



# Origo Integration Hub

## Software Supplier Valuations Onboarding Guide

Version: **1.1**

Date: **26/07/2021**

Distribution: ***OIH Valuations Users***

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### **Information Classification: Public**

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## CHANGE HISTORY

| Date       | Version | Changes Incorporated                                                                                                                                                          |
|------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 24/02/2021 | 1.0     | Previous Valuations Implementation Guide superseded by this SS specific Valuations Onboarding Guide.<br>Contents rationalised and irrelevant or superfluous material removed. |
| 19/05/2021 | 1.1     | Changed Information Classification to Public.                                                                                                                                 |

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## INTRODUCTION

Origo has built an Integration Hub (OIH) to satisfy the demand that exists for a more cost-efficient integration route between adviser Software Suppliers (SSs) and Platform / Product Providers (PPs), and to allow both PPs and SSs to achieve greater integration coverage across a wide range of business processes.

The OIH provides integration functionality for the **Valuations** business process and currently covers Wrap, Pension, Collective Investment and Bond valuations.

## DOCUMENT PURPOSE

The purpose of this document is to provide technical SS personnel with a guide to what is required in order to use the **OIH GetValuation API**.

**Note:** At the present time, PPs will only fulfil electronic valuations if the requester is the **Servicing Agent** or is acting for the Servicing Agent of the requested contract and Servicing Agents must be authorised by the FCA to give **financial advice**.

## ASSOCIATED DOCUMENTS

The documents in the tables below are available to all prospective customers and familiarity with them is required for using OIH Bulk Services.

For restricted documents, please contact Customer Services.

| Document / Standard Name                                            | Description                                                                                                                                                                                    |
|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Public Documents (can be downloaded from Origo.com)</b>          |                                                                                                                                                                                                |
| OIH – Service Description                                           | A non-technical overview of OIH functionality.                                                                                                                                                 |
| <b>Restricted Documents (available to OIH customers on request)</b> |                                                                                                                                                                                                |
| OIH – Service Management Procedures                                 | Defines OIH management and support procedures.                                                                                                                                                 |
| OIH – Solution Architecture                                         | An overview of the OIH solution architecture including template responses to anticipated due diligence questions.                                                                              |
| <b>Standards (see Criterion's Standards Library)</b>                |                                                                                                                                                                                                |
| Message Implementation Guides (MIGs)                                | A MIG is created for each version of a Standard. These cover in detail, Message Structure and Dependencies.                                                                                    |
| CE Business Errors                                                  | Covers the Standard Business Errors/Warnings for Pensions, Bonds and CIV.<br><b>Note:</b> Although not explicit, it is acceptable to use the CE Business Error definitions for Wrap responses. |
| HTTP Message Transmission Guidelines                                | Defines the envelope that the business data of an Origo message is contained within.                                                                                                           |

The following Unipass document provides supplementary information and is available from Origo's **Customer Service team** ([customerservices@origo.com](mailto:customerservices@origo.com)). Familiarity with this document is recommended.

| Document Name                            |                                                                                             |
|------------------------------------------|---------------------------------------------------------------------------------------------|
| Developers Guide to implementing Unipass | Guidance for developers looking to implement Unipass via an Identity Provider (IdP) service |

## GLOSSARY

The following terms are used throughout this document.

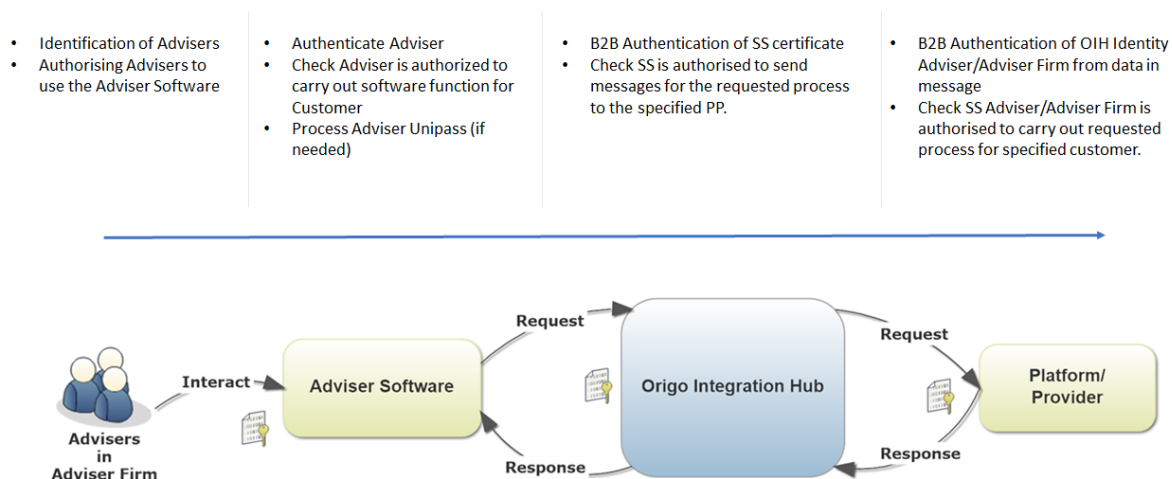
| Abbreviation / Term                  | Meaning                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CRL</b>                           | Certificate Revocation List: A list of revoked Unipass certificates which have not yet reached their expiry date.                                                                                                                                                                                                                  |
| <b>'Hosted' SS</b>                   | See 'Hosted' Software Supplier.                                                                                                                                                                                                                                                                                                    |
| <b>'Hosted' Software Supplier</b>    | Adviser Software Supplier which provides their software as a service to their customers.<br><br>'Hosted' SSs operate as TPSPs and also have Data Processor responsibilities under the DPA.                                                                                                                                         |
| <b>'Installed' SS</b>                | See 'Installed' Software Provider.                                                                                                                                                                                                                                                                                                 |
| <b>'Installed' Software Supplier</b> | Adviser Software Supplier which provides their software as a product to be installed on the customer's infra-structure and managed by them.<br><br>'Installed' SSs are not responsible for authenticating the users of their software or for the data input into their software, and as such have no DPA related responsibilities. |
| <b>IdP</b>                           | Identity Provider                                                                                                                                                                                                                                                                                                                  |
| <b>OCSP</b>                          | Online Certificate Status Protocol: An online service providing "real-time" certificate status information                                                                                                                                                                                                                         |
| <b>MIG</b>                           | Message Implementation Guidelines                                                                                                                                                                                                                                                                                                  |
| <b>MTG</b>                           | Message Transmission Guidelines                                                                                                                                                                                                                                                                                                    |
| <b>OIH</b>                           | Origo Integration Hub                                                                                                                                                                                                                                                                                                              |
| <b>OIH Customer</b>                  | PP or SS subscribing to OIH Services.                                                                                                                                                                                                                                                                                              |
| <b>OIH Customer Portal</b>           | UI for Customers to modify their Organisation's Configuration, acquire Supporting Documentation and view Transaction Logs.                                                                                                                                                                                                         |
| <b>OIHSG</b>                         | Origo Integration Hub Steering Group                                                                                                                                                                                                                                                                                               |
| <b>PSG</b>                           | Process & Standards Group                                                                                                                                                                                                                                                                                                          |
| <b>PP</b>                            | See Platform / Product Provider.                                                                                                                                                                                                                                                                                                   |
| <b>Platform / Product Provider</b>   | Investment Platform and/or Life & Pensions Provider.                                                                                                                                                                                                                                                                               |
| <b>Provisional Build</b>             | Refers to a version of a Criterion standard that includes changes that may not yet have been fully accepted by the relevant Governance Group.                                                                                                                                                                                      |

