

SOLEO COMMUNICATIONS

# Soleo Local Search™ API Specification

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## 1 Purpose

The purpose of this document is to define the Soleo Local Search™ API (Application Programming Interface) that enables developers to integrate search capabilities into their websites, applications, and/or internet-oriented devices. This document also describes the resources that are provided for a seamless integration of the Soleo Local Search™ API into your business.

The audience for this document is the owners and developers of websites, applications, and internet-oriented devices (referred to as the **API Customer**) that are using, or interested in using, Soleo's Local Search API to retrieve business listings and potentially generate revenue from presenting these businesses to consumers (referred to as **End Users**) and/or connecting them with one of the presented businesses.

## 2 Soleo Local Search Overview

Soleo offers application developers a Local Search API to discover US-based business listings and sponsored content and return high quality, relevant results, which may also be used for revenue generating purposes.

### 2.1 Service Description

Soleo Local Search™ services include:

- The Soleo Local Search™ API, a RESTful API offering a collection of endpoints to easily search and discover local businesses
- The Soleo Local Search™ Engine, which is comprised of:
  - Search technology built upon natural language understanding and linguistic models that translates user specified search criteria into meaningful intent,
  - A database containing a comprehensive set of categorized US business listings,
  - Access to an extensive real time ad network of sponsored business content.

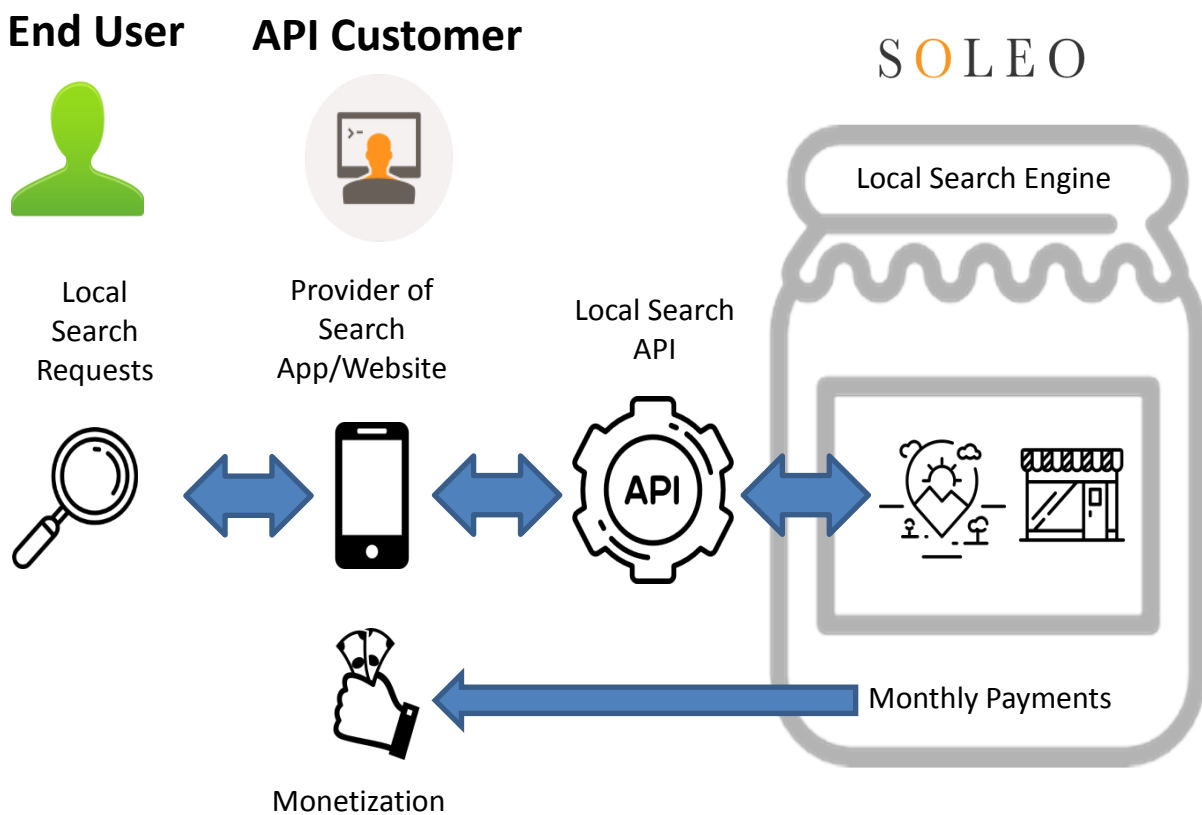
API Customers search and access content in the Local Search Engine by integrating the API into their application/website. This API enables the API Customer to:

- Submit search requests to the Local Search Engine.
- Receive search results from the Local Search Engine.

The following describes, at a high-level, the message exchange that occurs between an End User, the API Customer's search application/website, the Local Search API, and the Local Search Engine (see the diagram that follows):

1. The End User submits a local search request to the API Customer's search application/website.
2. The API Customer's search application/website creates a business search request that contains the End User's search criteria.
3. The API Customer's search application/website submits the business search request to the Local Search Engine for processing, via the Local Search API.
4. The Local Search Engine searches the US business listings and sponsored content for businesses that meet the search criterion specified in the business search request.

5. The Local Search Engine returns a business search response to the API Customer's application/website via the Local Search API. The response contains the business listings/sponsored content that best matches the specified search criteria.
6. The API Customer's search application/website presents the local search results to the End User.
7. If the End User performs a revenue generating action (e.g., selects a sponsored business from the search results, requests more information for a selected business, requests to call a selected business, etc.), the API Customer's search application/website submits a Callback Request to the Local Search Engine, via the Local Search API, to indicate that this revenue generating action occurred.
8. The Local Search Engine returns a Callback Response to the API Customer's application/website, via the Local Search API, to provide acknowledgement of the Callback Request or additional Callback details.
9. If the API Customer's Service Plan supports monetization of sponsored content, Soleo pays the API Customer for the revenue generating actions, per the terms in that API Customer's Service Plan.



Local Search Diagram

## 2.2 Benefits

Some of the differentiators and benefits of Soleo Local Search™ are:

1. Natural Language search capabilities

The Local Search API offers an easy and powerful way to search business content using natural language. The underlying search engine uses language models built around business names, categories, products, and services. Natural Language search requests are analyzed for their intent, then translated into a ranked weighting of the best business names and/or categories to search. The results are sorted by relevancy to ensure the businesses that best match the specified search criterion appear first in the search results that are returned.

2. White label service with no attribution required

The Local Search API is offered as a white label service, which means API Customers can build applications that utilize the API to access organic business listings and sponsored content, without branding the application to indicate the search was powered by Soleo. The branding of the application is entirely up to the API Customer.

3. Comprehensive local business content

The Local Search API offers access to a database that includes a comprehensive set of 16+ million categorized and geocoded US business listings. Full coverage of all US businesses is accomplished by aggregating business listings from a variety of sources (telephone carriers, location management providers, data aggregators, niche content providers, and Internet). The database is updated on a daily basis to ensure that you are receiving the best content available.

4. Revenue generation through sponsored content

The Local Search API provides a single point of integration for sponsored content from an extensive network of advertisers. API Customers have the opportunity to get paid, by Soleo, for presenting this sponsored content to End Users.

The API Customer accesses the sponsored content by submitting search requests via the Local Search API. The search results returned by the API include sponsored business listings (depending on the Service Plan) from which the API Customer can generate revenue. Revenue can be generated when the following actions occur:

- A sponsored business is presented to an End User.
- An End User selects a sponsored business from the search results.
- An End User requests the call completion number for a sponsored business.
- An End User requests additional information for a sponsored business.
- An End User calls a sponsored business.

Revenue generated as the result of these actions can cover an API Customer's costs to use the Local Search API, as well as generate significant additional revenue for the API Customer.

## 5. Useful and easy

The Local Search API is a RESTful API that is ideally suited for a variety of applications that interact with End Users (voice-based applications, graphical map-based applications, text-based applications, chatbots, etc.). In addition, the Soleo Developer site provides easy-to-use developer tools (quick-start guides, FAQs, SDKs, sample code, user documentation) that are designed to accelerate the integration of the Local Search API into an API Customer's web sites, applications, and/or internet-oriented devices. Soleo provides a free trial service plan for the Local Search API that potential API Customers can use to "test drive" the API before spending any money or committing to a long-term relationship with Soleo.

## 3 Monetization Overview

Sponsored listings exist for businesses that have agreed to pay mobile application and website providers (API Customers) for the promotion of their business. Revenue generated from these sponsored listings, referred to as monetization, is an important element of the Soleo Local Search™ API.

A sponsored listing can be monetized when the following actions occur:

- Sponsored listing is presented to the End User. This is referred to as an impression.
- End User selects a sponsored listing from the search results. This is referred to as a selection.
- End User requests the call completion number for a selected business.
- End User requests details for a selected business (e.g., contact information, hours of operation, etc.).
- End User calls the selected business' Displayed Number.
- End User calls the selected business' Completion Number. In order to monetize this call, the End User must stay connected to the business for a minimum duration of time or perform a specific action (e.g., make an appointment or place an order). The sponsored business listing specifies the criteria that must be met for that particular business. This is referred to as pay-per-call.

The API Customer's Service Plan and the sponsored business' advertising plan collectively define which of these actions can generate revenue and the criteria that must be met when that action occurs in order to generate revenue from that action. For example, the business' advertising plan may indicate revenue can be realized when an End User calls the Completion Number and the End User remains connected to the called business for at least 30 seconds. The amount of monetization (payment to the API Customer) depends upon the type of action that occurred, and the revenue amount specified in the sponsored business listing for that action. The higher valued End User actions (e.g., calling the completion number or scheduling an appointment) typically result in higher payments.

In order to claim revenue for an End User action, the API Customer must notify the Local Search API each time one of these End User actions occurs. This is referred to as a Callback. A Callback is accomplished by using the Callback links that are provided for each sponsored listing that is returned in the search results. Each Callback link uniquely identifies the sponsored business and the End User action from which revenue can be generated. When that End User action occurs, the API Customer's application/website must submit a Callback Request, using the Callback link provided in the selected business listing for the End User action that occurred. This ensures Local Search API knows the action occurred and can credit the API Customer with the revenue defined for that action.

The Local Search API provides two different formats for Callbacks:

- v1 - Provides Callback links for all the End User actions identified above. v1 provides the most revenue generating opportunities, but the number of Callbacks may be more than your application needs.
- v2 (referred to as expresscall) - Only provides Callback links for pay-per-call. Callback links for the other End User actions are not supported. The benefit of v2 is a streamlined API that provides all business information in the initial search response, therefore, eliminating the need for Callbacks for additional information. However, v2 limits your monetization opportunities to pay-per-call. If your application only searches organic listings (no monetization) or you are only monetizing Local Searches that result in the End User calling the sponsored business, v2 is recommended.

See [Callbacks](#) for more information.

## 4 Business Listing Data Model

The Soleo Local Search™ database includes a comprehensive set of categorized US business listings. Each business listing contains the following information:

- Business Name
- Location/street address
- Telephone number
- Category - type of business
- Listing type - sponsored or organic
- Geocode information (longitude/latitude of business)
- Hours of operation (optional)
- URL of the business (optional)
- Images (optional)
- Social media profiles (optional)
- Calls to Action (optional)

For example:

**Business Name** - Lake Ave Florist

**Location/Street Address** - 123 Lake Ave, Rochester, NY 14607

**Telephone Number** - (585) 867-5309

**Category** - Floral

**Listing Type** – Sponsored

**Geocode Information** - 43.038185, -77.458347

**Hours of Operation** - M-F, 9:00 AM - 6:00 PM

### 4.1 Organic Business

The Listing Type for a business can be either **sponsored** or **organic**. An **organic** business is not supported by advertising and does not offer revenue generating opportunities. All businesses in the United States are represented by an organic listing in the database.



A business may be represented by multiple organic listings. This occurs when there are several ways to contact a business. For example, an automobile dealer may have one business listing for new car sales, with a dedicated telephone number, and a second business listing for its service department, with a different telephone number. Both business listings are related to the same business entity, but they are categorized differently such that a Category-based search returns the business' contact information that is most relevant to the End User's request.

## 4.2 Sponsored Business

The Listing Type for a business can be either **sponsored** or **organic**. A **sponsored** business is supported by advertising and pays for promotions and referrals. Not all businesses are sponsored businesses.

An API Customer can generate revenue by presenting sponsored businesses to the End User. This is dependent upon your Service Plan with Soleo and the sponsored business' advertising campaign, which defines the End User interactions that can generate revenue. Refer to Section 3 for more on monetization of sponsored listings.

In search results that contain a combination of sponsored and organic businesses, the sponsored business listing is always given preference over the corresponding organic business listing. As a result, only one type of listing will be returned for a specific business.

## 4.3 Categories

A Category identifies the commercial offering that is provided by a business (e.g., travel or automotive). Each business listing is assigned one or more categories when it is added to the database.

Categories play an important role in Local Search. If the End User does not know the name of a business, they can search for the commercial offering/service they are looking by specifying a Category in their Local Search request. The End User does not need to know the exact Category Name that Soleo uses. They can enter what they are looking for and the Local Search Engine will determine which category is the best match.

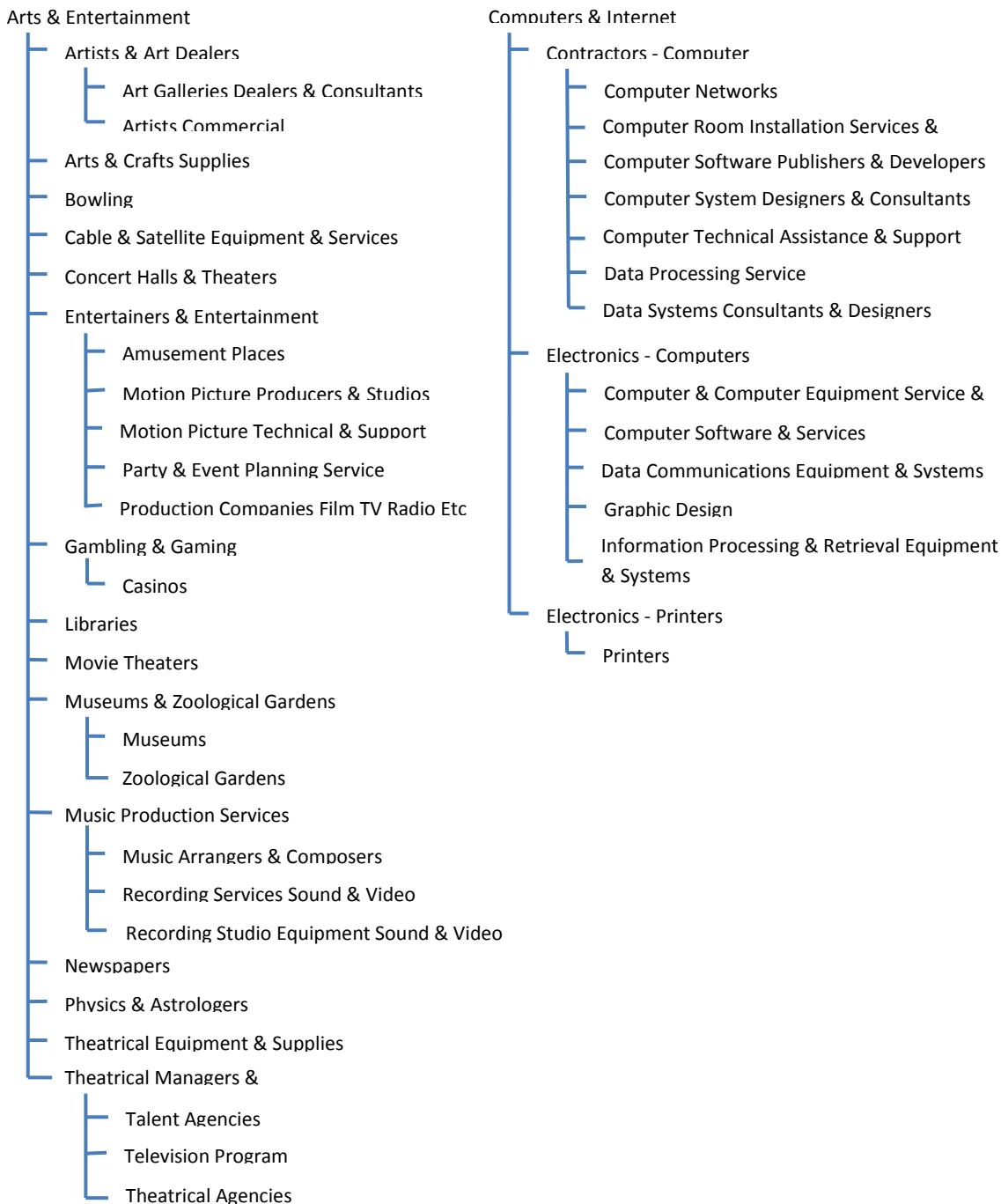
Taxonomy is the hierarchical classification of categories into ordered groupings. The Soleo taxonomy consists of approximately 2400 categories that are organized into four tiers:

- Tier 1 - defines the high-level business categories.
- Tier 2 - provides a more detailed classification/breakdown of the Tier 1 categories. The Tier 2 categories are nested under the appropriate Tier 1 categories.
- Tier 3 - provides a more detailed classification/breakdown of the Tier 2 categories. The Tier 3 categories are nested under the appropriate Tier 2 categories.
- Tier 4 - provides a more detailed classification/breakdown of the Tier 3 categories. The Tier 4 categories are nested under the appropriate Tier 3 categories. Currently only sponsored listings use tier 4 categories.

To get a list of the Soleo Categories please contact Soleo.

**NOTE:** Categories are not updated often. You may periodically request updates or ask that Soleo notify you when changes are made.

The following is small sampling of the Soleo taxonomy. It shows two Tier 1 categories ("Arts & Entertainment" and "Computers & Internet") and their corresponding Tier 2 and Tier 3 categories.



### Taxonomy Samples

## 5 Business Search Strategies

The Soleo Local Search™ API offers the following techniques for performing business searches:

- Free Form query
- Category query
- Name query
- Keyword query

Each technique uses different search criteria and logic to determine the businesses that are the best match, but the underlying set of sponsored and organic listings that are returned in the search results for each technique are the same. This gives the API Customer flexibility, as they can select the search strategy that works best with their application.

## 5.1 Free Form Query

The most powerful and easiest way to search for business listings is to use the Free Form Query. This utilizes a single search argument, which contains text describing what the End User is looking for in their own words (e.g., “where can I find pizza”). This query can be used to search for specific businesses by business name, by keywords, by categories or by natural language phrases. **This query is a good search strategy to use when the API Customer does not force the End User to specifically tag the search arguments as Category or Name arguments.**

The API Customer's application provides a free-form text input field into which the End User enters their search request. For example, an End User could search for “local brew pub” or “where can I find pizza” (or any other words or phrases). Then, the API Customer's application builds a Business Search Request and populates the **FreeFormQuery** Business parameter with the complete text the End User entered into the free-form text field. When the API Customer's application submits this Business Search Request, the Local Search Engine deconstructs the **FreeFormQuery** text string into chunks of meaningful information and derives the End User's intent on what to look for, using natural language processing.

