

Verification API Documentation

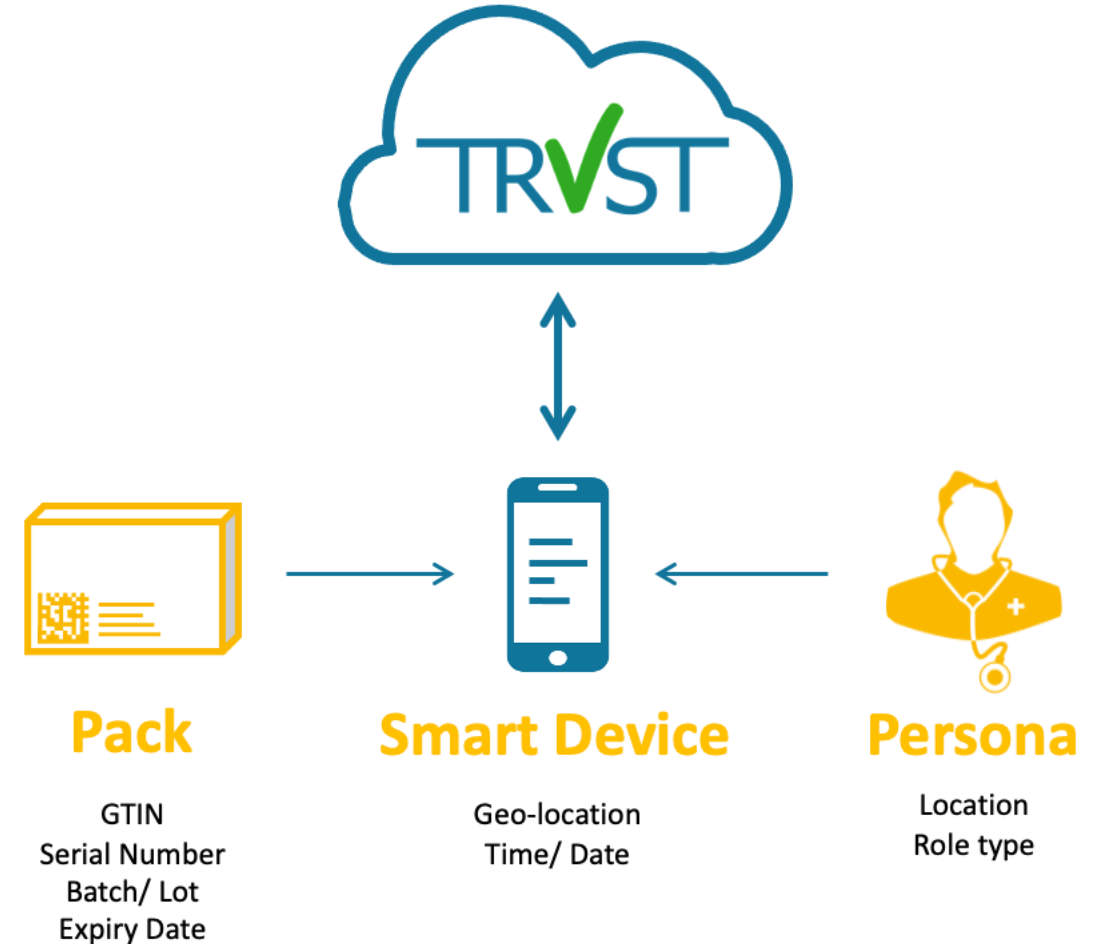
Country Authorities & Integration Partners

Version 1.0



Data collected when verifying a pack or batch

- The TRVST collects the minimum amount of data required to verify the item.
- The user of the verification app agrees terms and conditions allowing the use of the scanned data.
- We do not collect any private personal data of the user.
- The application does not track the user's movements, only the geo-location of a verification request.
 - Latitude and longitude co-ordinates, Country Code (ISO 3166 format), timestamp of scan.
- The data is not made available publicly and is kept secure.
- When scanning a pack, the data that uniquely identifies an individual pack or unit of the Healthcare Product is verified
 - Product Scheme (GTIN), GTIN, Serial Number, Batch/Lot & Expiry Date.
- User persona data is also captured but does not identify the individual.
- User's Device Id, User's Location, Role Type.
- Name and Version of the software making the request to the Verification API.
 - This User Agent info is used for Authentication purposes.