| Abbreviation / Term    | Meaning                                                                                                                                                                |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Servicing Agent</b> | An adviser who has <i>Servicing Rights</i> to a policy. A Servicing Agent will provide ongoing advice to the policyholder(s) and can instruct changes to the policy.   |
| <b>SS</b>              | Adviser Software Supplier which provides their software as a service to their customers.                                                                               |
| <b>TPSP</b>            | Trusted Third Party Service Provider. TPSPs operate as 'Data Processors' as defined by the 1998 DPA and provide data processing and / or user authentication services. |
| <b>XML</b>             | Extensible Mark-up Language                                                                                                                                            |
| <b>XSD</b>             | XML Schema definition                                                                                                                                                  |

## OIH SECURITY

This section provides some details of the **OIH Security Model for a Hosted SS** (See [Appendix B](#) for **Installed SS**). The model is covered more comprehensively in the **Solution Architecture** document and familiarity with these full details is a prerequisite of using OIH Valuations.

The Hosted SS operates as a **Trusted Third Party (T3P)**, authenticating the Adviser end-user and confirming that they have a valid and active Unipass Identity. A typical synchronous request/response operation as shown in the following diagram illustrates the security responsibilities.



From the diagram above:

1. The SS authenticates the adviser;
2. The OIH authenticates **and** authorises the SS;
3. The PP authorises the adviser.



## SS ADVISER AUTHENTICATION

The Hosted SS is responsible for the identification and authentication of the adviser, and will populate the relevant sections of the XML request payload (**X509Data**) with an extract of details from the adviser's Unipass certificate.

Adviser Unipass authentication by the SS must include an **OCSP** check, or if this is not available, a **CRL** check.

---

**Note:** *It is recommended that an SS intending to implement Unipass via an Identity Provider (IdP) service familiarise themselves with the **Developers Guide to implementing Unipass**. This can be downloaded from the Unipass website, <https://www.unipass.co.uk>.*

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## OIH SS VALIDATION

The Hosted SS must connect to the OIH using their Organisation's Unipass. An **Organisational Unipass certificate** can be obtained from:

<https://www.origoservices.net/UnipassOrganisationCertificateApplicationForm.html>

For testing purposes, a **trial Organisational certificate** can be used. A trial certificate can **only** be used to connect to the test OIH test environment. This certificate can be applied for from:

<https://www.unipass.co.uk/Pages/TrialCertificate/Apply.aspx>

## PP ADVISER AUTHORISATION

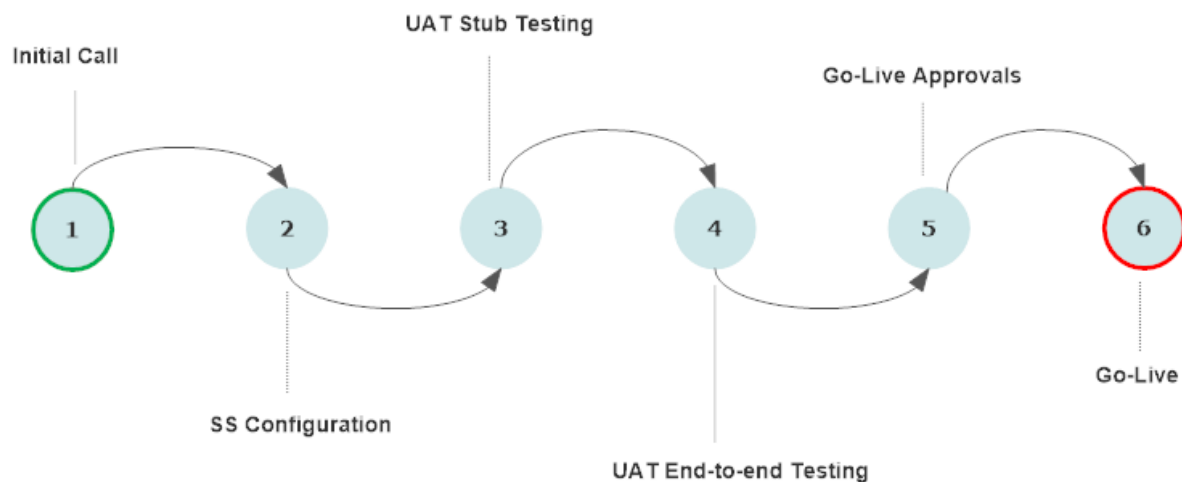
The PP will use data from the message (**X509Data**) to check that the adviser is authorised to carry out business for the specified contract. The adviser must be the **Servicing Agent** for the contract.

## CUSTOMER ONBOARDING

Origo will provide support to the SS throughout the onboarding journey to ensure:

- The SS is fully aware of the overall **OIH Model** for Valuations and what it can deliver for their Organisation;
- The SS is compliant with the **OIH Security Model**;
- Requests sent to the OIH comply with the relevant **Criterion Standard** (in terms of both schema validity and the business rules contained in the Standard);
- Systems / procedures are able to process **OIH issued errors**;
- Users have access to the **OIH Customer Portal**.

The journey can be broken down into following steps:



## INITIAL CALL

An initial conference call will be scheduled with an Origo analyst. This will provide an opportunity for Origo to:

- provide an overview of the OIH;
- describe the steps involved in onboarding to the OIH;
- capture SS Requirements;
- describe the SS's and Origo's responsibilities throughout the onboarding process.

The following requirements will be captured:

- **Standards:** Which Versions of the Standards are required?
- **Trading Partners:** Has the SS identified any specific Providers from which they would like to request valuations?
- **Business Model:** Discuss how the OIH will meet the requirements of the SS Business Model.