To accomplish this high-powered search, Soleo has assembled topic models that span all of the known businesses and business categories in the Soleo Taxonomy. They were built by analyzing the language that is used on websites for the various types of businesses. These topic models are used to determine whether this is a search for a specific business, product, service or category based upon the End User's input. Using this information, the topic models can find specific businesses that match or closely match on business name, and determine categories that correlate to the business, product, service or category provided in the input. Using the pizza example above, the Local Search Engine's natural language processing may determine that the appropriate categories to search for are "Pizza Restaurants" and "Grocery Stores", as the End User may be looking for either a restaurant that serves pizza or a grocery store that sells pizza. In general, more descriptive search terms result in more specific categories.

The result of natural language processing is a ranked list of business names and categories, from the most likely to the least likely to satisfy the End User's request. The Local Search Engine searches the sponsored and organic listings for businesses that are assigned the specified category. The results are a combination of the sponsored and organic business listings that match this category. Then, the Local Search Engine returns these business listings to the API Customer's application in a Business Search Response.

## 5.2 Category Query

If the category to be searched is well known or you only want results for a single category, the Category Query is your best choice.

The API Customer's application collects the desired Category from the End User, builds a Business Search Request, and populates the **Category** Business parameter with the Category entered by the End User. When the API Customer's application submits this Business Search Request, the Local Search Engine uses the **Category** specified in the request to find matches against the Category Names in the Soleo Taxonomy. A fully spelled category name will match a single category. In the event of multiple matches, the Local Search Engine selects the category that best matches the End User's request.

Next, the Local Search Engine searches the sponsored and organic listings for businesses that are assigned the specified category. The results are a combination of the sponsored and organic business listings that match this category. Then, the Local Search Engine returns these business listings to the API Customer's application in a Business Search Response.

### 5.3 Name Query

When searching for a specific known business, Name Query is the best choice.

The API Customer's application collects the desired Business Name from the End User, builds a Business Search Request, and populates the **Name** Business parameter with the Business Name entered by the End User. When the API Customer's application submits this Business Search Request, the Local Search Engine uses the **Name** specified in the request to search for businesses that contain that name in their Business Name. All words specified in **Name** are treated as abbreviated words. For example, a **Name** of "HOW" would match against the businesses "How To Plumbing" and "Howard Johnsons".

The results are a combination of sponsored and organic business listings that match the specified **Name**. The Local Search Engine returns these business listings to the API Customer's application in a Business Search Response.

### 5.4 Keyword Query

A Keyword Query is a general-purpose business query that compares search arguments against the Category Names and Business Names to determine matching listings. This search will use the same process as is used in the Category Search and the Name Search. This query is a good search strategy to use when the API Customer does not force the End User to specifically tag the search arguments as Category or Name arguments but still expects the query to be either a business name or a category.

The API Customer's application collects the search arguments from the End User, builds a Business Search Request, and populates the **Keyword** Business parameter with the search arguments entered by the End User. When the API Customer's application submits this Business Search Request, the Local Search Engine uses the **Keyword** specified in the request to search for businesses that contain the specified word(s) in their Business Name or Category.

The results are a combination of sponsored and organic business listings whose Business Name and/or Category matches the specified **Name**. The Local Search Engine returns these business listings to the API Customer's application in a Business Search Response.

## 6 Searching For Businesses

When the End User submits a Local Search request to the API Customer's application/website, the API Customer's application/website submits a Business Search Request to the Local Search Engine, via the Local Search API. The Local Search Engine processes the request and returns a Business Search Response to the API Customer's application/website, via the Local Search API. This response contains the business listings/sponsored content that best matches the specified search criteria.

Business searches may result in a mixture of sponsored and organic businesses, depending upon the API Customer's Service Plan. It is possible for a business to be both sponsored and organic. In this scenario, the business only appears once in the search results with sponsored listings taking precedence. Duplicate business listings are not returned.

The contents of the results are also dependent upon the parameters defined in the API Customer's Service Plan, such as:

- Maximum number of searches allowed per day.
- Maximum number of searches allowed per second.
- Maximum number of listings that can be returned in the search results.
- Whether or not an ANI is provided in the Local Search requests.

**NOTE:** If you perform the same search a second time, you may not receive the same set of sponsored business listings. This is the result of the parameters that are defined in the API Customer's Service Plan, as well as the business rules that are applied to the sponsored content (e.g., Business A's ad can only be presented 5 times).

See **Business Search Response** for more detailed information regarding the format and content of the results that are returned by a Business search.

The following sections describe how to build a Business Search Request.

## 6.1 Business Search Request

A Business Search Request is an HTTP-based search request. It is comprised of HTTP Request Headers and an Endpoint. The following provides a high-level definition of these components.

### 6.1.1 HTTP Request Headers

The Business Search Request contains the following HTTP Request Headers:

1. **HTTP Method** - defines the HTTP Method to use. Valid value is "GET" (retrieve data).
2. **Accept Header** - specifies:
  - The search application – must be set to "application/vnd.api.soleo.com"
  - Callback format - valid values are:
    - v1 - Callbacks are required to request additional information and/or claim revenue for End User actions.
    - v2 (referred to as "expresscall") - All business information is provided in the initial Business Search Response, therefore, the only Callbacks that are required are the links used to claim revenue when the End User calls a sponsored business.
  - Response format - valid values are:
    - json - return response in JSON format
    - xml - return response in XML format

**NOTE:** If an Accept Header is not provided, the Callback format defaults to "v1" and the response format defaults to "JSON". If you want "v2" and/or "XML" format, an Accept Header must be provided.
3. **User-Agent Header** - provides information about the End User's device that generated the search request. Typically, this header is auto-populated by the HTTP client (e.g., user's web browser). This data is used for reporting purposes.

**NOTE:** The User-Agent Header is optional for Business searches.

### 6.1.2 Endpoints

The HTTP Request Headers are followed by an endpoint, which defines the search you want to perform. The following defines the endpoint format:

`https://domain.soleo.com/endpoint?[ParameterName]=[ParameterValue]&APIKey=[YOUR_API_KEY]`

Where:

1. **https://** - defines the protocol being used.  
The protocol for all Business Search Requests is HTTPS. Using HTTP will result in an error.
2. **domain.soleo.com** - defines the target domain against which the Business search is to be performed:
  - If you are using the Local Search API in trial mode, use "trialapi.soleo.com" as the domain for all of your searches.
  - When you move to production mode, use "api.soleo.com" as the domain for all of your searches. Only production API keys can access endpoints in this domain.
3. **/endpoint** - refers to the resource you want to search. The following endpoints are available for your use:
  - **/organic** - only searches organic business listings for the specified search criteria.
  - **/sponsored** - only searches sponsored business listings for the specified search criteria. Results can be returned using the v1 or v2 Callback format (see **HTTP Request Headers**).
  - **/businesses** - searches all business listings (organic and sponsored) for the specified search criteria.
  - **/expresscall** - only searches sponsored business listings for the specified search criteria. Results are always returned using the v2 Callback format (see **HTTP Request Headers**).
4. The remaining contents define the search criteria that was specified by the End User, as well as the API Key assigned to the API Customer.

If a question mark ("?",) follows the endpoint name (**/endpoint**), this indicates that the remainder of the Business Search Request contains search parameters. The format of each search parameter is:

`"[ParameterName]=[ParameterValue]"`

Where:

- ParameterName is the name assigned to the search parameter.
- ParameterValue is the value to search for.

Refer to the **Business Search Parameters** section for more detailed information.

### 6.1.3 Business Search Example

The following is an example of a Business Search Request, where the End User requested a search for **restaurants** in **Chicago, Illinois**:

GET

Accept: application/vnd.api.soleo.com-v1+json

User-Agent: Mozilla/5.0 (Windows NT 6.1) AppleWebKit/537.36 (KHTML, like Gecko)

Chrome/41.0.2228.0 Safari/537.36

https://trialapi.soleo.com/businesses?Category=Restaurants&City=Chicago&State=IL&APIKey=[YOUR\_API\_KEY]

In this example:

- **HTTP Method** is "GET".  
The End User is requesting the system to retrieve data based upon the specified search criteria.
- **Accept Header** is "Accept: application/vnd.api.soleo.com-v1+json", where:
  - "application/vnd.api.soleo.com" identifies the Local Search application.
  - "v1" indicates the v1 Callback format is requested.
  - "json" indicates the search response format should be in JSON format.
- **User-Agent Header** is "User-Agent: Mozilla/5.0 (Windows NT 6.1) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/41.0.2228.0 Safari/537.36".
- **Endpoint** is  
"https://trialapi.soleo.com/businesses?Category=Restaurants&City=Chicago&State=IL&APIKey=[YOUR\_API\_KEY]"
  - **Protocol** is "https://".
  - **Domain** is "trialapi.soleo.com" - indicates trial mode is being used.
  - **Endpoint name** is "/businesses" – indicates a search for all business listings (organic and sponsored).
  - **Search Parameters** are  
"?Category=Restaurants&City=Chicago&State=IL&APIKey=[YOUR\_API\_KEY]"
    - "Category=Restaurants" - indicates a search for business listings that have been assigned a Category of "Restaurants".
    - "City=Chicago" - indicates a search for business listings whose City is "Chicago".
    - "State=IL" - indicates a search for business listings whose State is "IL".
    - "APIKey=[YOUR\_API\_KEY]" defines the API Key that the API Customer obtained on the Soleo Developer site.

## 6.2 Business Search Parameters

If a question mark ("?") follows the endpoint name in a Business Search Request, this indicates the remainder of the Business Search Request contains search parameters. The search parameters define the search criterion entered by the End User and the API Key assigned to the API Customer.

The search parameters are grouped into the following categories:

1. Account Parameters - used to specify your API Key.
2. Business Parameters - used to specify the name and/or type of business you are searching for.

3. Location Parameters - used to specify the desired location of a business.
4. User Parameters - used to identify the End User that submitted the Business Search Request.
5. Results Parameter - used to specify the maximum number of organic and sponsored listings to include in the search response, as well as the sort order for the business listings returned in the search response.

**NOTE:** In order to perform a successful Business search, you must include Account, Business, and Location parameters in your Business Search Request.

The format of each search parameter is:

`"[ParameterName]=[ParameterValue]"`

Where:

- ParameterName is the name assigned to the search parameter.
- ParameterValue is the value to search for.

The following rules apply to the search parameters:

- Parameter names are case-sensitive.
- Parameter values are not case-sensitive.
- If multiple search parameters are specified, they must be separated by an ampersand character ("&").
- The search parameters can be provided in any order.
- The APIKey parameter (see **Account Parameters**) must be provided in all Business Search Requests.
- At least one Business parameter must be specified in every Business Search Request.
- At least one Location parameter option (Geocoded Circular Fence, Address Designation by City/State Pair, or Address Designation by Postal Code) must be specified in every Business Search Request.
- User parameters are optional.
- Results parameters are optional.

### 6.2.1 Account Parameters

Account parameters are used to identify the API Customer that is issuing the Business Search Request. Currently, there is only one Account parameter - APIKey.



### 6.2.1.1 Account Parameters Definitions

The following defines the Account parameters that are available for searching business listings.

Parameter Name	Description	Required/ Optional	Data Type	Example
<b>APIKey</b>	API Key assigned to API Customer issuing the Business Search Request (assigned when API Customer requested a key on the Soleo Developer site). Used to locate API Customer's Service Plan. Refer to <a href="#">Quick Start Guide</a> to learn more about API Keys.	Required	String	"w6w8pmx6dxqbrn8hqeyobx"

### Account Parameters Definitions

### 6.2.1.2 Account Parameters Rules

A valid **APIKey** must be specified in every Business Search Request.

### 6.2.1.3 Account Parameters Example

The following provides examples of how to specify your API Key in the endpoint of a Business Search Request.

**NOTE:** In order to perform a successful Business search, one or more Location parameters and one or more Business parameters must also be specified in the Business Search Request.

Assuming your API Key is "w6w8pmx6dxyqbrn8hqeyobx":

- Search for businesses that contain the Keyword "insurance" in Chicago, IL:  
"https://trialapi.soleo.com/businesses?Keyword=insurance&City=Chicago&State=IL&**APIKey=w6w8pmx6dxyqbrn8hqeyobx**"
- Search for businesses with a Category of "Florist" in Rochester, NY:  
"https://trialapi.soleo.com/businesses?Category=Florist&City=Rochester&State=NY&**APIKey=w6w8pmx6dxyqbrn8hqeyobx**"

## 6.2.2 Business Parameters

Business parameters are provided that enable you to specify selection criteria for business searches:

- FreeFormQuery - search for business listings using a Business Name, Category, Keywords or Natural Language (free-form text request containing one or more of the above components) search
- Keyword - search for business listings that contain a specific Keyword
- Category - search for business listings that are assigned to a specific Category
- Name - search for business listings whose Business Name matches a specific Name

Additional parameters are available to filter the business listings that are returned in the search results:

- Open Only - limits the search results to businesses that are currently open (based upon Hours of Operation specified in the database for that business). Note that not all businesses have open hours associated with them.

- Type - limits the type of businesses that are returned in the search results, based upon their revenue generating opportunities.

Not all endpoints support all of the Business parameters. The following sections identify the supported uses.

### 6.2.2.1 Business Parameters Definitions

The following defines the Business parameters that are available for searching business listings.

Parameter Name	Description	Required/Optional	Data Type	Example
<b>FreeFormQuery</b>	Free-form text used to perform a Natural Language search for a business. <b>NOTE:</b> If this parameter is specified, the search ignores the data specified in Name, Category, and Keyword.	See Rules	String	"restaurant that serves burritos"
<b>Keyword</b>	Term used to search against Business Names and Categories	See Rules	String	"burritos"
<b>Category</b>	Identifies the commercial offering provided by a business. To obtain a list of defined categories, request this from Soleo.	See Rules	String	"restaurants"
<b>Name</b>	Name of the business you are searching for <b>NOTE:</b> Name search performs an implicit wildcard search on each word that is specified in Name (e.g., "ray flan" will match "Raymour and Flanigan").	See Rules	String	"Chipolte Mexican Grill"
<b>Open Only</b>	Indicates whether or not the search results should include businesses that are currently closed (based upon Hours of Operation specified in database). Valid values are: <ul style="list-style-type: none"> <li>▪ yes - only return business listings for businesses that are currently open</li> <li>▪ no - return all business listings that match the specified search criteria, regardless of whether or not they are currently open</li> </ul> <b>NOTE:</b> Default value is no. <b>NOTE:</b> If the search cannot determine if a business is open (Hours of Operation are not specified in the database), the listing is included in the search results.	Optional	String	"yes" "no"

Parameter Name	Description	Required/ Optional	Data Type	Example
<b>Type</b>	<p>Limits the type of businesses that are returned in the search results, based upon their revenue generating opportunities.</p> <p>Valid values are:</p> <ul style="list-style-type: none"> <li>organic - only return organic business listings</li> <li>presented - only return sponsored business listings with revenue generating opportunities when the listing is presented/impressed to the End User</li> <li>selected - only return sponsored business listings with revenue generating opportunities when the End User selects the business from the search results</li> <li>called - only return sponsored business listings with revenue generating opportunities when the End User calls the business' completion number.</li> </ul> <p><b>NOTE:</b> Multiple Types can be specified, using a comma-delimited list.</p>	Optional	String	<p>"organic"</p> <p>"presented"</p> <p>"selected"</p> <p>"called"</p> <p>"presented,selected"</p> <p>"selected,called"</p>

### Business Parameters Definitions

#### 6.2.2.2 Business Parameters Rules

The following defines the rules for the Business parameters specified in a Business Search Request:

1. At least one Business parameter (FreeFormQuery, Name, Category, or Keyword) must be specified in every Business Search Request.
2. Do not include more than one of each type of parameter (FreeFormQuery, Keyword, Category, Name, Open Only, Type) in the Business Search Request.
3. If FreeFormQuery is specified, the Business search ignores Name, Category, and Keyword.

#### 6.2.2.3 Business Parameters Examples

The following provides examples of how to specify Business parameters in the endpoint of a Business Search Request.

**NOTE:** In order to perform a successful Business search, one or more Location parameters and your API Key (Account parameter - APIKey) must also be specified in the Business Search Request.

##### 6.2.2.3.1 FreeFormQuery

The following endpoints are examples of business searches that use the Free Form search which can include any of the other search types as well as natural language queries.

- Search for nearby hotels in Hollywood, CA using natural language:

"https://trialapi.soleo.com/businesses?FreeFormQuery=What\_hotels\_are\_nearby%3F&City=Hollywood&State=CA&APIKey=[YOUR\_API\_KEY]"

- Search for burritos in the 34511 Postal Code area using keywords:

https://trialapi.soleo.com/businesses?FreeFormQuery=  
**burritos**&PostalCode=34511&APIKey=[YOUR\_API\_KEY]

- Search for life insurance in Akron, Ohio using category:

"https://trialapi.soleo.com/businesses?FreeFormQuery=  
**life\_insurance&City=Akron&State=OH**&APIKey=[YOUR\_API\_KEY]"

- Search for a McDonalds near latitude/longitude of "43.1234/77.1234 using business name:

"https://trialapi.soleo.com/businesses?FreeFormQuery= **McDonalds&Latitude=43.1234&Longitude=77.1234**&APIKey=[YOUR\_API\_KEY]"

#### 6.2.2.3.2 Keyword

The following endpoints are examples of searches for businesses that contain a specific Keyword.

- Search for businesses that contain the Keyword "insurance" in Chicago, IL:

"https://trialapi.soleo.com/businesses?Keyword=**insurance**&City=Chicago&State=IL&APIKey=[YOUR\_API\_KEY]"

- Search for businesses that contain the Keyword "insurance" in the 14450 Postal Code area:

"https://trialapi.soleo.com/businesses?Keyword=**insurance**&PostalCode=14450&APIKey=[YOUR\_API\_KEY]"

#### 6.2.2.3.3 Category

The following endpoints are examples of searches for businesses that are assigned to a specific Category.

- Search for businesses with a Category of "Florist" in Rochester, NY:

"https://trialapi.soleo.com/businesses?Category=**Florist**&City=Rochester&State=NY&APIKey=[YOUR\_API\_KEY]"

- Search for businesses with a Category of "General Contractors" in Salem, MA:

"https://trialapi.soleo.com/businesses?Category=**General+Contractors**&City=Salem&State=MA&APIKey=[YOUR\_API\_KEY]"

#### 6.2.2.3.4 Name

The following endpoints are examples of searches for businesses with a specific Name.

- Search for businesses with the Business Name of "Hilton" in Hollywood, CA:

"https://trialapi.soleo.com/businesses?Name=**Hilton**&City=Hollywood&State=CA&APIKey=[YOUR\_API\_KEY]"

- Search for businesses with the Business Name of "Chipotle Mexican Grill", in the 34511 Postal Code area:

"https://trialapi.soleo.com/businesses?Name=Chipotle+Mexican+Grill&PostalCode=34511&APIKey=[YOUR\_API\_KEY]"

**NOTE:** Name search performs an implicit wildcard search on each word specified in the Name parameter (e.g., "ray flan" will match "Raymour and Flanigan").