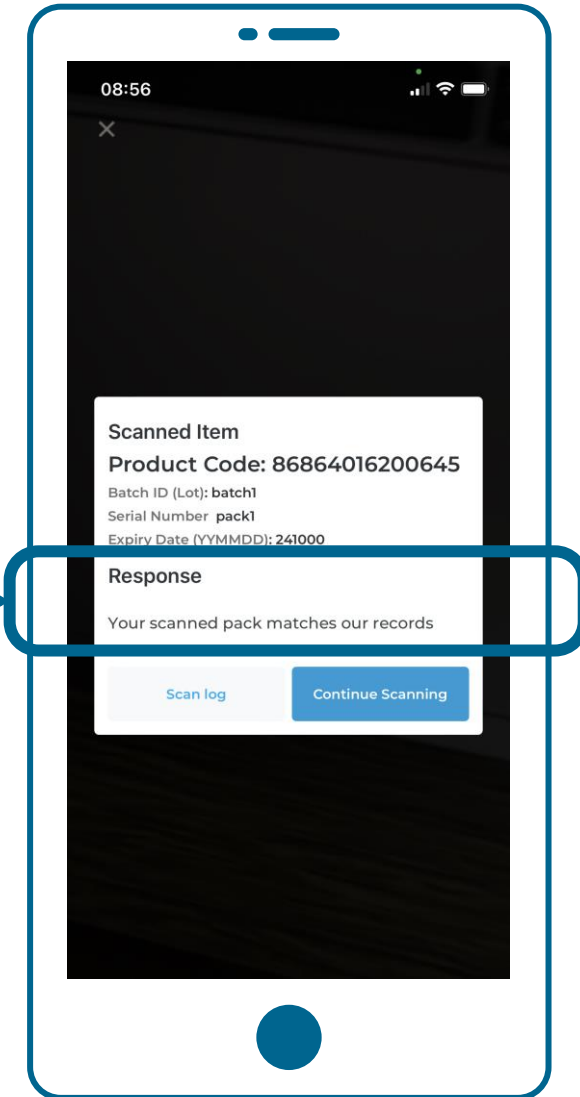
For packs which are not serialised we only scan the GTIN, Batch/ Lot and Expiry Date.

TRVST Verification Responses

Verification Responses

- When a pack is scanned and submitted to the Verification API, there are several possible responses that can be provided. Key on the next slide explains the possibilities.
- TRVST has number of different scenarios covering both serialized packs and batch only.
- With the most common scenario being that a scan is performed and the GTIN, Serial No, batch and expiry match the records within TRVST.
- Any failed verification will be notified to the manufacturer of the product to be investigated.
- Markets can determine their own API response.
 - This may be useful to provide market specific information – for example instructing the end user to contact an authority if they have scanned a recalled batch.











Verification API OpCodes and responses v5











Verification Responses



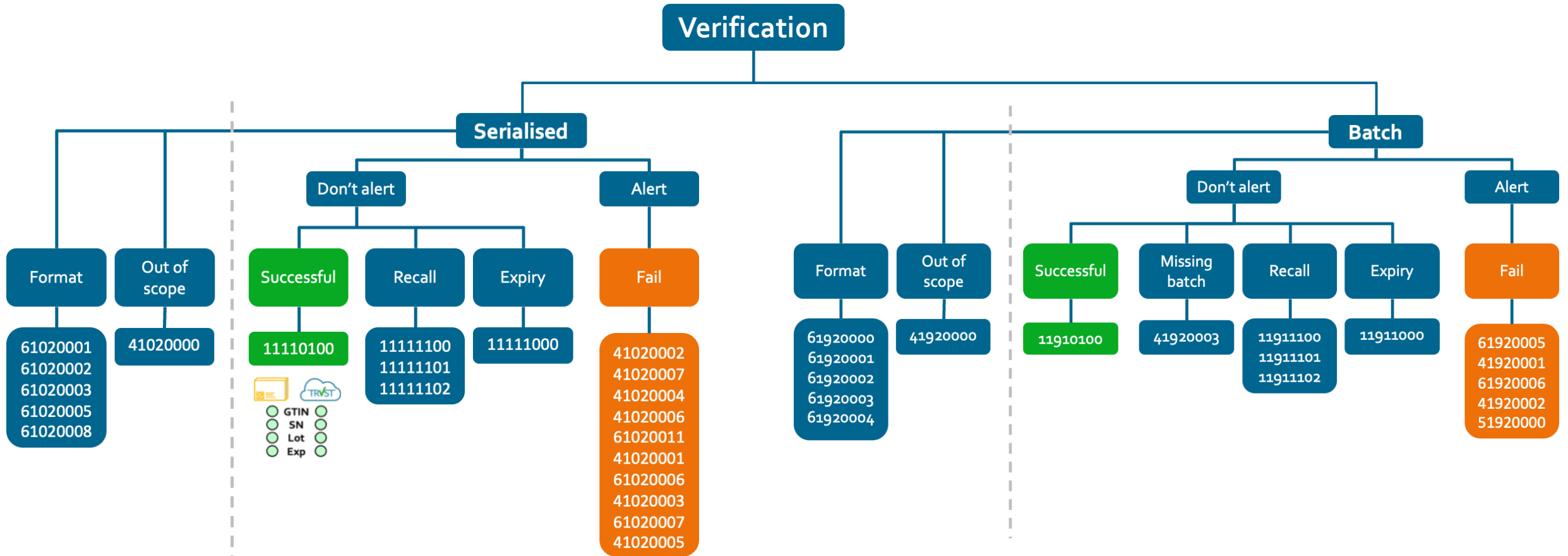
Examples

| Scenario |   GTIN SN Lot Exp GTIN is invalid (not the correct format) |   GTIN SN Lot Exp Verification successful |   GTIN SN Lot Exp Verification successful but product expired |   GTIN SN Lot Exp Verification successful but batch/lot under recall |   GTIN SN Lot Exp Verification not successful batch/lot does not match |
|------------|--|---|--|--|--|
| OpCode | 61020008 | 11110100 | 11111000 | 11111100 | 41020003 |
| Alert Sent | No | No | No | No | Yes |

| KEY | |
|--|-------------------------------|
|  | Data invalid (format issue) |
|  | Data does not match |
|  | Data provided / matches |
|  | No data provided or available |
|  | Data available |
|  | Expired |
|  | Recalled |
|  | Recall expected |

Verification responses













- TRVST can either verify against serialised products or those with only batch data.
- TRVST operates 64 Scenarios against 38 Opcodes, of these 15 will generate an alert.



