

**Tertiary Education
Commission**

Te Amorangi Mātauranga Matua



Key Information Set Data Service Guide (final)

TEO Published Information for Learners

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Te Amorangi Mātauranga Matua

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44 The Terrace

PO Box 27048

Wellington, New Zealand

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Authors

The Tertiary Education Commission

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1 Purpose of this guide

The Tertiary Education Commission has developed a KIS Data Service to enable tertiary education organisations (TEOs) easy access to the up-to-date Key Information Set (KIS) data so it can be displayed on the qualification pages on your websites.

This guide tells you how you connect to the KIS Data Service, your data connection for your website. The document is written for the technical staff that will connect your website to the KIS Data Service. The assumption is you have already designed the KIS for your qualification pages and are ready to retrieve the data from the KIS Data Service.

This guide covers:

- › an overview of the KIS Data Service and the environments available to you
- › the methods available to connect to the KIS Data Service
- › the steps needed to develop and implement the connection method (and example code)
- › string and number representations for the KIS data
- › Frequently Asked Questions (FAQs).

2 About the Key Information Set (KIS)

The Key Information Set is a set of information learners can view on your website to help them make more informed tertiary education investment decisions on what and where to study.

The KIS is displayed on the qualification pages of your website and is made up of two sections with the following data:

- information available at a TEO qualification level ie, *Entry Requirements, Duration, Tuition Fees, Student Success*
- information available at a national level for young graduates ie, *Earnings, In employment, In further study*

3 The KIS Data Service design

3.1 Overview

The TEC has developed the KIS Data Service to aggregate all the data required for the Key Information Set. The KIS Data Service retrieves this data to save TEOs having to manually input or resubmit data already collected.

KIS data is calculated from core data held within the TEC's Data Warehouse and made available for use through the KIS Data Service (*Figure 1*). After the data is collated it is moved into the Information for Learners database. The information is then visible to the public through your website.

The KIS Data Service uses OData protocol which allows you to query the KIS Data Service and retrieve the data for the KIS using the URL. The KIS data is presented as a complete package ie, all fields for a qualification will be returned as an aggregated set and not individually, and will be refreshed on a daily basis. The refreshed data will be available to you every day. The fields returned are described in the *String and Number Representations for the KIS* table.

The TEC also hosts KIS web pages where you can search for your qualifications and check the most up-to-date KIS data has made it to your website (see *Data calculations and timeframes for updates*).

The data aggregation service infrastructure is set up as a highly available service, load balanced and replicated across multiple servers to distribute the workload evenly and eliminate any single points of failure. Any required maintenance will be carried out independently on each set of servers meaning that scheduled maintenance outages will not be needed.

3.2 Environments

There are two TEC environments available:

1. Sandbox – connect to this from your test environment (see *Figure 1*)

This environment is an OData service that contains test data (it is not connected to the TEC Data Warehouse). It is not load balanced or replicated. It has been set up to allow you to test your connection and to connect your test environment to. This environment is not available to the public. You will need to provide your IP address and request access.

2. Production – connect to this from your live site (see *Figure 2*)

This environment is an OData service and connects to the TEC Data Warehouse to provide live data. It is load balanced and replicated. It has been set up to allow you to connect your live environment to display the KIS on your qualification pages.

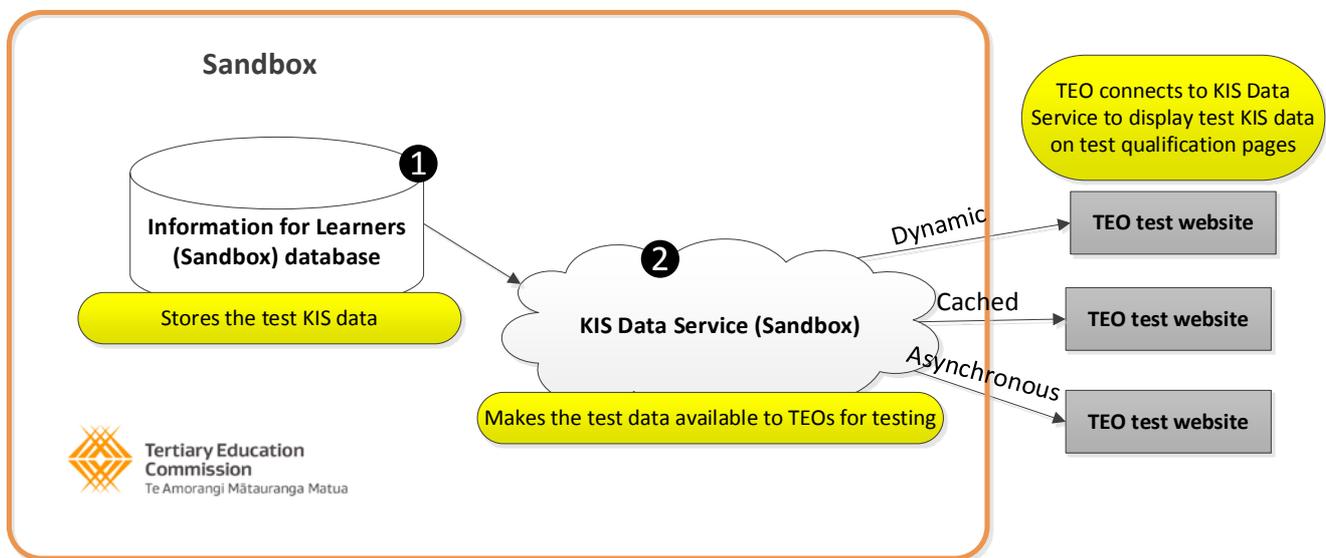


Figure 1: TEC Data Aggregation Service Sandbox

Table 1: Description of the TEC Data Aggregation Service Sandbox components

Component	Description
1 Information for Learners (Sandbox) database	The Information for Learners database stores test data needed for the Key Information Set.
2 KIS Data Service (Sandbox)	The KIS Data Service makes the data in the Information for Learners database available to TEOs for testing.

