Origo Integration Hub

Platform/Product Provider Valuations Onboarding Guide

Version: 1.1

Date: ***26/07/2021***

Distribution: ***OIH Valuations Users***

CHANGE HISTORY

Date	Version	Changes Incorporated
24/02/2021	1.0	Previous Valuations Implementation Guide superseded by this PP specific Valuations Onboarding Guide. Contents rationalised and irrelevant or superfluous material removed.
26/07/2021	1.1	Changed Information Classification to Public

CONTENTS

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 PP personnel with a guide to what is required in order to use the **OIH GetValuation API.**

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
Public Documents (*can be downloaded from Origo.com*)	
OIH – Service Description	A non-technical overview of OIH functionality.
Restricted Documents (*available to OIH customers on request*)	
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.
Standards (see Criterion's Standards Library)	
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. ***Note**: 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.

GLOSSARY

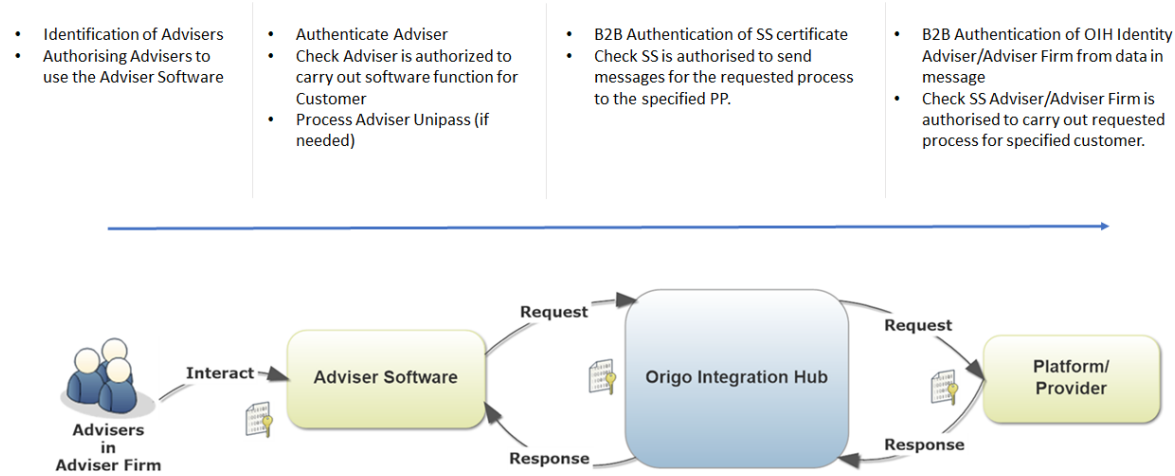
The following terms are used throughout this document.

Abbreviation / Term	Meaning
CRL	Certificate Revocation List: A list of revoked Unipass certificates which have not yet reached their expiry date.
'Hosted' SS	See 'Hosted' Software Supplier.
'Hosted' Software Supplier	Adviser Software Supplier which provides their software as a service to their customers. 'Hosted' SSs operate as TPSPs and also have Data Processor responsibilities under the DPA.
'Installed' SS	See 'Installed' Software Provider.
'Installed' Software Supplier	Adviser Software Supplier which provides their software as a product to be installed on the customer's infra-structure and managed by them. '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.
IdP	Identity Provider
OCSP	Online Certificate Status Protocol: An online service providing "real-time" certificate status information
MIG	Message Implementation Guidelines
MTG	Message Transmission Guidelines
OIH	Origo Integration Hub
OIH Customer	PP or SS subscribing to OIH Services.
OIH Customer Portal	UI for Customers to modify their Organisation's Configuration, acquire Supporting Documentation and view Transaction Logs.
OIHSG	Origo Integration Hub Steering Group
PSG	Process & Standards Group
PP	See Platform / Product Provider.
Platform / Product Provider	Investment Platform and/or Life & Pensions Provider.
Provisional Build	Refers to a version of a Criterion standard that includes changes that may not yet have been fully accepted by the relevant Governance Group.
Servicing Agent	An adviser who has *Servicing Rights* to a policy. A Servicing Agent will provide ongoing advice to the policyholder(s) and can instruct changes to the policy.
SS	Adviser Software Supplier which provides their software as a service to their customers.
TPSP	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.
XML	Extensible Mark-up Language
XSD	XML Schema definition

OIH SECURITY

This section provides some details of the **OIH Security Model.** Although the example used in this section is based on a **Hosted SS**, from the perspective of the PP the request will be in the same format regardless of the SS type**.** The security 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 validates the OIH's Initiator ID (see the Request Structure section) and **Organisation Unipass certificate**
4. The PP authorises the adviser.