Verification Response Scenarios

Example scenarios: Successful verification, a serial number not known and batch recall

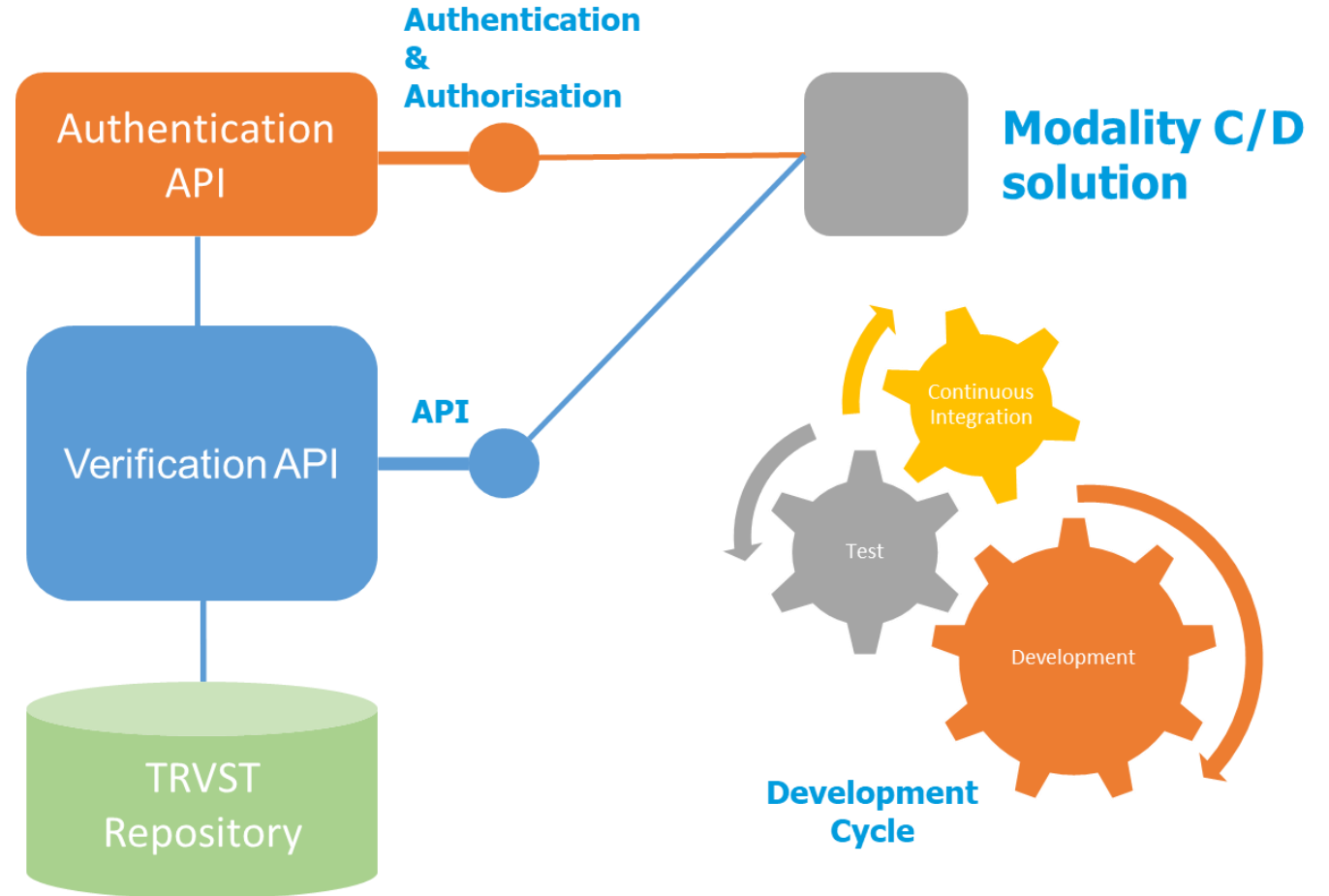
Serialised Pack Codes

| GTIN | Serial Number | Batch | Expiry Date | | OpCode | Title/Error Message | Description (in Reports, on mouse over and Notification) | Response In App | Alert |
|------|---------------|---|---------------------|---|----------|------------------------------|--|--|-------|
| Yes | No | Batch id not provided OR Batch provided and found in the system and it contains serial numbers OR Batch provided and NOT found in the system and system product the system product contain other serial numbers | Not relevant |   <div> <div> <input checked="" type="radio"/> GTIN <input checked="" type="radio"/> SN <input type="radio"/> Lot <input type="radio"/> Exp </div> <div> <input checked="" type="radio"/> GTIN <input type="radio"/> SN <input type="radio"/> Lot <input type="radio"/> Exp </div> </div>   <div> <div> <input checked="" type="radio"/> GTIN <input checked="" type="radio"/> SN <input type="radio"/> Lot <input type="radio"/> Exp </div> <div> <input checked="" type="radio"/> GTIN <input type="radio"/> SN <input type="radio"/> Lot <input type="radio"/> Exp </div> </div> | 41020001 | SSP no SN match | Scanned serialised pack - no serial number match | The serial number for this pack does not match our records | Yes |
| Yes | Yes | Yes or Not provided, but system batch due to be recalled | Yes or Not provided |   <div> <div> <input checked="" type="radio"/> GTIN <input checked="" type="radio"/> SN <input checked="" type="radio"/> Lot <input checked="" type="radio"/> Exp </div> <div> <input checked="" type="radio"/> GTIN <input checked="" type="radio"/> SN <input checked="" type="radio"/> Lot <input checked="" type="radio"/> Exp </div> </div>   <div> <div> <input checked="" type="radio"/> GTIN <input checked="" type="radio"/> SN <input checked="" type="radio"/> Lot <input checked="" type="radio"/> Exp </div> <div> <input checked="" type="radio"/> GTIN <input checked="" type="radio"/> SN <input checked="" type="radio"/> Lot <input checked="" type="radio"/> Exp </div> </div> | 11111101 | SSP batch due to be recalled | Scanned serialised pack - the batch is due to be recalled in the country | Your scanned pack matches our records, however we recommend you check the batch/lot status with the regulatory authority in your country | No |
| Yes | Yes | Yes or Not provided | Yes or Not provided |   <div> <div> <input checked="" type="radio"/> GTIN <input checked="" type="radio"/> SN <input checked="" type="radio"/> Lot <input checked="" type="radio"/> Exp </div> <div> <input checked="" type="radio"/> GTIN <input checked="" type="radio"/> SN <input checked="" type="radio"/> Lot <input checked="" type="radio"/> Exp </div> </div>   <div> <div> <input checked="" type="radio"/> GTIN <input checked="" type="radio"/> SN <input checked="" type="radio"/> Lot <input checked="" type="radio"/> Exp </div> <div> <input checked="" type="radio"/> GTIN <input checked="" type="radio"/> SN <input checked="" type="radio"/> Lot <input checked="" type="radio"/> Exp </div> </div> | 11110100 | SSP successful verification | Scanned serialised pack - verified | Your scanned pack matches our records | No |

Authentication and Verification API – Technical Details

ITE Testing

- The Integrated Test Environment (ITE) must be used for development and testing of a solution
- The ITE reflects the same functionality of the IQE and production environment
