



Integrating HR Avatar Assessments into your Hiring Process

HR Avatar API Document

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PART 1 – OVERVIEW

Pre-employment assessments can make a big difference in quality of new hires. However, assessments form only one part of every organization's hiring process or workflow. It's important for the hiring process to work seamlessly and efficiently, both from the perspective of candidates as well as recruiters and hiring managers.

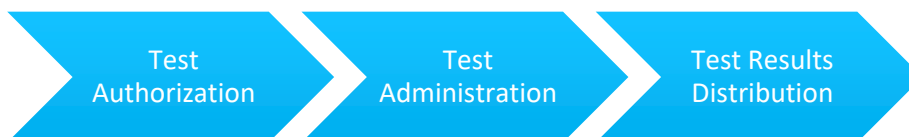
To ensure every employer can integrate assessments in the optimum way for their needs, HR Avatar offers several integration options.

*The Simplest Approach May Be All You Need
(If so you can stop reading here!)*

For low to medium volume situations, all functions can be performed via the HR Avatar website without any additional requirements for integration, approvals, etc. When we designed the HR Avatar website we concentrated on making it as easy as possible to use. We expect that this solution will be adequate most of our customers. If the website is adequate for your organization's process, no further reading is required!

The Three Core Testing Functions

To determine the best way to integrate HR Avatar assessments into your hiring process, it's often helpful to break pre-employment testing into three functions or steps.



HR Avatar offers several options for each of these functions. Unlike many other test delivery solutions, which require use of one approach or another, HR Avatar's technology and architecture allows organizations to mix and match different approaches for each function, if needed. For example, an organization with an ATS may want to use RESTful web services for test authorization, but does not wish to import test results into the ATS database and uses the HR Avatar website for

test result distribution. The result is a flexible platform that lets organizations integrate HR Avatar tests in the way that is best for them.

High-Level Approaches:

To accomplish the various functions associated with pre-employment assessment there are four basic approaches available:

1. **WEBSITE** – Testing is manually managed via the HR Avatar management and reporting website at <https://www.hravatar.com>
2. **REST** – Test management is automated and integrated with a third-party system via a set of RESTful Web Services.
3. **HTTP** – Testing is initiated by passing the user to the HR Avatar testing website via HTTP POST or GET that starts a test automatically. Test results are available via the WEBSITE and can also be pushed to client systems via HTTP.
4. **EMBEDDED** – The test itself is embedded in a 3rd party web page. Simply opening the web-page containing the test on the 3rd party site will start the test. Test results are available via the WEBSITE and can also be pushed to client systems via HTTP.

In most situations clients without any 3rd party system integration will use the WEBSITE approach, while clients who wish to integrate testing into a 3rd party system, such as an applicant tracking system will usually use the REST approach. The HTTP and EMBEDDED approaches are only used in special or unusual circumstances.

Privacy and Information Security

HR Avatar takes the privacy and protection of client data seriously. Our privacy policy is located at <https://www.hravatar.com/privacy>. Our Security Manual is located at <https://www.hravatar.com/security>.

Zero-Personally Identifying Information (Zero PII) Approaches Supported

Clients pursuing complex integrations often perform a privacy and security review of HR Avatar systems and procedures. We like to point out that all of our integration methods support testing in which zero personally identifying information is transferred to HR Avatar from third-party systems, from client account administrators, or from test takers during the testing process. A thoughtful design of the testing approach in which no identifying information is captured or stored by HR Avatar can often assist in easing information security requirements.

After reviewing our various options and approaches, if you would like to implement a Zero PII approach and would like some help formulating your approach, please contact us to talk through options.

When testing via WEBSITE or REST, you can specify a “User Anonymity Type” that determines what information is collected from the test-taker. The default is to collect name and email address.

However, other options include a single alphanumeric ID, a password, or nothing at all (anonymous testing).

Test Authorization Options

Authorizing a test refers to the process through which an organization requests a specific test event be configured. On the HR Avatar system, this process results in the creation of a *Test Key*. To create a Test Key, an organization must identify which test should be administered, along with optional parameters that configure *how* the administration should be conducted as well as how the results should be distributed.

