

---

# **Project - Partner Test Guidelines**

**HEI Course Database Web Services**

## TABLE OF CONTENTS

<b>1. DOCUMENT OVERVIEW .....</b>	<b>3</b>
DOCUMENT PURPOSE.....	3
RELATED DOCUMENTS .....	4
TERMINOLOGY .....	4
<b>2. BACKGROUND INFORMATION.....</b>	<b>5</b>
TESTING.....	5
<i>Unit Testing</i> .....	5
<i>System Testing</i> .....	5
<i>Operational Acceptance Testing (OAT)</i> .....	5
<i>Known Defects/Concerns</i> .....	5
<b>3. TEST SYSTEM.....</b>	<b>6</b>
SCOPE.....	6
THE TEST APPLICATION SYSTEM.....	6
TEST DATA .....	6
SLC USER LOG-INS AND PASSWORDS .....	6
APPLICATION USE .....	7
<b>4. PARTNER SUPPORT.....</b>	<b>8</b>
1 <sup>ST</sup> LINE SUPPORT .....	8
<i>HEI</i> .....	8
<i>HEI Technology Provider</i> .....	8
2 <sup>ND</sup> LINE SUPPORT .....	8
SLA AND ESCALATION .....	9
<b>APPENDIX A – CONTACTS .....</b>	<b>10</b>
<b>APPENDIX B - FAQ.....</b>	<b>11</b>

# 1. Document Overview

## **Document Purpose**

---

Each year, in order to approve loans for students, SLC need to know details of all courses offered by the various Higher Education Institutions (HEI). SLC systems need to be updated with the new academic year's course details prior to loan applications being received for that year.

Since SLC systems are web enabled, they can accept instructions from another computer using the web's Hypertext Transfer Protocol (HTTP) communication protocol, to run programs, passing in specifically defined parameters. These are known as web services and a specific set of rules called Simple Object Access Protocol (SOAP) has been defined to describe how they need to be called.

SLC is now offering a range of web services to users of the existing HEI Portal, which will allow HEIs to directly update SLC systems based on information held on their own respective systems and also to draw information down. This will replace the current system of extraction, uploading and passing information by couriered CD between the individual HEI and SLC offices.

When providing web services to external customers it is prudent that a test system is made available to allow the customers to perform acceptance testing.

This document provides information required by the HEI or their proxy service provider, when accessing the SLC test system for the purpose of customer acceptance testing.

This is a support and not a technical document; technical specifications for web service descriptions have already been issued to HEI partners and/or their technology service providers.

## Related Documents

Document Name	Doc Type	Connection with this document
<i>Course DB Web Services Technical Approach - v1.0 - External.doc</i>	<i>Technical Approach</i>	<i>Details the technical solution for implementing the changes</i>

## Terminology

Acronym/Term	Definition
HEI	Higher Education Institution, a body offering tertiary educational services
HTTP	Hypertext Transfer Protocol is the set of rules for transferring files (text, graphic images, sound, video, and other multimedia files) on the World Wide Web
Portal	A term, generally synonymous with <i>gateway</i> , for a World Wide Web site that users tend to visit as an anchor site
SOAP	Simple Object Access Protocol is a way for a program running in one kind operating system to communicate with a program in the same or another kind of an operating system by using the World Wide Web's Hypertext Transfer Protocol and its Extensible Markup Language (XML) as the mechanisms for information exchange.
Web	World Wide Web
World Wide Web	All the resources and users on the Internet that are using the Hypertext Transfer Protocol
WSDL	Web Services Description Language, an XML-based language that describes Web services and defining them as collections of network endpoints (or ports) and provides a way to access those services electronically
XML	Extensible Markup Language is a flexible way to create common information formats and share both the format and the data on the World Wide Web

## 2. Background Information

### ***Testing***

---

The following phases of testing are conducted by SLC ICT Systems Development to ensure the operability of web services on SLC systems.

#### ***Unit Testing***

Full unit testing and small integration testing are conducted by SLC developers, mainly using Oracle Web Services Manager, validating not only individual units of source code singly but also when grouped together in larger aggregates. The output of this forms the integrated system ready for system testing.