#### 6.2.2.3.5 Open Only

The following endpoints are examples of searches that utilize the Open Only feature.

- Search for businesses with the Keyword "bikes" in the 14450 Postal Code area and request that only open businesses be returned in the search results:

https://trialapi.soleo.com/businesses?Keyword=bikes&PostalCode=14450&OpenOnly=yes&APIKey=[YOUR\_API\_KEY]

**NOTE:** Search results may also include results for businesses that don't have defined open hours. The default assumption is that such businesses are open.

- Search for businesses with the Business Name of "Chipotle Mexican Grill", in the 34511 Postal Code area and request that all matching businesses be returned regardless of whether or not they are open:

"https://trialapi.soleo.com/businesses?Name=Chipotle+Mexican+Grill&PostalCode=34511&OpenOnly=no&APIKey=[YOUR\_API\_KEY]"

#### 6.2.2.3.6 Type

The following endpoints are examples of searches that utilize the Type feature.

- Search for businesses with the Keyword "bikes" in the 14450 Postal Code area, only include open businesses that have revenue generating opportunities when the End User calls the business:

https://trialapi.soleo.com/businesses?Keyword=bikes&PostalCode=14450&OpenOnly=yes&Type=called&APIKey=[YOUR\_API\_KEY]

- Search for businesses with the Business Name of "Chipotle Mexican Grill" in the 34511 Postal Code area, only include those businesses that have revenue generating opportunities when the business listing is presented to the End User and when the End User selects that business:

"https://trialapi.soleo.com/businesses?Name=Chipotle+Mexican+Grill&PostalCode=34511&Type=presented,selected&APIKey=[YOUR\_API\_KEY]"

### 6.2.3 Location Parameters

Location parameters are used to search for businesses in a targeted geographic area. The following options are available for specifying the desired geographic area:

1. Address Designation by Latitude and Longitude with Radius
2. Address Designation by City/State Pair
3. Address Designation by Postal Code

### 6.2.3.1 Location Parameters Definitions

The following defines the Location parameters that are available for searching business listings in a targeted geographic area.

With any of the location parameters you can create a circular fence which identifies an area around the center point of the location provided. All businesses results returned would be within that circular fence, for example within 10 miles from the center of the City/State Pair or Rochester, NY.

#### 6.2.3.1.1 Geocoded Circular Fence Option Address Designation by Latitude and Longitude

The following defines the Geocoded Circular Fence parameters that are available for searching business listings by Latitude, Longitude, and Radius.

**NOTE:** Even though geocodes are not restricted, you should only expect the search results to contain listings in the continental United States, Alaska, and Hawaii.

Parameter Name	Description	Required/Optional	Data Type	Example
<b>Latitude</b>	<p>Latitude of the geographic area in which you want to search.</p> <p>Valid range of values is -90.0000000 to 90.0000000, inclusive. Must point to a location in the USA.</p> <p><b>NOTE:</b> Latitude has maximum precision of 7 digits to the right of the decimal point. If more than 7 digits are specified, it will be truncated to 7 digits (8<sup>th</sup> digit and up are dropped).</p>	See Rules	String	"43.1022421"
<b>Longitude</b>	<p>Longitude of the geographic area in which you want to search.</p> <p>Valid range of values is -180.0000000 to 180.0000000, inclusive. Must point to a location in the USA.</p> <p><b>NOTE:</b> Longitude has maximum precision of 7 digits to the right of the decimal point. If more than 7 digits are specified, it will be truncated to 7 digits (8<sup>th</sup> digit and up are dropped).</p>	See Rules	String	"-77.5384997"
<b>Radius</b>	<p>Radius (in miles) that forms a circular fence around the geographic area in which you want to search.</p> <p>Valid range of values is 0.01 to 999.99, inclusive.</p> <p>Default value - 7 miles.</p>	Optional	String	"20"

#### Location Parameters Definitions - Geocoded Circular Fence Option

### 6.2.3.1.2 Address Designation by City/State Pair Option

The following defines the Address Designation by City/State Pair parameters that are available for searching business listings by City and State.

Parameter Name	Description	Required/Optional	Data Type	Example
<b>City</b>	Name of the City in which you want to search.	See Rules	String	"Rochester"
<b>State</b>	<p>2-character postal abbreviation for the State or U.S. territory in which you want to search.</p> <p>Valid values for the 50 U.S. States and Washington, DC are:</p> <p>AK, AL, AR, AZ, CA, CO, CT, DC, DE, FL, GA, HI, IA, ID, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, MT, NC, ND, NE, NH, NJ, NM, NV, NY, OH, OK, OR, PA, RI, SC, SD, TN, TX, UT, VA, VT, WA, WS, WV, WY</p> <p>Valid values for the U.S. territories are:</p> <p>AS (American Samoa), FM (Federated States of Micronesia), GU (Guam), MH (Marshall Islands), MP (Northern Mariana Islands), PW (Palau), PR (Puerto Rico), VI (Virgin Islands)</p>	See Rules	String	"NY"
<b>Radius</b>	<p>Radius (in miles) that forms a circular fence around the geographic area in which you want to search.</p> <p>Valid range of values is 0.01 to 999.99, inclusive.</p> <p>Default value - 7 miles.</p>	Optional	String	"20"

#### Location Parameters Definitions - Address Designation by City/State Pair Option

### 6.2.3.1.3 Address Designation by Postal Code

The following defines the Address Designation by Postal Code parameters that are available for searching business listings by Postal Code.

Parameter Name	Description	Required/Optional	Data Type	Example
<b>Postal Code</b>	<p>Postal Code in which you want to search.</p> <p>Valid values are:</p> <ul style="list-style-type: none"> <li>5-digit Postal Code</li> <li>9-digit Postal Code</li> <li>9-digit Postal Code with a dash ("-") between the 5<sup>th</sup> and 6<sup>th</sup> digits</li> </ul>	See Rules	String	<p>"14618"</p> <p>"146183232"</p> <p>"14618-3232"</p>

Parameter Name	Description	Required/ Optional	Data Type	Example
<b>Radius</b>	Radius (in miles) that forms a circular fence around the geographic area in which you want to search.  Valid range of values is 0.01 to 999.99, inclusive.  Default value - 7 miles.	Optional	String	"20"

### Location Parameters Definitions - Address Designation by Postal Code Option

#### 6.2.3.2 Location Parameters Rules

The following defines the rules for the Location parameters specified in a Business Search Request:

1. At least one Location parameter option (Geocoded Circular Fence, Address Designation by City/State Pair, or Address Designation by Postal Code) must be specified in every Business Search Request.
2. If Latitude is specified, Longitude must be specified.
3. If Longitude is specified, Latitude must be specified.
4. If City is specified, State must be specified.
5. If State is specified, City must be specified.
6. Radius can be specified along with any of the other location parameters.
7. If Postal Code and a City/State pair are specified, but the specified Postal Code is for a different City/State, the search returns those business listings that match the specified Postal Code and/or City/State Pair (search forms a union of both sets of results).

#### 6.2.3.3 Location Parameters Examples

The following provides examples of how to specify Location parameters in the endpoint of a Business Search Request.

**NOTE:** In order to perform a successful Business search, one or more Business parameters and your API Key (Account parameter - APIKey) must also be specified in the Business Search Request.

##### 6.2.3.3.1 Address Designation by Latitude and Longitude

The following endpoints are examples of searches for businesses that fall within a specific geographic area.

- Search for businesses that contain the Keyword "insurance" that fall within a 5-mile radius of Latitude 43.102242 and Longitude -77.538499.  
  
"https://trialapi.soleo.com/businesses?Keyword=insurance& **Latitude=43.102242&Longitude=-77.538499&Radius=5&APIKey=[YOUR\_API\_KEY]**"
- Search for businesses with a Category of "Florist" that fall within a 10-mile radius of Latitude 43.102242 and Longitude -77.538499.  
  
https://trialapi.soleo.com/businesses?Category=Florist& **Latitude=43.102242&Longitude=-77.538499&Radius=10&APIKey=[YOUR\_API\_KEY]**



- Search for businesses with a Category of "Florist" that fall within the default radius (7-miles) of Latitude 43.102242 and Longitude -77.538499.

`https://trialapi.soleo.com/businesses?Category=Florist&Latitude=43.102242&Longitude=-77.538499&APIKey=[YOUR_API_KEY]`

#### 6.2.3.3.2 Address Designation by City/State Pair

The following endpoints are examples of searches for businesses in a specific City and State.

- Search for businesses with a Category of "Florist" that fall within a 10-mile radius of Rochester, NY:

`"https://trialapi.soleo.com/businesses?Category=Florist&City=Rochester&State=NY&Radius=10&APIKey=[YOUR_API_KEY]"`

- Search for businesses with a Business Name of "Hilton" in New York City (New York, NY) within the default radius (7-miles):

`"https://trialapi.soleo.com/businesses?Name=Hilton&City=New+York&State=NY&APIKey=[YOUR_API_KEY]"`

#### 6.2.3.3.3 Address Designation by Postal Code

The following endpoints are examples of searches for businesses in a specific Postal Code.

- Search for businesses with a Category of "Travel" in the 14618 postal code area:

`"https://trialapi.soleo.com/businesses?Category=Travel&PostalCode=14618&APIKey=[YOUR_API_KEY]"`

- Search for businesses with a Keyword of "bikes" in the 324562222 postal code area:

`"https://trialapi.soleo.com/businesses?Keyword=bikes&PostalCode=324562222&APIKey=[YOUR_API_KEY]"`

- Search for businesses with a Keyword of "bikes" that fall within a 20-mile radius of the 32456-2222 postal code area:

`"https://trialapi.soleo.com/businesses?Keyword=bikes&PostalCode=32456-2222&Radius=20&APIKey=[YOUR_API_KEY]"`

### 6.2.4 User Parameters

User Parameters are used to send information about the End User that submitted the Business Search Request. These parameters do not affect the Business search results. They are only used for reporting purposes. This data is also useful for integrating reporting and analytic data into the API Customer's application/website.

### 6.2.4.1 User Parameters Definitions

The following defines the User parameters that are available for inclusion in your Business Search Request.

Parameter Name	Description	Required/Optional	Data Type	Example
<b>ANI</b>	<p>Automatic Number Identification (ANI) - End User's phone number. Used by Soleo to correlate End User activity with sponsored content monetization.</p> <p>Must comply with the North American Numbering Plan (NANP) - ANI must be one of the following:</p> <ul style="list-style-type: none"> <li>10 digits in NXXNXXXXXX format</li> <li>11 digits in 1NXXNXXXXXX format</li> </ul> <p>Where:</p> <ul style="list-style-type: none"> <li>N - integer between 2 and 9, inclusive</li> <li>X - integer between 0 and 9, inclusive</li> </ul>	Optional (see Rules)	Integer	5558675309 15558675309
<b>Reference ID</b>	String identifier generated by the API Customer's application that uniquely identifies this Business Search Request. The content of this data element is defined by the API Customer's application. Typically, it is the ID of the End User device making the request or the version number of the API Customer's application. This is used in reports for tracking purposes.	Optional	String	"d4aa7ed99d444ac09491a992b344bdfa" "1.2.50.0"
<b>Source ID</b>	String identifier that identifies the source that issued the Business Search Request. This can be the End User or the API Customer's application name or website. This is used for reporting purposes only.	Optional	String	"MobileSearchAppXYZ"
<b>IP Address</b>	IP address assigned to the End User that submitted the Business Search Request. This information is included in reports for tracking purposes.	Optional	String	"127.12.4.1"

### User Parameters Definitions

### 6.2.4.2 User Parameters Rules

The following defines the rules for the User parameters specified in a Business Search Request:

1. All User parameters are optional. You do not have to specify a User parameter in the Business Search Request in order to perform a successful Business search.
2. ANI is an optional, yet very valuable parameter. It enables Soleo to correlate End User activity with sponsored content monetization. Typically, you must specify an ANI in the Business Search Request in order to monetize sponsored listings. If you do not know the End User's ANI when the Business Search is created, a couple of options are provided that will enable you to monetize

sponsored listings. The following table defines the options that are available. Which option you choose is dependent upon your application, whether or not you are monetizing sponsored listings, and whether or not you have access to the End User's ANI.

ANI Option	When To Use	How To Use	Search Request - ANI Parameter
<b>Standard ANI</b>	<ul style="list-style-type: none"> <li>API Customer wants to monetize sponsored listings returned in the Business Search Response.</li> <li>API Customer's application knows the End User's ANI when the initial Business Search Request is created.</li> </ul> <p><b>This is the preferred option.</b></p>	<ul style="list-style-type: none"> <li>API Customer's application specifies the End User's ANI in the initial Business Search Request.</li> <li>Business Search Response contains Callback links for sponsored business listings.</li> <li>API Customer's application uses the Callback links to monetize specific End User actions with a sponsored business listing.</li> </ul>	End User's ANI
<b>ANI-switch</b>	<ul style="list-style-type: none"> <li>API Customer wants to monetize sponsored listings returned in the Business Search Response.</li> <li>API Customer's application does not know the End User's ANI when the initial Business Search Request is created, but is able to obtain the End User's ANI later in the user's session (prior to submitting a <b>Called Displayed Number</b> or <b>Called Completion Number</b> Callback Request).</li> </ul> <p><b>Contact your Soleo Account Manager, if you plan to use this option.</b></p>	<ul style="list-style-type: none"> <li>API Customer's application specifies a place-holder ANI in the initial Business Search Request.</li> <li>Business Search Response contains Callback links for sponsored business listings.</li> <li>API Customer's application uses the Callback links to monetize specific End User actions with a sponsored business listing. If the application performs a <b>Called Displayed Number</b> or <b>Called Completion Number</b> Callback Request, it must change (switch) the ANI specified in the Callback link to the End User's ANI, prior to submitting the Callback Request.</li> </ul>	Place-holder ANI (any valid NANP number)
<b>ANI-less</b>	<ul style="list-style-type: none"> <li>API Customer wants to monetize sponsored listings returned in the Business Search Response.</li> <li>API Customer's application does not have access to the End User's ANI.</li> </ul> <p><b>Contact your Soleo Account Manager to enable this option for your account.</b></p>	<ul style="list-style-type: none"> <li>API Customer's API Key must be configured to be "ANI-less".</li> <li>API Customer's application does not include ANI in the initial Business Search Request.</li> <li>Callback links are returned in the Business Search Response.</li> <li>API Customer's application uses the Callback links to monetize specific End User actions with a sponsored business listing.</li> </ul>	No ANI

ANI Option	When To Use	How To Use	Search Request - ANI Parameter
<b>No ANI</b>	<ul style="list-style-type: none"> <li>API Customer is only searching organic business listings</li> <li>- OR -</li> <li>API Customer does not want to generate revenue from sponsored listings returned in the Business Search Response.</li> </ul>	<ul style="list-style-type: none"> <li>API Customer's application does not include ANI in the initial Business Search Request.</li> <li>v1 - Callback links are not returned in the Business Search Response.</li> <li>v2 - Callback links are returned in the Business Search Response, but they cannot be used to monetize (ANI is required to do this).</li> </ul>	No ANI

### Business Search Request - ANI Parameter Options

#### 6.2.4.3 User Parameters Examples

The following provides examples of how to specify User parameters in the endpoint of a Business Search Request.

**NOTE:** In order to perform a successful Business search, one or more Business parameters, one or more Location parameters, and your API Key (Account parameter - APIKey) must also be specified in the Business Search Request.

##### 6.2.4.3.1 ANI

The following endpoints are examples of Business searches that include the End User's ANI.

- Search for businesses with a Category of "Florist" in Rochester, NY and include the End User's ANI (5558675309):  
`"https://trialapi.soleo.com/businesses?Category=Florist&City=Rochester&State=NY&ANI=5558675309&APIKey=[YOUR_API_KEY]"`
- Search for businesses that contain the Keyword "insurance" in the 14450 Postal Code area and include the End User's ANI (15858671212):  
`"https://trialapi.soleo.com/businesses?Keyword=insurance&PostalCode=14450&ANI=15858671212&APIKey=[YOUR_API_KEY]"`

##### 6.2.4.3.2 Reference ID

The following endpoint is an example of a Business search that includes the Reference ID that uniquely identifies this Business Search Request.

- Search for businesses with a Category of "Florist" in Rochester, NY and include Reference ID "d4aa7ed99d444ac09491a992b344bdafa":  
`"https://trialapi.soleo.com/businesses?Category=Florist&City=Rochester&State=NY&ReferenceId=d4aa7ed99d444ac09491a992b344bdafa&APIKey=[YOUR_API_KEY]"`

### 6.2.4.3.3 Source ID

The following endpoint is an example of a Business search that includes the Source ID that uniquely identifies the source that submitted the Business Search Request.

- Search for businesses with a Category of "Florist" in Rochester, NY and include Source ID "MobileAppXYZ":  
`"https://trialapi.soleo.com/businesses?Category=Florist&City=Rochester&State=NY&SourceId=MobileAppXYZ&APIKey=[YOUR_API_KEY]"`

### 6.2.4.3.4 IP Address

The following endpoint is an example of a Business search that includes the IP Address assigned to the End User that submitted the Business Search Request.

- Search for businesses with a Category of "Florist" in Rochester, NY. Include the user's IP Address (127.0.0.1):  
`"https://trialapi.soleo.com/businesses?Category=Florist&City=Rochester&State=NY&IPAddress=127.0.0.1&APIKey=[YOUR_API_KEY]"`

## 6.2.5 Results Parameters

The Results parameters are used to specify the:

- Maximum number of organic business listings to include in the search results.
- Maximum number of sponsored business listings to include in the search results.
- Order in which to sort the business listings that are returned in the search results.

### 6.2.5.1 Results Parameters Definition

The following defines the Results parameters that are provided.

Parameter Name	Description	Required/ Optional	Data Type	Example
<b>MaxSponsored Count</b>	Maximum number of sponsored businesses to return in the search results. If not specified, the maximum is determined by a pre-defined system configuration.  <b>NOTE:</b> Only use this parameter when searching the <b>/sponsored</b> or <b>/businesses</b> endpoints. Including this parameter with the <b>/organic</b> endpoint will result in an error.	Optional	Integer	10
<b>MaxOrganicCount</b>	Maximum number of organic businesses to return in the search results. If not specified, the maximum is determined by a pre-defined system configuration.  <b>NOTE:</b> Only use this parameter when searching the <b>/organic</b> or <b>/businesses</b> endpoints. Including this parameter with the <b>/sponsored</b> endpoint will result in an error.	Optional	Integer	10

Parameter Name	Description	Required/ Optional	Data Type	Example
<b>Sort</b>	<p>Defines the order in which to sort the business listings returned in the search results.</p> <p>Valid values are:</p> <ul style="list-style-type: none"> <li>distance - sort by distance</li> <li>value - sort by value</li> <li>value_distance - sort by value and distance</li> <li>name_category_distance - sort by name, category, and distance (Free Form Query search only)</li> <li>confidence – sort by confidence and then by distance. Only used for FreeFormQuery. For any other query type this will default to distance.</li> </ul> <p>If no Sort parameter is specified, the default sort order will be value_distance</p> <p>See below for more information regarding the algorithms used for each sort order.</p>	Optional	String	<p>"distance"</p> <p>"value"</p> <p>"value_distance"</p> <p>"name_category_distance"</p>

### Results Parameters Definition

The following defines the sort algorithm that is used for each Sort option:

1. Sort By Distance - "distance"

Business listings are sorted according to their proximity to the area specified in the Location parameters. The listings are sorted in ascending distance order, from the shortest distance to the longest distance from the specified location.