The following options are available:

Test Authorization Option	Note
WEBSITE: Create Single-Administration Links from the HR Avatar website	This is the default option. After a secure login, the user selects the test he/she wants to administer by perusing the test catalog, creates a <i>Test Key</i> for that test, and then sends the test key information, including a link to start the test, to the candidate, either by email, text message, or another method. Candidates click on the link to start or restart the test. When the test is completed, the link is disabled.
WEBSITE: Create Multi-Administration Links from the HR Avatar website	This option is used to create a single URL link that can be used for multiple administrations of the same test. This could be used in a job posting, for instance, and save the recruiter the hassle of creating individual test keys for each candidate. A multi-administration link can be generated (and managed) via the HR Avatar website. The link can be set to allow a maximum number of test administrations, or to expire after a certain date. Once clicked, this link works the same way for a candidate as a single administration link.
REST: Test key creation via RESTful web services	This option provides an automated way for a third party system to create a <i>Test Key</i> directly by using HTTP POST to send an XML-formatted document to HR Avatar and receive an XML document in return that contains all necessary information to administer the test. This option is useful for systems such as applicant tracking systems and learning management systems that want to automate the testing process while simultaneously exercising greater control over the administration of the test and that want to import test results into their own databases. <i>This is the recommended method for test</i>

	<i>key creation for all complex integrations, including those that use direct test embedding.</i>
HTTP: POST or GET link directly to HR Avatar Testing site.	Organizations can create test keys directly by embedding sufficient information (as request parameters) into the HTTP request that forwards the user into the testing system to enable a test key to be created and the test started immediately. A possible use case would be a form or a link on a client website that links directly into a test on the HR Avatar testing site.
EMBEDDED: Automatic test key creation when directly embedding a test into a third-party system web page	For organizations that want to embed a test directly into their own web pages, test keys can be automatically generated by embedding a set of required and optional parameters into the webpage containing the embedded test.

The net result of any of the options above is exactly the same: a Test Key is created that specifies how a given test should be administered and how the results should be distributed.

Test Administration Options

Once a test key has been created, the test is ready to be administered to a user. Tests are administered via the HR Avatar testing system, in either a default or a custom testing portal, or within any webpage using direct test embedding. Each of these approaches is described below.

Test Administration Option	Note
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<p>Administer via the default HR Avatar Testing Portal</p>	<p>This is the default method of test administration. When a user is redirected to the HR Avatar testing system, the default testing portal is loaded and the test is administered. The default look/feel as well as default test administration settings are used. These settings include required collection/confirmation of name and email, optional collection of demographic information, and optional acknowledgement of a testing privacy/data protection statement. Additionally, an optional post-test survey is administered.</p>
<p>Administer via a customized HR Avatar Testing Portal</p>	<p>Both the look and feel as well as the test administration behavior settings above can be completely customized by creating a custom testing portal. For instance, a testing portal that has your company's branding can be created. The post-test survey can be either eliminated or replaced with a survey specific to your needs. Once a custom portal is created it can be accessed via any of the test authorization methods described above. When a Test Key is created, it can be configured to use a specific portal. If no portal is specified, the default portal for that organization is used. If no default portal is specified for the organization, the default HR Avatar portal is used. Note also that tests administered via Direct Test Embedding do not use portals, since the test is embedded into a web page that is completely controlled by the organization.</p>
<p>EMBEDDING - Administer via Direct Test Embedding</p>	<p>Direct Test Embedding refers to embedding a test into ANY WEBPAGE by including a few lines of HTML. In this method, you control the testing portal completely because you embed the test into your own webpage or into your system's webpages. This is handled in much the same way as embedding an image into a webpage. This method provides a new level of seamlessness and control over the test-taker experience compared to traditional methods.</p>

Custom or default testing portals can be used with any of the options for authorizing test events. Since direct test embedding completely bypasses the HR Avatar testing system (from the test-taker's perspective) an HR Avatar portal is not applicable since the testing portal is controlled completely by you.

When using direct test embedding, you can use either the RESTful web services approach for generating a test key or the automatic approach.

Regardless of the approach used, the HR Avatar test will send the test-taker's responses to the HR Avatar system via a background process that is not visible to the test taker. Responses are sent each

time the test-taker clicks on something new so that if they have to restart a test it can be restarted exactly where they previously left off.

Test Result Distribution Options

Once the test is completed, the test results are distributed according to settings made when the test key was created.

Test Result Distribution Option	Note
WEBSITE: Results posted to online account via the HR Avatar website	This is the default method of test results distribution. No matter what method is used to authorize and administer a test, the test results are always available 24x7 via the user's online account on the HR Avatar website.
WEBSITE: Results sent via email to authorized users	Test results can be automatically emailed to any number of authorized recipients after they are ready. A default list of recipients is usually set for a company, though individual users can designate their own list. Both of these settings can be modified on the HR Avatar website. Additionally, emailing instructions can be customized for individual test events, either via the website or via parameters in automated test authorization requests.
WEBSITE: Results sent via text message (SMS) to authorized users	This works in the same way as automated results emails (see above). Phone numbers for text messaging are also set up in organization-wide records, user records, and individual test events. An abbreviated message is sent with a link to the detailed results via the HR Avatar website.
REST: Results <u>pulled</u> by RESTful web services	This is a RESTful HTTP POST endpoint that accepts requests and returns results in the form of an XML-formatted document, including any PDF reports. This web services resource also acts as a test status indicator for tests that have not yet been completed or scored.
HTTP: Results <u>pushed</u> by HTTP Post	The HR Avatar system can be configured to automatically push (via HTTP POST) an XML-formatted document that contains all result data including any PDF reports to a third party URL.