## SS CONFIGURATION

Following the initial call, Origo will set up the SS in the OIH UAT environment and provide the SS with:

- **Sample References:** Origo will provide sample policy references to allow the SS to request valuations.
- **Sample XML:** Origo will provide sample request/response XML for each required Standard.
- **Supporting Documentation:** Origo will suggest/provide Supporting Documentation (See [Associated Documents](#)).
- **OIH Customer Portal Access:** Access to the **OIH UAT Customer Portal** will be granted.

By having access to the **OIH UAT Customer Portal**, an SS User can alter their Organisation's configuration as required (see the [Customer Portal](#) section).

---

The **OIH UAT Customer Portal** can be accessed at <https://oih-portal-uat.origoservices.com>

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## UAT STUB TESTING

Where a trading partnership is *Stubbed*, a valuation response message is returned directly from OIH. This gives SSs a true feel for the responses they will receive from PPs without needing the PP's UAT environment to be available. These messages have been created to simulate responses from PPs and are subject to the same schema validation and consistency checks as those sent in an 'End-to-End' partnership.

The SS must attach their **Organisation's Unipass certificate** to a request. At this stage however, a **trial Organisational Unipass certificate** is sufficient

Stub testing will ensure that the SS can:

- connect to the OIH using their **Organisation's Unipass certificate**;
- submit valid valuation requests;
- process responses
  - Successful valuation responses.
  - OIH Errors
  - PP (Business) Errors

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Test Requests should be sent to the **UAT Endpoint**: <https://oihuat.origoservices.com/api/getValuation>

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## UAT END-TO-END TESTING

Where a PP has a test environment, Origo will configure the trading partnership to allow a SS to request valuations directly, i.e., the trading partnership will be un-stubbed.

---

**Note:** End-to-End testing is not always possible and is reliant on the existence and availability of a PP test environment. Origo however, is committed to providing a wide range of Stub Responses that are based on actual PP responses.

---

## GO-LIVE APPROVALS

Origo requires email confirmation from the main Business Contacts of both trading partners before it will configure the trading partnership on the OIH Live environment.

This approval is required to:

1. ensure that there are no reasons why the trading partnership should not be made LIVE on the OIH;
2. enable Origo to maintain an audit trail of trading partnership Confirmations.

---

**Note:** *The decision on whether or not to establish a Trading Agreement rests ultimately with each trading partner.*

---

## GO-LIVE

Following the receipt of both 'Go-Live Approvals', Origo will arrange a date to:

- add the SS to the **Live Environment**: <https://oih.origoservices.com/api/getValuation>
- add SS Users to the **Live Customer Portal**: <https://oih-portal.origoservices.com/>

The SS must attach their **Organisation's Unipass certificate** to valuations Requests to the live environment. A Trial certificate will result in the request being **rejected** by the OIH.

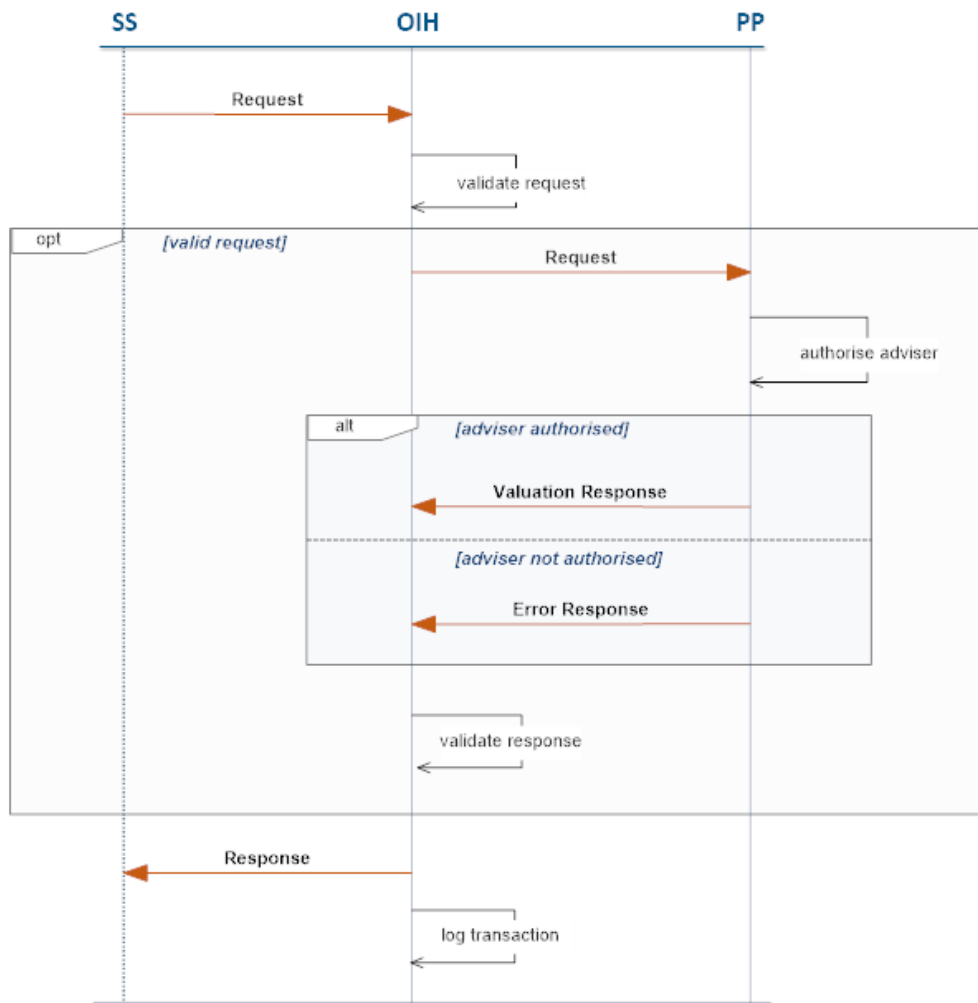
## ONBOARDING CHECKLIST

The table below contains a list of milestone tasks that should be completed in order for an SS to successfully integrate with the OIH.