2. Sort By Value - "value"

Business listings are sorted according to their estimated value (potential revenue that can be generated from that listing). Organic listings have a value of zero. The listings are sorted in descending value order, from the highest revenue generating potential to the lowest revenue generating potential.

Refer to **Monetization Overview** and **Callbacks** for additional information regarding revenue generating opportunities.

3. Sort By Value and Distance - "value\_distance" (default)

Sponsored business listings are sorted according to their estimated value (potential revenue that can be generated from that listing) and their distance from the area specified in the Location parameters. The listings are sorted as follows:

- The business listings are split into two groups - sponsored businesses first, organic businesses second.
- The sponsored business listings appear first in the results. They are sorted in descending value order, from the highest revenue generating potential to the lowest revenue generating potential. Then they are sorted in ascending distance order, from the shortest distance to the longest distance from the area specified in the Location parameters.

- The organic business listings follow the sorted sponsored listings. The organic listings are sorted in ascending distance order, from the shortest distance to the longest distance from the area specified in the Location parameters.

4. Sort By Name, Category, Distance - "name\_category\_distance"

The closest business whose name exactly matches the Name specified in the Business Search Request appears as the first business listing in the search results.

The remaining business listings are sorted in descending Category Weight order. The Category Weight associated with each business listing indicates the level of confidence that its category is a good match. The higher the Category Weight, the higher the level of confidence that the listing's category is a good match. Then, the listings are sorted in ascending distance order, from the shortest distance to the longest distance from the area specified in the Location parameters.

5. Sort Confidence, Distance - "confidence"

The FreeFormQuery search type uses linguistic models to determine how the content of the query string best matches business names and categories and then scores the resulting business names and business names found for the categories. The businesses are sorted based on highest confidence score and then closest business for that confidence score. This could mean that one or more business names matched highest, one or more categories matched highest or a mix of business names and categories matched high and additional business names and categories matched with a lower confidence.

The business listings are sorted based on the confidence that the business or category associated with the businesses matches the query request from highest confidence to lowest confidence. Within a confidence value the businesses are then sorted by distance from the area specified in the Location parameters.

The remaining business listings, which do not have a confidence value are sorted at the end based on distance from the area specified in the Location parameters.

This sort method is meant to be used with FreeFormQuery. For any other query type, it will have the same effect as the "Distance" sort option.

**NOTE:** If a Sort parameter is not specified in the Business Search Request, the default is "Sort by Value and Distance" ("value\_distance").

### 6.2.5.2 Results Parameters Rules

The following defines the rules for the Results parameters specified in a Business Search Request:

1. Only use **MaxSponsoredCount** when you are searching the **/sponsored** or **/businesses** endpoints. Including this parameter with the **/organic** endpoint will result in an error.
2. Only use **MaxOrganicCount** when you are searching the **/organic** or **/businesses** endpoints. Including this parameter with the **/sponsored** endpoint will result in an error.
3. If you do not specify a **Sort** parameter in the Business Search Request, the business listings are sorted by "Value and Distance".
4. In order to obtain the best results when sorting by distance, it is recommended that you use Latitude and Longitude for your location parameters.

### 6.2.5.3 Results Parameters Examples

The following endpoints are examples of how to specify Results parameters in the endpoint of a Business Search Request.

**NOTE:** In order to perform a successful Business search, one or more Location parameters, and your API Key (Account parameter - APIKey) must also be specified in the Business Search Request.

- Search for businesses with a Category of "Florist" in Rochester, NY. Do not include more than 3 sponsored business listings in the search results and sort the listings by distance:

"https://trialapi.soleo.com/businesses?Category=Florist&City=Rochester&State=NY&  
**MaxSponsoredCount=3&Sort=distance**&APIKey=[YOUR\_API\_KEY]"

- Search for businesses with a Category of "Florist" in Rochester, NY. Do not include more than 7 organic business listings in the search results and sort the listings by value:

"https://trialapi.soleo.com/businesses?Category=Florist&City=Rochester&State=NY&  
**MaxOrganicCount=7&Sort=value**&APIKey=[YOUR\_API\_KEY]"

- Search for businesses with a Category of "Florist" in Rochester, NY. Do not include more than 7 organic business listings and do not include more than 3 sponsored listings. Use default sorter:

"https://trialapi.soleo.com/businesses?Category=Florist&City=Rochester&State=NY&  
**MaxOrganicCount=7&MaxSponsoredCount=3**&APIKey=[YOUR\_API\_KEY]"

## 6.3 Business Search Response

This section describes the contents of the Business Search Response that is returned as the result of performing a Business search.

A Business Search Response is an HTTP-based response. It is comprised of a Response Status, Response Headers, and a Response Body that contains the business listings that were returned by the Business search. The following defines the contents of each of these components.

### 6.3.1 Response Status

Response Status is an HTTP response code that indicates the status of the Business search. Appendix A lists the HTTP response codes that can be received and explains the reason for receiving each code. If a response code indicates an error occurred, the Appendix also tells you how to troubleshoot the problem.

### 6.3.2 HTTP Response Headers

The Business Search Response contains the following HTTP Response Headers:

- **Cache-Control** - cache control directive for the API.  
Always set to "no-cache".
- **Content-Type** - defines the format of the search response:
  - application/json - indicates search results are returned in JSON format
  - application/xml - indicates search results are returned in XML format
  - text/plain - indicates an error occurred (error message is plain text)
  - charset=utf-8 - indicates the character encoding of the text is "UTF-8"
- **Date** - date and time of the Business Search Response.



- **Server** - identifies the server that generated the Business Search Response.
- **Content-Length** - defines the length, in bytes, of the Business Search Response.

The following is an example of the HTTP Response Headers that are returned in the Business Search Response:

```
Cache-Control: no-cache
Content-Type: application/json;charset=utf-8
Date: Thu, 22 Sep 2016 13:43:13 GMT
Server: Apache
Content-Length: 2892
```

### 6.3.3 Response Body

The HTTP Response Headers are followed by the Response Body, which is either a JSON or XML document that contains the business listings that were returned by the Business search.

**NOTE:** The Accept Header in the Business Search Request specified which document format (JSON or XML) to use. If the Business Search Request did not include an Accept Header, the search results are returned in JSON format.

#### 6.3.3.1 JSON Document Format

The JSON document includes Callbacks, which can be provided in one of two formats:

- v1 - JSON document only includes the **Presented** Callback. The API Customer's application/website must submit Callback Requests to obtain the other Callbacks.
- v2 - All business information is returned in the JSON document, eliminating the need for the Callbacks for additional information. The only Callbacks that are required are the **Called Displayed Number** and **Called Completion Number** Callbacks, which are included in the JSON document.

The Accept Header in the Business Search Request specified which Callback format to use (see [HTTP Request Headers](#)).

See [Monetization Overview](#) and [Callbacks](#) for additional information regarding Callbacks.

##### 6.3.3.1.1 JSON v1 Format

The following defines the format of the search results when they are returned as a JSON v1 document. See [Response Data Element Definitions](#) for a detailed description of each data element (items in **BOLD**).

**NOTE:** In a previous version of the API, the "monetizationCriteria" and "costCriteria" tags were misspelled as "monetizationCriteria" and "costCriteria", respectively. Currently, the software supports both spellings, but be aware that the misspelled tags will be deprecated in a future release. It is highly recommended that you use the correct spelling in your application, so your application will not run into problems when the misspelled tags are no longer supported. Existing API Customers should update their applications/websites as soon as possible.

```
{
  "summary": {
    "resultCount": {
      "sponsored": "sponsored_count",
      "organic": "organic_count",
```

```

    },
    "validUntil": "valid_until"
  },
  "businesses": [{
    "name": "business_name",
    "address": "business_address",
    "city": "business_city",
    "state": "business_state",
    "zip": "business_postal_code",
    "type": "business_type",
    "categoryName": "category_name",
    "categoryID": "category_id",
    "url": "business_url",
    "image": "business_image_url",
    "verified": "business_verified",
    "score": "business_score",
    "latitude": "business_latitude",
    "longitude": "business_longitude",
    "distance": {
      "miles": "miles"
    }
  },
  "monetizationCriteria": {
    "action": "revenue_action",
    "criteria": "revenue_criteria",
    "value": "revenue_amount",
    "validUntil": "revenue_valid_until "
  },
  "costCriteria": {
    "action": "cost_action",
    "value": "cost_amount",
    "validUntil": "cost_valid_until"
  },
  "_links": [{
    "rel": "presented_callback",
    "href": "presented_callback_link",
    "method": "presented_callback_method"
  }
  ]
},
"_links": [{
  "rel": "bus_search_relationship",
  "href": "bus_search_link",
  "method": "bus_search_method"
}]
}

```

### 6.3.3.1.2 JSON v2 Format

The following defines the format of the search results when they are returned as a JSON v2 document. See **Response Data Element Definitions** for a detailed description of each data element (items in **BOLD**).

```
{
  "summary": {
    "resultsCount": {
      "sponsored": "sponsored_count",
      "organic": "organic_count",
    },
    "validUntil": "valid_until"
  },
  "businesses": [
    {
      "name": "business_name",
      "address": "business_address",
      "city": "business_city",
      "state": "business_state",
      "zip": "business_postal_code",
      "latitude": "business_latitude",
      "longitude": "business_longitude",
      "type": "business_type",
      "displayPhoneNumber": "displayed_number",
      "completionPhoneNumber": "completion_number",
      "distance": {
        "miles": "miles",
      },
      "monetizationCriteria": {
        "action": "revenue_action",
        "criteria": "revenue_criteria",
        "value": "revenue_amount",
        "validUntil": "revenue_valid_until"
      },
      "costCriteria": {
        "action": "cost_action",
        "value": "cost_amount",
        "validUntil": "cost_valid_until"
      },
      "details": {
        "isOpen": "open_indicator",
        "hours": "hours_of_operation",
        "displayHours": "display_hours",
        "timeZone": "business_time_zone",
        "descriptors": [business_descriptor],
        "thirdPartyData": [
          {
            "eventURL": "event_url",
            "eventType": "event_type"
          },
        ],
      },
    }
  ]
}
```

```

        "eventURL": "event_url",
        "eventType": "event_type"
    },
    ],
    "socialMedia": {
        "facebook": "social_media_url",
        "foursquare": "social_media_url",
        "linkedin": "social_media_url",
        "twitter": "social_media_url"
    },
    "images": {
        "primary": [image_url],
        "logo": [image_url],
        "storefront": [image_url],
        "exterior": "[image_url]",
        "interior": [image_url]
    },
    "associations": [business_association]
},
"categoryName": "category_name",
"categoryID": "category_id",
"url": "business_url",
"image": "business_image_url",
"verified": "business_verified",
"score": "business_score",
    "_links": [
        {
            "rel": "called_displayed_callback",
            "href": "called_displayed_callback_link ",
            "method": "called_displayed_callback_method"
        },
        {
            "rel": "called_completion_callback",
            "href": "called_completion_callback_link"
            "method": "called_completion_callback_method"
        }
    ]
}
],
"_links": [
    {
        "rel": "bus_search_relationship",
        "href": "bus_search_link",
        "method": "bus_search_method"
    }
]
}

```

### 6.3.3.2 XML Document Format

The XML document includes Callbacks, which can be provided in one of two formats:

- v1 - XML document only includes the **Presented** Callback. The API Customer's application/website must submit Callback Requests to obtain the other Callbacks.
- v2 - All business information is returned in the XML document, eliminating the need for Callbacks for additional information. The only Callbacks that are required are the **Called Displayed Number** and **Called Completion Number** Callbacks, which are included in the XML document.

The Accept Header in the Business Search Request specified which Callback format to use (see [HTTP Request Headers](#)).

See [Monetization Overview](#) and [Callbacks](#) for additional information.

#### 6.3.3.2.1 XML v1 Format

The following defines the format of the search results when they are returned as an XML v1 document. See [Response Data Element Definitions](#) for a detailed description of each data element (items in **BOLD**).

```
<?xml version="1.0" encoding="UTF-8"?>
<results>
  <summary>
    <resultcount>
      <sponsored>sponsored_count</sponsored>
      <organic>organic_count</organic>
    </resultcount>
    <validuntil>valid_until</validuntil>
  </summary>
  <businesses>
    <business>
      <name>business_name</name>
      <address>business_address</address>
      <city>business_city</city>
      <state>business_state</state>
      <zip>business_postal_code</zip>
      <latitude>business_latitude</latitude>
      <longitude>business_longitude</longitude>
      <distance>
        <miles>miles</miles>
      </distance>
      <type>business_type</type>
      <categoryName>category_name</categoryName>
      <categoryID>category_id</categoryID>
      <url>business_url</url>
      <image>business_image_url</image>
      <verified>business_verified</verified>
      <score>business_score</score>
    </business>
  </businesses>
  <monetizationcriteria>
    <action>revenue_action</action>
    <criteria>revenue_criteria</criteria>
  </monetizationcriteria>
</results>
```

```

        <value>revenue_amount</value>
        <validuntil>revenue_valid_until</validuntil>
    </monetizationcriteria>
    <costcriteria>
        <action>cost_action</action>
        <value>cost_amount</value>
        <validuntil>cost_valid_until</validuntil>
    </costcriteria>
    <_links>
        <presented>
            <rel>presented_callback</rel>
            <href>presented_callback_link</href>
            <method>presented_callback_method</method>
        </presented>
    </_links>
</business>
</businesses>
<_links>
    <self>
        <rel>bus_search_relationship</rel>
        <href>bus_search_link</href>
        <method>bus_search_method</method>
    </self>
</_links>
</results>

```

#### 6.3.3.2.2 XML v2 Format

The following defines the format of the search results when they are returned as an XML v2 document. See [Response Data Element Definitions](#) for a detailed description of each data element (items in **BOLD**).

```

<?xml version="1.0" encoding="UTF-8"?>
<results>
    <summary>
        <resultCount>
            <sponsored>sponsored_count</sponsored>
            <organic>organic_count</organic>
        </resultCount>
        <validUntil>valid_until</validUntil>
    </summary>
    <businesses>
        <business>
            <name>business_name</name>
            <address>business_address</address>
            <city>business_city</city>
            <state>business_state</state>
            <zip>business_postal_code</zip>
            <latitude>business_latitude</latitude>
            <longitude>business_longitude</longitude>
            <displayPhoneNumber>displayed_number</displayPhoneNumber>
        </business>
    </businesses>
</results>

```

```

<completionPhoneNumber>completion_number</completionPhoneNumber>
<distance>
  <miles>miles</miles>
</distance>
<type>business_type</type>
<monetizationCriteria>
  <action>revenue_action</action>
  <criteria>revenue_criteria</criteria>
  <value>revenue_amount</value>
  <validUntil>revenue_valid_until</validUntil>
</monetizationCriteria>
<costCriteria>
  <action>cost_action</action>
  <value>cost_amount</value>
  <validUntil>cost_valid_until</validUntil>
</costCriteria>
<details>
  <isOpen>open_indicator</isOpen>
  <hours>hours_of_operation</hours>
  <displayHours>display_hours</displayHours>
  <timeZone>business_time_zone</timeZone>
  <descriptors>
    <descriptor>business_descriptor</descriptor>
  </descriptors>
  <thirdPartyData>
    <thirdPartyEvent>
      <eventType>event_url</eventType>
      <eventURL>event_type</eventURL>
    </thirdPartyEvent>
    <thirdPartyEvent>
      <eventType>event_url</eventType>
      <eventURL>event_type</eventURL>
    </thirdPartyEvent>
  </thirdPartyData>
  <socialMedia>
    <facebook>social_media_url</facebook>
    <foursquare>social_media_url</foursquare>
    <linkedin>social_media_url</linkedin>
    <twitter>social_media_url</twitter>
  </socialMedia>
  <images>
    <primary>
      <urls>
        <url>image_url</url>
      </urls>
    </primary>
    <logo>
      <urls>
        <url>image_url</url>
      </urls>
    </logo>
  </images>

```

```

        </logo>
        <storeFront>
            <urls>
                <url>image_url</url>
            </urls>
        </storeFront>
        <exterior>
            <urls>
                <url>image_url</url>
            </urls>
        </exterior>
        <interior>
            <urls>
                <url>image_url</url>
            </urls>
        </interior>
    </images>
    <associations>
        <association>business_association</association>
    </associations>
</details>
<categoryName>category_name</categoryName>
<categoryID>category_id</categoryID>
<url>business_url</url>
<image>business_image_url</image>
<verified>business_verified</verified>
<score>business_score</score>
    <_links>
        <calledDisplayNumber>
            <rel>called_displayed_callback</rel>
            <href>called_displayed_callback_link</href>
            <method>called_displayed_callback_method</method>
        </calledDisplayNumber>
        <calledCompletionNumber>
            <rel>called_completion_callback</rel>
            <href>called_completion_callback_link</href>
            <method>called_completion_callback_method</method>
        </calledCompletionNumber>
    </_links>
</business>
</businesses>
<_links>
    <self>
        <rel>bus_search_relationship</rel>
        <href>bus_search_link</href>
        <method>bus_search_method</method>
    </self>
</_links>
</results>

```



### 6.3.3.3 Response Data Element Definitions

The following defines the data elements (**BOLD** items in JSON and XML format descriptions) that are returned in the JSON and XML documents. The "Sponsored/Organic" column indicates one of the following:

- Sponsored - data value is only provided for sponsored business listings
- Organic - data value is only provided for organic business listings
- Both - data value is provided for sponsored and organic business listings

**NOTE:** The data elements returned in a JSON document are identical to the data elements returned in an XML document. The only difference between the two is the syntax used to represent each data element.

**NOTE:** Callback links are only included in the Business Search Response, if one of the following is true:

- The End User's ANI was specified in the initial Business Search Request.
- A place-holder ANI was specified in the initial Business Search Request.
- The API Customer's API Key is configured to be "ANI-less".

See [User Parameters Rules](#) for more information.