Selecting the Right Approach

Selecting the right integration approach for your needs entails selecting one method of performing each of the three functions (test authorization, test administration, and test results distribution).

A note about Test Credits

HR Avatar charges its customers using a credits system. Each test requires a certain number of credits for each administration. Regardless of which method is used to access the test, credits are deducted from the company account when a test is started for the first time.

In other words, credits are charged when the test is started for the first time.

It is the responsibility of the account administrator to ensure that enough credits are available within the account when someone starts a test. Otherwise, the test will be unauthorized and unable to proceed. The HR Avatar system will send the account administrator a warning email when the credit balance becomes low and when the credit balance becomes zero. Additional credits can be purchased quickly and easily online via credit card or paypal.

PART 2 – DETAILED METHOD DESCRIPTIONS

In the sections below we provide additional detail regarding the options listed above.

Test-Authorization – WEBSITE - Creating Single Administration Links

This is the most basic method used by HR Avatar account holders. Users access their online account at <https://www.hravatar.com>, search tests, and select the test they want to administer. Then they click on “Administer this Test,” optionally enter the test taker’s name and email, and create the link. After the link is created, several parameters can be changed and the link can be sent by email or SMS message to the candidate or test taker. Once the test is complete, the link is deactivated and results are posted to the test results section of the company account.

Test-Authorization – WEBSITE - Creating Multi- Administration

All account administrators can create multi-administration links for any HR Avatar test from within their online account on <http://www.HRAvatar.com>. You can control the maximum number of tests that can be administered via the link, or the dates during which the link is active. You can also disable a link at any time.

To create a link, log on to your HR Avatar account (you must be an account administrator). Next, select the test you wish to administer via the link, then click on “Administer this Test.” Next, click on “Create A Multi-Administration Link For This Test” and fill in the appropriate values.

To review or edit your multi-administration links, click on Advanced Features -> Multi-Administration Links in the user menu.

Once a link is active, you can email it to as many test-takers as you like or post it on the web. Anyone clicking on an active link will be able to take the test and results will be scored and placed into your online account.

Test-Authorization – REST

The access point for this web service is:

<https://test.hravatar.com/tt/wsapi/assessmentorder>

Consumers should use HTTP POST to send an XML document that is specified using the XSD at:
<https://test.hravatar.com/tt/api/AssessmentOrderRequest.xsd>

Results are returned in the form of an XML Document that confirms to the XSD at:
<https://test.hravatar.com/tt/api/AssessmentOrderAcknowledgement.xsd>

These XSDs are documented to indicate the purpose and format of each element. Note that the username and password included in the request document must be associated with a valid account administrator within your company account. Additionally, several fields, such as ClientId and Package Id, must be provided by HR Avatar ahead of time.

It's also important to recognize that the Client Order Id value must be unique (for your organization). Repeat use of the same Client Order Id for two different test key requests, even years apart, will result in an error.

Advanced Only: If you wish to capture result XML separately and post it to the HR Avatar website asynchronously, or if you wish to use the Zip File export capability to download an event-specific and time-limited version of the simulation to a local server (typically done to deal with Internet bandwidth issues), your account must be pre-authorized by HR Avatar. Please see Appendix B for posting result XML and Appendix C for more information about obtaining a single use zip files for download.

Assessment Order Request - Error Codes:

Assessment Order Request – Error Code	Definition
1	System temporarily down for maintenance.
100	Unknown HR Avatar System Error.
101	XML in request is null
102	ClientId.OrgId is invalid
103	Org associated with ClientId.OrgId is not in an active state.
104	ClientId.username is required
105	ClientId.password is required
106	Username and/or password is invalid
110	ClientOrderId.OrderId (HRA eventRef) is required.
111	ClientOrderId has been previously processed and test event is complete.
112	ClientOrderId has been previously processed and test event is expired.
120	NumberOfTestEventsToCreate is out of range
121	Disallowed mismatch between username and ClientId.OrgId

Assessment Order Request – Error Code	Definition
130	AssessmentId (HRA ProductId) is invalid
131	Product not found for AssessmentId
132	Error in detected in AssessmentOrderRequest parameters.
133	TestTakerUserId or TestTakerUsername is not available for use for requested TestTakerAnonymityType.
140	Cannot post ResultXML for a product that is not a single simulation.
150	Creation of an Export File is not authorized for this account.
151	No File Export Url generated.