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.

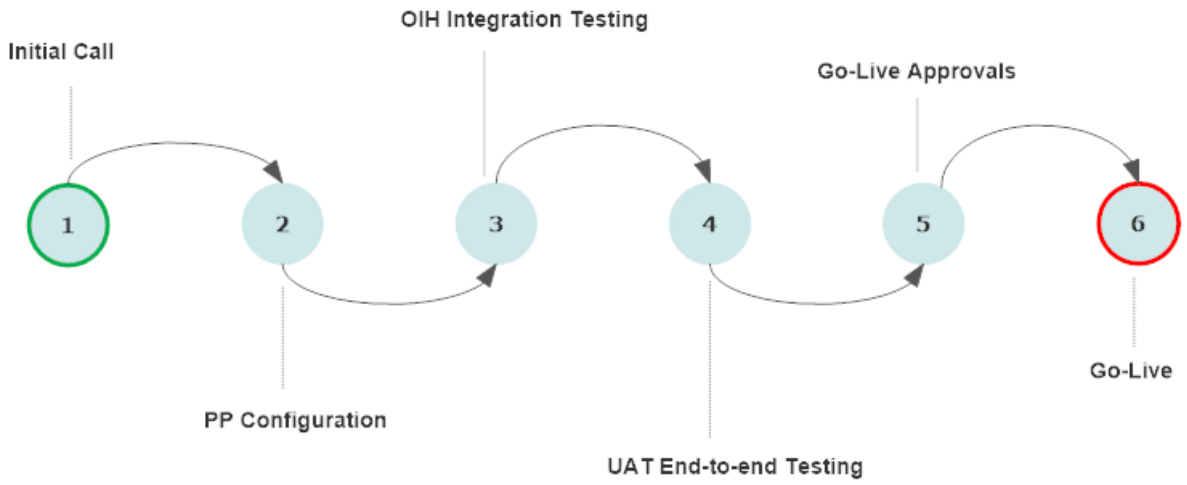
Note: *The OIH doesn't use a static IP address in the live OIH environment, so any firewall or other 'white-listing' restriction must be* ***certificate*** *rather than IP based.*

CUSTOMER ONBOARDING

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

- The PP is fully aware of the overall **OIH Model** for Valuations and what it can deliver for their Organisation;
- The PP is compliant with the **OIH Security Model**;
- Responses sent to the OIH comply with the relevant **Criterion Standard** (in terms of both schema validity and the business rules contained in the Standard);
- 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 PP Requirements;
- describe the PP'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 PP identified any specific Software Suppliers who they would like to provide Valuations for?
- **Business Model**: Discuss how the OIH will meet the requirements of the PP Business Model.

PP CONFIGURATION

Following the initial call, Origo will

- provide the PP with **Supporting Documentation**: Origo will suggest/provide supporting documentation (See Associated Documents).
- provide the PP with **OIH Customer Portal Access**
- set up the PP on the **OIH UAT environment**.

A PP User will configure their organisation in the **OIH UAT Customer Portal** as required (see the Customer Portal section).

The PP will enter/verify:

- General Details
- Business Process Settings (Valuations)
- Supported Standards

---

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

OIH INTEGRATION TESTING

The PP will provide Origo with sample request/response messages for all message versions and product sub-types which will be sent to the OIH. Origo will review and test the sample messages for:

- Schema validity
- Compliance with Additional Business Rules
- Compliance with OIH Consistency Checks

The sample responses will include the PP's error responses (see Error Responses Section).

See the Message Compliance section for more details.

Origo will send sample request to the endpoints specified in the PP's business process settings to confirm that:

- The PP can receive requests from the OIH
- The PP can provide valid responses to requests from the OIH

Note*: Origo recommends that the PP has an active test environment that can receive test requests.*

UAT END-TO-END TESTING

Origo will facilitate End-to-End testing between SSs and PP's. The test scope and exit criteria are for the Trading Partners to determine.

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

The PP must update their configuration in the live **OIH Customer Portal** so that valuation requests are sent from the OIH to the correct endpoint.