Data Element	Description	Sponsored/ Organic
<b>sponsored_count</b>	Number of sponsored business listings included in search results.	Both
<b>organic_count</b>	Number of organic business listings included in search results.	Both
<b>valid_until</b>	<p>Date and time when this session will expire, in UTC (Coordinated Universal Time) format:            YYYY-MM-DDTHH:MM:SS.sssZ</p> <p>Where:</p> <ul style="list-style-type: none"> <li>▪ YYYY - 4-digit year</li> <li>▪ MM - 2-digit month</li> <li>▪ DD - 2-digit day</li> <li>▪ T - constant value</li> <li>▪ HH - hours in military time</li> <li>▪ MM - minutes</li> <li>▪ SS.sss - seconds (reported to the thousandth of a second)</li> <li>▪ Z - constant value</li> </ul>	Both
<p><b>"businesses" contains the following bulleted data elements for each business listing in the search results.</b></p> <p><b>NOTE:</b> If this business listing is for a national business, location information (<b>business_address</b>, <b>business_city</b>, <b>business_state</b>, and <b>business_postal_code</b>) is not provided.</p>		
▪ <b>business_name</b>	Name of the business.	Both
▪ <b>business_address</b>	<p>Business' street address - may contain several components (street number, building number, suite number, street name, street type, etc.).</p> <p><b>NOTE:</b> If this business is a national business, this data element is empty.</p>	Both

Data Element	Description	Sponsored/ Organic
▪ <b>business_city</b>	City in which the business is located. <b>NOTE:</b> If this business is a national business, this data element is empty.	Both
▪ <b>business_state</b>	2-character postal abbreviation for the State or U.S. territory in which the business is located. Valid values for the 50 U.S. States and Washington, DC are: AK, AL, AR, AZ, CA, CO, CT, DC, DE, FL, GA, HI, IA, ID, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, MT, NC, ND, NE, NH, NJ, NM, NV, NY, OH, OK, OR, PA, RI, SC, SD, TN, TX, UT, VA, VT, WA, WS, WV, WY Valid values for the U.S. territories are: AS (American Samoa), FM (Federated States of Micronesia), GU (Guam), MH (Marshall Islands), MP (Northern Mariana Islands), PW (Palau), PR (Puerto Rico), VI (Virgin Islands) <b>NOTE:</b> If this business is a national business, this data element is empty.	Both
▪ <b>business_postal_code</b>	Postal Code in which the business is located. Valid values are: ▪ 5-digit Postal Code ▪ 9-digit Postal Code ▪ 9-digit Postal Code with a dash ("-") between 5 <sup>th</sup> and 6 <sup>th</sup> digits <b>NOTE:</b> If this business is a national business, this data element is empty.	Both
▪ <b>business_type</b>	Type of business. Valid values are: ▪ organic - not supported by advertising, does not offer revenue generating opportunities ▪ sponsored - supported by advertising, may offer revenue generating opportunities	Both
▪ <b>category_name</b>	Name of the Category used to retrieve this business listing (text associated with Taxonomy ID assigned to category). If a <b>Sort</b> parameter is specified in the Business Search Request and it is set to "name_category_distance", the following rule applies: If this listing's Business Name exactly matches the <b>Name</b> parameter specified in the initial Business Search Request, this data element contains "ClosestNamedBusiness".	Both
▪ <b>category_id</b>	Category ID (Taxonomy ID) assigned to the Category used to retrieve this business listing.	Both
▪ <b>business_url</b>	URL to the business' web site.	Both
▪ <b>business_image_url</b>	A URL to the primary image for the business	Both

Data Element	Description	Sponsored/ Organic
▪ <b>business_verified</b>	Either the business owner, a digital advertising company acting on behalf of the business, or a Soleo data curator has verified the listing information for the business.	Both
▪ <b>business_score</b>	(future)	Both
▪ <b>business_latitude</b>	Vertical component of the business' geocode location. Valid range of values is -90.0000000 to 90.0000000, inclusive. <b>NOTE:</b> Latitude has a maximum precision of 7 digits to the right of the decimal point. If more than 7 digits are specified, Latitude is truncated to 7 digits.	Both
▪ <b>business_longitude</b>	Horizontal component of the business' geocode location. Valid range of values is -180.0000000 to 180.0000000, inclusive. <b>NOTE:</b> Longitude has a maximum precision of 7 digits to the right of the decimal point. If more than 7 digits are specified, Longitude will be truncated to 7 digits.	Both
▪ <b>displayed_number</b>	Business' telephone number. <b>NOTE:</b> This data element is only provided in the v2 Callback. If you are using the v1 Callback, you have to submit a Callback to obtain this number. <b>NOTE:</b> This number is for display purposes only. Do not use this number to complete a call for the End User. <b>You will not generate revenue by completing calls to this number.</b>	Both
▪ <b>completion_number</b>	Business' call completion telephone number. <b>NOTE:</b> This data element is only provided in the v2 Callback. If you are using the v1 Callback, you have to submit a Callback to obtain this number. <b>NOTE:</b> Use this number if the End User submits a request to call this business. <b>You will only generate revenue for completing calls to this number, if the revenue_criteria specified for this business listing is met.</b>	Sponsored
▪ <b>miles</b>	Distance, in miles, from the specified search area to this business.	Both
▪ <b>revenue_action</b>	Action for which revenue can be generated. Valid values are: <ul style="list-style-type: none"> <li>▪ PRESENTED - Revenue can be generated when this business listing is presented/impressed to the End User.</li> <li>▪ SELECTED - Revenue can be generated when the End User selects this business listing from the search results.</li> <li>▪ CALLED - Revenue can be generated when the End User calls this business, using the completion phone number, and the <b>revenue_criteria</b> specified for this business listing is met.</li> </ul>	Sponsored

Data Element	Description	Sponsored/ Organic
▪ <b>revenue_criteria</b>	<p>If <b>revenue_action</b> = CALLED, this contains one of the following:</p> <ul style="list-style-type: none"> <li>▪ A numeric value that specifies the minimum duration (in seconds) the End User must remain on the phone with this business in order to generate revenue.</li> <li>▪ Text that specifies the End User action that must occur in order to generate revenue (e.g., "appointment" or "qualified lead").</li> </ul> <p>If <b>revenue_action</b> is not CALLED, this is null.</p>	Sponsored
▪ <b>revenue_amount</b>	<p>Amount of revenue, in dollars, that is generated when the <b>revenue_action</b> occurs and the <b>revenue_criteria</b> is met.</p> <p><b>NOTE:</b> Dollar amounts may have a precision of 4 digits to the right of the decimal point.</p>	Sponsored
▪ <b>revenue_valid_until</b>	<p>Date and time when the opportunity to generate revenue from this business listing expires, in UTC (Coordinated Universal Time) format:</p> <p>YYYY-MM-DDTHH:MM:SS.sssZ</p> <p>Where:</p> <ul style="list-style-type: none"> <li>▪ YYYY - 4-digit year</li> <li>▪ MM - 2-digit month</li> <li>▪ DD - 2-digit day</li> <li>▪ T - constant value</li> <li>▪ HH - hours in military time</li> <li>▪ MM - minutes</li> <li>▪ SS.sss - seconds (reported to the thousandth of a second)</li> <li>▪ Z - constant value</li> </ul>	Sponsored
▪ <b>cost_action</b>	<p>Action that results in a cost to the API Customer.</p> <p>Valid values are:</p> <ul style="list-style-type: none"> <li>▪ Presented - Cost incurred when this business listing is presented to the End User.</li> <li>▪ Selected - Cost incurred when the End User selects this business listing from the search results.</li> <li>▪ CompletionNumberRequest - Cost incurred when the End User requests the completion number for this business listing (completion number has built-in call tracking).</li> <li>▪ Called - Cost incurred when the End User calls this business, using the call completion phone number.</li> </ul>	Organic
▪ <b>cost_amount</b>	<p>Amount, in dollars, the API Customer is charged when the <b>cost_action</b> occurs.</p> <p><b>NOTE:</b> Dollar amounts may have a precision of 4 digits to the right of the decimal point.</p>	Organic

Data Element	Description	Sponsored/ Organic
▪ <b>cost_valid_until</b>	<p>Date and time when a cost is no longer incurred when the <b>cost_action</b> occurs, in UTC (Coordinated Universal Time) format: YYYY-MM-DDTHH:MM:SS.sssZ</p> <p>Where:</p> <ul style="list-style-type: none"> <li>▪ YYYY - 4-digit year</li> <li>▪ MM - 2-digit month</li> <li>▪ DD - 2-digit day</li> <li>▪ T - constant value</li> <li>▪ HH - hours in military time</li> <li>▪ MM - minutes</li> <li>▪ SS.sss - seconds (reported to the thousandth of a second)</li> <li>▪ Z - constant value</li> </ul>	Organic
▪ <b>open_indicator</b>	<p>Indicates whether or not the business is open.</p> <p>Valid values are:</p> <ul style="list-style-type: none"> <li>▪ Yes - business is currently open.</li> <li>▪ No - business is currently closed.</li> <li>▪ Unknown - could not determine if business is currently open or closed.</li> </ul> <p><b>NOTE:</b> This data element is only provided in the v2 Callback. If you are using the v1 Callback, you have to submit a Callback to obtain this information.</p>	Both
▪ <b>hours_of_operation</b>	<p>Business' hours of operation. Example - Su 00:00-00:00, Mo 09:00-17:00, Tu 09:00-17:00, We 09:00-17:00, Th 09:00-17:00, Fr 09:00-17:00, Sa 00:00-00:00</p> <ul style="list-style-type: none"> <li>• The hours are returned in 24 hour time.</li> <li>• The open and close time are separated by a hyphen. If the time-period goes past midnight the close time will be less than the open time. For example 13:00-02:00</li> <li>• If there are multiple open/close times during a day each time block will be separated from the previous with a space. For Example 09:00-14:00 17:00-22:00.</li> <li>• If the business is closed the hours_of_operation field will be set to 00:00-00:00.</li> </ul> <p><b>NOTE:</b> This data element is only provided in the v2 Callback. If you are using the v1 Callback, you have to submit a Callback to obtain this information.</p>	Both

Data Element	Description	Sponsored/ Organic
▪ <b>display_hours</b>	<p>Business' hours of operation, as they should be displayed to the End User. Example - Sunday Closed, Monday 9:00 AM-5:00 PM, Tuesday 9:00 AM-5:00 PM, Wednesday 9:00 AM-5:00 PM, Thursday 9:00 AM-5:00 PM, Friday 9:00 AM-5:00 PM, Saturday Closed</p> <ul style="list-style-type: none"> <li>• If the business is open 24 hours the display might say "Open Daily 24 hours"</li> <li>• If the business is closed on any specific day that day would be displayed as "Closed"</li> </ul> <p><b>NOTE:</b> This data element is only provided in the v2 Callback. If you are using the v1 Callback, you have to submit a Callback to obtain this information.</p>	Both
▪ <b>business_time_zone</b>	<p>Time zone in which the business is located.</p> <p><b>NOTE:</b> This data element is only provided in the v2 Callback. If you are using the v1 Callback, you have to submit a Callback to obtain this information.</p>	Both
▪ <b>business_descriptor</b>	<p>Additional information that describes the business. This can be additional Categories that are assigned to the business, a list of credit cards accepted by this business, etc.</p> <p>Multiple business descriptors can be specified:</p> <ul style="list-style-type: none"> <li>▪ JSON format - descriptor values are separated by commas. For example: "descriptors": [ "BICYCLE DEALERS", "SKATING SUPPLIES", "BICYCLE RENTALS" ]</li> <li>▪ XML Format - Each descriptor has its own data element name/data value pair. For example: &lt;descriptor&gt;BICYCLE DEALERS&lt;/descriptor&gt; &lt;descriptor&gt;SKATING SUPPLIES&lt;/descriptor&gt; &lt;descriptor&gt;BICYCLE RENTALS&lt;/descriptor&gt;</li> </ul> <p><b>NOTE:</b> This data element is only provided in the v2 Callback. If you are using the v1 Callback, you have to submit a Callback to obtain this information.</p>	Both
▪ <b>event_url</b>	<p>A third party URL associated with the business that offers access to additional information, an event, or call to action (CTA).</p> <p><b>NOTE:</b> This data element is only provided in the v2 Callback. If you are using the v1 Callback, you have to submit a Callback to obtain this information.</p>	Organic

Data Element	Description	Sponsored/ Organic
▪ <b>event_type</b>	<p>The third-party action type associated with the event_url. The event_type can be used to determine a user-friendly label for the URL.</p> <p>Valid values are:</p> <ul style="list-style-type: none"> <li>• Make an Appointment</li> <li>• Order Online</li> <li>• Schedule Catering</li> </ul> <p><b>NOTE:</b> This data element is only provided in the v2 Callback. If you are using the v1 Callback, you must submit a Callback to obtain this information.</p>	Organic
▪ <b>social_media_url</b>	A third-party URL associated with the social media profile of the business. The social media site may be (but is not limited to) one of Facebook, Foursquare, LinkedIn, or Twitter.	Both
▪ <b>image_url</b>	A third-party URL for an image associated with the business. The image may represent one of the following image types: primary businesses image, business logo, storefront, exterior, or interior.	Both
▪ <b>business_association</b>	An association of which the business is a member or partner. For example, a chamber of commerce or better business bureau. The name of the association is a text string suitable for display.	Both
▪ <b>presented_callback</b>	<p>URN assigned to the <b>Presented</b> Callback (used when this business listing is presented/impressed to the End User).</p> <p>Valid value is "urn:soleo:businesses:presented".</p> <p><b>NOTE:</b> Only provided in the Business Search Response if you are using the v1 Callback.</p> <p><b>NOTE:</b> Only provided if the End User's ANI or a place-holder ANI was specified in the initial Business Search Request or the API Key is configured to be "ANI-less".</p>	Both
▪ <b>presented_callback_link</b>	<p>Callback link to use when submitting a <b>Presented</b> Callback Request to the Local Search API.</p> <p><b>NOTE:</b> Only provided in the Business Search Response if you are using the v1 Callback.</p> <p><b>NOTE:</b> Only provided if the End User's ANI or a place-holder ANI was specified in the initial Business Search Request or the API Key is configured to be "ANI-less".</p>	Both
▪ <b>presented_callback_method</b>	<p>HTTP method to use when submitting a <b>Presented</b> Callback Request to the Local Search API.</p> <p>Valid value is "POST".</p> <p><b>NOTE:</b> Only provided in the Business Search Response if you are using the v1 Callback.</p> <p><b>NOTE:</b> Only provided if the End User's ANI or a place-holder ANI was specified in the initial Business Search Request or the API Key is configured to be "ANI-less".</p>	Both

Data Element	Description	Sponsored/ Organic
▪ <b>called_displayed_callback</b>	<p>URN assigned to the <b>Called Displayed Number</b> Callback (used when the End User calls this business using the displayed telephone number).</p> <p>Valid value is "urn:soleo:businesses:calledisplaynumber".</p> <p><b>NOTE:</b> Only provided in the Business Search Response if you are using the v2 Callback. If you are using the v1 Callback, you must submit Callback Requests to obtain this data.</p> <p><b>NOTE:</b> Only provided if the End User's ANI or a place-holder ANI was specified in the initial Business Search Request or the API Key is configured to be "ANI-less".</p>	Sponsored
▪ <b>called_displayed_callback_link</b>	<p>Callback link to use when submitting a <b>Called Displayed Number</b> Callback Request to the Local Search API.</p> <p><b>NOTE:</b> Only provided in the Business Search Response if you are using the v2 Callback. If you are using the v1 Callback, you must submit Callback Requests to obtain this data.</p> <p><b>NOTE:</b> Only provided if the End User's ANI or a place-holder ANI was specified in the initial Business Search Request or the API Key is configured to be "ANI-less".</p>	Sponsored
▪ <b>called_displayed_callback_method</b>	<p>HTTP method to use when submitting a <b>Called Displayed Number</b> Callback Request to the Local Search API.</p> <p>Valid value is "POST".</p> <p><b>NOTE:</b> Only provided in the Business Search Response if you are using the v2 Callback. If you are using the v1 Callback, you must submit Callback Requests to obtain this data.</p> <p><b>NOTE:</b> Only provided if the End User's ANI or a place-holder ANI was specified in the initial Business Search Request or the API Key is configured to be "ANI-less".</p>	Sponsored
▪ <b>called_completion_callback</b>	<p>URN assigned to the <b>Called Completion Number</b> Callback (used when the End User calls this business using the completion telephone number).</p> <p>Valid value is "urn:soleo:businesses:calledcompletionnumber".</p> <p><b>NOTE:</b> Only provided in the Business Search Response if you are using the v2 Callback. If you are using the v1 Callback, you must submit Callback Requests to obtain this data.</p> <p><b>NOTE:</b> Only provided if the End User's ANI or a place-holder ANI was specified in the initial Business Search Request or the API Key is configured to be "ANI-less".</p>	Sponsored



Data Element	Description	Sponsored/ Organic
▪ <b>called_completion_callback_link</b>	<p>Callback link to use when submitting a <b>Called Completion Number</b> Callback Request to the Local Search API.</p> <p><b>NOTE:</b> Only provided in the Business Search Response if you are using the v2 Callback. If you are using the v1 Callback, you must submit Callback Requests to obtain this information.</p> <p><b>NOTE:</b> Only provided if the End User's ANI or a place-holder ANI was specified in the initial Business Search Request or the API Key is configured to be "ANI-less".</p>	Sponsored
▪ <b>called_completion_callback_method</b>	<p>HTTP method to use when submitting a <b>Called Completion Number</b> Callback Request to the Local Search API.</p> <p>Valid value is "POST".</p> <p><b>NOTE:</b> Only provided in the Business Search Response if you are using the v2 Callback. If you are using the v1 Callback, you must submit Callback Requests to obtain this data.</p> <p><b>NOTE:</b> Only provided if the End User's ANI or a place-holder ANI was specified in the initial Business Search Request or the API Key is configured to be "ANI-less".</p>	Sponsored
<b>bus_search_relationship</b>	<p>Identifies <b>bus_search_link</b> as the initial Business Search Request that generated these search results. Provided for informational purposes only.</p> <p>Valid value is "self".</p>	Both
<b>bus_search_link</b>	Link used for the initial Business Search Request. Provided for informational purposes only.	Both
<b>bus_search_method</b>	HTTP method used with <b>bus_search_link</b> . Provided for informational purposes only.	Both

### Business Search Response Data Element Definitions

#### 6.3.3.4 Response Body Examples

The following sections provide examples of the different Response Body formats:

- JSON v1
- JSON v2
- XML v1
- XML v2

##### 6.3.3.4.1 JSON v1 Response Body Example

The following provides an example of what the Response Body looks like when the business search results are returned as a JSON v1 document.