Test Authorization - HTTP

In most cases, 3rd-party systems will use the RESTful web services API to obtain a test key and manage the forwarding of a user to the HR Avatar system, and therefore this section can be ignored.

However, it is possible to skip this step and instead send the test taker to the testing system without a test key. In this case, the request forwarding the user can be accomplished via HTTP GET or HTTP POST. (We anticipate it will usually be a POST request). The request must have the proper parameters included for the system to create a test key automatically and administer it to the user.

These parameters are described in the following table:

Parameter	Required	Description
pk	Yes. (unless 'x' is provided on a reentry)	This is the HR Avatar product identifier for the test to be administered. These identifiers can be obtained from HR Avatar (analogous to PackageId in REST).
od	Yes. (Unless a custom portal is specified in parameter 'cp')	This is the HR Avatar company identifier for the company account (analogous to ClientId in REST).
x	Optional (Required if 3 rd party wants to obtain test status and results from the HR Avatar API).	This is a unique test event identifier generated on the 3 rd party system (analogous to ClientOrderId in REST). This identifier must be unique for the company. The combination of 'od' and 'x' form a unique identifier that can be used to enable restarts of tests in progress.
a	Optional	This is a unique test taker identifier on the 3 rd party system (analogous to UserReferenceId in REST).

sod	Optional	This is the HR Avatar identifier for the suborganization or department within the
		company account with which this test event will be associated (analogous to SuborgId in REST).
cp	Optional	This is the HR Avatar identifier for the custom testing portal to use for this test event (analogous to PortalId in REST). Custom portal identifiers can be obtained from HR Avatar. Note that a company record can also contain a reference to a custom testing portal.
c1 ... c20	Optional	Custom data fields. These are not required for HR Avatar standard tests.
fn	Optional	Test-taker first name
ln	Optional	Test-taker last name
em	Optional	Test-taker email address
sv1 ... sv12	Optional	These are state variable initial values. These are sometimes used as special switches to enable specific behavior from the test.
au	Optional	This is the HR Avatar identifier for the company account user who will be indicated as having authorized this test event.
ru	Optional	This is a fully-qualified URL that will be used as the URL to return the user to after the test is completed (analogous to RedirectionUrl in REST).
rpu	Optional	This is a fully-qualified URL to which the HR Avatar system should push test results when ready via HTTP POST (analogous to ResultsNotificationUrl in REST).

When a user is forwarded to the HR Avatar testing system automatic test URL (<https://test.hravatar.com/tt/a.xhtml>) with the appropriate parameters set, a test key is automatically created using the data in the parameters and the test is automatically started. Note that if a user has to restart the test, the HR avatar system will look up the unique event identifier record “x” for the company on the HR Avatar system to see if there is already an event with that unique event identifier. If an in-progress event exists, that event is continued. Otherwise, a new test key is created.

When this approach is used to authorize a test, the test results can only be obtained through the HR Avatar API and only if a unique event identifier was specified.

Test Administration – Using the Default HR Avatar Testing Portal

Note that testing portals are not applicable when using direct test embedding.

No action is required for this. If a custom test portal is not specified in the test key, the default HR Avatar testing portal will be used.

Test Administration – Using a Custom HR Avatar Testing Portal

A custom test portal is like a miniature website that looks AND behaves in a desired way. Some options for custom portals include:

- Totally customized look/feel – logo, colors, fonts, etc.
- Totally customized URL (i.e. test.yourcompanydomain.com instead of test.hravatar.com) - Can set to skip name/email collection and/or confirmation or make it optional.
- Can set to skip test-taker demographic data collection or make it optional.
- Can set to skip test-taker release acceptance or make it optional.
- Can customize the test-taker release text.
- Can add a customized announcement or other information for the test taker.
- Can add a totally customized post-test survey or skip the standard post-test survey. - Can direct test-takers to a custom URL after the test is completed.

To use a custom testing portal, the portal Id must be specified when creating the test key. All methods allow the user to specify the desired test key. For the HR Avatar website-based methods of test authorization, the test portal is specified in the advanced Test Key options when creating the test key or the Test Key detail page after the test key has been created. For RESTful web service test key creation, or using parameters in an HTTP post transaction, the portal Id must be obtained ahead of time from HR Avatar and specified in the request.