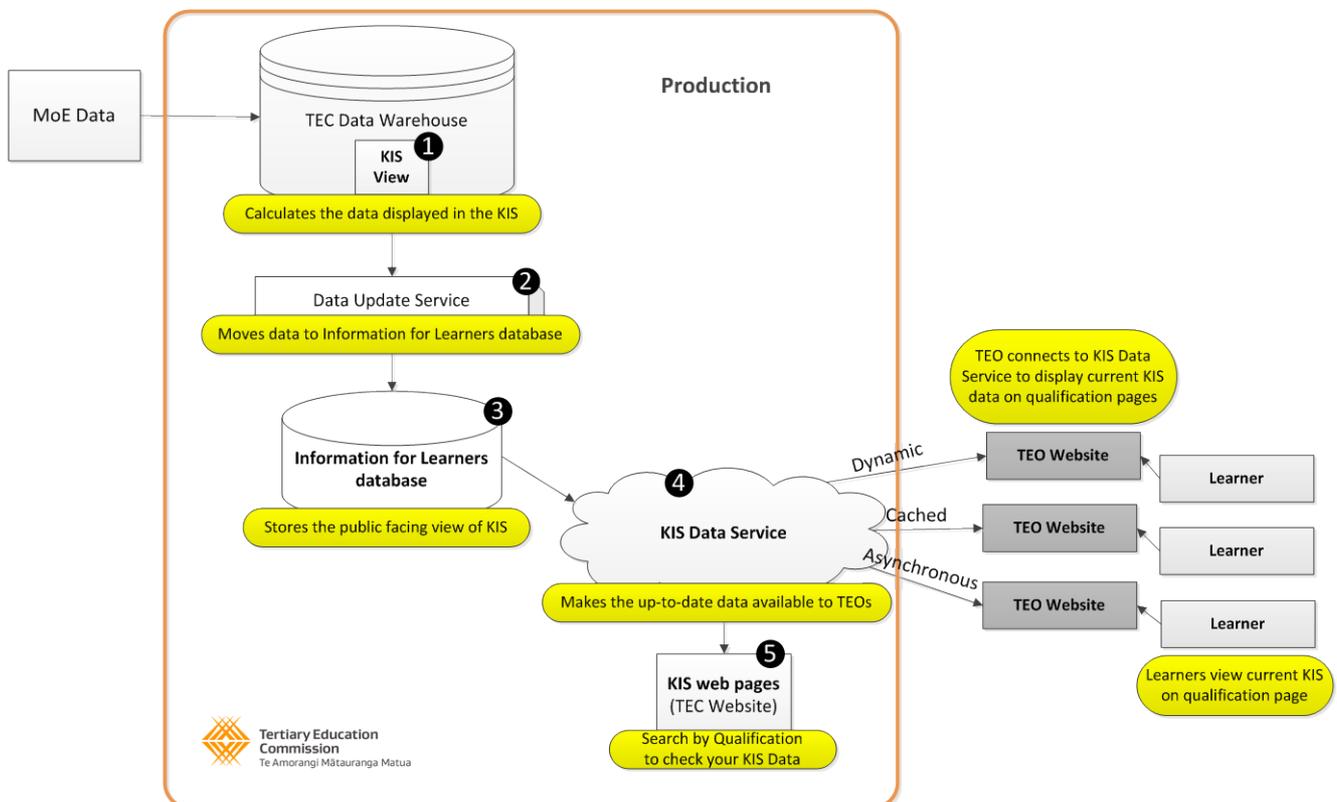
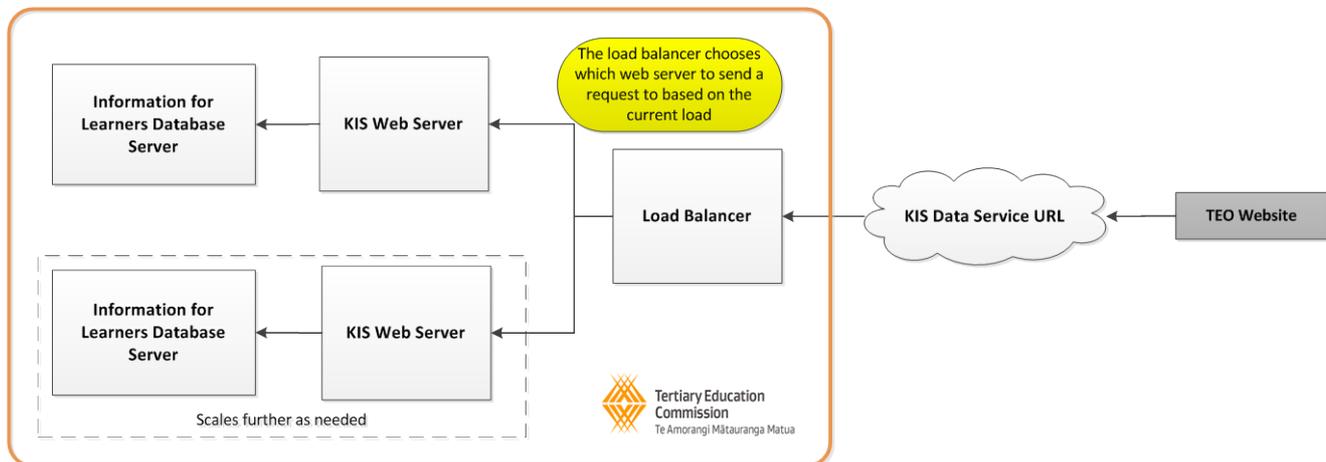
**Figure 2:** TEC Data Aggregation Service Production environment

Table 2: Description of the TEC Aggregation Service Production components

Component	Description
① KIS View	The KIS View in the TEC Data Warehouse retrieves data from source tables, collates and performs calculations, and makes the results available to the Data Update Service.
② Data Update Service	The Data Update Service retrieves data from the KIS View within the TEC Data Warehouse, converts data as necessary for display and stores the resulting information in the Information for Learners database.
③ Information for Learners database	The Information for Learners database stores publicly available information needed for the Key Information Set and previous versions of that information.
④ KIS Data Service	The KIS Data Service makes the data in the Information for Learners database available to TEOs, other organisations and members of the public.
⑤ KIS web pages	Web pages on the TEC's public website allow TEOs to view the KIS for each qualification (and those TEOs that do not have qualification pages to connect to).

**Figure 3:** TEC server configuration showing load balancing for the Production environment

4 Connecting to the KIS Data Service

4.1 Choose a connection method

There are three methods for connecting to the KIS Data Service and updating the Key Information Set on your qualification pages – **Dynamic**, **Cached** and **Asynchronous**. You should choose the most relevant method dependent on the type of website you have (*Table 2*).