This example is a search for businesses using the Keyword "towing" and requesting all businesses within a 10-mile radius of Rochester, NY (used geocodes 43.038185, -77.458347), sorted by distance. The following is the Business Search Request for this search:

GET

Accept: application/vnd.api.soleo.com-v1+json

User-Agent: Mozilla/5.0 (Windows NT 6.1) AppleWebKit/537.36 (KHTML, like Gecko)

Chrome/41.0.2228.0 Safari/537.36

https://trialapi.soleo.com/businesses?Keyword=towing&Latitude=43.038185&Longitude=-77.458347&Radius=10&Sort=distance&ANI=5558675309&APIKey=87337cfef712db3ad4158af558928

The following is the JSON document that was returned in the Business Search Response for this search. Notice the following:

- The search results contain two businesses listings - one sponsored and one organic.
- The organic business listing appears 1st in the results, because it is closer to the specified longitude and latitude than the sponsored business listing.
- The sponsored business has a revenue generating opportunity of \$1.50 if the End User calls the business and remains connected to the business for a minimum duration of 5 minutes (300 seconds).

```
{
  "summary": {
    "resultsCount": {
      "sponsored": "1",
      "organic": "1",
    },
    "validUntil": "2015-04-29T13:45:18.112Z"
  },
  "businesses": [
    {
      "name": "Fake Towing Company",
      "address": "99 Fake Street",
      "city": "Rochester",
      "state": "NY",
      "zip": "14450",
      "type": "Organic",
      "categoryName": "TOWING",
      "categoryID": "2.58.12",
      "url": "http://faketowingofrochester.com",
      "image": "https://freeimagedepot.com/452/ny/rochester/52174/logo.jpeg",
      "verified": "Yes",
      "score": "",
      "latitude": "43.038185",
      "longitude": "-77.458347",
      "distance": {
        "miles": "1.12"
      },
      "monetizationCriteria": {
        "action": "",
        "criteria": "",
        "value": "",
        "validUntil": ""
      }
    }
  ]
}
```

```

    },
    "costCriteria": {
      "action": "",
      "value": "",
      "validUntil": ""
    },
    "_links": [{
      "rel": "urn:soleo:businesses:presented",
      "href": "https://trialapi.soleo.com/businesses/presented/f8ad734a-23da-4ff3-ade7-3932943746f;jsessionid=4B84E41362A71315E76BA3D26EF9DCB8.0a0b01dc?APIKey=87337cfef712db3ad4158af558928",
      "method": "POST"
    }]
  },
  {
    "name": "Another Fake Towing Company",
    "address": "99 Fake Avenue",
    "city": "Rochester",
    "state": "NY",
    "zip": "14450",
    "type": "Sponsored",
    "categoryName": "TOWING",
    "categoryID": "2.58.12",
    "url": "",
    "image": "",
    "verified": "",
    "score": "",
    "latitude": "43.038185",
    "longitude": "-77.458347",
    "distance": {
      "miles": 9.2
    },
    "monetizationCriteria": {
      "action": "CALLED",
      "criteria": "300",
      "value": "1.50",
      "validUntil": "2015-04-29T13:45:18.112Z"
    },
    "costCriteria": {
      "action": "",
      "value": "",
      "validUntil": ""
    },
    "_links": [{
      "rel": "urn:soleo:businesses:presented",
      "href": "https://trialapi.soleo.com/businesses/presented/4f8d6edf-2160-4240-aff2-36e83ac0a6d4;jsessionid=4B84E41362A71315E76BA3D26EF9DCB8.0a0b01dc?APIKey=87337cfef712db3ad4158af558928",
      "method": "POST"
    }]
  }
}

```

```

    }}
    "_links": [{
        "rel": "self",
        "href": "https://trialapi.soleo.com/businesses?Keyword=towing&Latitude
=34.123&Longitude=118.1234&Radius=10&Sort=distance&ANI=5558675309&APIKey=87337cfef712db3ad41
58af558928",
        "method": "GET"
    }]
}

```

#### 6.3.3.4.2 JSON v2 Response Body Example

The following provides an example of what the Response Body looks like when the business search results are returned as a JSON v2 document.

This example is a search for businesses using the Category "travel" and requesting all businesses in the 14450 Postal Code area, sorted by value and distance. The following is the Business Search Request for this search:

```

GET
Accept: application/vnd.api.soleo.com-v2+json
User-Agent: [Mozilla/5.0 (Windows NT 6.1; WOW64; Trident/7.0; SLCC2; .NET CLR 2.0.50727;
.NET CLR 3.5.30729; .NET CLR 3.0.30729; Media Center PC 6.0; .NET4.0C; .NET4.0E; BRI/2;
GWX:RESERVED; rv:11.0) like Gecko]
https://api.soleo.com/businesses/?APIKey=sp9q7fvjns5abbhh7dy2b6d9&ANI=5856414300&Ref
erenceID=T9019&Category=travel&PostalCode=14450&Sort=value_distance

```

The following is the JSON document that was returned in the Business Search Response for this search.

```

{
    "summary": {
        "resultsCount": {
            "sponsored": 2
            "organic": 1
        },
        "validUntil": "2016-09-29T14:50:40.662Z"
    },
    "businesses": [
        {
            "name": "CheapFares.Flights",
            "address": "",
            "city": "",
            "state": "",
            "zip": "",
            "latitude": "",
            "longitude": "",
            "displayPhoneNumber": "8666611372",
            "completionPhoneNumber": "8777610533",
            "distance": {
                "miles": ""
            }
        },
    ],
}

```

```

        "type": "Sponsored",
        "url": "",
        "image": "",
        "verified": "",
        "score": "",
        "monetizationCriteria": {
            "action": "CALLED",
            "criteria": "30",
            "value": "0.4659",
            "validUntil": "2016-09-29T14:51:40.048Z"
        },
        "costCriteria": {
            "action": "",
            "value": "",
            "validUntil": ""
        },
        "details": {
            "isOpen": "Unknown",
            "hours": "",
            "displayHours": "",
            "timeZone": "GMT-4",
            "descriptors": [],
            "thirdPartyData": [
                {
                    "eventURL": "",
                    "eventType": ""
                }
            ]
        },
        "_links": [
            {
                "rel": "urn:soleo:businesses:calleddisplaynumber",
                "href": "https://api.soleo.com/SearchNormalizationApplication/
businesses/callback/ed6c64dd-f441-4210-b638-c94f3feb16f7;jsessionid=0BB255354DE6724D21A3A2B45
FC37A9C.0a0b01dd?displayNumber=8666611372&APIKey=sp9q7fvjns5abbhh7dy2b6d9",
                "method": "POST"
            },
            {
                "rel": "urn:soleo:businesses:calledcompletionnumber",
                "href": "https://api.soleo.com/SearchNormalizationApplication
/businesses/callback/ed6c64dd-f441-4210-b638-c94f3feb16f7;jsessionid=0BB255354DE6724D21A3A2B45
FC37A9C.0a0b01dd?completionNumber=8777610533&APIKey=sp9q7fvjns5abbhh7dy2b6d9",
                "method": "POST"
            }
        ],
        {
            "name": "SmartFares.com",
            "address": "",
            "city": "",
            "state": "",

```

```

        "zip": "",
        "latitude": "",
        "longitude": "",
        "displayPhoneNumber": "8552487227",
        "completionPhoneNumber": "8668446938",
        "distance": {
            "miles": ""
        },
        "type": "Sponsored",
        "url": "",
        "image": "",
        "verified": "",
        "score": "",
        "monetizationCriteria": {
            "action": "CALLED",
            "criteria": "30",
            "value": "0.4644",
            "validUntil": "2016-09-29T14:51:40.048Z"
        },
        "costCriteria": {
            "action": "",
            "value": "",
            "validUntil": ""
        },
        "details": {
            "isOpen": "Unknown",
            "hours": "",
            "displayHours": "",
            "timeZone": "GMT-4",
            "descriptors": [],
            "thirdPartyData": [
                {
                    "eventURL": "",
                    "eventType": ""
                }
            ]
        },
        "_links": [
            {
                "rel": "urn:soleo:businesses:calleddisplaynumber",
                "href": "https://api.soleo.com/SearchNormalizationApplication/
businesses/callback/67da6ddb-faed-4b09-ab0b-efc1a9005766;jsessionid=0BB255354DE6724D21A3A2B45
FC37A9C.0a0b 01dd?displayNumber=8552487227&APIKey=sp9q7fvjns5abbhh7dy2b6d9",
                "method": "POST"
            },
            {
                "rel": "urn:soleo:businesses:calledcompletionnumber",
                "href": "https://api.soleo.com/SearchNormalizationApplication/
businesses/callback/67da6ddb-faed-4b09-ab0b-efc1a9005766;jsessionid=0BB255354DE6724D21A3A2B45
FC37A9C.0a0b 01dd?completionNumber=8668446938&APIKey=sp9q7fvjns5abbhh7dy2b6d9",

```

```

        "method": "POST"
    }}
},
{
    "name": "Tripp N Travel",
    "address": "6 Dunbridge Hts",
    "city": "Fairport",
    "state": "NY",
    "zip": "14450-3330",
    "latitude": "43.073142",
    "longitude": "-77.444273",
    "displayPhoneNumber": "5854251613",
    "completionPhoneNumber": "5854251613",
    "distance": {
        "miles": "1.2139"
    },
    "type": "Organic",
    "url": "",
    "image": "",
    "verified": "Yes",
    "score": "",
    "monetizationCriteria": {
        "action": "",
        "criteria": "",
        "value": "",
        "validUntil": ""
    },
    "costCriteria": {
        "action": "",
        "value": "",
        "validUntil": ""
    },
    "details": {
        "isOpen": "Unknown",
        "hours": "",
        displayHours": "",
        "timeZone": "GMT0",
        "descriptors": ["GENERAL TRAVEL AGENTS & AGENCIES"],
        "thirdPartyData": [
            {
                "eventURL": "",
                "eventType": ""
            }
        ],
        "socialMedia": {
            "twitter": "https://twitter.com/trippntravel"
        };
        "images": {
            "primary": [https://hostimagesite.com/85392/travel.jpeg]
        },

```

```

        "associations":["Business Roundtable"]
    },
    "_links": [
    {
        "rel": "urn:soleo:businesses:calleddisplaynumber",
        "href": "https://api.soleo.com/SearchNormalizationApplication/
businesses/callback/e50e9273-9de3-4abc-9be6-cc8deeb4677e;jsessionid=0BB255354DE6724D21A3A2B45
FC37A9C.0a0b 01dd?displayNumber=5854251613&APIKey=sp9q7fvjns5abbhh7dy2b6d9",
        "method": "POST"
    },
    {
        "rel": "urn:soleo:businesses:calledcompletionnumber",
        "href": "https://api.soleo.com/SearchNormalizationApplication/
businesses/callback/e50e9273-9de3-4abc-9be6-cc8deeb4677e;jsessionid=0BB255354DE6724D21A3A2B45
FC37A9C.0a0b 01dd?completionNumber=5854251613&APIKey=sp9q7fvjns5abbhh7dy2b6d9",
        "method": "POST"
    }
    ]
},
    "_links": [
    {
        "rel": "self",
        "href": "https://api.soleo.com/SearchNormalizationApplication/
businesses?APIKey=sp9q7fvjns5abbhh7dy2b6d9&ANI=5856414300&ReferenceID=T9019&Category=
travel&PostalCode=14450&Sort=value_distance",
        "method": "GET"
    }
    ]
}

```

#### 6.3.3.4.3 XML v1 Response Body Example

The following provides an example of what the Response Body looks like when the business search results are returned as a XML v1 document.

this example searches for businesses using the Keyword "bikes" and requests all businesses within a 10-mile radius of the 14450 Postal Code, sorted by distance. The following is the Business Search Request for this search:

```

GET
Accept: application/vnd.api.soleo.com-v1+xml
User-Agent: Mozilla/5.0 (Windows NT 6.1) AppleWebKit/537.36 (KHTML, like Gecko)
Chrome/41.0.2228.0 Safari/537.36
https://trialapi.soleo.com/businesses?Keyword=bikes&Radius=10&PostalCode=14450&Sort=dis
tance&APIKey=vg8r67m3dsurrdztjusuvngxu

```

The following is the XML document that was returned in the Business Search Response for this search. Notice the following:

- The search results contain three businesses listings - two sponsored businesses and one organic business.



- The sponsored businesses have a revenue generating opportunity of \$.0812, if the End User calls the business and remains connected to the business for a minimum duration of 2 minutes (120 seconds).

```
<?xml version="1.0" encoding="UTF-8"?>
<results>
  <summary>
    <resultCount>
      <sponsored>2</sponsored>
      <organic>1</organic>
    </resultCount>
    <validUntil>2016-08-30T15:38:07.426Z</validUntil>
  </summary>
  <businesses>
    <business>
      <name>Pedallers Bike Shop</name>
      <address>2511 E Henrietta Rd Store</address>
      <city>Rochester</city>
      <state>NY</state>
      <zip>14623</zip>
      <latitude>43.068852</latitude>
      <longitude>-77.607686</longitude>
      <distance>
        <miles>9</miles>
      </distance>
      <type>Sponsored</type>
      <categoryName>bicycles</categoryName>
      <categoryID>6.23.6</categoryID>
      <url></url>
      <image></image>
      <verified></verified>
      <score></score>
      <monetizationCriteria>
        <action>CALLED</action>
        <criteria>120</criteria>
        <value>0.0812</value>
        <validUntil>2016-08-30T15:39:06.867Z</validUntil>
      </monetizationCriteria>
      <costCriteria>
        <action></action>
        <value></value>
        <validUntil></validUntil>
      </costCriteria>
      <_links>
        <presented>
          <rel>urn::businesses:presented</rel>
          <href>https://trialapi.soleo.com/Search
NormalizationApplication/ businesses/presented/6280613c-ad5c-4856-823d-70d56cbee218;jsessionid=
```

```

79F157C7AAD2930 0A61045AEE654FFDD.0a0b01f1?APIKey=vg8r67m3dsurrdztjusuvngxu</href>
      <method>POST</method>
    /presented>
  </_links>
</business>
<business>
  <name>Freewheelers</name>
  <address>1757 Mount Hope Ave</address>
  <city>Rochester</city>
  <state>NY</state>
  <zip>14620</zip>
  <latitude>43.115786</latitude>
  <longitude>-77.621887</longitude>

  <distance>
    <miles>10</miles>
  </distance>
  <type>Sponsored</type>
  <categoryName>bicycles</categoryName>
  <categoryID>6.23.6</categoryID>
  <url></url>
  <image></image>
  <verified></verified>
  <score></score>
  <monetizationCriteria>
    <action>CALLED</action>
    <criteria>120</criteria>
    <value>0.0812</value>
    <validUntil>2016-08-30T15:39:06.867Z</validUntil>
  </monetizationCriteria>
  <costCriteria>
    <action></action>
    <value></value>
    <validUntil></validUntil>
  </costCriteria>
  <_links>
    <presented>
      <rel>urn:soleo:businesses:presented</rel>
      <href>https://trialapi.soleo.com/Search
Normalization Application/businesses/presented/ddd4e77c-b2ff-47c9-a55b-1a94e51dbe92;jsessionid=
79F157C7AAD29300 A61045AEE654FFDD.0a0b01f1?APIKey=vg8r67m3dsurrdztjusuvngxu</href>
      <method>POST</method>
    </presented>
  </_links>
</business>
<business>
  <name>Berts Bikes & Fitness</name>
  <address>100 Jay Scutti Blvd</address>
  <city>Rochester</city>

```

```

<state>NY</state>
<zip>14623-2538</zip>
<latitude>43.089531</latitude>
<longitude>-77.628852</longitude>
<distance>
  <miles></miles>
</distance>
<type>Organic</type>
<categoryName>bicycles</categoryName>
<categoryID>6.23.6</categoryID>
<url></url>
<image></image>
<verified>Yes</verified>
<score></score>
<monetizationCriteria>
  <action></action>
  <criteria></criteria>
  <value></value>
  <validUntil></validUntil>
</monetizationCriteria>
<costCriteria>
  <action></action>
  <value></value>
  <validUntil></validUntil>
</costCriteria>
<_links>
  <presented>
    <rel>urn:soleo:businesses:presented</rel>

```

```

    <href>https://trialapi.soleo.com/Search
Normalization Application/businesses/presented/84926529-80f2-4e3f-aeaf-331ebd9428ae;jsessionid=
79F157C7AAD29300 A61045AEE654FFDD.0a0b01f1?APIKey=vg8r67m3dsurrdztjusuvngxu</href>
    <method>POST</method>
  </presented>
</_links>
</business>
</businesses>
<_links>
  <self>
    <rel>self</rel>
    <href>https://trialapi.soleo.com/SearchNormalizationApplication
/businesses?Keyword=bikes&Radius=10&PostalCode=14450&Sort=distance&
APIKey=vg8r67m3dsurrdztjusuvngxu&MaxSponsoredCount=3&MaxOrganicCount=7</href>
    <method>GET</method>
  </self>
</_links>
</results>

```

#### 6.3.3.4.4 XML v2 Response Body Example

The following provides an example of what the Response Body looks like when the business search results are returned as an XML v2 document.

This example searches for a businesses using the Keyword "bikes" and requests all businesses in the 14450 Postal Code, sorted by value and distance. The following is the Business Search Request for this search:

GET

Accept: application/vnd.api.soleo.com-v2+xml

User-Agent: [Mozilla/5.0 (Windows NT 6.1; WOW64; Trident/7.0; SLCC2; .NET CLR 2.0.50727; .NET CLR 3.5.30729; .NET CLR 3.0.30729; Media Center PC 6.0; .NET4.0C; .NET4.0E; BRI/2; GWX:RESERVED; rv:11.0) like Gecko]

https://api.soleo.com/businesses/?APIKey= sp9q7fvjns5abbhh7dy2b6d9&Keyword=bikes&PostalCode=14450&Sort=value\_distance

The following is the XML document that was returned in the Business Search Response for this search.

```
<?xml version="1.0" encoding="UTF-8"?>
<results>
  <summary>
    <resultCount>
      <sponsored>1</sponsored>
      <organic>1</organic>
    </resultCount>
    <validUntil>2016-09-28T14:23:51.714Z</validUntil>
  </summary>
  <businesses>
    <business>
      <name>Pedallers Bike Shop</name>
      <address>2511 E Henrietta Rd Store</address>
      <city>Rochester</city>
      <state>NY</state>
      <zip>14623</zip>
      <latitude>43.068852</latitude>
      <longitude>-77.607686</longitude>
      <displayPhoneNumber>5853341083</displayPhoneNumber>
      <completionPhoneNumber>8777610533</completionPhoneNumber>
      <distance>
        <miles>8.9318</miles>
      </distance>
      <type>Sponsored</type>
      <url/>
      <image>https://imagelocker/264/pbsimg.jpeg</image>
      <verified></verified>
      <score></score>
      <monetizationCriteria>
        <action>CALLED</action>
        <criteria>30</criteria>
        <value>0.1906</value>
      </monetizationCriteria>
    </business>
  </businesses>
</results>
```

```

        <validUntil>2016-09-28T14:24:51.036Z</validUntil>
    </monetizationCriteria>
    <costCriteria>
        <action></action>
        <value></value>
        <validUntil></validUntil>
    </costCriteria>
    <details>
        <isOpen>Yes</isOpen>
        <hours>Su 00:00-00:00, Mo 10:00-19:00, Tu 10:00-19:00, We 10:00-19:00,
Th 10:00-19:00, Fr 10:00-19:00, Sa 10:00-17:30</hours>
        <displayHours>Sunday Closed, Monday 10:00AM-07:00PM, Tuesday
10:00AM-07:00PM, Wednesday 10:00AM-07:00PM, Thursday 10:00AM-07:00PM, Friday 10:00AM-07:00PM,
Saturday 10:00AM-05:30PM</displayHours>
        <timeZone>GMT-4</timeZone>
        <descriptors>
            <descriptor>BICYCLE DEALERS</descriptor>
            <descriptor>SKATING SUPPLIES</descriptor>
            <descriptor>BICYCLE RENTALS</descriptor>
        </descriptors>
        <thirdPartyData>
            <thirdPartyEvent>
                <eventURL></eventURL>
                <eventType></eventType>
            </thirdPartyEvent>
        </thirdPartyData>
        <socialMedia>
            <facebook>https://facebook.com/pedallersbikeshop</facebook>
        </socialMedia>
        <images>
            <primary>
                <urls>
                    <url>https://imagelocker/264/pbsimg.jpeg</url>
                </urls>
            </primary>
            <logo>
                <urls>
                    <url>https://imagelocker/264/pbslogo.jpeg</url>
                </urls>
            </logo>
        </images>
        <associations>
            <association>Better Business Bureau</association>
        </associations>
    </details>
    <categoryName>bicycles</categoryName>
    <categoryID>6.23.6</categoryID>
    <_links>
        <calledDisplayNumber>
            <rel>urn:soleo:businesses:calleddisplaynumber</rel>