Test Administration – Using any HR Avatar Testing Portal embedded in an iFrame

Some testing systems will want to embed the HR Avatar test within an iFrame for control. When this is done, the outer frame is typically served from a different domain than the contents of the iFrame which is served from <https://test.hravatar.com>. Therefore, messaging between the iFrame and the outer frame must be performed by the window.postMessage method and event listeners in the outer

frame. To accommodate this communication, the HR Avatar testing pages will send the following messages:

Testing Page in iFrame	Message Call
Test Page fully loaded in browser	'simpageloaded'
Test page –when an HR Avatar test is in progress	When the test first enters a status of 'complete', will send: 'imocomplete'
Test page –when an HR Avatar test is in progress	When a test taker clicks the exit button inside the IMO, will send: 'doexitmodulecalled'
Test page – when an HR Avatar test is in progress	When user clicks a response that increments the percent complete value, will send a JSON object (as text) that contains the updated percentcomplete value. Example: '{percentcomplete:54.5}' This can be parsed into a json object.
Test page – when the HR Avatar test reaches 100% complete AND the result XML has been saved on the server successfully.	'finaldatasavecomplete'
Exit page (exit button exposed)	When page loads, will send 'exitpageloaded'
Exit page (exit button exposed)	When exit button called, will send 'exitbuttonclicked'
Log messages sent by the IMO for troubleshooting and miscellaneous tracking.	'imologmsg level=' + level + ' msg=' + msg Levels: 0=Error, 1=Warning, 2=Info

Outer frames can access these messages by setting an event listener as follows:

```
window.addEventListener("message", iframeMessageFcn, false);
```

Then you can set a function to parse the message:

```
function iframeMessageFcn( event )
{
    var msg = event.data;

    // do something with the message
    if( msg == 'imocomplete' )
```

```
    alert( 'test entered completed status' );  
}
```

This can be used to update status bars in the outer frame, or to determine when the test is complete and ready to be removed from a dynamic webpage.

Test Authorization and Administration – EMBED

Embedding an HR Avatar assessment into a webpage on a company website or job board can be as simple as embedding HTML provided by HR Avatar into the web page that will “host” the assessment. A possible use of this capability might be making a test available to applicants through an online registration process open to the public such that anyone who reaches a certain step can take the test without delay.

The main steps for directly embedding a test into a webpage are:

1. Select the test.
2. Obtain the HTML to embed the test from HR Avatar (via support@hravatar.com). We will call and confirm several settings, then send you the code.
3. Place in web page. Modify any dynamic parameters that may be necessary for your requirements.
4. Optionally, implement a `doExitModule()` javascript method on the webpage to handle what to do next after a user completes the test.

When embedded in this way, whenever a user’s web browser loads the web page with the test embedded, either a new test event will start or a partially complete test event will be resumed, depending on the parameters that have been inserted dynamically into the HTML. A full list of parameters is provided below. In the background, the test object sends the response data back to HR Avatar. While taking the test, the user never leaves your webpage. When the test is completed, the test will execute a ‘`doExitModule()`’ javascript method on the page, which signals to the page that the test is complete and the system should move to the next logical step in the process.

Once a directly embedded test is completed, HR Avatar will score the test in the same way as if it were performed via any other method. Results will be emailed or texted per the initial settings. Results are available 24x7 via the company account on the HR Avatar website.

Sample embed HTML is provided below. Note that there is some HTML code that goes in the head section and some that goes in the body section specifically where the assessment should appear within the webpage.

```
<!-- PLACE IN HEAD SECTION -->  
<meta name="viewport" content="width=960" />  
<script id="cf5_corescrip" type="text/javascript"  
src="http://cfmedia.clicflic.com/web/misc/hybrid/clicflichybrid_1.js"></script>  
<script id="cf5imoscrip_1501" type="text/javascript"  
src="http://cfmedia.clicflic.com/web/a/1001/4/reFusqMUJ3Q-/cf_json_imo.js"></script>  
<script type="text/javascript">  
var cf_il501_prms = {
```

```
dirtstcode: encodeURIComponent('CRa8L0B08bA*'),
fn: encodeURIComponent('Michael'),      ln:
encodeURIComponent('Jones'),
em:encodeURIComponent('mike.jones@yourdomain.com' ),
sv10:'0' }; </script>
```

```
<!-- PLACE IN BODY SECTION WHERE TEST OBJECT SHOULD APPEAR -->
<div id="cf_hybdiv_1501"
style="position:relative;width:960px;height:568px"><noscript>Your web browser must
support Javascript in order to view this content. Please enable javascript in your
web browser, or shift to a different web browser that supports javascript and then
try again.</noscript></div>
```

The html code will contain a javascript object definition, in JSON format (`cf_i1501_prms` in the example code above), that contains all startup parameters. These parameters will differ depending on your specific needs. HR Avatar staff will assist you in configuring the parameters, as there is significant flexibility. The name of this object in the example code above is 'cf_i1501_prms' for direct test embedding.