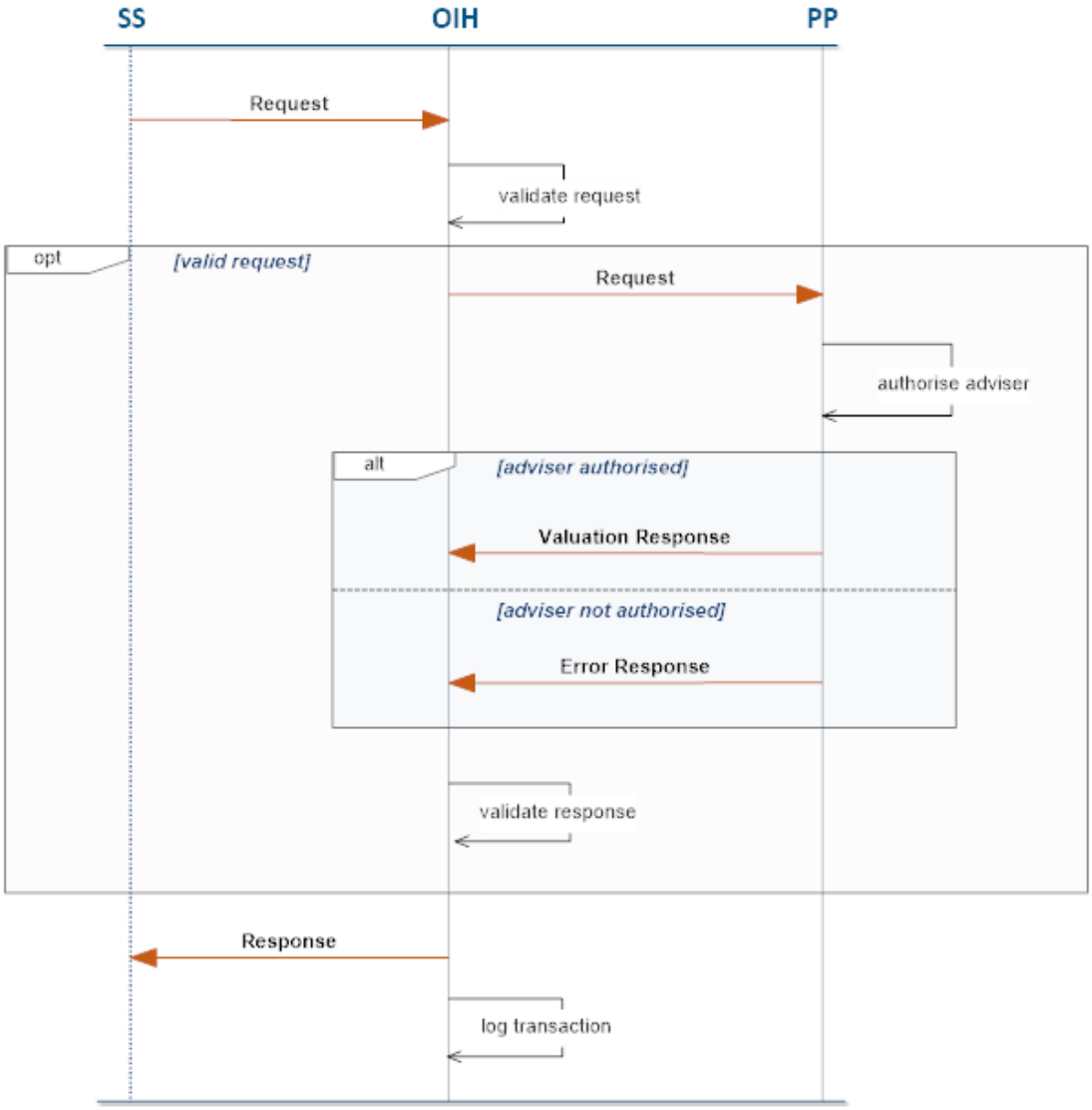
ONBOARDING CHECKLIST

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

Task	Prerequisite for	Who
Hold tele-conference to capture PP requirements.	PP Configuration	PP, Origo
Identify trading partners.	Go-Live	PP, Origo
Initial Configuration of PP on OIH UAT environment.	Integration Testing	Origo
Provide Origo with Sample XML	Integration Testing	Origo
Set up PP Users on Customer Portal	Customer Portal	Origo
Obtain Individual Unipass certificate	Customer Portal	PP
Verify Configuration on UAT Customer Portal.	Integration Testing	PP
Complete 'end-to-end' testing.	Go-Live	PP
Complete OIH Integration Testing	Go-Live	PP, Origo
Apply any required Custom Transformations (XML Changes)	Go-Live	Origo
Agree and sign Commercials and Legal Contract with Origo.	Go-Live	PP, Origo
Provide Go-Live Approvals	Go-Live	SS, Origo, PP
Configure PP 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).