```

```

        <href>https://api.soleo.com/SearchNormalization
Application/businesses/callback/ 8e50ac7e-0c11-4225-ad8349f8d2fb3dcb;jsessionid=2D1AB039D17590FDD
549B5069D937FFB.0a0b01dd?displayNumber=8442767125&APIKey=sp9q7fvjns5abbhh7dy2b6d9</href>
        <method>POST</method>
    </calledDisplayNumber >
    <calledCompletionNumber>
        <rel>urn:soleo:businesses:calledcompletionnumber</rel>
        <href>https://api.soleo.com/SearchNormalization
Application/businesses/callback/8e50ac7e-0c11-4225-ad83-49f8d2fb3dcb;jsessionid=2D1AB039D17590FDD
549B509D937FFB.0a0b01dd?completionNumber=8553293159&APIKey=sp9q7fvjns5abbhh7dy2b6d9</href>
        <method>POST</method>
    </calledCompletionNumber >
</_links>
</business>
<business>
    <name>Tryon Bike</name>
    <address>80 Rockwood Pl # 1</address>
    <city>Rochester</city>
    <state>NY</state>
    <zip>14610-2600</zip>
    <latitude>43.144037</latitude>
    <longitude>-77.547902</longitude>
    <displayPhoneNumber>5854134444</displayPhoneNumber>
    <completionPhoneNumber>5854134444</completionPhoneNumber>
    <distance>
        <miles>6.9572</miles>
    </distance>
    <type>Organic</type>
    <url>http://bikesbytryonbike.com</url>
    <image></image>
    <verified>Yes</verified>
    <score></score>
    <monetizationCriteria>
        <action></action>
        <criteria></criteria>
        <value></value>
        <validUntil></validUntil>
    </monetizationCriteria>
    <costCriteria>
        <action></action>
        <value></value>
        <validUntil></validUntil>
    </costCriteria>
    <details>
        <isOpen>Unknown</isOpen>
        <hours></hours>
        <displayHours></displayHours>
        <timeZone>GMT0</timeZone>
        <descriptors>
            <descriptor>BICYCLE DEALERS</descriptor>

```

```

        </descriptors>
        <thirdPartyData>
            <thirdPartyEvent>
                <eventURL>https://soleo.pingup.com/px5A4y</eventURL>
                <eventType>Make an Appointment</eventType>
            </thirdPartyEvent>
        </thirdPartyData>
        <socialMedia>
            <facebook>https://facebook.com/tryonbike</facebook>
            <foursquare>https://foursquare.com/mytryonbike</foursquare>
        </socialMedia>
    </details>
    <_links>
        <calledDisplayNumber>
            <rel>urn:soleo:businesses:calleddisplaynumber</rel>
            <href>https://api.soleo.com/SearchNormalization
Application/businesses/callback/f413f42b-c22c-4973-99c2-9ac3d623b0c3;jsessionid=5B3D0445716E55513C
1CEC7E D2A0F3C0.0a0b01dd?displayNumber=5854134444&APIKey=sp9q7fvjns5abbhh7dy2b6d9</href>
            <method>POST</method>
        </calledDisplayNumber>
        <calledCompletionNumber>
            <rel>urn:soleo:businesses:calledcompletionnumber</rel>
            <href>https://api.soleo.com/SearchNormalization
Application/ businesses/callback/f413f42b-c22c-4973-99c2-9ac3d623b0c3;jsessionid=5B3D0445716E55513C
1CEC7ED2A0F3C0.0a0b01dd?completionNumber=5854134444&APIKey=sp9q7fvjns5abbhh7dy2b6d9</href>
            <method>POST</method>
        </calledCompletionNumber>
    </_links>
</business>
</businesses>
<_links>
    <self>
        <rel>self</rel>
        <href>https://api.soleo.com/SearchNormalizationApplication/businesses
?APIKey=sp9q7fvjns5abbhh7dy2b6d9&ANI=5856414300&ReferenceID=T5475&Keyword=bikes&PostalCode=
14450& Sort=value_distance</href>
        <method>Get</method>
    </self>
</_links>
</results>

```

## 7 Callbacks

Callbacks are special Local Search API requests that the API Customer's application/website uses for the following purposes:

1. Obtain additional information for a selected organic or sponsored business listing:
  - End User requests the call completion number for a selected business.

- End User requests details for a selected business (e.g., contact information, hours of operation, etc.).

When the End User requests additional information for a selected business listing; the API Customer's application/website submits a Callback Request, using the Callback link provided in the search results for that business listing and the additional information that is being requested.

**NOTE:** Only applies to v1 Callback (see table below). v2 Callback provides all business information in the initial Business Search Response, eliminating the need for the Callbacks for additional information.

2. Notify the Local Search API when one of the following End User actions occurs. Revenue can be claimed for the action, if the selected business listing is a sponsored business listing. Revenue cannot be claimed, if the selected business listing is an organic business listing.
  - Business listing is presented to the End User. This is referred to as an impression.
  - End User selects a listing from the search results. This is referred to as a selection.
  - End User calls the selected business' Displayed Number.
  - End User calls the selected business' Completion Number. In order to monetize this call, the End User must stay connected to the business for a minimum duration of time or perform a specific action (e.g., make an appointment or place an order). The sponsored business listing specifies the criteria that must be met for that particular business. This is referred to as pay-per-call.

When the End User performs one of these actions, the API Customer's application/website must notify the Local Search API by submitting a Callback Request, using the Callback link provided in the search results for that business listing and action.

The Local Search API provides two different formats for Callbacks:

- v1 - Provides Callback links for all of the End User actions identified above.
- v2 (referred to as **expresscall**) - All business information is provided in the initial Business Search Response, which eliminates the need for Callbacks for additional information. The only Callbacks that are required are the "Called Displayed Number" and "Called Completion Number" links that are used to notify the Local Search API when the End User called a business.

The Accept Header in the initial Business Search Request defines which Callback format to use.

**NOTE:** Callback links are only included in the Business Search Response, if one of the following is true:

- The End User's ANI was specified in the initial Business Search Request.
- A place-holder ANI was specified in the initial Business Search Request.
- The API Customer's API Key is configured to be "ANI-less".

See [User Parameters Rules](#) for more information.

The following defines the Callback links that are provided and identifies the Callback format(s) in which they are used:

Callback	Description	Callback Format
<b>Presented</b>	Used to notify the Local Search API that this business listing was presented/impressed to the End User.	v1 only



Callback	Description	Callback Format
<b>Selected</b>	Used to notify the Local Search API that the End User selected this business listing from the initial search results.	v1 only
<b>Selected With Details</b>	Used to notify the Local Search API that the End User selected this business listing from the initial search results and requested additional information for this business listing.	v1 only
<b>Get Completion Number</b>	Used to request the completion number for this business listing (completion number has built-in call tracking).	v1 only
<b>Get Details</b>	Used to request additional information for this business listing.	v1 only
<b>Called Displayed Number</b>	Used to notify the Local Search API that the End User called this business, using the displayed phone number. <b>NOTE:</b> Only used for metrics and reporting purposes. Revenue is never generated for this action.	v1 and v2
<b>Called Completion Number</b>	Used to notify the Local Search API that the End User called this business, using the completion phone number, and the <b>monetization criteria</b> specified for this business listing is met.	v1 and v2

### Callback Links and Formats

## 7.1 v1 Callback

The following describes how to use the Callback links that are provided with the v1 Callback (Callback format is specified in the Business Search Request's Accept Header).

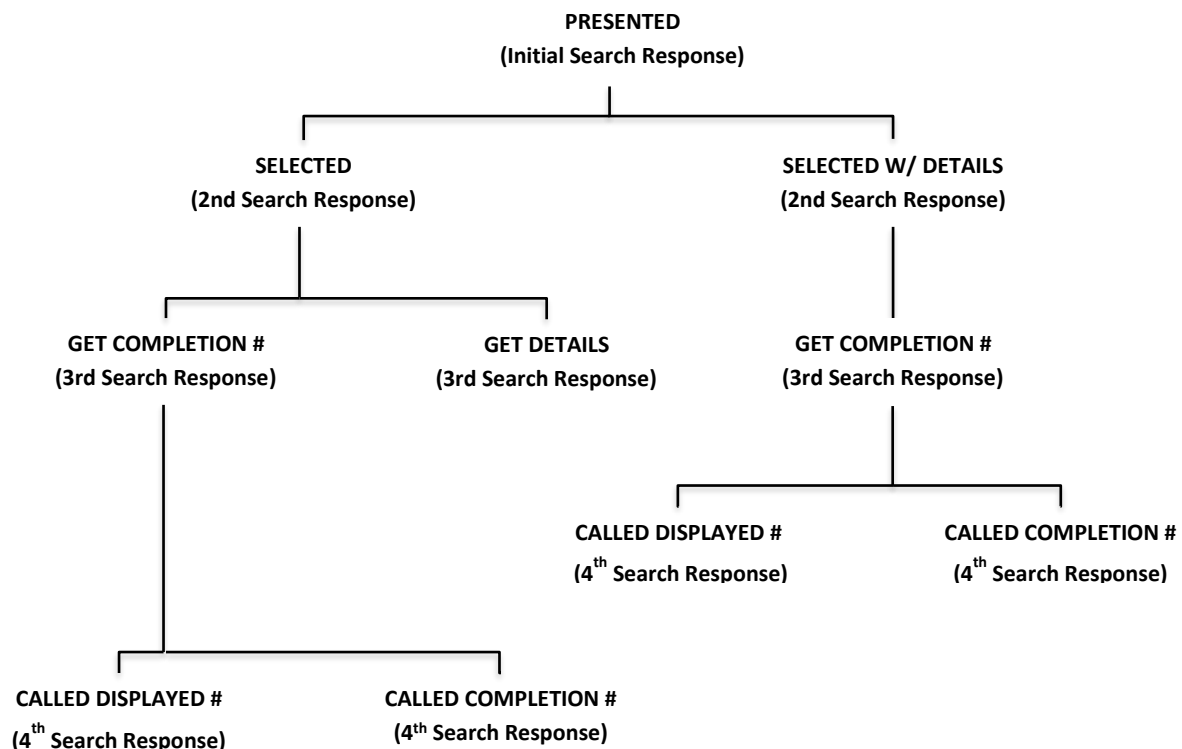
Callback	Where To Find It	How It Works
<b>Presented</b>	Initial Business Search Response - under "_links"	<p>Every business listing (organic and sponsored) returned in the Business Search Response contains a <b>Presented</b> Callback link. The API Customer's application uses this link to notify the Local Search API that the business listing was presented to the End User (submits <b>Presented</b> Callback Request).</p> <p>The Local Search API returns a <b>Presented</b> Callback Response to the API Customer's application. It contains the <b>Selected</b> and <b>Selected With Details</b> Callback links.</p>
<b>Selected</b>	<b>Presented</b> Callback Response	<p>If the End User selects a business listing, the API Customer's application uses the <b>Selected</b> Callback link to notify the Local Search API that this action occurred (submits <b>Selected</b> Callback Request).</p> <p><b>NOTE:</b> Application must submit a <b>Presented</b> Callback Request in order to obtain the <b>Selected</b> Callback link.</p> <p>The Local Search API returns a <b>Selected</b> Callback Response to the API Customer's application. It contains the <b>Get Details</b> and <b>Get Completion Number</b> Callback links.</p>

Callback	Where To Find It	How It Works
<b>Selected With Details</b>	<b>Presented</b> Callback Response	<p>If the End User selects a business listing and requests details, the API Customer's application uses the <b>Selected With Details</b> Callback link to notify the Local Search API that this action occurred (submits <b>Selected With Details</b> Callback Request).</p> <p><b>NOTE:</b> Application must submit a <b>Presented</b> Callback Request in order to obtain the <b>Selected With Details</b> Callback link.</p> <p>The Local Search API returns a <b>Selected With Details</b> Callback Response to the API Customer's application. It contains the <b>Get Completion Number</b> Callback link.</p>
<b>Get Details</b>	<b>Selected</b> Callback Response	<p>If the End User requests more details for a business listing, the API Customer's application uses the <b>Get Details</b> Callback link to notify the Local Search API that this action occurred (submits <b>Get Details</b> Callback Request).</p> <p><b>NOTE:</b> Application must submit a <b>Selected</b> Callback Request in order to obtain the <b>Get Details</b> Callback link.</p> <p>The Local Search API returns a <b>Get Details</b> Callback Response to the API Customer's application. It contains the requested details (no more Callback links).</p>
<b>Get Completion Number</b>	<b>Selected</b> or <b>Selected With Details</b> Callback Response	<p>If the End User requests a business listing's completion number, the API Customer's application uses the <b>Get Completion Number</b> Callback link to notify the Local Search API that this action occurred (submits <b>Get Completion Number</b> Callback Request).</p> <p><b>NOTE:</b> Application must submit a <b>Selected</b> or <b>Selected With Details</b> Callback Request in order to obtain the <b>Get Completion Number</b> Callback link.</p> <p>The Local Search API returns a <b>Get Completion Number</b> Callback Response to the API Customer's application. It contains the <b>Called Displayed Number</b> and <b>Called Completion Number</b> Callback links.</p>
<b>Called Displayed Number</b>	<b>Get Completion Number</b> Callback Response	<p>If the End User calls a business using the displayed telephone number, the API Customer's application uses the <b>Called Displayed Number</b> Callback link to notify the Local Search API that this action occurred (submits <b>Called Displayed Number</b> Callback Request).</p> <p><b>NOTE:</b> Application must submit the <b>Get Completion Number</b> Callback Request in order to obtain the <b>Called Displayed Number</b> Callback link.</p> <p>The Local Search API returns a <b>Called Displayed Number</b> Callback Response to the API Customer's application. It contains the HTTP Response Headers, but no data. Its only purpose is to let the API Customer's application know the Callback Request was successful.</p>

Callback	Where To Find It	How It Works
<b>Called Completion Number</b>	<b>Get Completion Number</b> Callback Response	<p>If the End User calls a business using the completion telephone number, the API Customer's application uses the <b>Called Completion Number</b> Callback link to notify the Local Search API that this action occurred (submits <b>Called Completion Number</b> Callback Request).</p> <p><b>NOTE:</b> Application must submit the <b>Get Completion Number</b> Callback Request in order to obtain the <b>Called Completion Number</b> Callback link.</p> <p>The Local Search API returns a <b>Called Completion Number</b> Callback Response to the API Customer's application. It contains the HTTP Response Headers, but no data. Its only purpose is to let the API Customer's application know the Callback Request was successful.</p>

### How To Use v1 Callback

The following illustrates the hierarchy of Callback links for the v1 Callback:



### Hierarchy of Callback Links - v1 Callback

## 7.2 v2 Callback (expresscall)

The following describes how to use the Callback links that are provided with the v2 Callback (Callback format is specified in the Business Search Request's Accept Header).

Callback Link	Where To Find It	How It Works
<b>Called Displayed Number</b>	Initial Business Search Response - under "_links"	<p>If the End User calls a business using the displayed telephone number, the API Customer's application uses the <b>Called Displayed Number</b> Callback link to notify the Local Search API that this action occurred (submits <b>Called Displayed Number</b> Callback Request).</p> <p>The Local Search API returns a <b>Called Displayed Number</b> Callback Response to the API Customer's application. It contains the HTTP Response Headers, but no data. Its only purpose is to let the API Customer's application know the Callback Request was successful.</p>
<b>Called Completion Number</b>	Initial Business Search Response - under "_links"	<p>If the End User calls a business using the completion telephone number, the API Customer's application uses the <b>Called Completion Number</b> Callback link to notify the Local Search API that this action occurred (submits <b>Called Completion Number</b> Callback Request).</p> <p>The Local Search API returns a <b>Called Completion Number</b> Callback Response to the API Customer's application. It contains the HTTP Response Headers, but no data. Its only purpose is to let the API Customer's application know the Callback Request was successful.</p>

### How To Use v2 Callback

## 7.3 Callback Request

The API Customer's application/website must submit a Callback Request when it wants to perform any of the following functions:

1. Obtain additional information for a selected business listing.
2. Notify the Local Search API that a specific End User action occurred.
3. Notify the Local Search API that a specific End User action occurred with a sponsored business listing and to claim revenue for that action.

The Callback Request is an HTTP-based search request. It is comprised of HTTP Request Headers and a Callback Link. The following provides a high-level definition of these components.

### 7.3.1 HTTP Request Headers

The Callback Request contains the same HTTP Request Headers as the Business Search Request. The only exception is the **HTTP Method**, which can be set to "GET" (retrieve data) or "POST" (add/update data), depending upon the type of Callback that is being performed. Refer to **Business Search Request** for more information regarding the HTTP Headers.

The API Customer's application/website uses the HTTP Method that is specified in the initial Business Search Response or a subsequent Callback Response for the type of Callback being performed (Presented, Selected, Get Details, etc.). The HTTP Method is different for each type of Callback, so it is very important that the application uses the HTTP Method that is provided for the type of Callback you want to perform.

In the initial Business Search Response and subsequent Callback Responses, <rel> defines the type of Callback and the corresponding <method> specifies the HTTP Method to use for that Callback (see **Response Data Element Definitions** and **Callback Data Element Definitions**). The API Customer's application/website submits a Callback Request, using the <method> specified for the <rel> that corresponds to the Callback being performed.

### 7.3.2 Callback Link

The API Customer's application/website uses the Callback Link that is specified in the initial Business Search Response or a subsequent Callback Response for the type of Callback being performed (Presented, Selected, Get Details, etc.). The Callback Link is different for each type of Callback, so it is very important that the application uses the link that is provided for the type of Callback you want to perform.

In the initial Business Search Response and subsequent Callback Responses, <rel> defines the type of Callback and the corresponding <href> specifies the Callback Link to use for that Callback (see **Response Data Element Definitions** and **Callback Data Element Definitions**). The API Customer's application/website submits a Callback Request, using the <href> specified for the <rel> that corresponds to the Callback being performed.

**NOTE:** If a place-holder ANI was specified in the initial Business Search Request and you are submitting a **Called Displayed Number** or **Called Completion Number** Callback Request, your application **must** change the ANI specified in the Callback Link to the End User's ANI before submitting the Callback Request to the Local Search API. This is referred to as an "**ANI-switch**".

## 7.4 Callback Response

This section describes the contents of the Callback Response that is returned in response to a Callback Request from the API Customer's application/website.

A Callback Response is an HTTP-based response. Just like a Business Search Response, it is comprised of a Response Status, Response Headers, and a Response Body. The Callback Response's Response Body contains additional information from the business listing and/or additional Callback links. The following defines the contents of each of these components.

### 7.4.1 Response Status

Response Status is an HTTP response code that indicates the status of the Callback. Appendix A lists the HTTP response codes that can be received and explains the reason for receiving each code. If a response code indicates an error occurred, the Appendix also tells you how to troubleshoot the problem.