| Task                                                                                                                                                                              | Prerequisite for                     | Who           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|---------------|
| Hold tele-conference to capture SS requirements.                                                                                                                                  | SS Configuration                     | SS, Origo     |
| Identify trading partners.                                                                                                                                                        | Go-Live                              | SS, Origo     |
| Initial Configuration of SS on OIH UAT environment.                                                                                                                               | Stub-testing                         | Origo         |
| Provide SS with Sample XML                                                                                                                                                        | Stub-testing                         | Origo         |
| Provide SS with Test Policy References                                                                                                                                            | Stub-testing                         | Origo         |
| Set up SS Users on Customer Portal                                                                                                                                                | Customer Portal                      | Origo         |
| Obtain Individual Unipass certificate                                                                                                                                             | Customer Portal                      | SS            |
| Verify Configuration on UAT Customer Portal.                                                                                                                                      | Stub-testing                         | SS            |
| Obtain trial Organisational Unipass certificate<br><i><b>Note:</b> This cannot be used in Live and is not required if the SS holds an Organisational certificate (non-trial).</i> | Stub-testing /<br>End-to-End testing | SS            |
| Obtain Organisational Unipass certificate<br><i><b>Note:</b> A trial certificate will be rejected for Live.</i>                                                                   | Go-Live                              | SS            |
| Complete Stub testing.                                                                                                                                                            | Go-Live /<br>End-to-End testing      | SS            |
| Complete 'end-to-end' testing.<br><i><b>Note:</b> This task is not required but recommended where possible.</i>                                                                   | Go-Live                              | SS            |
| Agree and sign Commercials and Legal Contract with Origo.                                                                                                                         | Go-Live                              | SS, Origo     |
| Provide Go-Live Approvals                                                                                                                                                         | Go-Live                              | SS, Origo, PP |
| Configure SS on OIH production environment.                                                                                                                                       | Go-Live                              | Origo         |

## MESSAGING OVERVIEW

The diagram below provides a simplified overview of a valuation request/response transaction.



## Request

The OIH validates and:

- forwards **valid** requests to the PP or
- returns an error for **invalid** requests

Errors generated by the OIH may be due (but not limited) to:

- non-compliance with message version's schema;
- non-compliance with additional business rules;
- security related errors.

The PP authorises the adviser and returns:

- an error where the adviser is not authorised or
- a valuation

## Response

The OIH validates the PP response. Errors generated by the OIH may be due (but not limited) to:

- non-compliance with message version's schema;
- non-compliance with additional business rules / consistency checks;
- security related errors

Where there is an **invalid** PP response, the OIH will send the appropriate error response to the SS. (see the [Error Processing](#) section).

**Note:** The OIH Connection Timeout Period (CTP) is set to 30 seconds to accommodate PP Processing Time Limits that Origo is aware of and your connection time should ideally be set to slightly greater than this. NB If this is not possible your software could miss out on successful PP responses received towards the end of the OIH CTP.

## REQUEST STRUCTURE

The validation of a valuation request is based on the **Criterion Standard** for the Process (see the [Criterion Standards](#) section). The example below illustrates some of the key elements of a typical **Pension 2.2 Request**. In this case the SS, “OIH TEST SS” is requesting a Pensions valuation from the PP, “OIH TEST PP”:



| No. | Element                          | Note                                                                                                                                                                                                                                                                             |
|-----|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | <b>message_id</b>                | This must be a <b>unique</b> GUID/UUID (Length 36) for the transaction and will be used to identify the request/response (e.g., in the Transaction logs in the <b>OIH Customer Portal</b> ).                                                                                     |
| 2   | <b>message_version</b>           | The SS's version of the Standard.                                                                                                                                                                                                                                                |
| 3   | <b>initiator_id</b>              | This must always be the <b>SS Organisation Name</b> as configured in the OIH and presented in the <b>SS Organisation's Unipass certificate</b> .                                                                                                                                 |
| 4   | <b>KeyInfo</b>                   | This block contains the certificate details relating to <b>the adviser</b> and should be populated by the SS. The PP will use this information to <b>authorise the adviser</b> .                                                                                                 |
| 5   | <b>responder_id</b>              | This must be the PP providing the valuation.                                                                                                                                                                                                                                     |
| 6   | <b>request_scope</b>             | This block is used to specify the details of the content required in the response.<br><br><b>Note:</b> For Pensions, Bonds and CIV this block is mandatory. The <b>contract_details_required</b> element should only be included for Pensions and Bonds (where it is mandatory). |
| 7   | <b>contract_reference_number</b> | Identifies the policy to be valued.                                                                                                                                                                                                                                              |

## MESSAGE COMPLIANCE

The OIH performs the following validation on valuations requests/responses:

- **Schema Validation:** Based on the associated Criterion Standard
- **Trading Partnership:** The SS must have an active trading partnership with the target PP (see *responder\_id*)
- **Additional Business Rules (ABRs):** Dependencies as defined in the Criterion Standard
- **Consistency Checks (response only):** Additional OIH checks to ensure monetary amounts in the response are internally consistent.

Errors generated from the OIH are classed as **Technical Errors**.

The PP performs additional Provider Specific validation on incoming requests. Errors generated by the PP are classed as **Business Errors**.

Message errors, both Business and Technical are logged in and can be viewed in the **OIH Customer Portal**.

## MESSAGE SCOPE

Integration with the OIH is based on sending and receiving messages constructed in accordance with **Criterion Standards**.

Message headers must conform to Origo MTG v2.1, with the exception of Collective Investment (CECIV) message headers which use Origo MTG v1.

The message versions that are supported by the OIH can be found on the **OIH Customer Portal** under **Core OIH Configuration/Standards**.

## CRITERION STANDARDS

For each version of a Standard, Criterion provide a comprehensive set of **XML Schema Definitions** (XSDs). The XSDs, together with the **Message Implementation Guides** (MIGs) can be downloaded from the **Criterion Standards Library** <https://www.criterion.org.uk/>.

OIH valuation messages are required to be compliant with the **Criterion Standards** - with the following exceptions:

1. An ABR has been excluded from the **OIH implementation** of the standard
2. A **Custom Transformation** has been applied where an SS/PP cannot comply with the standard (see the Message Transformation section)

---

**Note:** Origo will only apply ABRs when Criterion have published a final version of the standard, i.e., the ABRs applied to a **Provisional Build** will be based on the **previous final version** of the standard.

---



## ERROR PROCESSING

SS software must be able to process any errors that could be returned to it by the OIH, whether these errors are generated by the PP or by the OIH itself.