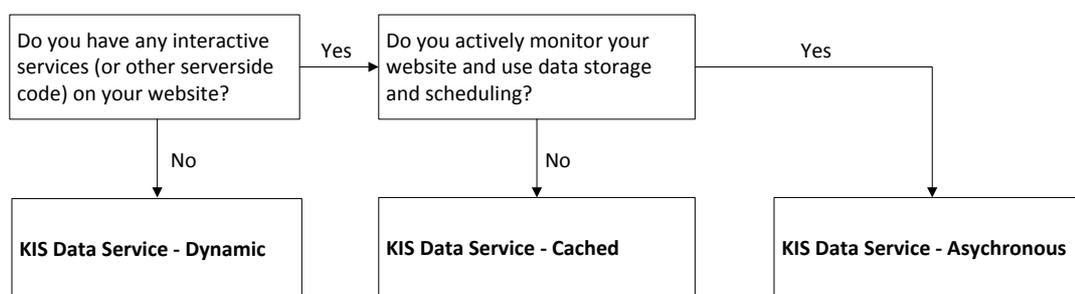


Figure 4: Decision steps for choosing your connection method

Table 3: Choosing the right connection method

Connection Method	Description	Who is it for?	Be aware...
KIS Data Service - Dynamic	The KIS data on a TEO's website is refreshed each time a learner visits the qualification page.	Easy to code for TEOs with websites that only display information. Learners always see the most up-to-date information available.	There may be a slight delay in displaying the data for learners. Less suitable for websites with a large number of qualification pages.
KIS Data Service - Caching	The KIS data on the TEO's website is saved after initial download and refreshed at regular intervals determined by their website.	For TEOs that have interactive website capability eg, enrolments, qualification searches, ask a question.	More involved coding required for implementation. Learners may not see the most up-to-date information.
KIS Data Service - Asynchronous	The TEO schedules when KIS data is refreshed on their website using their scheduling capability.	Maximum control for TEOs that want to pull data at specific times. TEOs can store data off the website for historical analysis.	Relatively complex coding required for implementation. Not suitable for TEOs that do not proactively monitor their websites.

4.2 Set up your connection method

Follow the instructions to set up your preferred connection method to the KIS Data Service.

- **Dynamic KIS Data Service**
- **Cached KIS Data Service**
- **Asynchronous KIS Data Service**

Important: Don't forget to add in the *Additional requirements* and StudyLink links as these are not provided by the KIS Data Service (see *Data calculations and timeframes for updates*).

While there are a number of ways to connect to an OData service with strongly typed objects eg, by generating a proxy, it is suggested that you instead use a more dynamic connection method that allows you to retrieve just the fields you need.

The example code shows one way to do this. Connecting in this way helps ensure that any future additional Key Information Set fields do not adversely affect your site.

4.3 Need help?

Call the TEC Sector Helpdesk on 04 4625201 (9.00am to 5.00pm Mon to Fri) or email sectorhelpdesk@tec.govt.nz

5 KIS Data Service connection set-up instructions

5.1 Dynamic connection method

5.1.1 How to connect to the KIS Data Service

There are two options for connecting to the KIS Data Service using the dynamic connection method:

1. Copy and adapt the TEC's example code (below); or
2. Write your own code using either the TEC dynamic or cached code as an example (refer to the **String and Number Representations** table for the field names to use). If you use the TEC code as an example, the *Dynamic* section shows a client-side example and the *Cached* section shows a server side example.

5.1.2 Copy and adapt the TEC's example code (where highlighted)

1. Add 'id' attributes to HTML tags in your design where you want KIS data to appear.
2. Copy and paste the JavaScript code from the example code to the bottom of your qualification page.
3. Update the URL in the code:
 - a. to connect to Production use – <http://info4learners.tec.govt.nz/>
 - b. to connect to the Sandbox for testing purposes use – <http://i4l-pilot.tec.govt.nz/>
4. Update the EDUMIS number and qualification code in the url.
5. Update the id's in the JavaScript.

1	Add 'id' attributes to HTML tags in your design where you want the KIS dataset to appear	<pre><p id="courseCompletion"></p></pre> <p>Or use:</p> <pre><tr><td title="The minimum amount of time to complete this qualification." id="duration"></td></tr></pre> <p>NB: You need an id for each of the KIS fields, and one to display a message if the data cannot be retrieved. Our code uses the following ids but you can use different names if you prefer:</p> <ul style="list-style-type: none"> • <code>minimumEntryRequirements</code> • <code>duration</code> • <code>governmentSubsidy</code> • <code>studentFees</code> • <code>courseCompletion</code> • <code>employment</code> • <code>furtherStudy</code> • <code>onBenefit</code> • <code>earnings</code> • <code>upperQuartileEarnings</code> • <code>lowerQuartileEarnings</code> • <code>errorMessage</code>
2	Copy and paste this JavaScript code to the bottom of your qualification page - after the </html> tag.	<pre><!--Reference the JQuery JavaScript library - this library is also available to download for free from https://jquery.com/ --> <script src="https://code.jquery.com/jquery-1.11.3.min.js"></script> <script type="text/javascript"> //This is the code that calls the KIS Data Service to retrieve Key Information Set data when the page is loaded. //The url includes the OData query - in this case getting Key Information Set data for a particular provider and qualification. \$(function () { var url = " http://info4learners.tec.govt.nz/KeyInformation?\$filter=ProviderCode_eq</pre>

		<pre>'1234' and QualificationCode eq 'MYQUAL''; //This tells the browser it is ok to call a web service that isn't //part of your website - required for Internet Explorer \$.support.cors = true; \$.getJSON(url, function (result) { displayKisData(result); }) //If something goes wrong during the call, tell the user we can't display the data .fail(function () { \$("#errorMessage").text("Sorry, this information is not available right now. Please check back later."); }); }); //This function is called when the call to the KIS Data Service returns information function displayKisData(data) { //We know that only one Key Information Set should be returned for a single qualification, so we check that is the case if (data.value.length === 1) { var keyInformationSetData = data.value[0]; //Grab the values we are interested in and display them in the right places on the page using the ids defined in the html above \$("#minimumEntryRequirements").text(keyInformationSetData. MinimumEntryRequirements); \$("#duration").text(keyInformationSetData.Duration); \$("#governmentSubsidy").text(keyInformationSetData.GovernmentSubsidy); \$("#studentFees").text(keyInformationSetData.StudentFees); \$("#courseCompletion").text(keyInformationSetData.CourseCompletion); \$("#employment").text(keyInformationSetData.GraduatesInEmployment); \$("#furtherStudy").text(keyInformationSetData.GraduatesInStudy); \$("#onBenefit").text(keyInformationSetData.GraduatesOnBenefit); \$("#earnings").text(keyInformationSetData.MedianEarnings); \$("#upperQuartileEarnings").text(keyInformationSetData.UpperQuartileEarning s); \$("#lowerQuartileEarnings").text(keyInformationSetData.LowerQuartileEarning s); } else { //If we got no results, or more than one, tell the user we can't display the data \$("#errorMessage").text("Sorry, this information is not available right now. Please check back later."); } } </script></pre>
3	Update the EDUMIS number and qualification code in the URL to match yours	<pre>> var url = " http://info4learners.tec.govt.nz/KeyInformation?\$filter=ProviderCode eq '1234' and QualificationCode eq 'MYQUAL'";</pre>