#### ***System Testing***

Full testing of all web services functionality is conducted by SLC system testers familiar with the functionality and design of the web services and the underlying HEI Portal. Testing is carried out on a pseudo-LIVE production system with desktop machines acting as clients.

A test harness is used to simulate messages being received by the web services host.

#### ***End 2 End Testing***

End-to-end testing is the process of testing transactions/business level products as they pass right through the single system, ensuring that all aspects of the business are supported: that the overall process flows as expected; that system components integrate together correctly; that the right information is passed between them.

A test harness is used to create the required HTTP headers and XML files for the individual tests, which will be received at the border router.

#### ***Operational Acceptance Testing (OAT)***

OAT testing undertaken falls into 3 categories:-

- Benchmark testing – here, establishing that baseline performance over a controlled period is within expected tolerances
- Stability testing – longer scenario with volumes acquired from benchmark test
- Stress testing – scenario with increasing volumes of users

User volumes are decided from Workload Models and system load created using a virtual user, load generator. Test scripts are developed, executed, and analysed using the HP LoadRunner test tool.

Due to the number of possible partners requiring to test the web services, it is likely that the Partner Testing scheme will be open for partner testing before all Operational Performance Testing is completed.

#### ***Known Defects/Concerns***

See Section 5 *FAQ - Troubleshoot*

## 3. Test System

### Scope

---

The purpose of providing this test system is to let individual HEI, or technology providers representing one or more HEI, to be able to perform functional and integration testing.

The functions being delivered as web services are:-

Get Course Data (Webservice)

- getCourseCatalog
- getCourse
- getLocation
- getInstitutionYear
- getQualificationsList

Submit Course Data (Webservice)

- submitCourseCatalog

Full details can be found in the document - Course DB Web Services Technical Approach - External

### The Test Application System

---

SLC has a dedicated test version of the HEI Portal, which can be used by HEI for external access. The system, we shall call it Partner Testing, is also used for our internal Learning and Development courses<sup>1</sup> so access to this, and is not exclusive.

The endpoint URL for connection to HEI Services running on Partner Testing is:-

- <https://trainingsecure.heservices.slc.co.uk/heicoursesWS/services/CourseServices>

Please note that all other technical information remains constant and as defined in the Web Services Description Languages(WSDL) document.

### Test Data

---

Each user of the test system will have access to a full year's course data for their institution. The information will be based on the last full year's validated information for that HEI.

### SLC User Log-Ins and Passwords

---

Partners testing on the system will need user specific log-ins and password to access it. It is important that these valid credential are included within your service request otherwise it will be rejected.

Log-in credentials will be supplied by our Business Services team, on request. Please send an e-mail to [hei\\_services@slc.co.uk](mailto:hei_services@slc.co.uk)

---

<sup>1</sup> no LIVE customer data exists on this environment

To	hei_services@slc.co.uk
cc	
bcc	
Subject	HEI Web Services Partner Testing - Log-in Required

Please note that we require to log a valid e-mail address for returning any error reports associated with the data load; unless we receive specific instruction to use a separate e-mail address, we will assume this is the same address, as was used to request the log-in credentials.

### ***Application Use***

---

The Partner Testing system is a 8.5 by 5 environment, which essentially means it is expected to be available most weekdays, between 09:00 and 17:30.

On occasions, however, the environment will be accessible outside these times, however, as no technical support exists to cover this period, so use should be avoided.

Again, on occasions, the environment may need to be taken off-line, between 09:00 and 17:30, for training releases.

Standard HTTP response status codes will be returned to service calls, which should provide an explanation of any connection problems.

If you are concerned that the service seems to have been down for an unacceptable period, could you please let us know and we can advise you of the current situation. Please send an e-mail to [hei\\_services@slc.co.uk](mailto:hei_services@slc.co.uk)

To	hei_services@slc.co.uk
cc	
bcc	
Subject	HEI Web Services Partner Testing - Services Unavailable

## 4. Partner Support

### 1<sup>st</sup> Line Support

---

#### **HEI**

There can be a number of reasons why a test will fail and the HEI should seek to eliminate localized faults first.

If a test appears to fail, double check that this simply isn't user error and also that you are using valid test data. Also, perhaps run the test again and see if you get the same error.