REQUEST STRUCTURE

The valuation request is based on the **Criterion Standard** for the Process (see the Criterion Standards section). The example request below illustrates some of the key elements of a typical **Pension 2.2 Request**.

```
<?xml version="1.0" encoding="UTF-8"?>
<mtg:message xmlns:ce="http://www.origostandards.com/schema/ce/v2.2/CEPensionSingleContractRequest"
    xmlns:ds="http://www.w3.org/2000/09/xmldsig#"
    xmlns:mtg="http://www.origostandards.com/schema/mtg/v2"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
    <mtg:m_control>
        <mtg:control_timestamp>2021-01-01T14:42:42.820</mtg:control_timestamp>
1       <mtg:message_id>12345678901234567890123456789012345678901234567890123456</mtg:message_id>
        <mtg:retry_number>0</mtg:retry_number>
        <mtg:message_type>Contract Enquiry Request</mtg:message_type>
2       <mtg:message_version>/origo/2.2/CEPensionSingleContractRequest.xsd</mtg:message_version>
        <mtg:expected_response_type>synchronous</mtg:expected_response_type>
3       <mtg:initiator_id>Origo Integration Hub</mtg:initiator_id>
        <mtg:KeyInfo xmlns:ds="http://www.w3.org/2000/09/xmldsig#">
            <ds:X509Data>
                <ds:X509IssuerSerial>
                    <ds:X509IssuerName>Origo Root CA - G3, O=Origo Secure Internet Services Ltd</ds:X509IssuerName>
                    <ds:X509SerialNumber>12345678901234567890123456789012345678901234567</ds:X509SerialNumber>
                </ds:X509IssuerSerial>
                <ds:X509SubjectName>E= ggordon@origoservices.com, CN= OIH Test IFA X, OU= BPEH10 5AJ, OU= ORIGO OIH DUMMY FINANCIAL ADVISERS,
                    OU= EmployeeID111000197602290IH01001, OU=Warning/Terms of Use - www.unipass.co.uk/tou, OU=CPS - www.unipass.co.uk/cps,
                    O= FirmID21000195682151111222EH105AJ, C=GB
                </ds:X509SubjectName>
            </ds:X509Data>
        </mtg:KeyInfo>
5       <mtg:responder_id>OIH TEST PP</mtg:responder_id>
    </mtg:m_control>
    <ce:m_content>
        <ce:request_scope>
            <ce:contract_details_required_ind>Yes</ce:contract_details_required_ind>
            <ce:valuation_currency>GBP</ce:valuation_currency>
            <ce:fund_code_type_required>Product Provider Specific</ce:fund_code_type_required>
            <ce:valuation_request ce:type="Current"/>
            <ce:at_retirement_details_required_ind>Yes</ce:at_retirement_details_required_ind>
        </ce:request_scope>
        <ce:contract>
7           <ce:contract_reference_number>X00123456Y</ce:contract_reference_number>
        </ce:contract>
    </ce:m_content>
</mtg:message>
```

No.	Element	Note
1	***message_id***	This is a **unique** GUID/UUID (Length 36) for the transaction and is used to identify the request/response (e.g., in the Transaction logs in the **OIH Customer Portal**).
2	***message_version***	The PP's version of the Standard.
3	***initiator_id***	This is always 'Origo Integration Hub'. ***Note**: On the incoming request (from SS to OIH), the **initiator_id** element holds the **SS Organisation Name**.*
4	***KeyInfo***	This block contains the certificate details relating to **the adviser** as populated by the SS. The PP will use this information to **authorise the adviser**.
5	***responder_id***	This will be the **PP Organisation Name**.
6	***request_scope***	This block is used to specify the details of the content required in the response. ***Note**: For Pensions, Bonds and CIV this block is mandatory. The **contract_details_required** element will only be included for Pensions and Bonds.*
7	***contract_reference_number***	Identifies the policy to be valued.

RESPONSE STRUCTURE

The valuation response is based on the **Criterion Standard** for the Process (see the Criterion Standards section).

SUCCESS RESPONSE

The example below illustrates some of the key elements of a typical Successful **Pension 2.2 Response**.

```
<?xml version="1.0"?>
<mtg:message
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:ce="http://www.origostandards.com/schema/ce/v2.2/CEPensionSingleContractDetailResponse"
    xmlns:mtg="http://www.origostandards.com/schema/mtg/v2"
    xmlns:ds="http://www.w3.org/2000/09/xmldsig#">
    <mtg:m_control>
        <mtg:control_timestamp>2012-06-28T12:26:58.221+01:00</mtg:control_timestamp>
        <mtg:message_id>12345678901234567890123456789012345678901234567890123456</mtg:message_id>
        <mtg:retry_number>0</mtg:retry_number>
        <mtg:message_type>Contract Enquiry Response</mtg:message_type>
        <mtg:message_version>/origo/2.2/CEPensionSingleContractDetailResponse.xsd</mtg:message_version>
        <mtg:message_status>Success</mtg:message_status>
        <mtg:expected_response_type>synchronous</mtg:expected_response_type>
        <mtg:initiator_id>Origo Integration Hub</mtg:initiator_id>
        <mtg:responder_id>OIH TEST PP</mtg:responder_id>
    </mtg:m_control>
    <ce:m_content>
        <ce:b_control>
            <ce:enquiry_response_status>Success</ce:enquiry_response_status>
        </ce:b_control>
        <ce:request_scope>
            <ce:contract_details_required_ind>Yes</ce:contract_details_required_ind>
            <ce:valuation_currency>GBP</ce:valuation_currency>
            <ce:fund_code_type_required>Product Provider Specific</ce:fund_code_type_required>
            <ce:valuation_request ce:type="Current"/>
        </ce:request_scope>
        <ce:contract ce:type="Self Invested Personal Pension">
        ..
        ..
        </ce:contract>
    </ce:m_content>
</mtg:message>
```