Some of the key parameters include:

Parameter	Required	Description
dirtstcode	Required unless eventid is provided.	Set to values provided by HR Avatar. This code indicates to HR Avatar's system specifically which account is requesting this test, and which test should be given.
eventid	Optional	This is the HR Avatar identifier for the test key obtained when using the HR Avatar RESTful web services API to create a test key before starting the test.
fn	Optional	(Optional) First name of the test-taker. Needed by HR Avatar for the PDF report that is created and for online reporting via the HR Avatar Website. If not provided, a random text string will be generated, unless the parameter sv10 is set to 1, in which case the test will ask the test taker for his or her name and email before proceeding. Do not include here if API is used to obtain a test key, include it in the API call instead.
ln	Optional	Last name of the test-taker. Needed by HR Avatar for the PDF report that is created and for online reporting via the HR Avatar Website. If not provided, a random text string will be generated, unless the parameter sv10 is set to 1, in which case the test will ask the test taker for his or her name and email

		before proceeding. Do not include here if API is used to obtain a test key, include it in the API call instead.
em	Optional	Email of the test-taker. Needed by HR Avatar for the PDF report that is created and for online reporting via the HR Avatar Website. If not provided, a random text string will be generated, unless the parameter sv10 is set to 1, in which case the test will ask the test taker for his or her name and email before proceeding. Do not include here if API is used to obtain a test key, include it in the API call instead.
altevtref	Optional	Unique identifier for this test event on YOUR testing system (analogous to ClientOrderId in REST). This is used to ensure that if there is a restart of a partially completed test, the system can reload all responses that have been completed so far. Note that this value must be a unique for all test events conducted from the 3 rd party system. When this value is included, results can be obtained using the HR Avatar web services API. Do not include here if API is used to obtain a test key, include it in the API call instead.
xref	Optional	Unique identifier for this test taker on YOUR testing system (analogous to UserReferenceId in REST). This is used to associate test events from the same user together within the HR Avatar data capture and scoring systems.
sv10	Optional	If set to 1, the test will confirm or request the test-taker's name and email. This is typically used when you don't know the name of the test taker before they start the test. The test will capture it and report it in the results.
reftime	Optional	This is the number of milliseconds since midnight 1/1/1970. Used to ensure accurate recording of elapsed time across restarts. Usually not needed.
rpu	Optional	This is a fully-qualified URL to which the HR Avatar system should push test results when ready via HTTP POST (analogous to ResultsNotificationUrl in REST).

Note that all string values should be encoded using the built-in encodeURIComponent() javascript method when embedding if they contain any non-alphanumeric characters.

Several of these parameters must be set dynamically for a specific test taker. A web programmer should be able to indicate which values can be set for your situation.

Test Results Distribution – WEBSITE

Viewing results via the HR Avatar website is easy. Simply log on via a secure login, select “Test Results” from the top menu bar, and modify search parameters to find the results you are looking for.

Note that no matter what method is used for test authorization, test administration, and test results distribution, the results are always posted to your online HR Avatar account.

Test Results Distribution – WEBSITE - Via email and SMS

This type of distribution occurs automatically when the test scores are completed.

Test Results Distribution - REST

The access point for this web service is:

<https://test.hravatar.com/tt/wsapi/assessmentstatus>

Consumers should use HTTP POST to send an XML document that is specified using the XSD at:

<https://test.hravatar.com/tt/api/AssessmentStatusRequest.xsd>

Results are returned in the form of an XML Document that confirms to the XSD at:

<https://test.hravatar.com/tt/api/AssessmentResult.xsd>

These XSDs are documented to indicate the purpose and format of each element. Note that any PDF score reports are also included in the XML document in Base 64 encoded format.

Note that the username and password included in the request document must be associated with a valid account administrator within your company account. Additionally, several fields, such as ClientId, must be provided by HR Avatar ahead of time.

Assessment Status Request – Error Code	Definition
1	System temporarily down for maintenance.
100	Unknown HR Avatar system error.
101	XML from request is empty.
102	ClientId.OrgId is invalid
103	Org associated with ClientId.OrgId is not in an active state.
104	Username is required
105	Password is required
106	Cannot authenticate username and/or password.

Assessment Status Request – Error Code	Definition
121	ClientId (HRA OrgId) mismatch between authUser and org
201	ClientOrderId (HRA eventRef) or UserArea.TestKey is required.
202	Could not find TestKey for UserArea.testKeyId
203	Cannot find TestKey.
204	TestKey doesn't contain any test events.
205	TestKey is not in appropriate status (testkey status type id) (typically is means that the test was not finished and scoring never started, or that the test key expired or was deactivated).
206	TestKey had a scoring error.