- The technical slides cover the following:
- Authentication and authorization of a client.
 - TRVST uses OAuth 2.0 and Open ID Connect to authenticate and authorise client systems. It does not authenticate or authorise individual human users of the client system, this is the responsibility of the client system.
 - Each client system connection is authorised by exchanging a valid set of 'system user' credentials (client ID and client secret) for a JWT bearer token. This token must be passed in each request made to TRVST using the HTTP Authorization header. Please note that these credentials are case sensitive.
- Verification API
 - Verification of packs and batches
 - Bulk of pack operations (for offline mode)
 - Product Download
 - System Status



Authentication API

- OAuth 2.0 and Open ID Connect to authenticate and authorise client systems
- Client Credentials allow access to Verification API from Verification Providers (Modality C) and National Systems (Modality D). An authentication request must contain the following
 - Client ID
 - Client Secret
 - *These are provided via the TRVST Portal and issued by Global Administrators*
- Client systems **must** provide the client credentials in the body of the HTTP authentication with the Content-Type "application/x-www-form-urlencoded"
- On successful authentication the client will be issued a Bearer token
- This Bearer token **must** be passed in each request to TRVST Verification API and typically have a validity of 30 minutes (1800 seconds)
 - Failing to do so will result in the request being rejected with an unauthorised response
 - Client system **shall not** over request bearer tokens. Please do not authenticate every call. The tokens issued are bearer tokens and last for 30 minutes. It is much quicker to reuse the same token.
 - A good strategy would be to request a new access token 5 minutes before its expiration, and if possible, as a fallback mechanism attempt a new authentication when a transaction returns an HTTP 401
 - Improper use of the system may result in client credential suspension
- A unique transaction ID (TXID) is returned with each request to the authentication API. This **should** be recorded internally within your solution for your audit trail and could be used to support users if they need to report an issue with a transaction.

Authentication API

- Client systems **must** provide a meaningful **User-Agent** HTTP header
 - e.g. <clientSystemSolutionName>.<majorVersionNo>.<minorVersionNo>
 - This must be the version of your solution on which qualification was performed
 - This information is incredibly useful when troubleshooting issues or malfunctions
 - This shall be consistent for a solution, do not provide a dynamic value
- Client systems **must** provide the custom header **trvst-device-id**
 - This is the unique identifier of the instance of the application making the call
 - This information is recorded against failed requests and suspect activities
- Client systems **must** provide the custom header **trvst-user-app-version**
 - The same advice applies as the User-Agent header
- Client systems **should** provide the GPS co-ordinates of when the authentication was made. This is performed by providing two more custom headers:
 - **trvst-latitude**
 - **trvst-longitude**
 - These **must** be provided in Decimal Degree format (DD). E.g. 41.40338, 2.17403)
 - These **must** be provided in order to return market specific responses from the Verification API. If they are not provided Global Verification API Response will be returned.