No.	Element	Note
1	***message_type***	This is always ‘Contract Enquiry Response’.
2	***message_version***	The PP’s version of the Standard.
3	***message_status***	This is always ‘Success’ for a successful response. Other possible values that can be set by the PP are covered in the Appendix.
4	***enquiry_response_status***	Set by the PP to indicate whether they have been able to provide a response. (see Error Responses and PP Generated Errors sections).
5	***contract***	This block contains the valuation details for the specified policy (***contract_reference_number).***

ERROR RESPONSES

The PP can return errors in the following elements:

Element	Applies to	Description
message_status	All Products	Errors relating to adviser authorisation.
enquiry_response	Bonds, Pensions, CIV	Business errors/warnings that affect the PP's ability to provide a valuation.
success_ind	Wrap	Business errors/warnings that affect the PP's ability to provide a valuation.

message_status errors

The **Pensions 2.2** example below illustrates how the ***message_status*** element is used by the PP to note that the Adviser specified in the request does not have authority to receive the valuation.

```
<?xml version="1.0"?>
<mtg:message
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:ce="http://www.origostandards.com/schema/ce/v2.2/CEPensionSingleContractDetailResponse"
    xmlns:mtg="http://www.origostandards.com/schema/mtg/v2"
    xmlns:ds="http://www.w3.org/2000/09/xmldsig#">
    <mtg:m_control>
        <mtg:control_timestamp>2012-06-28T12:26:58.221+01:00</mtg:control_timestamp>
        <mtg:message_id>12345678901234567890123456789012345678901234567890123456</mtg:message_id>
        <mtg:retry_number>0</mtg:retry_number>
        <mtg:message_type>Contract Enquiry Response</mtg:message_type>
        <mtg:message_version>/origo/2.2/CEPensionSingleContractDetailResponse.xsd</mtg:message_version
        <mtg:message_status>User not allowed access</mtg:message_status>
        <mtg:expected_response_type>synchronous</mtg:expected_response_type>
        <mtg:initiator_id>Origo Integration Hub</mtg:initiator_id>
        <mtg:responder_id>OIH TEST PP</mtg:responder_id>
    </mtg:m_control>
</mtg:message>
```

***Note**: Where errors are recorded in the **message_status** element, the **m_content** block should be omitted in the response.*

enquiry_response errors

The **Pensions 2.2** example below illustrates how the ***enquiry_response_status*** element can be used. In this case, the PP notes that the request specifies a fund code that is not supported but has still provided a valuation.

```
<?xml version="1.0"?>
<mtg:message
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:ce="http://www.origostandards.com/schema/ce/v2.2/CEPensionSingleContractDetailResponse"
    xmlns:mtg="http://www.origostandards.com/schema/mtg/v2"
    xmlns:ds="http://www.w3.org/2000/09/xmldsig#">
    <mtg:m_control>
        <mtg:control_timestamp>2012-06-28T12:26:58.221+01:00</mtg:control_timestamp>
        <mtg:message_id>12345678901234567890123456789012345678901234567890123456</mtg:message_id>
        <mtg:retry_number>0</mtg:retry_number>
        <mtg:message_type>Contract Enquiry Response</mtg:message_type>
        <mtg:message_version>/origo/2.2/CEPensionSingleContractDetailResponse.xsd</mtg:message_version>
        <mtg:message_status>Success</mtg:message_status>
        <mtg:expected_response_type>synchronous</mtg:expected_response_type>
        <mtg:initiator_id>Origo Integration Hub</mtg:initiator_id>
        <mtg:responder_id>OIH TEST PP</mtg:responder_id>
    </mtg:m_control>
    <ce:m_content>
        <ce:b_control>
            <ce:enquiry_response_status>Warning</ce:enquiry_response_status>
            <ce:enquiry_error_note code="1014">
                <ce:short_description>
                    <ce:short_description>Fund Code Type not supported by Provider.</ce:short_description>
                </ce:short_description>
            </ce:enquiry_error_note>
        </ce:b_control>
        <ce:request_scope>
            <ce:contract_details_required_ind>Yes</ce:contract_details_required_ind>
            <ce:valuation_currency>GBP</ce:valuation_currency>
            <ce:fund_code_type_required>SEDOL</ce:fund_code_type_required>
            <ce:valuation_request ce:type="Current"/>
        </ce:request_scope>
        <ce:contract ce:type="Self Invested Personal Pension">
            ..
            ..
        </ce:contract>
    </ce:m_content>
</mtg:message>
```