---

### PP GENERATED ERRORS

1. PP validation of request messages functions as currently with 'point-to-point' integrations, with the exception of the validations that have been delegated to the OIH (e.g., schema and '**Additional Business Rule**' compliance).
2. Where a request message fails PP validation, the errors returned to the OIH should be either,
  - a) as documented in the **CE\_BusinessErrors** document and entered as per the relevant Standard, in the **AlertDetails** (Wrap) or **EnquiryErrorNote** (Pensions, Bonds and CIV) element in the **m\_content** block or
  - b) as per the **Message Transmission Guidelines (MTG)**, and entered in **m\_control\message\_status**.
3. CE Standard Business Errors & Warnings have a format of '9999'. For a detailed description of these error and warnings, consult the **CE\_BusinessErrors** document.  
**Note:** The **CE\_BusinessErrors** document does not cover **Wrap Business Errors**
4. The OIH has taken on a number of functions that would fall to PPs in a 'point-to-point' integration, and this influences the number of **m\_control\message\_status** errors that PPs will need to use. When using the OIH, just two **m\_control\message\_status** errors remain with PPs - 'User not recognised' and 'User not allowed access'.
5. If there is a timeout on the OIH – PP session, an OIH00428 error message is sent back to the adviser / SS but an Alert is not be passed to the OIH Helpdesk.
6. Business Errors reported as warnings, returned as result of PP Validation still include an actual valuation response.

---

**Note:** Messages with **m\_control\message\_status** errors should not include an **m\_content** block, and if this does occur, the OIH removes the **m\_content** block before passing on to the SS.

---

## OIH GENERATED ERRORS

OIH Errors can be returned to the SS;

- 1) in the **m\_content** part of the message;
- 2) in the **m\_control** part of the message;
- 3) as an **HTTP error**.

The following points concern aspects of OIH error processing:

### **m\_content errors**

1. All PP validation errors and the majority of OIH generated errors are returned in m\_content.
  - **m\_content errors** are returned, as per the relevant Standard, in the **AlertDetails** or **EnquiryErrorNote** element.
  - OIH errors returned in the **m\_content** block have a format of 'OIH00nnn' to allow them to be clearly differentiated from CE Business Errors.
2. An OIH00403 error is returned by the OIH if:
  - a) the Request is schema invalid;
  - b) the Request fails an Additional Business Rule (ABR).
3. An OIH00300 error is returned by the OIH if an unexpected OIH system error occurs. Should this occur, Origo are automatically alerted.
4. An OIH00400 error is returned by the OIH if:
  - 1) the Response message is schema invalid or not well formed;
  - 2) the Response message contains invalid header parameters;
  - 3) the Response message fails an ABR.

Should any of these problems occur, Origo is automatically alerted and informs the PP promptly.

### **m\_control errors**

'Origo Standard not supported', 'Version not supported', 'Initiator not allowed access', and 'Response type not supported' errors relating to the Request xml are returned, as per the **Message Transmission Guidelines (MTG)**, in **m\_control\message\_status**.

Please refer to [Appendix](#) for further information on OIH usage of **message status**.

### **HTTP errors**

An HTTP 400 error returned where there are Unipass certificate related errors, or the Request XML is not well formed or not recognised.

---

*Note: Error codes, reasons, descriptions, explanatory notes and suggested resolution routes are covered in the **OIH Customer Portal**.*

---

## HTTP HEADER

OIH policy regarding HTTP Header parameters on valuation messages and the validation that is applied is shown in the table below. Please see the latest **HTTP Message Transmission Guidelines** for further information.

| HTTP PARAMETER    | VALIDATION                                     | NOTES                                                                                |
|-------------------|------------------------------------------------|--------------------------------------------------------------------------------------|
| ACTION            | 'POST'                                         |                                                                                      |
| ACCEPT:           | 'text/xml' or 'application/xml' or not present | Request messages sent by the OIH to PPs will be set to 'text/xml'.                   |
| ACCEPT-CHARSET:   | 'UTF-8' or 'ISO-8859-1' or not present         | All request messages sent by the OIH to PPs will be set to 'UTF-8'.                  |
| ACCEPT-LANGUAGE:  | 'en-gb' or not present                         | OIH will assume 'en-gb' if not present.                                              |
| ACCEPT-ENCODING:  | 'none' or not present                          | OIH will assume 'none' if not present.                                               |
| CONTENT-TYPE:     | 'text/xml' or 'application/xml' or not present | Request messages sent by the OIH to PPs will be set to 'text/xml'.                   |
| CONTENT-ENCODING: | 'GZIP', none or not present                    | The MTG requirement is to use 'GZIP' or none. OIH will assume 'none' if not present. |
| CONTENT-LANGUAGE: | 'en-gb' or not present                         | OIH will assume 'en-gb' if not present.                                              |
| DATE:             | no validation                                  |                                                                                      |
| CACHE_CONTROL:    | no validation                                  |                                                                                      |
| HOST:             | no validation                                  |                                                                                      |
| REFERRER:         | no validation                                  |                                                                                      |
| AUTHORIZATION:    | no validation                                  |                                                                                      |
| CONTENT-LENGTH:   | no validation                                  |                                                                                      |

## MESSAGE CONTROL BLOCK

The **m\_control** element of Request messages sent by SSs to the OIH must be populated in conformance with MTG 2.1 and as shown below:

| ELEMENT                      | REQUIRED VALUE                                                                               |
|------------------------------|----------------------------------------------------------------------------------------------|
| <CONTROL_TIMESTAMP>          | Time message sent.                                                                           |
| <MESSAGE_ID>                 | GUID / UUID                                                                                  |
| <RETRY_NUMBER>               | '0' (Note: Retry functionality not currently implemented)                                    |
| <MESSAGE_TYPE>               | If Wrap valuation: 'Contract Enquiry Request' or 'Provide Contract Valuation'.               |
|                              | For all other valuation types: 'Contract Enquiry Request'                                    |
| <MESSAGE_VERSION>            | The version of the Standard that the SS has adopted for the request (see Request Structure). |
| <MESSAGE_STATUS>             | Not Used.                                                                                    |
| <EXPECTED_RESPONSE_TYPE>     | 'synchronous' or 'either'.                                                                   |
| <INITIATOR_ID>               | SS name                                                                                      |
| <INITIATOR_ORCHESTRATION_ID> | Optional and forwarded 'as-is' if present.                                                   |
| <KEYINFO>                    | Adviser unipass Credentials                                                                  |
| <USERID>                     | If required by the PP.                                                                       |
| <RESPONDER_ID>               | PP name                                                                                      |

## MESSAGE CONTENT BLOCK

The m\_content block of requests sent by or responses sent to SSs is not altered by the OIH in any way, unless a transformation between message versions has been authorised by one or other of the trading parties (see [Message Transformation](#)).

Valuation request and response messages routed via the OIH must comply with the relevant schemas and also the additional business rules (ABRs) contained in the relevant Standard.

### Additional Business Rules (ABRs)

Additional Business Rules (ABRs) are covered in the **Criterion Standards** documentation as Dependency Rules. While the OIH enforces the majority of Dependency Rules, it doesn't enforce all of them.