4	If you use different names for your ids, update the ids in the JavaScript code to match yours:	<pre> \$("#minimumEntryRequirements").text(keyInformationSetData. MinimumEntryRequirements); \$("#duration").text(keyInformationSetData.Duration); \$("#governmentSubsidy").text(keyInformationSetData.GovernmentSubsidy); \$("#studentFees").text(keyInformationSetData.StudentFees); \$("#courseCompletion").text(keyInformationSetData.CourseCompletion); \$("#employment").text(keyInformationSetData.GraduatesInEmployment); \$("#furtherStudy").text(keyInformationSetData.GraduatesInStudy); \$("#onBenefit").text(keyInformationSetData.GraduatesOnBenefit); \$("#earnings").text(keyInformationSetData.MedianEarnings); \$("#upperQuartileEarnings").text(keyInformationSetData.UpperQuartileEarning s); \$("#lowerQuartileEarnings").text(keyInformationSetData.LowerQuartileEarning s); \$("#errorMessage").text("Sorry, this information is not available right now. Please check back later."); </pre>
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5.1.3 Frequently Asked Questions

Q	Do I have to use .net as my website technology?
A	<i>No. You can use any technology in line with your existing website.</i>
Q	Can I use the Dynamic connection method on server side instead of JavaScript?
A	<i>Yes. Look at the caching example for ideas on how to do this.</i>
Q	If we are connecting dynamically and the KIS Data Service goes down, will it break our website?
A	<i>The example code provides an example of the basic code you need to call and retrieve the KIS data and an error message if the service is down. You will need to add specific code for your existing technology to ensure any such eventualities are covered, ie the rest of your website still displays and an error message is only shown in the KIS section.</i>
Q	What should be displayed if the KIS Data Service is down?
A	<i>The example code displays 'Sorry, this information is not available right now. Please check back later.' if the service is down. Please make sure your code displays the appropriate error messages.</i>
Q	Does the KIS Data Service provide everything required for the KIS presentation?
A	<i>Data for all data fields is retrieved from the KIS Data Service. Don't forget to add in the 'Additional requirements' and StudyLink links as these are not provided by the KIS Data Service (see Data calculations and timeframes for updates).</i>

5.2 Cached connection method

5.2.1 How to connect to the KIS Data Service

To connect to the KIS Data Service using the *Cached* connection method you will need to write code to:

1. Retrieve data from the KIS Data Service and display it on your website (using the code below as an example only).
2. Implement your choice of caching mechanism to cache the results of calls to the KIS Data Service (use the code below as an example only).

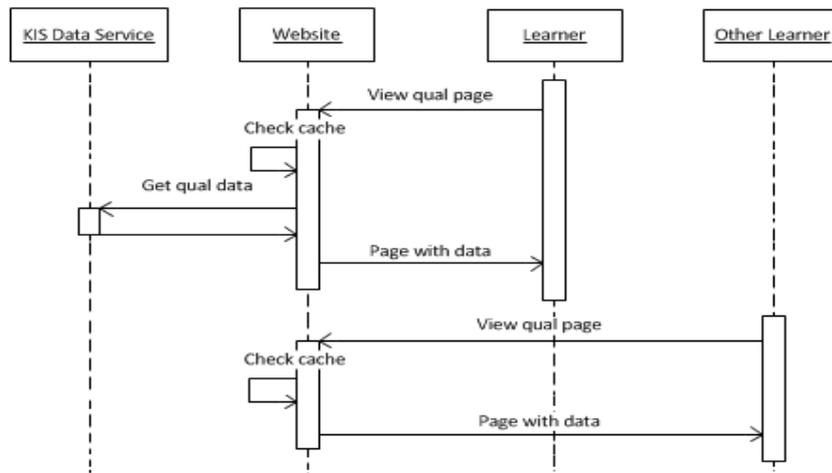


Figure 4 - shows the ideal sequence of events for a caching solution

5.2.2 TEC example code

Note: The example code shows one way to do this. It should only be used as a model of the steps to follow and not just copied, as the code will be dependent on the technology you use.

The example code was built in C# using ASP.NET MVC 4.5. While there are a number of ways to connect to an OData service with strongly typed objects eg, by generating a proxy, it is suggested that you use a more dynamic connection method that allows you to retrieve just the fields you need. Connecting in this way helps ensure that any future additional Key Information Set fields do not adversely affect your site.

Remember to update the URL in the code to point to the correct OData service:

- a. to connect to Production use – <http://info4learners.tec.govt.nz/>
- b. to connect to the Sandbox for testing purposes use – <http://i4l-pilot.tec.govt.nz/>

Retrieve data from the KIS Data Service and display it on your website

```

/// <summary>
/// This method retrieves Key Information Set data from the KIS Data Service.
/// It uses the Simple.OData.Client library to connect to the service - this
/// library can also support strongly typed connections if desired.
/// </summary>
/// <returns>A Key Information Set for the qualification requested</returns>
private KeyInformationSet GetKeyInformationData()
{
    //Set up the client to connect to the web service url
    var client = new ODataClient("http://info4learners.tec.govt.nz/");

    //Pass an OData query to the service and get the result (the library we
    //are using requires this to be an asynchronous call)
    //This query asks for Key Information Sets where the provider number and
    //qualification code match the ones we are using
  
```

```

var oDataResult = Task.Run(async () => await client
    .FindEntriesAsync($"KeyInformation?$filter=ProviderCode eq
        '{_edumisNumber}' and QualificationCode eq
        '{_qualificationCode}'"))
    .GetAwaiter().GetResult().ToList();

//We know that there should only be one Key Information Set record for a
//qualification, so any other result means something isn't right
if(oDataResult.Count != 1)
{
    throw new Exception($"OData call for a Key Information Set for
        edumis {_edumisNumber} qualification {_qualificationCode}
        returned {oDataResult.Count} records.");
}

//Pull the values we are interested in out of the result and put them
//into a model class the view can use
//We can safely use First() because we checked previously there was only
//one record returned
var kis = new KeyInformationSet
{
    CourseCompletion =
        oDataResult.First()["CourseCompletion"].ToString(),
    Duration = oDataResult.First()["Duration"].ToString(),
    MinimumEntryRequirements =
oDataResult.First()["MinimumEntryRequirements"].ToString(),
    GovernmentSubsidy =
        oDataResult.First()["GovernmentSubsidy"].ToString(),
    GraduatesInEmployment =
        oDataResult.First()["GraduatesInEmployment"].ToString(),
    GraduatesInStudy =
        oDataResult.First()["GraduatesInStudy"].ToString(),
    GraduatesOnBenefit =
        oDataResult.First()["GraduatesOnBenefit"].ToString(),
    MedianEarnings = oDataResult.First()["MedianEarnings"].ToString(),
    UpperQuartileEarnings=oDataResult.First()["UpperQuartileEarnings"].ToString(),
    LowerQuartileEarnings=
oDataResult.First()["LowerQuartileEarnings"].ToString(),
    QualificationCode =
        oDataResult.First()["QualificationCode"].ToString(),
    StudentFees =
        oDataResult.First()["StudentFees"].ToString(),
};

return kis;
}