success_ind errors

The example below illustrates how a warning can be returned by the PP in **Wrap 1.3**.

```
<?xml version="1.0" encoding="UTF-8"?>
<mtg:message xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns="http://www.origoservices.com" xmlns:mtg="http://www.origostandards.com/schema/mtg/v2"
    xmlns:gwresp="http://www.origostandards.com/schema/ProvideContractValuation/v1.0/GetWrapResponse"
    xmlns:cvtypes="http://www.origostandards.com/schema/ProvideContractValuation/v1.0/Common/ContractValuationTypes"
    xmlns:ds="http://www.w3.org/2000/09/xmldsig#">
    <mtg:m_control>
        ..
        ..
    </mtg:m_control>
    <gwresp:m_content id="m_content1">
        <gwresp:success_ind>Warning</gwresp:success_ind>
        <gwresp:intermediary>
            <cvtypes:FirmFSARef>123456</cvtypes:FirmFSARef>
        </gwresp:intermediary>
        <gwresp:response_alert_details>
            <cvtypes:info_alert>
                <cvtypes:type>Warning</cvtypes:type>
                <cvtypes:description>
                    Product details incorrect
                </cvtypes:description>
            </cvtypes:info_alert>
        </gwresp:response_alert_details>
        <gwresp:wrap_account_details>
         ..
         ..
        </gwresp:wrap_account_details>
        <gwresp:wrap_account_valuation>
         ..
          ..
        </gwresp:wrap_account_valuation>
    </gwresp:m_content>
</mtg:message>
```

Where a warning is issued, a valuation is still required. Where ***success_ind*** has a value of 'Error', then the valuation can be omitted as shown below:

```
<?xml version="1.0" encoding="UTF-8"?>
<mtg:message xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns="http://www.origoservices.com" xmlns:mtg="http://www.origostandards.com/schema/mtg/v2"
    xmlns:gwresp="http://www.origostandards.com/schema/ProvideContractValuation/v1.0/GetWrapResponse"
    xmlns:cvtypes="http://www.origostandards.com/schema/ProvideContractValuation/v1.0/Common/ContractValuationTypes"
    xmlns:ds="http://www.w3.org/2000/09/xmldsig#">
    <mtg:m_control>
        ..
        ..
    </mtg:m_control>
    <gwresp:m_content id="m_content1">
        <gwresp:success_ind>Error</gwresp:success_ind>
        <gwresp:intermediary>
            <cvtypes:FirmFSARef>123456</cvtypes:FirmFSARef>
        </gwresp:intermediary>
        <gwresp:response_alert_details>
            <cvtypes:info_alert>
                <cvtypes:type>Warning</cvtypes:type>
                <cvtypes:description>
                    Product details incorrect
                </cvtypes:description>
            </cvtypes:info_alert>
        </gwresp:response_alert_details>
    </gwresp:m_content>
</mtg:message>
```

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
- **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

The SS will process any errors that could be 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.
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.*

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
CONTENT-TYPE:	'text/xml' or 'application/xml'	Request messages sent by the OIH to SSs will be set to 'text/xml'.
CONTENT-ENCODING:	no validation	
CONTENT-LANGUAGE:	'en-gb' or not present	OIH will assume 'en-gb' if not present.
DATE:	no validation	
CACHE_CONTROL:	no validation	
SERVER:	no validation	
WWW-AUTHENTICATE:	no validation	
CONTENT-LENGTH:	no validation	

The OIH will also provide one or two additional custom parameters.