The possible reasons for excluding a Dependency Rule are as follows:

1. more information than is available to the OIH is required to determine whether these rules have been broken or not;
2. the documented dependency is better understood as a guidance note;
3. the documented dependency is already enforced by the schema.

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**Note:** *Further information on ABRs is available on request*

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## OIH Consistency Checks

Criterion **Contract Enquiry Standards** do not include any Dependencies which precisely define how the totals and sub-totals present in these Standards are connected.

A number of 'OIH specific' ABRs, which we refer to as "Consistency Checks" have been developed to address this problem.

### CONTRACT ENQUIRY CONSISTENCY CHECKS

Consistency Check ABRs for **Unitised contracts** and **Conventional with Profits (CWP)** contracts are defined below:

| No                 | ABRs                                                                                                                                              | Applicability  |                    |                   |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------|--------------------|-------------------|
|                    |                                                                                                                                                   | Valuation Type | Product Type       | Standard Version  |
| Unitised Contracts |                                                                                                                                                   |                |                    |                   |
| 1                  | $valuation\_amount/amount = \sum (value\_of\_units)$                                                                                              | Current only   | Pension, Bond, CIV | All OIH Supported |
| 2                  | $value\_of\_units = number\_of\_units * fund\_unit\_valuation\_price$                                                                             | All            | Pension, Bond, CIV | All OIH Supported |
| 3                  | $total\_external\_asset\_valuation/value = \sum (external\_asset\_valuation/value) + dim\_portfolio/total\_value + value\ of\ undeclared\ assets$ | All            | Pension only       | v2.1 and above    |
| 4                  | $total\_value\_amount = valuation\_amount + \sum (plan\_bank\_account/balance) + total\_external\_asset\_valuation/value$                         | Current only   | Pension only       | v2.2 and above    |
| 5                  | $value = protected\_rights\_value + non\_protected\_rights\_value$                                                                                | Current only   | Pension only       | v2.0 and above    |
| CWP Contracts      |                                                                                                                                                   |                |                    |                   |
| 1                  | $valuation\_amount/amount = basic\_sum\_assured + total\_bonus\_to\_date$                                                                         | All            | Pension and Bond   | All OIH Supported |

The following notes also apply to these ABRs:

| No                        | ABRs                                                                                                                                                                       | Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Unitised Contracts</b> |                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1                         | $\text{valuation\_amount/amount} = \sum (\text{value\_of\_units})$                                                                                                         | <p>This equation is subject to a rounding adjustment.</p> <p>Where, <math>\text{valuation\_amount} = \mathbf{VA}</math> ; <math>\text{value\_of\_units} = \mathbf{VU}</math> and maximum possible deviation due to rounding = <b>MPD</b>,</p> <p><b>Unitised ABR 1</b> is more accurately expressed as: <math>\mathbf{VA} \leq \sum(\mathbf{VU}) + \mathbf{MPD}</math> and <math>\mathbf{VA} \geq \sum(\mathbf{VU}) - \mathbf{MPD}</math>.</p> <p><b>MPD</b> is calculated from the results of applying Unitised ABR 2 to each <math>\text{value\_of\_units}</math> i.e.</p> <p><math>\mathbf{MPD} = \sum(\text{Max possible deviation for each } \text{value\_of\_units})</math>.</p>                                                                                |
| 2                         | $\text{value\_of\_units} = \text{number\_of\_units} * \text{fund\_unit\_valuation\_price}$                                                                                 | <p>This equation is subject to a rounding adjustment.</p> <p>Where <math>\text{value\_of\_units} = \mathbf{VU}</math>; <math>\text{number\_of\_units} = \mathbf{NU}</math>; <math>\text{fund\_unit\_valuation\_price} = \mathbf{FUVF}</math> and maximum possible deviation due to rounding = <b>MPD</b>,</p> <p><b>Unitised ABR 2</b> is more accurately expressed as:</p> <p><math>\mathbf{VU} \leq (\mathbf{NU} * \mathbf{FUVF}) + \mathbf{MPD}</math> and <math>\mathbf{VU} \geq (\mathbf{NU} * \mathbf{FUVF}) - \mathbf{MPD}</math></p>                                                                                                                                                                                                                          |
| 3                         | $\text{total\_external\_asset\_valuation/value} = \sum (\text{external\_asset\_valuation/value}) + \text{dim\_portfolio/total\_value} + \text{value of undeclared assets}$ | <p><i>Value of undeclared assets</i> doesn't exist in any of the Pension response schemas, and SSs will derive it from the response message sent to them by applying the following formula:</p> <p><math>\text{value of undeclared assets} = \text{total\_external\_asset\_valuation/value} - \sum(\text{external\_asset\_valuation/value}) - \text{dim\_portfolio/total\_value}</math>.<sup>1</sup></p> <p>In order to ensure that <math>\text{total\_external\_asset\_valuation/value}</math> has been calculated correctly, the OIH will check that: <b>value of undeclared assets <math>\neq</math> <math>\text{dim\_portfolio/total\_value} * -1</math></b> and <b>value of undeclared assets <math>\neq \sum(\text{plan\_bank\_account/balance})</math></b></p> |

<sup>1</sup>  $\text{dim\_portfolio}$  was only added to the response schemas with **CE Pension v2.3**.

## WRAP CONSISTENCY CHECKS

Consistency Check ABRs for Wraps contracts are defined below:

| No | ABRs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | $total\_value\_amount = \sum (asset/total\_value) + \sum (wrap\_bank\_account/balance) + \text{'value of undeclared assets'}$ <p><i>Note: SSs will be invited to assume that any differences between the sides of this equation can be attributed to 'value of undeclared assets'.</i></p> <p>A check will be made in test to ensure that 'value of undeclared assets' is not exactly equal to <math>\sum (wrap\_bank\_account/balance) * (-1)</math>, as this would almost certainly indicate that <math>wrap\_bank\_account/balance</math> has not been included in <math>total\_value\_amount</math>.</p> |
| 2  | $asset/total\_value = number\_of\_shares * share\_valuation\_price$ <p>if share based asset. Could also apply to <math>external\_asset/total\_value</math>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 3  | $asset/total\_value = \sum (value\_of\_units) + \sum (plan\_bank\_account/balance)$ <p>if wrap plan or unit based asset.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 4  | $external\_asset/total\_value = \sum (fund\_unit\_holding/value\_of\_units)$ <p>if external unit based assets.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 5  | $asset/total\_value = \sum (dim\_portfolio/assets/asset/value\_of\_units) + \sum (dim\_portfolio/plan\_bank/accounts/plan\_bank\_account/balance)$ <p>if Wrap 1.3 and <math>dim\_portfolio</math> present.</p>                                                                                                                                                                                                                                                                                                                                                                                               |
| 6  | $fund\_unit\_holding/value\_of\_units = fund\_unit\_holding/number\_of\_units * fund\_unit\_holding/fund\_unit\_valuation\_price$ <p>If message is Wrap v1.3, this ABR could also apply to <math>dim\_portfolio/asset</math>.</p> <p>If Wrap includes external assets, this ABR could also apply to <math>external\_asset/fund\_unit\_holding</math>.</p>                                                                                                                                                                                                                                                    |