```

Implement your choice of caching mechanism to cache the results of calls to the KIS Data Service

```

/// <summary>
/// Retrieves the default page for the site.
/// In this case, a simple page showing a Key Information Set for the
/// qualification specified by the _qualificationCode.
/// </summary>
/// <returns>The Home/Index view along with its data model</returns>
public ActionResult Index()
{
    //Get the appropriate Key Information Set from the cache
    var kis = System.Web.HttpRuntime.Cache[_qualificationCode]
        as KeyInformationSet;

    //If the Key Information Set was not found in the cache
    if (kis == null)

```

```

    {
        try
        {
            //Get the Key Information Set from TEC
            kis = GetKeyInformationData();

            //Save the result into the cache ready for next time
            //Set the cached value to expire in 24 hours
            System.Web.HttpRuntime.Cache.Insert(_qualificationCode, kis,
                null, DateTime.Now.AddDays(1),
                Cache.NoSlidingExpiration);
        }
        catch
        {
            //Catch any errors arising from calling the web service
            //so they don't affect our view
            //In a real implementation, we would log the errors here
        }
    }

    //Return the view with the Key Information Set data to display
    return View(kis);
}

```

5.2.3 Frequently Asked Questions

Q	How long can we cache the KIS for?
A	24 hours
Q	Can I cache on the client side?
A	<i>While this is technically possible we do not recommend it. This is only of benefit when the same learner accesses your site within the same day. Server-side caches provide benefits when multiple learners access your qualification pages within the same day.</i>
Q	Do I have to use .net as my website technology?
A	<i>No. You can use any technology in line with your existing website.</i>
Q	We'd like to graph or show some numeric data visually on our website. Can we do this?
A	<i>Yes. All numeric KIS fields are available as NUMBER VALUES as well as formatted strings. Look at the String & Number Representations table for field names to use.</i>
Q	If I am using a cached connection method, what happens if the KIS data for the qualification is not currently available from the KIS Data Service?
A	<i>If the current qualification data is already in the cache, the cached data will be displayed and an outage in the KIS Data Service will have no effect on your website. If there is no qualification data in the cache (or it has expired) and the KIS Data Service is not available then your website should display an appropriate error message.</i> <i>You will need to add specific code for your existing technology to ensure any such eventualities are covered, ie the rest of your website still displays and an error message is only shown in the KIS section.</i>
Q	What should be displayed if the KIS Data Service is down?
A	<i>If the service is down, the example code (provided in this document) displays 'Sorry, this information is not available right now. Please check back later.' Please make sure your code displays the appropriate error messages.</i>
Q	Does the KIS Data Service provide everything required for the KIS presentation?
A	<i>Data for all data fields is retrieved from the KIS Data Service. Don't forget to add in the 'Additional requirements' and StudyLink links as these are not provided by the KIS Data Service (see Data Calculations and timeframes for updates).</i>

5.3 Asynchronous connection method

5.3.1 Connect to the KIS Data Service

To connect to the KIS Data Service using the *Asynchronous* connection method you will need to write code to:

1. Retrieve data from the KIS Data Service and store it in a location of your choice (use the code below as an example only).
2. Implement a scheduling system of your choice to ensure the data is updated regularly.
3. Retrieve your stored data and display it on your website.

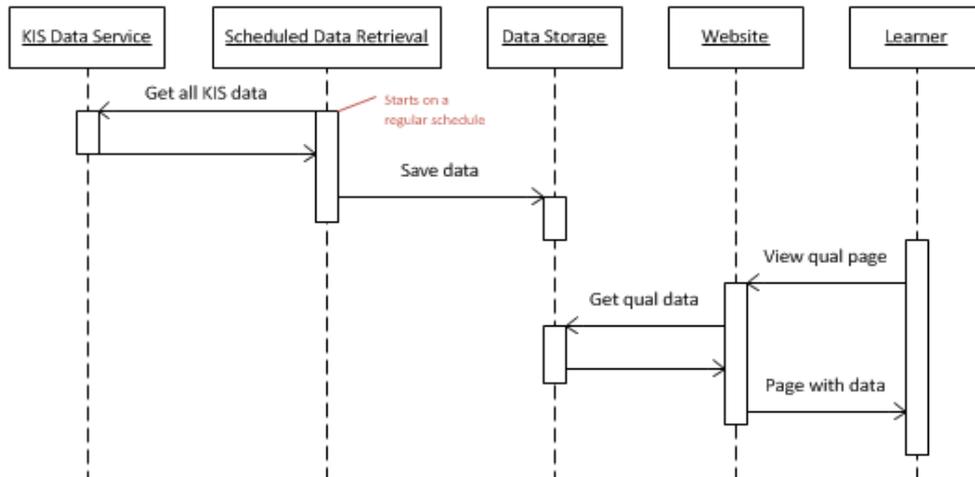


Figure 5 - shows the ideal sequence of events for an Asynchronous solution

5.3.2 TEC example code

Note: The example code shows one way to do this. It should only be used as a model of the steps to follow and not just copied as the code will be dependent on the technology you use.

The example code was built in C# using ASP.NET MVC 4.5. While there are a number of ways to connect to an OData service with strongly typed objects, eg by generating a proxy, it is suggested that you use a more dynamic connection method that allows you to retrieve just the fields you need. Connecting in this way helps ensure that any future additional Key Information Set fields do not adversely affect your site.