Authentication API

- Example – I am a Verification Provider requesting an authentication bearer token.
- The POST request is sent to the authentication API endpoint (for the ITE: `login-ite.trvst4hp.org/connect/token`)
 - It must be sent with the required **content type**
 - It must contain the required **headers**
 - The body must contain **client credentials and the grant type**
- The response contains the bearer token and an indication of when the bearer token will expire.

| Request | Response |
|---|--|
| <pre>POST https://login-ite.trvst4hp.org/connect/token Content-Type: application/x-www-form-urlencoded trvst-device-id: 6E80E5FA-4E37-4A9D-B805-1B3A29B3F212 trvst-user-app-version: ExampleMobileAppv1.01 trvst-latitude: 51.507351 trvst-longitude: -0.12345 User-Agent: ExampleMobileAppv1.01 client_id=testclientid&client_secret=testsecret&grant_type=client_credentials</pre> | <pre>HTTP/1.1 200 OK Content-Type: application/json; charset=UTF-8 Content-Language: en-GB TXID: e838f22e-b368-4cd4-bb3f-83f955981589 { "access_token":"eyJhbGciOiJIUzI1...", (shortened due to length) "expires_in":1800, "token_type":"Bearer", "scope":"verification-api" }</pre> |

Authentication API

- Example – I am a Verification Provider and provide missing mandatory headers for the environment I'm targeting and receive an error response.
 - Here the *trvst-device-id* value is not provided in the request.
 - The response indicates back to the client a failed response and describes the error.

| Request | Response |
|--|--|
| <pre>POST https://login-ite.trvst4hp.org/connect/token Content-Type: application/x-www-form-urlencoded trvst-device-id: trvst-user-app-version: ExampleMobileAppv1.01 trvst-latitude: 51.507351 trvst-longitude: -0.12345 User-Agent: ExampleMobileAppv1.01 client_id=testclientid&client_secret=testsecret&grant_type=client_credentials</pre> | <pre>HTTP/1.1 400 OK Content-Type: application/json; charset=UTF-8 Content-Language: en-GB TXID: e838f22e-b368-4cd4-bb3f-83f955981589 { "error": "invalid_client" "error_description": "'trvst-device-id' HTTP header is missing." }</pre> |

Authentication API

- Example – I am a Verification Provider and provide invalid credentials for the environment I'm targeting
 - Requests will also fail if the client credentials provided are unknown to the TRVST system

| Request | Response |
|--|---|
| <pre>POST https://login-ite.trvst4hp.org/connect/token Content-Type: application/x-www-form-urlencoded trvst-device-id: 6E80E5FA-4E37-4A9D-B805-1B3A29B3F212 trvst-user-app-version: ExampleMobileAppv1.01 trvst-latitude: 51.507351 trvst-longitude: -0.12345 User-Agent: ExampleMobileAppv1.01 client_id=<u>unknownClient123</u>&client_secret=<u>unknownSecret</u>&grant_type=client_credentials</pre> | <pre>HTTP/1.1 400 OK Content-Type: application/json; charset=UTF-8 Content-Language: en-GB TXID: e838f22e-b368-4cd4-bb3f-83f955981589 { "error": "invalid_client" }</pre> |

Verification API

- A REST API for clients to verify packs, retrieve product information and check the API status
- Authorization is checked against the Bearer token received via the Authentication API. This token must be passed in each request to TRVST
 - Failing to do so will return an unauthorised response
- Examples of all transaction types provided in these slides (however, limited to only a few scenarios - refer to Verification API OpCodes and responses v5 for all scenarios)
- Appendix provides the details of all paths, query parameters, headers (whether mandatory or optional) and their schema.
- API documentation and specification are accessible via the Swagger UI. This includes:
 - <https://api-ite.trvst4hp.org/verification/swagger/index.html>
 - Request and response payloads
 - Mandatory and optional parameters and headers
- Currently on API v1
- Newer API versions will be defined on the Swagger

Verification API 1.0 OAS3

/verification/swagger/1.0/swagger.json

A REST API for clients to verify packs and batches.

