shown in textfield  |
|          |   |   | 10 | insert total series of doses in Textfield "Total Series of Doses*"                      |            | total series of doses is shown in textfield  |
|          |   |   | 11 | insert vaccination date in textfield with picker 'vaccination date'                     |            | vaccination date is shown in textfield   |
|          |   |   | 12 | choose Issuer country in combo box 'Issuer Country*'                                    |            | issuer country is shown in textfield   |
|          |   |   | 13 | insert certificate issuer in textfield "Certificate Issuer*"                            |            | Certificate Issuer is shown in textfield   |
|          |   |   | 14 | push "next" button  |            | QR-code will be generated with inserted data   |
|          |   |   | 15 | push "next" button  |            | QR-code will be generated with inserted data   |
|          |   |   | 16 | check the inserted data   |            | wrong birthday is shown  |
|          |   |   | 17 | push "correct patient data" button  |            | inserted data will be shown in data entry mask   |
|          |   |   | 18 | edit birthday field and insert correct birthday   |            | corrected birthday is shown  |
|          |   |   | 19 | push "next" button  |            | QR-code will be generated with corrected data  |
| TXR-2182 | INT_VerIAPP_render_dgc_for_test_result_negative               | A validly signed Digital Green Certificate of type Negative TEST (owner has tested negative) is presented for verification. The testcase tests presentation of the DGC Data.  |    | Step  | Input/Data | Expected Results   |
|          |   |   | 1  | VeriApp scans QR-Code.  |            | The DGC is read and a negative test result is displayed.                                       |
| TXR-2187 | INT_WalletApp_valid_TAN_which_does_not_belong_to_this_qr-code | Issuer has created two different QR-codes. Each with valid TAN.<br><br>He gave citizen A qr-code A with with valid TAN to qr-code B.<br><br>He gave citizen B qr-code B with with valid TAN to qr-code A.<br><br><br>So, we have A valid TAN which belongs to an other valid QR-code. |    | Step  | Input/Data | Expected Results   |
|          |   |   | 1  | scann QR-code with integrated barcode-scanner   |            | Barcode A will be shown on screen  |
|          |   |   | 2  | push save button  |            | TAN will be requested  |
|          |   |   | 3  | insert valid TAN B which does not belong to this qr-code (dgci)                         |            | TAN B will be accepted by wallet app   |
|          |   |   | 4  | send data to national backend   |            | national backend will proof the data and returns an error to wallet app                        |
|          |   |   | 5  | get error code from national backend  |            | qr-code will not be saved  |
| TXR-2205 | INT_WalletApp_start_WalletApp_with_wrong_PIN                  | If the citizen has no biometric data on his mobile device it should be possible to start the device by PIN  |    | Step  | Input/Data | Expected Results   |
|          |   |   | 1  | start the WalletApp on mobile device  |            | pin is requested instead of biometric data.<br><br>Only works when no biometric data are saved |
|          |   |   | 2  | insert the wrong PIN  |            | WalletApp shows an error   |