TestKey Status Codes	Definition
0	Active – the test key exists, but it has never been started.
1	Started – the test key has been started, but has not been completed by the test taker.
100	Completed – the test key has been completed by the test taker, but has not been scored.
101	Completed – pending external scoring. The test has been completed, but the system is waiting for an asynchronous scoring process (usually external), to complete.
105	Scoring Started – call external scores are completed and the system has started scoring the test key.
110	Scored – the scoring process has completed successfully, but reports have not yet been generated.
111	Reports Started – The process to produce PDF reports has started.
120	Reports Complete - The process to produce PDF reports has finished successfully.
130	Distribution Complete – Any messaging or posting of results for this test key have been completed.
131	Distribution Error – There was an error distributing the results.
201	Expired – The expiration date occurred prior to the test being started.

TestKey Status Codes	Definition
202	Deactivated – The test key was manually deactivated by an administrator.
203	Scoring Error – The test key is in an error status because a problem occurred during scoring.
204	Report Error – The test key is in an error status because a problem occurred during report generation.

Test Results Distribution - HTTP

When obtaining a Test Key via RESTful web service or when embedding parameters in the redirect HTTP request that forwards the test taker to the testing system, a value can be set for a URL to post test results to when they are ready. When this URL is present in a test key, the HR Avatar system will automatically send an HTTP POST transaction to that URL containing the results in XML format, including the PDF report, which is Base 64 Encoded and placed into the XML document. These results conform to the XSD at: <https://test.hravatar.com/tt/api/AssessmentResult.xsd>

The XML format for the results report is the same as that used above in the pull method using RESTful web services.

PART III – TEST SECURITY

The following features are in place to ensure the integrity and security of our testing systems and data:

Feature	Description
Event Id Verification	Will shutdown a test if an unauthorized eventid is used to start a test. HR Avatar tests use a hard-coded process to verify the provided Test Key ID with a verification server to ensure it is valid. If it is determined that the Test Key ID is not valid, the test will not proceed.
Browser/Platform Change Wait Period	Requires a 5 minute wait period before you can reload a test in a different browser or on a different device. This prevents cheaters from sharing a test across two devices.
Multi-Test in same browser prevention	Does not allow multiple tests to be administered at the same time within different windows or tabs of the same browser. This prevents data crossover and corruption.
IP Address recorded, along with location of test-taker	Helps detect cheating.
Item Randomization	Where appropriate, items are randomized to prevent test takers from passing answers to one another.
Secure Sockets Layer Communication	<ul style="list-style-type: none"> • The HR Avatar website is only accessible via Secure Sockets Layer (SSL) communication using the HTTPS protocol. This protects passwords and data for all users conducting testing via the HR Avatar website. • All RESTful web services and automatic test key generation and score reporting transactions are conducted via HTTPS. • All media and test software used within test-taker web browsers during testing is transmitted via HTTPS. • The HR Avatar testing system is accessible via HTTPS only.

Additionally, though it is not covered in detail here, HR Avatar also makes use of various features within the Amazon Web Services (Amazon AWS) system to ensure tight system security. For instance, all servers use an extra layer of security, provided by Amazon, that restricts logon access to database and operating systems to specific IP addresses only and limits communication ports to only those needed for test administration.

APPENDIX A – Obtaining The Test Catalog by RESTful Web Service

The access point for this web service is:

<https://test.hravatar.com/tt/wsapi/assessmentcatalog>

Consumers should use HTTP POST to send an XML document that is specified using the XSD at:

<https://test.hravatar.com/tt/api/AssessmentCatalogRequest.xsd>

Results are returned in the form of an XML Document that confirms to the XSD at:

<https://test.hravatar.com/tt/api/AssessmentCatalogResponse.xsd>

Note that the username and password included in the request document must be associated with a valid account administrator within your company account. Additionally, several fields, such as ClientId, must be provided by HR Avatar ahead of time.

API Error Codes:

Assessment Catalog Request – Error Code	Definition
1	System temporarily down for maintenance.
100	Unknown HR Avatar system error.
101	XML from request is empty.
102	ClientId.OrgId is invalid
103	Org associated with ClientId.OrgId is not in an active state.

APPENDIX B – Posting Result XML to HR Avatar directly for scoring

This is an advanced topic. Most users will not need to utilize this feature.

Additionally, please note that your account must be pre-authorized by HR Avatar to use this feature.

In certain circumstances, it is advantageous to capture result XML separately from the HR Avatar servers during test administration and then send it to HR Avatar at a later date/time for scoring. The AssessmentOrderRequest feature allows you to perform this task.

By embedding the resultXML into the AssessmentOrderRequest, HR Avatar will receive the resultXML and recognize that the test event has already occurred offline. The system will then perform all necessary credit authorization and storage so that the event will be scored as if it were administered by the HR Avatar system. Results can be obtained through an automatic HTTP POST push from HR Avatar if specified in the AssessmentOrderRequest, or via the AssessmentStatusRequest web service.