Authorize

Product

| Method | Endpoint | Description | Actions |
|--------|---|---|----------------|
| GET | /verification/product/{productCodeScheme}/{productCode}/pack/{serialNumber} | Verify a pack | Dropdown, Lock |
| GET | /verification/product/{productCodeScheme}/{productCode}/batch/{batch} | Verify a batch | Dropdown, Lock |
| POST | /verification/product/packs | Submit a bulk pack verification request | Dropdown, Lock |
| GET | /verification/product/packs/{requestId} | Get the outcome of a bulk pack request | Dropdown, Lock |
| GET | /verification/status/ | Get the system status | Dropdown, Lock |
| GET | /verification/product/{productCodeScheme}/{productCode} | Get product data for one product | Dropdown, Lock |

Verification API

- Client systems **must** provide a meaningful **User-Agent** HTTP header (all operations)
 - e.g. <clientSystemSolutionName>.<majorVersionNo>.<minorVersionNo>
 - This must be the version of your solution on which qualification was performed
 - This is information is incredibly useful when troubleshooting issues or malfunctions
 - This shall be consistent for a solution, do not provide a dynamic value
- Client systems **must** provide the custom header **trvst-device-id** (all operations)
 - This is the unique identifier of the instance of the application making the call
 - This information is recorded against failed requests and suspect activities
- Client systems **must** provide the custom header **trvst-call-timestamp** (all other than system status)
 - This is the time stamp of when the transaction was performed. Note this may be different from when the transaction is sent to TRVST (consider if a user's device has no internet connection and must store and forward)
 - This must be in ISO 8601 format and sent in UTC date format (YYYY-MM-DDThh:mm:ss.sssZ ... e.g 2023-05-01T12:50:00.000Z)
- Client systems **should** provide the GPS co-ordinates of when the verification was made. This is performed by providing two more custom headers:
 - *trvst-latitude*
 - *trvst-longitude*
 - These **must** be provided in Decimal Degree format (DD). E.g. 41.40338, 2.17403)
 - These **must** be provided in order to return market specific responses from the Verification API. If they are not provided Global Verification API Response will be returned.
- Client systems **should** explicitly provide an **api-version** header.
 - If this header is not supplied the system will default the call to the latest version. If a new API version is released in the future this could result in breaking changes to your solution.
- Client systems **should** provide **trvst-user-location** header. The value of this is base64 encoded and may include information such as the GLN of where the transaction was performed.
- If a market has been set up to use market specific API responses, then the **trvst-country-code** header **should** be provided
- A unique transaction ID (TXID) is returned with each request to the verification API. This **should** be recorded internally within your solution for your audit trail and could be used to support users if they need to report an issue with a transaction.

Verify a Pack (synchronous request)

- Example – Successful verification of a pack
- A pack verification request is made up of the following elements found withing a 2D Matrix Barcode
 - **GET** /verification/product/GTIN/98102185879527/pack/pack1?batch=batch1&expiry=241018
 - /<targetedApi>/product/<productCodeScheme>/<productCode>/pack/<serialNumber>?batch=<batchId/Lot>&expiry=<expiry>
- The bearer token must be provided within the Authorization header
- Required headers must be provided
- Response contains an operation code and information about the transaction. In this case the pack scanned is recorded within TRVST

| Request | Response |
|--|---|
| <pre>GET api-ite.trvst4hp.org/verification/product/GTIN/98102185879527/pack/pack1?batch=batch1&expiry=241018 Authorization: Bearer eyJhbGciOiJSUzI1NiIsI... (shortened for length) Accept-Language: en (language response) User-Agent: ExampleMobileAppv1.01 (meaningful user agent) Api-version: 1.0 (targeted API version) trvst-call-timestamp: 2022-05-23T12:50:00.000Z (time of request) trvst-device-id: 6E80E5FA-4E37-4A9D (device ID of transaction) trvst-latitude: 51.3354 (DD geo coordinates) trvst-longitude: 0.7429 (DD geo coordinates) trvst-user-role: Vaccinator (role of user) trvst-user-location: RXhbbXBsZQ== (Base64 encoded location) trvst-country-code: RW (market specific response)</pre> | <pre>HTTP/1.1 200 OK Content-Type: application/json; charset=utf-8 Content-Language: en TXID: 5c82a920-4302-4495-a464-6999e9db1153 (use for auditing) api-version: 1.0 (API version of request) api-supported-versions: 1.0 (list of supported API versions) { "operationCode": "11110100", "information": "Your scanned pack matches our records" }</pre> |

Verify a Pack

- Example – Unsuccessful verification of a pack (not found)
- In some cases, pack records might not be found within the TRVST repository
- A 404 Not Found HTTP response is returned
- A warning response is returned instead of information response

| Request | Response |
|--|---|
| <pre>GET api-ite.trvst4hp.org/verification/product/GTIN/61381740801524/pack/pack1 Authorization: Bearer eyJhbGciOiJSUzI1NiIsI... Accept-Language: en User-Agent: ExampleMobileAppv1.01 Api-version: 1.0 trvst-call-timestamp: 2022-05-23T12:50:00.000Z trvst-device-id: 6E80E5FA-4E37-4A9D trvst-latitude: 51.3354 trvst-longitude: 0.7429 trvst-user-role: Vaccinator trvst-user-location: RXhhbXBsZQ== trvst-country-code: RW</pre> | <pre>HTTP/1.1 404 Not Found Content-Type: application/json; charset=utf-8 Content-Language: en TXID: 5c82a920-4302-4495-a464-6999e9db1153 api-version: 1.0 api-supported-versions: 1.0 { "operationCode": "41020000", "warning": "We do not hold the records for this product" }</pre> |