Remember to update the URL in the code to point to the correct OData service:

- a. to connect to Production use – <http://info4learners.tec.govt.nz/>
- b. to connect to the Sandbox for testing purposes use - <http://i4l-pilot.tec.govt.nz/>

<p>Retrieve data from the TEC web service and store it in a location of your choice</p>	<pre> /// <summary> /// Retrieves Key Information Set data from the KIS Data Service /// and stores it in a local database. /// Uses the Simple.OData.Client library to connect to the service /// this library requires asynchronous calls. /// </summary> /// <returns>A message describing the result of the process</returns> private static async Task<string> UpdateKeyInformationData() { try { //Set up the client to connect to the KIS Data Service url var client = new ODataClient("http://info4learners.tec.govt.nz /"); //Call the service with an OData query - in this case, </pre>
---	--

```
//all qualifications for a particular provider
var qualifications = await client
    .FindEntriesAsync("KeyInformation?$filter=ProviderCode eq
        '6006'");

var repository = new KeyInformationRepository();

//Save all qualification data to the database
foreach (var qualification in qualifications)
{
    var kis = new KeyInformationSet
    {
        CourseCompletion =
            qualification["CourseCompletion"].ToString(),
        Duration = qualification["Duration"].ToString(),
        MinimumEntryRequirements =
            qualification["MinimumEntryRequirements"].ToString(),
        GovernmentSubsidy =
            qualification["GovernmentSubsidy"].ToString(),
        GraduatesInEmployment =
            qualification["GraduatesInEmployment"].ToString(),
        GraduatesInStudy =
            qualification["GraduatesInStudy"].ToString(),
        GraduatesOnBenefit =
            qualification["GraduatesOnBenefit"].ToString(),
        MedianEarnings =
            qualification["MedianEarnings"].ToString(),
        UpperQuartileEarnings =
            qualification["UpperQuartileEarnings"].ToString(),
        LowerQuartileEarnings =
            qualification["LowerQuartileEarnings"].ToString(),
        QualificationCode =
            qualification["QualificationCode"].ToString(),
        StudentFees =
            qualification["StudentFees"].ToString(),
    };
    repository.AddOrUpdateKis(kis);
}

return "All Key Information Sets successfully updated.";
}
catch(Exception ex)
{
    //In a real implementation we would log the error here

    var message = "An error occurred while updating Key Information
        Sets: " + ex.Message;
    if (ex.InnerException != null)
    {
        message = message + ex.InnerException.Message;
    }
    return message;
}
}
```

5.3.3 Frequently asked questions

Q	Do I have to use .net as my website technology?
A	No. You can use any technology in line with your existing website.
Q	Do I have to store the KIS data in a database?
A	No. You can store it using any method you choose eg, file, SharePoint list etc.
Q	How often should I update the data?
A	The TEC updates will be available to you after 11pm each night for the previous day's updates, or Tuesday after 11pm for data updated weekly (see Data Calculations and timeframes for updates).
Q	Can I retrieve fields on the KIS independently to others?
A	While this is technically possible, the KIS data comes as a package and you should always retrieve all data to ensure it is in sync.
Q	We'd like to graph or show some numeric data visually on our website. Can we do this?
A	Yes. All numeric KIS fields are available as NUMBER VALUES as well as formatted strings. Look at the String & Number Representations table for field names to use.
Q	If I am using an asynchronous connection method, what happens if the KIS data for the qualification is not currently available from the KIS Data Service?
A	Any outages in the KIS Data Service will have no effect on your website as all data will be retrieved from your local storage. If the KIS Data Service is unavailable when you attempt to retrieve updates your system should be configured to alert you and retry so that your data will be updated as soon as the KIS Data Service is available again.
Q	Does the KIS Data Service provide everything required for the KIS presentation?
A	Data for all data fields is retrieved from the KIS Data Service. Don't forget to add in the 'Additional requirements' and StudyLink links as these are not provided by the KIS data service (see Data Calculations and timeframes for updates).

6 About OData

6.1 OData URLs

OData URLs are made up of two parts:

1. the base service URL that tells the service what type of data you want to access
eg <https://i4l-pilot.tec.govt.nz/KeyInformation>
2. the query that tells the service which data you want to retrieve
eg `?$filter=ProviderCode eq '1234' and QualificationCode eq 'MYQUAL'`

The service will run the query you send it and return just the results you are interested in. Results can be returned in JSON or XML format. By default, the service will use a format matching the headers your system sends but you can add `&$format=json` or `&$format=xml` to the end of the query to specify the format explicitly.

The environment URLs

- a. To connect to Production use – <http://info4learners.tec.govt.nz/>
- b. To connect to the Sandbox for testing purposes use – <http://i4l-pilot.tec.govt.nz/>

For the purposes of displaying a Key Information Set on your website, you will want to retrieve just the Key Information Set data for a single qualification. You can do this with a URL like the following (replace the highlighted sections with the URL for the appropriate environment as well as your own EDUMIS number and Qualification Code).

For Production:

[http://info4learners.tec.govt.nz/KeyInformation?\\$filter=ProviderCode eq '1234' and QualificationCode eq 'MYQUAL'](http://info4learners.tec.govt.nz/KeyInformation?$filter=ProviderCode eq '1234' and QualificationCode eq 'MYQUAL')

For the Sandbox:

[http://i4l-pilot.tec.govt.nz/KeyInformation?\\$filter=ProviderCode eq '1234' and QualificationCode eq 'MYQUAL'](http://i4l-pilot.tec.govt.nz/KeyInformation?$filter=ProviderCode eq '1234' and QualificationCode eq 'MYQUAL')

If you plan to access the data service asynchronously, you may wish to retrieve data for all your qualifications at once. This can be done with a URL like the following (replace the highlighted section with your EDUMIS number).

For Production:

[http://info4learners.tec.govt.nz/KeyInformation?\\$filter=ProviderCode eq '1234'](http://info4learners.tec.govt.nz/KeyInformation?$filter=ProviderCode eq '1234')

For the Sandbox:

[http://i4l-pilot.tec.govt.nz/KeyInformation?\\$filter=ProviderCode eq '1234'](http://i4l-pilot.tec.govt.nz/KeyInformation?$filter=ProviderCode eq '1234')

You can find more detailed information about the capabilities of OData at <https://www.odata.org/>.

6.2 Other URLs

The following URL links to the web pages providing the KIS Search and Results pages as well as further information to learners about the Key Information Set:

<http://www.info4learners.education.govt.nz>

Please do not confuse this URL with those for the OData Service:

<http://info4learners.tec.govt.nz/> (Production environment)

<https://i4l-pilot.tec.govt.nz/> (Sandbox)

6.3 Production URLs

The following example queries can be run to access the Key Information Set in the Production environment. All the URLs return data based on the KIS fields. You can create your own filters by adding to the base service URL:

<http://info4learners.tec.govt.nz/KeyInformation?>

For more information about conventions for OData queries and examples of use and semantics go to [OData Version 4.0](#).