APPENDIX C – Downloading a single-use .Zip file of a Sim

This is an advanced topic. Most users will not need to utilize this feature.

Additionally, please note that your account must be pre-authorized by HR Avatar to use this feature.

In some cases, you may want to administer a sim offline to a test-taker. This can occur when there is limited or no Internet access available at testing time.

Since HR Avatar tests are all client-side objects, they run within the user's web browser and require very little programming on the server side to operate. Partners

HR Avatar allows you to download a .Zip file containing all files needed to run a Sim. This file can be unzipped to a specific directory on a 3rd party web server and the sim can be embedded into a web page served by the same or a different 3rd party web server. In this way, the sim can be operated on a LAN-based environment without direct access to the Internet. The web server must be coded to capture and store the result XML from the sim and save it for forwarding in the future to HR Avatar for scoring.

The FileExportTypeId value in the AssessmentOrderRequest is used to obtain a url to download this zip file. After a successful request, the download URL is found in the AssessmentOrderAcknowledgement in the field: FileExportUrl

Important Notes:

1. Single-Use Zip files ONLY RUN IN FLASH. All web browsers must have Adobe Flash (10.0.0 or higher) installed. Additionally, the code for embedding these files is slightly different. Please refer to the sample javascript in the downloaded Zip files for examples of how to do this.
2. The FileExportUrl is not ready for download for about 15 minutes following the initial request.
3. The Sim Zip file will only operate if the eventid parameter provided in the startup parameters when the sim is launched is exactly equal to the TestKey value included in the AssessmentOrderAcknowledgement. Any other eventid will result in an error.
4. The Sim Zip file will only operate for 48 hours after the initial AssessmentOrderRequest. If the test is not completed before 48 hours have elapsed, an error will occur.
5. The event verification feature of HR Avatar sims is disabled for single-use zip files.

Once the assessment is started, the resultXML can be either sent directly to the HR Avatar servers in the normal way (the hosting webpage must be configured to do this), or can be captured by the 3rd party system and sent to HR Avatar for scoring at a later time (see Appendix B) by sending another AssessmentOrderRequest with the resultXML included this time. Note that the same ClientOrderId should be used in this scoring request to ensure

that the original record is reused and additional test credits are not charged to your account.

The most typical steps involved in using this feature are:

1. 3rd Party System uses AssessmentOrderRequest to obtain a TestKey and sim zip file download URL.
2. **After waiting at least 15 minutes**, 3rd Party system downloads Zip file from the download URL and unzips to a new directory. A new directory should be used for each downloaded Zip file. Never place files from more than one downloaded sim in the same directory.
3. 3rd Party system administers test to test taker, using the TestKey value as eventid parameter, the path to the Sim directory to which the files were unzipped as the medialoc parameter, and capturing resultXML and storing it within the 3rd party system.
4. If the test is restarted, the 3rd party system must make the previous resultXML available to the restarted Sim so that it starts where it previously left off. Otherwise, it will start at the beginning.
5. Sometime after the test is complete, the 3rd Party system sends the result XML back to HR Avatar for scoring, using the AssessmentOrderRequest (see Appendix B) with the same ClientOrderId.
6. Results are either pushed to a URL via HTTP POST on the 3rd party system if the ResultsNotificationUrl element is set in the AssessmentOrderRequest. Otherwise, results will be posted to the online HR Avatar account and will be available for download via the AssessmentStatusRequest web service.

APPENDIX D – Additional Information about Direct Test Embedding

What if you could just embed an industrial-strength test into ANY WEB PAGE without using frames or pop-ups, or redirecting the user to a testing system URL? Well, now you can.

Virtually all legacy testing applications require tight coupling between a web server and the test-taker's web browser. The test taker answers a question and then sends the response back to a server, which provides a new web page containing the next question. This process worked great in the days of simple text-based questions on PCs and workstations. However, in order to blend rich media, mobile technology, and intelligent branching into testing, a change in architecture was required. In the new approach, the tests are controlled by software that runs inside the client's web-browser and are not directly controlled by or dependent on a server application. Instead, they send response data back (in the background) to a server as the test taker progresses. They also query a server to ensure that a test is authorized properly before continuing.

While this 'difference' may not sound all that exciting to most test users, it enables you to embed the entire test into a webpage simply by embedding a very small amount of HTML. This is similar to embedding an image hosted on one website into a webpage hosted by another.

Directly embedding a test into your website, applicant tracking system, or learning management system makes the testing process completely seamless to the test-taker and keeps the test-taker experience under the control of your system, not the testing system. There are no more frames and iframes, no more hand-offs, no more limitations due to concerns about cross-domain security, no more redirects across systems.

Put another way, with direct test embedding you can *embed* the test into any webpage you want – job posting, application process, etc. and never lose the candidate to another system.