HTTP PARAMETER	VALUE/COMMENT	TYPE
OIH-ORIGINAL-INITIATOR	SS <Initiator_id> sent to OIH.	string
OIH-OCSP-VERIFIED	Where SS is 'Installed', this will indicate whether a real time OCSP check of Adviser Unipass certificates has been successfully completed (true) or not (false). If set to 'false' then the certificate has been checked against the latest CRL list and has had other attributes such as expiry date checked but the real time check was not available. **Note:** *This parameter will not be set where SS is 'Hosted' - the OIH will not re-check adviser credentials sent in the X509 code block*	true | false

MESSAGE CONTROL BLOCK

The ***m_control*** element of Response messages sent by the PP to the OIH must be populated in conformance with MTG 2.1 and as shown below:

Element	Required	Required Value
control_timestamp	Yes	As per SS request.
message_id	Yes	As per SS request.
retry_number	No	As per SS request.
message type	Yes	If Wrap valuation: 'Contract Enquiry Response' or 'Provide Contract Valuation'. For all other valuation types: 'Contract Enquiry Response'.
message_version	Yes	'/origo/{version number}['ProvisionalBuild'n]/{standard}.xsd'
message_status	Yes	Success
expected_response_type	No	Not required.
initiator_id	Yes	'Origo Integration Hub'.
initiator_orchestration_id	No	Not required. Forwarded 'as-is' if present.
keyinfo	No	Could be populated with ***keyinfo*** from associated request message.
userid	No	Could be populated with ***userid*** from associated request message.
responder_id	Yes	As per original request message e.g., PP name.

MESSAGE CONTENT BLOCK

The m_content block of requests sent to or responses sent by PPs will not be 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.

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

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 = ∑ (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 = ∑ (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 + ∑ (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
Unitised Contracts		
1	*valuation_amount/amount* = *∑ (value_of_units)*	This equation is subject to a rounding adjustment. Where, *valuation_amount* = **VA** ; *value_of_units* = **VU** and maximum possible deviation due to rounding = **MPD**, **Unitised ABR 1** is more accurately expressed as: **VA ≤ ∑(VU) + MPD and VA ≥ ∑(VU) – MPD.** **MPD** is calculated from the results of applying Unitised ABR 2 to each *value_of_units i.e.* **MPD =** ∑(Max possible deviation for each *value_of_units*).
2	*value_of_units* = *number_of_units * fund_unit_valuation_price*	This equation is subject to a rounding adjustment. Where *value_of_units* = **VU**; *number_of_units* = **NU**; *fund_unit_valuation_price* = **FUVP** and maximum possible deviation due to rounding = **MPD**, **Unitised ABR 2** is more accurately expressed as: **VU ≤ (NU * FUVP) + MPD** and **VU ≥ (NU * FUVP) - MPD**
3	*total_external_asset_valuation/value* = *∑ (external_asset_valuation/value) +* *dim_portfolio/total_value +* *value of undeclared assets*	*Value of undeclared assets* 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: *value of undeclared assets* = *total_external_asset_valuation/value* – ∑(*external_asset_valuation/value*) - *dim_portfolio/total_value*.[1] In order to ensure that *total_external_asset_valuation/value* has been calculated correctly, the OIH will check that: **value of undeclared assets ≠ *dim_portfolio/total_value*-1** and **value of undeclared assets ≠ *∑(plan_bank_account/balance)***

[1] *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:

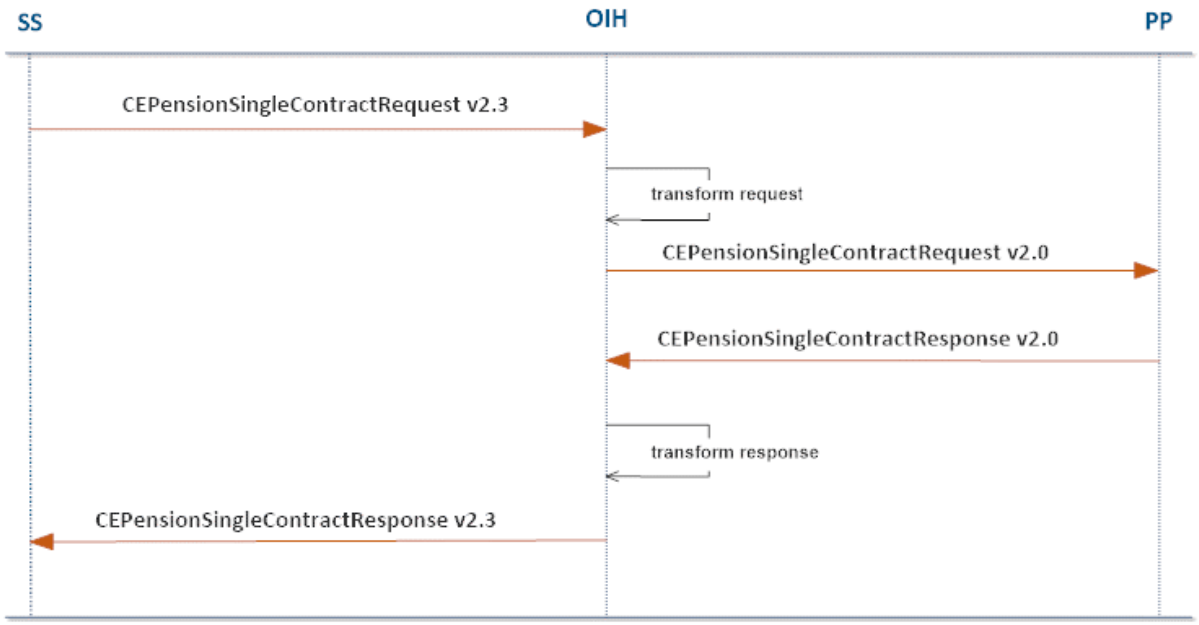
No	ABRs
1	*total_value_amount* = ∑ (*asset/total_value*) + ∑ (*wrap_bank_account/balance*) + 'value of undeclared assets' ***Note:*** *SSs will be invited to assume that any differences between the sides of this equation can be attributed to 'value of undeclared assets'.* A check will be made in test to ensure that 'value of undeclared assets' is not exactly equal to ∑ (*wrap_bank_account/balance*) * (-1), as this would almost certainly indicate that *wrap_bank_account/balance* has not been included in *total_value_amount*.
2	*asset/total_value = number_of_shares * share_valuation_price* if share based asset. Could also apply to external_asset/total_value.
3	*asset/total_value =* ∑ (*value_of_units)* + ∑ (*plan_bank_account/balance)* if wrap plan or unit based asset.
4	*external_asset/total_value =* ∑ (*fund_unit_holding/value_of_units)* if external unit based assets.
5	*asset/total_value =* ∑ (*dim_portfolio/assets/asset/value_of_units)* + ∑ (*dim_portfolio/plan_bank/accounts/plan_bank_account/balance)* if Wrap 1.3 and *dim_portfolio* present.
6	*fund_unit_holding/value_of_units = fund_unit_holding/number_of_units * fund_unit_holding/fund_unit_valuation_price* If message is Wrap v1.3, this ABR could also apply to *dim_portfolio/asset*. If Wrap includes external assets, this ABR could also apply to *external_asset/fund_unit_holding.*

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 PP 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

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

- View/Modify their Organisation's Configuration
  - General Details
  - Busines 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)

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

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
SUCCESS	The message contained within ***m_content*** has been received and has been or is being processed.	Used.
XML NOT WELL FORMED	XML message contained in ***m_content*** 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.
XML DOES NOT VALIDATE	Validation of the message failed against the Schema specified by ***message_type*** & ***message_version*** – Message Rejected without any processing being done.	OIH00403 issued instead for both schema validation errors and ABR compliance errors.
XML NOT RECOGNIZED	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.
ORIGO STANDARD NOT SUPPORTED	Receiver does not support the Origo Message Standard sent in the request – Message Rejected without any processing being done.	Used.
VERSION NOT SUPPORTED	Receiver does not support this version of the identified Origo Message Standard – Message Rejected without any processing being done.	Used.
USER NOT RECOGNIZED	User specified in ***user_id*** is not known to the receiver of the message, – Message Rejected without any processing being done.	To be used by PP.
INITIATOR NOT ALLOWED ACCESS	The Organisation specified in ***initiator_id*** 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. NB The OIH issues this error for a wider range of problems than specified in the MTG guidelines. See **OIH Errors** for more information.
FAILED XML SIGNATURE CHECK	An XML Signature contained within the ***message*** has failed validation.	Out of OIH scope.
RESPONSE TYPE NOT SUPPORTED	When a Receiving organisation is unable to respond using the method specified by ***expected_response_type***.	Used.
USER NOT ALLOWED ACCESS	User specified in **user_id** 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.

STATUS	MEANING	OIH USAGE

	Note: 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:
	
	`<mtg:m_control>`
	`<mtg:message_status>Success</mtg:message_status>`
	`</mtg:m_control>`
	`<ce:m_content>`
	`<ce:enquiry_response_status>Error</ce:enquiry_response_status>`
	`<ce:enquiry_error_note ce:code="1005" ce:sequence_number="1">`
	`<ce:short_description>Contract not found.</ce:short_description>`
	`<ce:reason>The intermediary is not the servicing agent for the contract.</ce:reason>`
	`</ce:enquiry_error_note>`
	`</ce:m_content>`
	
	as per **CE_BusinessErrors.pdf**.	

UNKNOWN RESPONSE LOCATION	For asynchronous communication if the URL identified in the ***response_location*** of the request message is unknown to the receiving organisation.	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.