Example queries

Scenario	URL logic
All (active) qualifications for all providers	http://info4learners.tec.govt.nz/KeyInformation?\$orderby=QualificationName
All qualifications for provider 'Amet Risus Donec'	http://info4learners.tec.govt.nz/KeyInformation?\$filter=ProviderName eq 'Amet Risus Donec'
Government Subsidy = \$7,600	http://info4learners.tec.govt.nz/KeyInformation?\$filter=GovernmentSubsidy eq '\$7,600'
Top 10 Government Subsidies	http://info4learners.tec.govt.nz/KeyInformation?\$orderby=GovernmentSubsidy&\$top=10
Qualification name includes 'Certificate'	http://info4learners.tec.govt.nz/KeyInformation?\$filter=contains(QualificationName,'Certificate') eq true
Duration is greater than 9 weeks	http://info4learners.tec.govt.nz/KeyInformation?\$filter=DurationInWeeksNumeric gt 9 or DurationInYearsNumeric gt 0
Duration is greater than 3 years	http://info4learners.tec.govt.nz/KeyInformation?\$filter=DurationInYearsNumeric gt 3
Minimum Entry Requirements contains 'ague'	http://info4learners.tec.govt.nz/KeyInformation?\$filter=contains(MinimumEntryRequirements,'ague') eq true
Qualifications where Median earnings of graduates > \$35k AND Student Fees > \$270	http://info4learners.tec.govt.nz/KeyInformation?\$filter=MedianEarnings gt '\$35,000' and StudentFeesNumeric gt 270
Qualifications where earnings range of graduates is between \$37,500 and \$55,000 and ordered by lowest earnings first	http://info4learners.tec.govt.nz/KeyInformation?\$filter=LowerQuartileEarningsNumeric ge 37500 and UpperQuartileEarningsNumeric le 55000&\$orderby=LowerQuartileEarningsNumeric
All qualifications where the number of graduates on a benefit is greater than 10%	http://info4learners.tec.govt.nz/KeyInformation?\$filter=GraduatesOnBenefitNumeric gt 0.10
All qualifications ordered by qualification code	http://info4learners.tec.govt.nz/KeyInformation?\$orderby=QualificationCode
All qualifications ordered by provider code	http://info4learners.tec.govt.nz/KeyInformation?\$orderby=ProviderCode

6.4 Sandbox URLs

The following example queries can be run to access the test Key Information Set data in the Sandbox environment. All the URLs return data based on the KIS fields. You can create your own filters by adding to the base service URL:

<http://i4l-pilot.tec.govt.nz/KeyInformation?>

For more information about conventions for OData queries and examples of use and semantics go to [OData Version 4.0](#).

Example queries

Scenario	URL logic
All (active) qualifications for all providers	http://i4l-pilot.tec.govt.nz/KeyInformation?\$orderby=QualificationName
All qualifications for provider 'Amet Risus Donec'	http://i4l-pilot.tec.govt.nz/KeyInformation?\$filter=ProviderName eq 'Amet Risus Donec'
Government Subsidy = \$7,600	http://i4l-pilot.tec.govt.nz/KeyInformation?\$filter=GovernmentSubsidy eq '\$7,600'
Top 10 Government Subsidies	http://i4l-pilot.tec.govt.nz/KeyInformation?\$orderby=GovernmentSubsidy&\$top=10
Qualification name includes 'Certificate'	http://i4l-pilot.tec.govt.nz/KeyInformation?\$filter=contains(QualificationName,'Certificate') eq true
Duration is greater than 9 weeks	http://i4l-pilot.tec.govt.nz/KeyInformation?\$filter=DurationInWeeksNumeric gt 9 or DurationInYearsNumeric gt 0
Duration is greater than 3 years	http://i4l-pilot.tec.govt.nz/KeyInformation?\$filter=DurationInYearsNumeric gt 3
Minimum Entry Requirements contains 'augue'	http://i4l-pilot.tec.govt.nz/KeyInformation?\$filter=contains(MinimumEntryRequirements,'augue') eq true
Qualifications where Median earnings of graduates > \$35k AND Student Fees > \$270	http://i4l-pilot.tec.govt.nz/KeyInformation?\$filter=MedianEarnings gt '\$35,000' and StudentFeesNumeric gt 270
Qualifications where earnings range of graduates is between \$37,500 and \$55,000 and ordered by lowest earnings first	http://i4l-pilot.tec.govt.nz/KeyInformation?\$filter=LowerQuartileEarningsNumeric ge 37500 and UpperQuartileEarningsNumeric le 55000&\$orderby=LowerQuartileEarningsNumeric
All qualifications where the number of graduates on a benefit is greater than 10%	http://i4l-pilot.tec.govt.nz/KeyInformation?\$filter=GraduatesOnBenefitNumeric gt 0.10
All qualifications ordered by qualification code	http://i4l-pilot.tec.govt.nz/KeyInformation?\$orderby=QualificationCode
All qualifications ordered by provider code	http://i4l-pilot.tec.govt.nz/KeyInformation?\$orderby=ProviderCode

7 String and number representations for the KIS

The following table outlines the String and Number Representations for displaying the Key Information Set on your qualification pages.

Important: Only use the Number Representation where the field information is being displayed as a graphical representation.

	Heading	Field Name	String Representation		Number Representation (if using graphics)	
			Field Name	Example data	Field Name	Example data
1a	Entry Requirements	Minimum requirements	MinimumEntryRequirements	Certificate in Computing Level 2 or equivalent qualification		
1b		Additional requirements	<i>Link not included in the KIS Data Service</i>			
2a	Duration	Duration	Duration	1 year	DurationInWeeksNumeric DurationInYearsNumeric	16 (null if in years) 1 (null if in weeks)
3a	Tuition Fees	Government subsidy	GovernmentSubsidy	\$24,789	GovernmentSubsidyNumeric	24789
3b		Student fee	StudentFees	\$8,123	StudentFeesNumeric	8123
3c		Student loan information	<i>Static link not included in the KIS Data Service</i>			
4a	Student Success	Successful course completions	CourseCompletion	86%	CourseCompletionNumeric	0.8600
5a	National Graduate Outcomes (3 years after completion)	Median earnings	MedianEarnings	\$42,650	MedianEarningsNumeric	42650
5b		Earnings range	LowerQuartileEarnings UpperQuartileEarnings	\$29,500 \$42,750	LowerQuartileEarningsNumeric UpperQuartileEarningsNumeric	29500 42750
5c		In employment	GraduatesInEmployment	58%	GraduatesInEmploymentNumeric	0.5800
5d		In further study	GraduatesInStudy	32%	GraduatesInStudyNumeric	0.3200
5e		On a benefit	GraduatesOnBenefit	2%	GraduatesOnBenefitNumeric	0.0200

8 Data calculations and timeframes for updates

The table below outlines the data sources and calculations for the KIS fields and the relevant time factors for data updates.