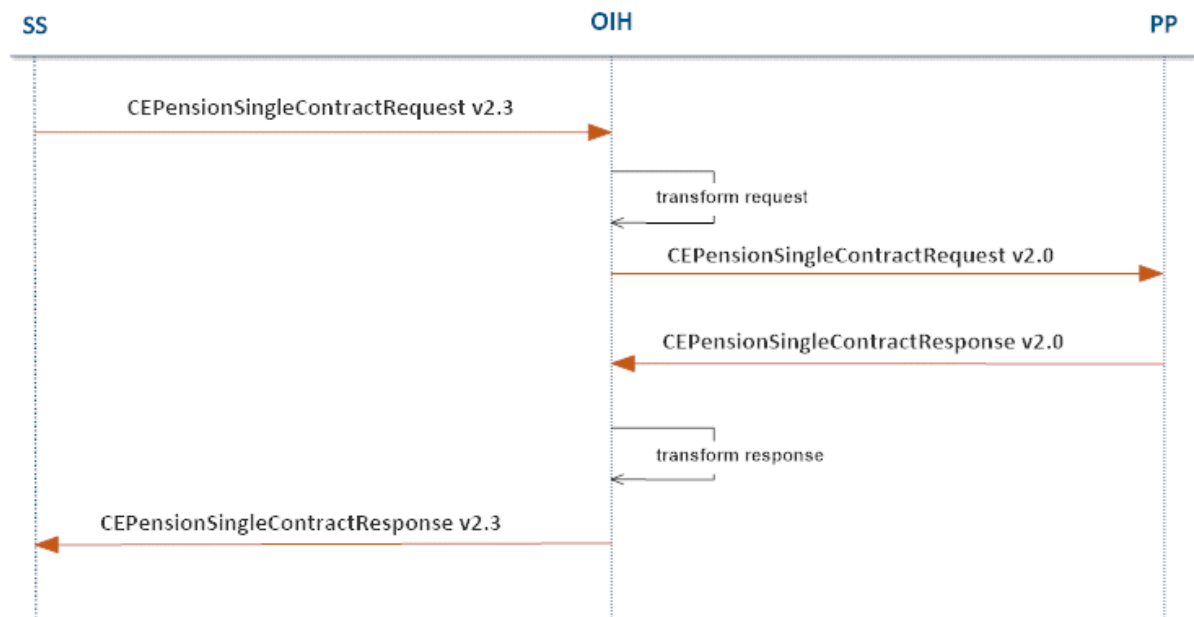
**Note:** An exhaustive explanation of Consistency Checks is beyond the scope of this Guide but further information is available on request



## MESSAGE TRANSFORMATION

As part of the standard OIH package offered by Origo, Customers are assumed to have given their permission for the OIH to transform valuation messages (sent or received by them) between different versions of a given **Criterion Standard** in order to enable these messages to be consumed by trading partners that use different versions of the Standard.

For example, the transformations below could be required for an SS using 2.3 and a PP using 2.0 of the CEPensionSingleContractRequest standard:



**Note:** The **OIH Customer Portal** provides an overview of the Permitted/Prohibited Transformation Operations.

## CUSTOM TRANSFORMATIONS

If a transformation involves converting a message to or from a format that is not fully supported by Origo or not compliant with **Criterion Standards**, this will be subject to Origo professional charges.

## OIH CUSTOMER PORTAL

Origo will give prospective Customers access to the **OIH Customer Portal** to enable them to enter their configuration data.

A User must log in to the OIH Customer Portal using their **Individual Unipass Certificate** – the information contained within this certificate must match an email address and organisation that is registered with the OIH.

- The **email address** used to register the certificate must match the email address provided to Origo for the individual.
- The **organisation name** used to register the certificate must match the organisation name used to register the SS in the OIH.

An Individual Unipass certificate (which forms part of a Unipass Identity) can be applied for here:

[https://www.unipass.co.uk/Pages/Apply/Stage1\\_OrganisationSearch.aspx](https://www.unipass.co.uk/Pages/Apply/Stage1_OrganisationSearch.aspx)

The **OIH Customer Portal** allows a User to:

- View/Modify their Organisation's Configuration
  - General Details
  - Business Process Settings
  - Supported Standards
- View Transaction Logs
  - Successful Transactions
  - Technical Errors
  - Business Errors
- View/Download MI Reports
- Download OIH Documentation
- View Core OIH Configuration (non-Customer specific)
  - Supported Standards
  - Supported Transformations (see [Message Transformation](#))

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**Note:** The Customer Portal is covered in detail in the **OIH Service Description**.

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## APPENDIX A – OIH USAGE OF MESSAGE STATUS

The table below shows which MTG message\_status errors are being used by the OIH and, where they are not being used, explains the reasons for this.

| STATUS                              | MEANING                                                                                                                                                                                                                                                                | OIH USAGE                                                                                                                                             |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SUCCESS</b>                      | The message contained within <b>m_content</b> has been received and has been or is being processed.                                                                                                                                                                    | Used.                                                                                                                                                 |
| <b>XML NOT WELL FORMED</b>          | XML message contained in <b>m_content</b> is not well formed according to basic XML validation rules – Message Rejected without any processing being done. Alternatively, HTTP Response Code 400 (Bad Request) can be used in this situation to have the same meaning. | HTTP 400 used.                                                                                                                                        |
| <b>XML DOES NOT VALIDATE</b>        | Validation of the message failed against the Schema specified by <b>message_type</b> & <b>message_version</b> – Message Rejected without any processing being done.                                                                                                    | OIH00403 issued instead for both schema validation errors and ABR compliance errors.                                                                  |
| <b>XML NOT RECOGNIZED</b>           | No recognisable XML message was contained in the content of the HTTP request – Message Rejected without any processing being done. Alternatively, HTTP Response Code 400 (Bad Request) can be used in this situation to have the same meaning.                         | HTTP400 used.                                                                                                                                         |
| <b>ORIGO STANDARD NOT SUPPORTED</b> | Receiver does not support the Origo Message Standard sent in the request – Message Rejected without any processing being done.                                                                                                                                         | Used.                                                                                                                                                 |
| <b>VERSION NOT SUPPORTED</b>        | Receiver does not support this version of the identified Origo Message Standard – Message Rejected without any processing being done.                                                                                                                                  | Used.                                                                                                                                                 |
| <b>USER NOT RECOGNIZED</b>          | User specified in <b>user_id</b> is not known to the receiver of the message, – Message Rejected without any processing being done.                                                                                                                                    | To be used by PP.                                                                                                                                     |
| <b>INITIATOR NOT ALLOWED ACCESS</b> | The Organisation specified in <b>initiator_id</b> is known to the receiver of the message, but has not signed up for the requested service – Message Rejected without any processing being done.                                                                       | Used.<br>NB The OIH issues this error for a wider range of problems than specified in the MTG guidelines. See <b>OIH Errors</b> for more information. |
| <b>FAILED XML SIGNATURE CHECK</b>   | An XML Signature contained within the <b>message</b> has failed validation.                                                                                                                                                                                            | Out of OIH scope.                                                                                                                                     |
| <b>RESPONSE TYPE NOT SUPPORTED</b>  | When a Receiving organisation is unable to respond using the method specified by <b>expected_response_type</b> .                                                                                                                                                       | Used.                                                                                                                                                 |
| <b>USER NOT ALLOWED ACCESS</b>      | User specified in <b>user_id</b> is known to the receiver of the message, but is not allowed to perform processing specified by the message, – Message Rejected without any processing being done.                                                                     | To be used by PP.                                                                                                                                     |