Verify a Pack

- Example – Unsuccessful verification of a pack due to invalid request
- If invalid product pack identifiers are provided the request can be rejected (doesn't meet GS1 standards, or missing elements)
- A 422 Unprocessable Entity HTTP response is returned
- A warning response is returned instead of information response
- There will be invalid responses for all other transaction types

| Request | Response |
|---|--|
| <pre>GET api-ite.trvst4hp.org/verification/product/GTIN/9810218587950\$/pack/pack1 Authorization: Bearer eyJhbGciOiJSUzI1NiIsI... Accept-Language: en User-Agent: ExampleMobileAppv1.01 Api-version: 1.0 trvst-call-timestamp: 2022-05-23T12:50:00.000Z trvst-device-id: 6E80E5FA-4E37-4A9D trvst-latitude: 51.3354 trvst-longitude: 0.7429 trvst-user-role: Vaccinator trvst-user-location: RXhbbXBsZQ== trvst-country-code: RW</pre> | <pre>HTTP/1.1 404 Not Found Content-Type: application/json; charset=utf-8 Content-Language: en TXID: 5c82a920-4302-4495-a464-6999e9db1153 api-version: 1.0 api-supported-versions: 1.0 { "operationCode": "61020008", "warning": "Barcode incorrectly formatted - scanned product code issue" }</pre> |

Verify a Batch (synchronous request)

- Example – Successful verification of non-serialised data (batch/lot)
- This is a verification of a batch that has no serialised data associated to it.
- A batch verification request is made up of the following elements found withing a 2D Matrix Barcode
- It differs with the route 'batch' instead of 'packs' and excludes the serial number.
- **GET** /verification/product/GTIN/02256435384835/batch/a0001&expiry=251231

/<targetedApi>/product/<productCodeScheme>/<productCode>/batch/<batch/Lot>?expiry=<expiry>

| Request | Response |
|---|--|
| <pre>GET api-ite.trvst4hp.org/verification/product/GTIN/g8102185879503/batch/batch2?expiry=241000 Authorization: Bearer eyJhbGciOiJSUzI1NiIsI... (shortened for length) Accept-Language: en (language response) User-Agent: ExampleMobileAppv1.01 (meaningful user agent) Api-version: 1.0 (targeted API version) trvst-call-timestamp: 2022-05-23T12:50:00.000Z (time of request) trvst-device-id: 6E80E5FA-4E37-4A9D (device ID of transaction) trvst-latitude: 51.3354 (DD geo coordinates) trvst-longitude: 0.7429 (DD geo coordinates) trvst-user-role: Vaccinator (role of user) trvst-user-location: RXhbbXBsZQ== (Base64 encoded location) trvst-country-code: RW (market specific response)</pre> | <pre>HTTP/1.1 200 OK Content-Type: application/json; charset=utf-8 Content-Language: en TXID: 5c82a920-4302-4495-a464-6999e9db1153 (use for auditing) api-version: 1.0 (API version of request) api-supported-versions: 1.0 (list of supported API versions) { "operationCode": "11910100", "information": "Your scanned product and batch matches our records" }</pre> |

Verify a Batch

- Example – Unsuccessful verification of non-serialised data (batch/lot)
- There are several scenarios of unsuccessful responses when scanning batches.
- This example shows that the expiry date provided within the transaction does not match the record within TRVST

| Request | Response |
|--|---|
| <pre>GET api-ite.trvst4hp.org/verification/product/GTIN/98102185879503/batch/batch2?expiry=241000 Authorization: Bearer eyJhbGciOiJSUzI1NiIsI... Accept-Language: en User-Agent: ExampleMobileAppv1.01 Api-version: 1.0 trvst-call-timestamp: 2022-05-23T12:50:00.000Z trvst-device-id: 6E80E5FA-4E37-4A9D trvst-latitude: 51.3354 trvst-longitude: 0.7429 trvst-user-role: Vaccinator trvst-user-location: RXhnbXBsZQ== trvst-country-code: RW</pre> | <pre>HTTP/1.1 404 Not Found Content-Type: application/json; charset=utf-8 Content-Language: en TXID: 5c82a920-4302-4495-a464-6999e9db1153 api-version: 1.0 api-supported-versions: 1.0 { "operationCode": "41920002", "warning": "The expiry date for this product does not match our records" }</pre> |

Bulk Pack Verification Submit (asynchronous request)

- Example – Verifying a collection of packs
- Bulk verification should be used when the users device has no connection to the internet. They may perform requests and have them stored and then sent when the users restores their internet connectivity.
- It is a POST request, containing up to 20,000 packs within a transaction. As each scan may occur in a different location, each pack record must contain the headers found within the synchronous verification of packs or batches (e.g. latitude, longitude, user role, user location and country code (for market specific responses)).
- The body of the request contains an array of packs, and a number of packs (this number must match number of elements in the array)
- When a request is successfully received TRVST will return a location (GUID) to the client, this location can be used to retrieve the results of the bulk verification.
- An estimated time of arrival (ETA) is also provided within the response, this should be used to determine when to retrieve the results of the verification as they may still be processing (especially on transactions with a lot of packs).
- An expiry of the response is also provided, bulk verification responses are not kept indefinitely by TRVST.
- Example provided of a bulk submission and retrieving the results.