Rules

The following rules have been applied for the Key Information Set aggregation and web data service:

1. Data is only included for active, funded qualifications.
2. Data is only included for qualifications at levels 5 and above.
3. All Course and Qualification Register data uses the latest values available. Updates to this data can be made on an ad hoc basis where necessary.
4. All course completion data uses the latest published EPI data.
5. All course enrolment data is taken from the December SDR as at the cut-off date for publication of the Educational Performance Indicators (EPIs). This means no resubmissions or changes to enrolment data will be reflected.
6. The KIS data only relates to domestic students.
7. Refreshed data will be available daily (*entry requirements, duration*) or weekly on a Tuesday (all other data) after TEC data processing has occurred. Subsequent data updates on your website will be dependent on your chosen connection method eg. *Dynamic* (immediate), *Cached* (within 24 hours) or *Asynchronous* (when your scheduled updates run).
8. Where data is unavailable or suppressed, the field will display the appropriate message in the KIS, eg 'N/A'

Heading	Field Name	Data source (field name)	Calculation	Data updates on KIS Data Service	Frequency
Entry Requirements	Minimum requirements	'brief entry requirements' TEO submitted data - Qualification Register	Not applicable	Ad hoc updates through Qualification Register	You will see the change in the KIS Data Service by 11.00pm the next night, as long as your change was made by 11.00pm on the previous night <i>(see Rule 3 above)</i>
	Additional requirements <i>(link)</i>	Link to more detailed information on TEO website. <i>(TEO sets up Additional requirements page if more information is needed for Entry Requirements)</i>	Not applicable	Not applicable	Not applicable

Heading	Field Name	Data source (field name)	Calculation	Data updates on KIS Data Service	Frequency
Duration	Duration	<p>'number of years'</p> <p>'teaching/tuition weeks'</p> <p>'vacation/recess weeks'</p> <p>TEO submitted data - Qualification Register</p>	<p>If duration in years > 1 then display duration in years.</p> <p>If duration in years <=1 and EFTS Value >= 1 and gross number of weeks >= 34 then display 1, otherwise display the gross number of weeks (tuition weeks + recess weeks).</p>	Ad hoc updates through Qualification Register	<p>You will see the change in the KIS Data Service by 11.00pm the next night, as long as your change was made by 11.00pm on the previous night</p> <p><i>(see Rule 3 above)</i></p>
Tuition Fees	Student fees	<p>TEC calculation using <i>course tuition fee, compulsory course cost fees</i> and <i>EFTS value</i>, and course enrolments from SDR submissions.</p> <p>TEO submitted data - Course Register, Qualification Register and Course Enrolment File</p>	average student fee per EFTS x EFTS value of the qualification	<p>Ad hoc updates through Qualification/Course Register – <i>EFTS value, course tuition fee, compulsory course cost fees</i>.</p> <p>Course enrolments – December SDR</p>	<p>You will see the change in the KIS Data Service weekly by 11.00pm Tuesday night.</p> <p><i>(see Rule 7 above)</i></p> <p>December SDR</p> <p><i>(see Rule 5 above)</i></p>
	Government subsidy	<p>TEC calculation using funding classification and course enrolments from SDR submissions.</p> <p>TEO submitted data - Course Enrolment File & Qualification Register</p>	<p>Average \$ delivered per EFTS for courses associated with intended qualification x EFTS value of the qualification</p> <p>(\$ delivered is the amount TEC fund, ie the dollar value of delivery, using the previous year's funding rates)</p>	<p>Ad hoc updates through Qualification Register – <i>EFTS value</i></p> <p>Course enrolments – December SDR</p>	<p>You will see the change in the KIS Data Service weekly by 11.00pm Tuesday night.</p> <p><i>(see Rule 7 above)</i></p> <p>December SDR</p> <p><i>(see Rule 5 above)</i></p>
	Student loan information (link)	<p>Static link to StudyLink</p> <p>(TEO sets up link to StudyLink hosted by MSD)</p>	Not applicable	Not applicable	Not applicable

Heading	Field Name	Data source (field name)	Calculation	Data updates on KIS Data Service	Frequency
Student Success	Successful course completions	TEC calculation based on EPI methodology using course enrolments and completions from SDR submissions.	EFTS delivered for total no. of successfully completed course enrolments ending in year n (associated with intended qualification 'x')	Latest published EPI data	Last reporting year using final data for publication cut-off for that year <i>(see Rule 4 above)</i>
			<hr/> EFTS delivered for total number of course enrolments ending in year n (associated with intended qualification 'x')		
National Graduate Outcomes (3 years after completion)	Median earnings	EOTE data - Integrated Data Infrastructure (IDI) data, Statistics New Zealand via MoE NZSCED - TEO submitted data in Qualification Register	EOTE data matched to qualifications based on qualification level and NZSCED.	EOTE – annually* NZSCED data - ad hoc updates through Qualification Register	When updated by MoE* You will see the change in the KIS Data Service by 11.00pm the next night, as long as your change was made by 11.00pm on the previous night <i>(see Rule 3 above)</i>
	Earnings range	EOTE lower and upper quartile data - Integrated Data Infrastructure (IDI) data, Statistics New Zealand via MoE NZSCED - TEO submitted data in Qualification Register	EOTE data matched to qualifications based on qualification level and NZSCED.	EOTE – annually* NZSCED data - ad hoc updates through Qualification Register	When updated by MoE* You will see the change in the KIS Data Service by 11.00pm the next night, as long as your change was made by 11.00pm on the previous night <i>(see Rule 3 above)</i>

Heading	Field Name	Data source (field name)	Calculation	Data updates on KIS Data Service	Frequency
	In employment	EOTE data - Integrated Data Infrastructure (IDI) data, Statistics New Zealand via MoE. NZSCED - TEO submitted data in Qualification Register	EOTE data matched to qualifications based on qualification level and NZSCED.	EOTE – annually* NZSCED data - ad hoc updates through Qualification Register	When updated by MoE* You will see the change in the KIS Data Service by 11.00pm the next night, as long as your change was made by 11.00pm on the previous night <i>(see Rule 3 above)</i>
	In further study	EOTE data - Integrated Data Infrastructure (IDI) data, Statistics New Zealand via MoE NZSCED - TEO submitted data in Qualification Register	EOTE data matched to qualifications based on qualification level and NZSCED.	EOTE – annually* NZSCED data - ad hoc updates through Qualification Register	When updated by MoE* You will see the change in the KIS Data Service by 11.00pm the next night, as long as your change was made by 11.00pm on the previous night <i>(see Rule 3 above)</i>
	On a benefit	EOTE data - Integrated Data Infrastructure (IDI) data, Statistics New Zealand via MoE NZSCED - TEO submitted data in Qualification Register	EOTE data matched to qualifications based on qualification level and NZSCED.	EOTE – annually* NZSCED data - ad hoc updates through Qualification Register	When updated by MoE* You will see the change in the KIS Data Service by 11.00pm the next night, as long as your change was made by 11.00pm on the previous night <i>(see Rule 3 above)</i>
* The TEC will update EOTE data as it becomes available from the Ministry of Education in a timely manner.					