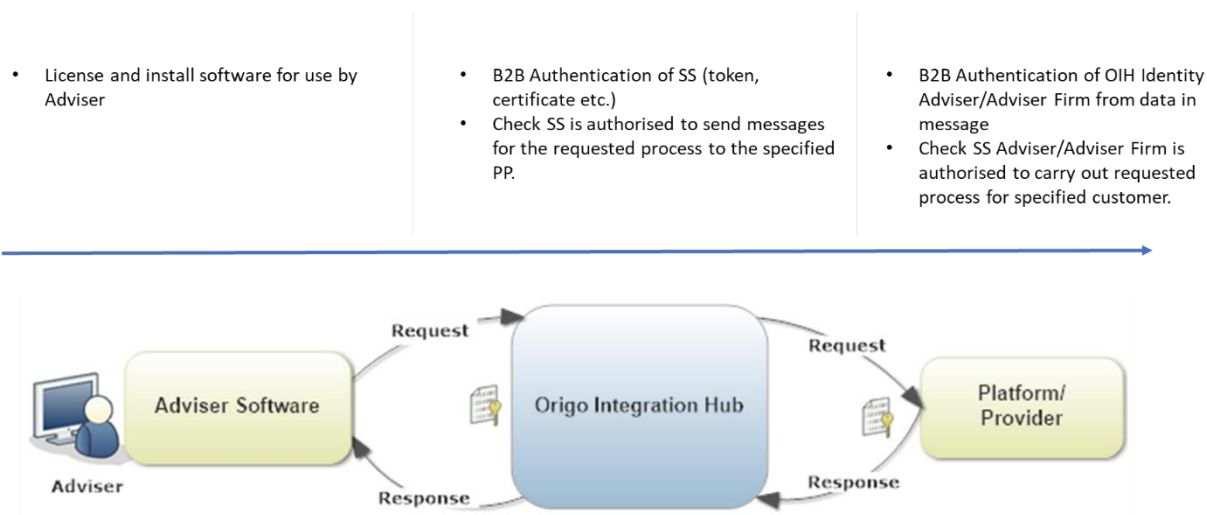
Data Classification: Public

| STATUS                    | MEANING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | OIH USAGE                          |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
|                           | <p><b>Note:</b> This message applies at the service level e.g., Valuations. If an adviser has access to the PP's valuation service, but is not authorised to request a valuation for a specific contract, this would be a business level error and, by way of example, the response xml could then include:</p> <pre> &lt;mtg:m_control&gt;   &lt;mtg:message_status&gt;Success&lt;/mtg:message_status&gt; &lt;/mtg:m_control&gt; &lt;ce:m_content&gt;   &lt;ce:enquiry_response_status&gt;Error&lt;/ce:enquiry_response_status&gt;   &lt;ce:enquiry_error_note ce:code="1005" ce:sequence_number="1"&gt;     &lt;ce:short_description&gt;Contract not found.&lt;/ce:short_description&gt;     &lt;ce:reason&gt;The intermediary is not the servicing agent for the       contract.&lt;/ce:reason&gt;   &lt;/ce:enquiry_error_note&gt; &lt;/ce:m_content&gt; </pre> |                                    |
| UNKNOWN RESPONSE LOCATION | <p>as per <b>CE_BusinessErrors.pdf</b>.<br/>For asynchronous communication if the URL identified in the <b>response_location</b> of the request message is unknown to the receiving organisation.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Out of OIH scope.                  |
| OTHER                     | Where the message is being rejected by the receiver, for a reason not identifiable by any of the above status. The message should be re-sent at a later time as laid down in the service level agreement.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Not currently required by the OIH. |

## APPENDIX B – INSTALLED SOFTWARE SUPPLIERS

Installed Software Suppliers don't provide a centrally managed service to their Adviser Firm customers. Instead of this, Adviser Firms implement installed software in separate instances on their own infra-structure. Therefore, the Installed Software Supplier does not undertake the responsibilities of a T3P in authenticating the end user and processing Unipass digital certificates. This role is performed by the OIH. To allow the OIH to do this, the relevant Adviser Unipass certificate must be attached to request. Given that two Unipass certificates cannot be attached to the same request message, an Installed SS uses an OIH issued token to authenticate themselves (see below).

The following diagram illustrates the security responsibilities in this model for a synchronous operation.



From the diagram above:

1. The adviser Unipass certificate is installed into adviser Software
2. The adviser Software
  - attaches the adviser certificate to a request
  - must include a token as an http parameter in the request: the token is provided by Origo (see below).
3. The OIH authenticates **and** authorises the SS;
4. The OIH will extract details from the attached adviser certificate and populate the KeyInfo block of the message payload.
5. The PP authorises the adviser.

| HTTP PARAMETER | VALIDATION                                                     | NOTES                                                                                                                                                                                                                                                                                                                   |
|----------------|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TOKEN          | This token will be validated against m_control/<initiator_id>. | <p>GUID, unique to the SS, supplied by Origo during onboarding. Required for 'Installed' SSs only.</p> <p>Separate GUIDs will be supplied for connecting to OIH UAT and PROD environments.</p> <p>These GUIDs will be passed to the named Business Contact provided in the Customer Configuration Data spreadsheet.</p> |