Once local issues have been ruled out, if your IT systems are managed via a technology provider, you should contact the provider to assist in the analysis of the issue.

If you run your own IT operation then you should contact SLC direct.

#### **HEI Technology Provider**

We hope that the majority of issues raised can be analyzed and fixed locally, and would seek your assistance in this with the respective HEI.

If it looks like you have a fault connecting to or using SLC's web services, please contact SLC direct.

### 2<sup>nd</sup> Line Support

---

If, after checking to ensure that there is no localized fault with the user operation, user data or user system, then the issue needs to be escalated to SLC. Please provide as much detail of the incident and the test case being performed, as possible. Please send an e-mail to [hei\\_services@slc.co.uk](mailto:hei_services@slc.co.uk)

To	hei_services@slc.co.uk
cc	
bcc	
Subject	HEI Web Services Partner Testing - Issue Found During Testing

You will receive an e-mail communication confirming that the incident has been logged and is being investigated. Our dedicated HEI unit will assess the problem and attempt to resolve it as soon as possible and respond direct.

---

## SLA and Escalation

---

While SLC will always strive to provide analysis and a workable solution to any issues encountered in as short a time as possible, there may be occasions, where this does not meet with the needs of the user.

Such occasions will hopefully be rare, however, we take all partner cooperation very seriously and would ask you to immediately address any matters of dissatisfaction with our Business Services Unit. Please send an e-mail to [hei\\_services@slc.co.uk](mailto:hei_services@slc.co.uk)

To	hei_services@slc.co.uk
cc	
bcc	
Subject	HEI Web Services Partner Testing - Please Expedite Issue Found During Testing

## Appendix A – Contacts

Please find below a summary of contacts outlined in this document:-

Requirement	Contact	Suggested Subject
Requesting a Log-in	<a href="mailto:hei_services@slc.co.uk">hei_services@slc.co.uk</a>	HEI Web Services Partner Testing – Log-in Required
Checking Service Availability	<a href="mailto:hei_services@slc.co.uk">hei_services@slc.co.uk</a>	HEI Web Services Partner Testing – Services Unavailable
Reporting an Issue	<a href="mailto:hei_services@slc.co.uk">hei_services@slc.co.uk</a>	HEI Web Services Partner Testing – Issue Found During Testing
Raising the priority of an issue	<a href="mailto:hei_services@slc.co.uk">hei_services@slc.co.uk</a>	HEI Web Services Partner Testing – Please Expedite Issue Found During Testing
General Enquiries	<a href="mailto:hei_services@slc.co.uk">hei_services@slc.co.uk</a>	HEI Web Services Partner Testing – General Enquiry

## Appendix B - FAQ

The following are answers to commonly asked questions, which may be useful as you conduct your testing:-

General Questions & How To's	
<b>Q</b>	<b>Do I have to download all data for an institution</b>
A	No, the user can 'get' data for individual courses
<b>Q</b>	<b>I didn't get an error when I submitted data; has my data fully validated</b>
A	Not necessarily, not receiving an error means that the data loaded to SLC systems correctly; there may still be problems with data validation
<b>Q</b>	<b>Are there any days more likely than others that the test system will be down</b>
A	No, however, we probably do the majority of our general environment maintenance on a Monday
<b>Q</b>	<b>Why should we address all queries to a mailbox rather than to a person</b>
A	The <a href="mailto:hei_services@slc.co.uk">hei_services@slc.co.uk</a> mailbox is constantly monitored by a number of people; individuals are a single point of impediment if in a meeting, on holiday, out to lunch etc. etc.

Troubleshoot	
<b>Q</b>	<b>I'm getting an error message when accessing a web service</b>
A	This could be for a number of reasons. Particular errors will point to particular faults e.g. server unavailable, wrong URL, invalid user id/password etc. etc.. Please check industry standard web server error listings to determine actual fault.
<b>Q</b>	<b>Why did I not receive an email after submission?</b>
A	An email will not be received if only a location or institution year is submitted via the Submit CourseCatalog. This is because validation is only done fully when an active course is submitted.
<b>Q</b>	<b>A Timestamp error has been returned</b>
A	The course data held probably doesn't match what is held with SLC. To fix this a GET Function should be preformed to correct the timestamp mismatch.