Bulk Pack Verification Submit (asynchronous request)

| Request | Response |
|--|---|
| <pre>POST api-ite.trvst4hp.org/verification/product/packs Authorization: Bearer eyJhbGciOiJSUzI1NiIsI... Content-Type: application/json Accept-Language: en User-Agent: ExampleMobileAppv1.01 Api-version: 1.0 trvst-call-timestamp: 2022-05-23T12:50:00.000Z trvst-device-id: 6E80E5FA-4E37-4A9D trvst-latitude: 51.3354 trvst-longitude: 0.7429 trvst-user-role: Vaccinator trvst-user-location: RXhbbXBsZQ== trvst-country-code: GB { "numberOfPacks": 1, (number of packs in the bulk transaction) "packs": [{ "productCodeScheme": "GTIN", "productCode": "00122273084355", "serialNumber": "pack1", "batchId": "batch1", "expiryDate": "241018", "timestamp": "2023-05-21T14:45:15.123Z", "latitude": 51.50633952528561, "longitude": -0.1256357517380163, "userRole": "Healthcare Professional", "userLocation": "St. Thomas Hospital London", "userCountryCode": "GB" }] }</pre> | <pre>HTTP/1.1 202 Accepted Location: https://api-ite.trvst4hp.org/verification/product/packs/f6a3304d-e2a6-4247-b0a1-7becd36f3ed5 TXID: 85d9dd12-dc5c-4eb7-bc19-f8f30457e118 api-version: 1.0 api-supported-versions: 1.0 { "operationCode": "22100000", "eta": "2023-07-14T09:53:57.401Z", "expires": "2023-07-15T09:53:57.401Z" }</pre> |

Bulk Pack Verification Retrieval

| Request | Response |
|---|--|
| <pre>GET api-ite.trvst4hp.org/verification/product/packs/<u>f6a3304d-e2a6-4247-b0a1-7becd36f3ed5</u> Authorization: Bearer eyJhbGciOiJSUzI1NiIsI... Accept-Language: en User-Agent: ExampleMobileAppv1.01 Api-version: 1.0 trvst-call-timestamp: 2022-05-23T12:50:00.000Z trvst-device-id: 6E80E5FA-4E37-4A9D trvst-latitude: 51.3354 trvst-longitude: 0.7429 trvst-user-role: Vaccinator trvst-user-location: RXhbbXBsZQ== trvst-country-code: GB</pre> | <pre>HTTP/1.1 200 OK TXID: 85d9dd12-dc5c-4eb7-bc19-f8f30457e118 api-version: 1.0 api-supported-versions: 1.0 { "operationCode": 12200000, (bulk level op code) "packs": [{ "pack": { "productCodeScheme": "GTIN", "productCode": "00122273084355", "serialNumber": "pack1", "batchId": "batch1", "expiryDate": "241018" }, "result": { "operationCode": "41020000", (pack level op code) "warning": "We do not hold the records for this product" } }] }</pre> |

System Status

- Example – client system attempting to retrieve information about whether the API is accessible
- This request should be used to determine if the API is reachable. This must be used instead of making erroneous calls to determine if the API is operational.
- No product identifiers are sent with this request.
- **GET** /verification/status

| Request | Response |
|--|--|
| <pre>GET api-ite.trvst4hp.org/verification/status Authorization: Bearer eyJhbGciOiJSUzI1NiIsI... Accept-Language: en User-Agent: ExampleMobileAppv1.01 api-version: 1.0 trvst-device-id: 6E80E5FA-4E37-4A9D</pre> | <pre>HTTP/1.1 404 Not Found Content-Type: application/json; charset=utf-8 Content-Language: en TXID: 5c82a920-4302-4495-a464-6999e9db1153 api-version: 1.0 api-supported-versions: 1.0 { "operationCode": "10010000", "information": "The system is operating normally" }</pre> |

Product Data Download

- Example – I am an end-user, and I would like to know information about a product held within the TRVST system
- This request should be used to retrieve the recorded product information
- No product identifiers are sent with this request.
- **GET** /verification/product/GTIN/02256435384835
/targetedApi/product/productCodeScheme/productCode

| Request | Response |
|--|--|
| <pre>GET api-ite.trvst4hp.org/verification/product/GTIN/98102185879503 Authorization: Bearer eyJhbGciOiJSUzI1NiIsI... Accept-Language: en User-Agent: ExampleMobileAppv1.01 Api-version: 1.0 trvst-call-timestamp: 2022-05-23T12:50:00.000Z trvst-device-id: 6E80E5FA-4E37-4A9D</pre> | <pre>HTTP/1.1 200 OK Content-Type: application/json; charset=utf-8 Content-Language: en TXID: 5c82a920-4302-4495-a464-6999e9db1153 api-version: 1.0 api-supported-versions: 1.0 { "operationCode": "14000000", "productName": "Amoxicillin Effective Medicines 250mg Capsules", "commonName": "Amoxicillan", "form": "Capsules", "strength": "250mg", "separableDosageUnits": 20, "packType": "Blister", "netContent": "40 ml", "obpName": "AntibioticsInc" }</pre> |