### 7.4.2 HTTP Response Headers

The Callback Response contains the same HTTP Response Headers as the Business Search Response. Refer to the **Business Search Response** section for more information.

### 7.4.3 Callback Response Body

The HTTP Response Headers are followed by the Response Body, which is either a JSON or XML document that contains the response to the Callback Request.

**NOTE:** The Accept Header in the Callback Request specified which document format (JSON or XML) to use. If the Callback Request did not include an Accept Header, the search results are returned in JSON format.

#### 7.4.3.1 JSON Callback Response Body

The contents of the JSON Callback Response Body vary, depending upon the type of Callback Request that was submitted:

- Presented
- Selected
- Selected With Details
- Get Details
- Get Completion Number
- Called Displayed Number
- Called Completion Number

The following sections define the format of the JSON Callback Response Body for each type of Callback.

##### 7.4.3.1.1 Presented Callback Response

A **Presented** Callback Response is returned to the API Customer's application/website in response to a **Presented** Callback Request. The following defines the format of the **Presented** Callback Response Body when it is returned as a JSON document. See [Callback Data Element Definitions](#) for a detailed description of each data element (items in **BOLD**).

```
{
  "data": [
    {
      "action": "select",
      "_links": [
        {
          "rel": "selected_callback",
          "href": "selected_callback_link",
          "method": "selected_callback_method"
        },
        {
          "rel": "selected_details_callback",
          "href": "selected_details_callback_link",
          "method": "selected_details_callback_method"
        }
      ]
    }
  ],
  "_links": [
    {
      "rel": "callback_relationship",
      "href": "callback_link",
```

```

        "method": "callback_method"
    }
]
}

```

#### 7.4.3.1.2 Selected Callback Response

A **Selected** Callback Response is returned to the API Customer's application/website in response to a **Selected** Callback Request. The following defines the format of the **Selected** Callback Response Body when it is returned as a JSON document. See [Callback Data Element Definitions](#) for a detailed description of each data element (items in **BOLD**).

```

{
  "data": [
    {
      "_links": [
        {
          "rel": "get_details_callback",
          "href": "get_details_callback_link",
          "method": "get_details_callback_method"
        },
        {
          "rel": "get_completion_callback",
          "href": "get_completion_callback_link",
          "method": "get_completion_callback_method"
        }
      ]
    },
    {
      "_links": [
        {
          "rel": "callback_relationship",
          "href": "callback_link",
          "method": "callback_method"
        }
      ]
    }
  ]
}

```

#### 7.4.3.1.3 Selected With Details Callback Response

A **Selected With Details** Callback Response is returned to the API Customer's application/website in response to a **Selected With Details** Callback Request. The following defines the format of the **Selected With Details** Callback Response Body when it is returned as a JSON document. See [Callback Data Element Definitions](#) for a detailed description of each data element (items in **BOLD**).

**NOTE:** Including additional information in the **Selected With Details** Callback is under consideration for a future release.

```

{
  "data": [

```

```

{
  "details": {
    "isOpen": "open_indicator",
    "hours": "hours_of_operation",
    "displayHours": "display_hours",
    "timeZone": "business_time_zone",
    "descriptors": [business_descriptor],
    "thirdPartyData": [
      {
        "eventURL": "event_url",
        "eventType": "event_type"
      },
      {
        "eventURL": "event_url",
        "eventType": "event_type"
      }
    ],
    "socialMedia": {
      "facebook": "social_media_url",
      "foursquare": "social_media_url",
      "linkedin": "social_media_url",
      "twitter": "social_media_url"
    },
    "images": {
      "primary": [image_url],
      "logo": [image_url],
      "storefront": [image_url],
      "exterior": [image_url],
      "interior": [image_url]
    },
    "associations": [business_association]
  },
  "_links": [
    {
      "rel": "get_completion_callback",
      "href": "get_completion_callback_link",
      "method": "get_completion_callback_method"
    }
  ]
},
"_links": [
  {
    "rel": "callback_relationship",
    "href": "callback_link",
    "method": "callback_method"
  }
]
}

```



#### 7.4.3.1.4 Get Details Callback Response

A **Get Details** Callback Response is returned to the API Customer's application/website in response to a **Get Details** Callback Request. The following defines the format of the **Get Details** Callback Response Body when it is returned as a JSON document. See [Callback Data Element Definitions](#) for a detailed description of each data element (items in **BOLD**).

**NOTE:** Including additional information in the **Get Details** Callback Response is under consideration for a future release.

```
{
  "data": [
    {
      "details": {
        "isOpen": "open_indicator",
        "hours": "hours_of_operation",
        "displayHours": "display_hours",
        "timeZone": "business_time_zone",
        "descriptors": [business_descriptor],
        "thirdPartyData": [
          {
            "eventURL": "event_url",
            "eventType": "event_type"
          },
          {
            "eventURL": "event_url",
            "eventType": "event_type"
          }
        ],
        "socialMedia": {
          "facebook": "social_media_url",
          "foursquare": "social_media_url",
          "linkedin": "social_media_url",
          "twitter": "social_media_url"
        },
        "images": {
          "primary": [image_url],
          "logo": [image_url],
          "storefront": [image_url],
          "exterior": [image_url],
          "interior": [image_url]
        },
        "associations": [business_association]
      }
    },
    {
      "_links": [
        {
          "rel": "callback_relationship",
          "href": "callback_link",
          "method": "callback_method"
        }
      ]
    }
  ]
}
```

---

 }

#### 7.4.3.1.5 Get Completion Number Callback Response

A **Get Completion Number** Callback Response is returned to the API Customer's application/website in response to a **Get Completion Number** Callback Request. The following defines the format of the **Get Completion Number** Callback Response Body when it is returned as a JSON document. See [Callback Data Element Definitions](#) for a detailed description of each data element (items in **BOLD**).

```
{
  "data": [
    {
      "action": "call",
      "displayPhoneNumber": "display_number",
      "completionPhoneNumber": "completion_number",
      "validUntil": "number_valid_until",
      "_links": [
        {
          "rel": "called_displayed_callback",
          "href": "called_displayed_callback_link",
          "method": "called_displayed_callback_method"
        },
        {
          "rel": "called_completion_callback",
          "href": "called_completion_callback_link",
          "method": "called_completion_callback_method"
        }
      ]
    },
    {
      "rel": "callback_relationship",
      "href": "callback_link",
      "method": "callback_method"
    }
  ]
}
```

#### 7.4.3.1.6 Called Displayed Number Callback Response

A **Called Displayed Number** Callback Response is returned to the API Customer's application/website in response to a **Called Displayed Number** Callback Request. No data is returned in this response. Therefore, the **Called Displayed Number** Callback Response only contains HTTP Response Headers. A Response Body is not provided.

The purpose for this response is it to let the API Customer's application/website know the **Called Displayed Number** Callback Request was successful.

#### 7.4.3.1.7 Called Completion Number Callback Response

A **Called Completion Number** Callback Response is returned to the API Customer's application/website in response to a **Called Completion Number** Callback Request. No data is returned in this response. Therefore, the **Called Completion Number** Callback Response only contains HTTP Response Headers. A Response Body is not provided.

The purpose for this response is it to let the API Customer's application/website know the **Called Completion Number** Callback Request was successful.

#### 7.4.3.2 XML Callback Response Body

The contents of the XML Callback Response Body vary, depending upon the type of Callback Request that was submitted:

- Presented
- Selected
- Selected With Details
- Get Details
- Get Completion Number
- Called Displayed Number
- Called Completion Number

The following sections define the format of the XML Callback Response Body for each type of Callback.

##### 7.4.3.2.1 Presented Callback Response

A **Presented** Callback Response is returned to the API Customer's application/website in response to a **Presented** Callback Request. The following defines the format of the **Presented** Callback Response Body when it is returned as an XML document. See [Callback Data Element Definitions](#) for a detailed description of each data element (items in **BOLD**).

```
<?xml version="1.0" encoding="UTF-8"?>
<results>
  <data>
    <action>select</action>
    <_links>
      <selected>
        <rel>selected_callback</rel>
        <href>selected_callback_link</href>
        <method>selected_callback_method</method>
      </selected>
      <selectedWithDetails>
        <rel>selected_details_callback</rel>
        <href>selected_details_callback_link</href>
        <method>selected_details_callback_method</method>
      </selectedWithDetails>
    </_links>
  </data>
  <_links>
    <self>
      <rel>callback_relationship</rel>
      <href>callback_link</href>
```

```

                <method>callback_method</method>
            </self>
        </_links>
    </results>

```

#### 7.4.3.2.2 Selected Callback Response

A **Selected** Callback Response is returned to the API Customer's application/website in response to a **Selected** Callback Request. The following defines the format of the **Selected** Callback Response Body when it is returned as an XML document. See [Callback Data Element Definitions](#) for a detailed description of each data element (items in **BOLD**).

```

<?xml version="1.0" encoding="UTF-8"?>
<results>
    <data>
        <_links>
            <completionNumber>
                <rel>get_completion_callback</rel>
                <href>get_completion_callback_link</href>
                <method>get_completion_callback_method</method>
            </completionNumber>
            <details>
                <rel>get_details_callback</rel>
                <href>get_details_callback_link</href>
                <method>get_details_callback_method</method>
            </details>
        </_links>
    </data>
    <_links>
        <self>
            <rel>callback_relationship</rel>
            <href>callback_link</href>
            <method>callback_method</method>
        </self>
    </_links>
</results>

```

#### 7.4.3.2.3 Selected With Details Callback Response

A **Selected With Details** Callback Response is returned to the API Customer's application/website in response to a **Selected With Details** Callback Request. The following defines the format of the **Selected With Details** Callback Response Body when it is returned as an XML document. See [Callback Data Element Definitions](#) for a detailed description of each data element (items in **BOLD**).

**NOTE:** Including additional information in the **Selected With Details** Callback Response is under consideration for a future release.

```

<?xml version="1.0" encoding="UTF-8"?>
<results>
    <data>

```

```

<details>
  <isOpen>open_indicator</isOpen>
  <hours>hours_of_operation</hours>
  <displayHours>display_hours</displayHours>
  <timeZone>business_time_zone</timeZone>
  <descriptors>
    <descriptor>business_descriptor</descriptor>
  </descriptors>
  <thirdPartyData>
    <thirdPartyEvent>
      <eventURL>event_url</eventURL>
      <eventType>event_type</eventType>
    </thirdPartyEvent>,
    <thirdPartyEvent>
      <eventURL>event_url</eventURL>
      <eventType>event_type</eventType>
    </thirdPartyEvent>
  </thirdPartyData>
  <socialMedia>
    <facebook>social_media_url</facebook>
    <foursquare>social_media_url</foursquare>
    <linkedin>social_media_url</linkedin>
    <twitter>social_media_url</twitter>
  </socialMedia>
  <images>
    <primary>
      <urls>
        <url>image_url</url>
      </urls>
    </primary>
    <logo>
      <urls>
        <url>image_url</url>
      </urls>
    </logo>
    <storeFront>
      <urls>
        <url>image_url</url>
      </urls>
    </storeFront>
    <exterior>
      <urls>
        <url>image_url</url>
      </urls>
    </exterior>
    <interior>
      <urls>
        <url>image_url</url>
      </urls>
    </interior>
  </images>

```

```

        </images>
        <associations>
            <association>business_association</association>
        </associations>
    </details>
    <_links>
        <completionNumber>
            <rel>get_completion_callback</rel>
            <href>get_completion_callback_link</href>
            <method>get_completion_callback_method</method>
        </completionNumber>
    </_links>
</data>
<_links>
    <self>
        <rel>callback_relationship</rel>
        <href>callback_link</href>
        <method>callback_method</method>
    </self>
</_links>
</results>

```

#### 7.4.3.2.4 Get Details Callback Response

A **Get Details** Callback Response is returned to the API Customer's application/website in response to a **Get Details** Callback Request. The following defines the format of the **Get Details** Callback Response Body when it is returned as an XML document. See [Callback Data Element Definitions](#) for a detailed description of each data element (items in **BOLD**).

**NOTE:** Including additional information in the **Get Details** Callback Response is under consideration for a future release.

```

<?xml version="1.0" encoding="UTF-8"?>
<results>
    <data>
        <details>
            <isOpen>open_indicator</isOpen>
            <hours>hours_of_operation</hours>
            <displayHours>display_hours</displayHours>
            <timeZone>business_time_zone</timeZone>
            <descriptors>
                <descriptor>business_descriptor</descriptor>
            </descriptors>
            <thirdPartyData>
                <thirdPartyEvent>
                    <eventURL>event_url</eventURL>
                    <eventType>event_type</eventType>
                </thirdPartyEvent>,
                <thirdPartyEvent>
                    <eventURL>event_url</eventURL>

```

```

        <eventType>event_type</eventType>
      </thirdPartyEvent>
    </thirdPartyData>
    <socialMedia>
      <facebook>social_media_url</facebook>
      <foursquare>social_media_url</foursquare>
      <linkedin>social_media_url</linkedin>
      <twitter>social_media_url</twitter>
    </socialMedia>
    <images>
      <primary>
        <urls>
          <url>image_url</url>
        </urls>
      </primary>
      <logo>
        <urls>
          <url>image_url</url>
        </urls>
      </logo>
      <storeFront>
        <urls>
          <url>image_url</url>
        </urls>
      </storeFront>
      <exterior>
        <urls>
          <url>image_url</url>
        </urls>
      </exterior>
      <interior>
        <urls>
          <url>image_url</url>
        </urls>
      </interior>
    </images>
    <associations>
      <association>business_association</association>
    </associations>
  </details>
</data>
<_links>
  <self>
    <rel>callback_relationship</rel>
    <href>callback_link</href>
    <method>callback_method</method>
  </self>
</_links>
</results>

```

#### 7.4.3.2.5 Get Completion Number Callback Response

A **Get Completion Number** Callback Response is returned to the API Customer's application/website in response to a **Get Completion Number** Callback Request. The following defines the format of the **Get Completion Number** Callback Response Body when it is returned as an XML document. See [Callback Data Element Definitions](#) for a detailed description of each data element (items in **BOLD**).

```
<?xml version="1.0" encoding="UTF-8"?>
<results>
  <data>
    <action>call</action>
    <displayPhoneNumber>display_number</displayPhoneNumber>
    <completionPhoneNumber>completion_number</completionPhoneNumber>
    <validUntil>number_valid_until</validUntil>
    <_links>
      <calledDisplayNumber>
        <rel>called_displayed_callback</rel>
        <href>called_displayed_callback_link</href>
        <method>called_displayed_callback_method</method>
      </calledDisplayNumber>
      <calledCompletionNumber>
        <rel>called_completion_callback</rel>
        <href>called_completion_callback_link</href>
        <method>called_completion_callback_method</method>
      </calledCompletionNumber>
    </_links>
  </data>
  <_links>
    <self>
      <rel>callback_relationship</rel>
      <href>callback_link</href>
      <method>callback_method</method>
    </self>
  </_links>
</results>
```

#### 7.4.3.2.6 Called Displayed Number Callback Response

A **Called Displayed Number** Callback Response is returned to the API Customer's application/website in response to a **Called Displayed Number** Callback Request. No data is returned in this response. Therefore, the **Called Displayed Number** Callback Response only contains HTTP Response Headers. A Response Body is not provided.

The purpose for this response is it to let the API Customer's application/website know the **Called Displayed Number** Callback Request was successful.



#### 7.4.3.2.7 Called Completion Number Callback Response

A **Called Completion Number** Callback Response is returned to the API Customer's application/website in response to a **Called Completion Number** Callback Request. No data is returned in this response. Therefore, the **Called Completion Number** Callback Response only contains HTTP Response Headers. A Response Body is not provided.

The purpose for this response is it to let the API Customer's application/website know the **Called Completion Number** Callback Request was successful.

#### 7.4.3.3 Callback Data Element Definitions

The following defines the data elements (**BOLD** items in JSON and XML format descriptions) that are returned in the Callback Response Body of the various Callback Responses.

Data Element	Description
<b>selected_callback</b>	URN assigned to the <b>Selected</b> Callback (used when the End User selects the business listing). Valid value is "urn:soleo:businesses:selected".
<b>selected_callback_link</b>	Callback link to use when submitting a <b>Selected</b> Callback Request to the Local Search API.
<b>selected_callback_method</b>	HTTP method to use when submitting a <b>Selected</b> Callback Request to the Local Search API. Valid value is "POST".
<b>selected_details_callback</b>	URN assigned to the <b>Selected With Details</b> Callback (used when the End User selects the business listing and requests additional information). Valid value is "urn:soleo:businesses:selectedwithdetails".
<b>selected_details_callback_link</b>	Callback link to use when submitting a <b>Selected With Details</b> Callback Request to the Local Search API.
<b>selected_details_callback_method</b>	HTTP method to use when submitting a <b>Selected With Details</b> Callback Request to the Local Search API. Valid value is "POST".
<b>get_details_callback</b>	URN assigned to the <b>Get Details</b> Callback (used when the End User requests additional information for the business listing). Valid value is "urn:soleo:businesses:getdetails".
<b>get_details_callback_link</b>	Callback link to use when submitting a <b>Get Details</b> Callback Request to the Local Search API.
<b>get_details_callback_method</b>	HTTP method to use when submitting a <b>Get Details</b> Callback Request to the Local Search API. Valid value is "GET".
<b>get_completion_callback</b>	URN assigned to the <b>Get Completion Number</b> Callback (used when the End User requests the business' completion number). Valid value is "urn:soleo:businesses:getcompletionnumber".
<b>get_completion_callback_link</b>	Callback link to use when submitting a <b>Get Completion Number</b> Callback Request to the Local Search API.

Data Element	Description
<b>get_completion_callback_method</b>	HTTP method to use when submitting a <b>Get Completion Number</b> Callback Request to the Local Search API. Valid value is "GET".
<b>called_displayed_callback</b>	URN assigned to the <b>Called Displayed Number</b> Callback (used when the End User calls the business using the displayed telephone number). Valid value is "urn:soleo:businesses:calleddisplaynumber".
<b>called_displayed_callback_link</b>	Callback link to use when submitting a <b>Called Displayed Number</b> Request to the Local Search API.
<b>called_displayed_callback_method</b>	HTTP method to use when submitting a <b>Called Displayed Number</b> Callback Request to the Local Search API. Valid value is "POST".
<b>called_completion_callback</b>	URN assigned to the <b>Called Completion Number</b> Callback (used when the End User calls this business listing using the completion telephone number). Valid value is "urn:soleo:businesses:calledcompletionnumber".
<b>called_completion_callback_link</b>	Callback link to use when submitting a <b>Called Completion Number</b> Callback Request to the Local Search API.
<b>called_completion_callback_method</b>	HTTP method to use when submitting a <b>Called Completion Number</b> Callback Request to the Local Search API. Valid value is "POST".
<b>open_indicator</b>	Indicates whether or not the business is open. Valid values are: <ul style="list-style-type: none"> <li>▪ Yes - business is currently open.</li> <li>▪ No - business is currently closed.</li> <li>▪ Unknown - could not determine whether or not business is currently open or closed.</li> </ul>
<b>hours_of_operation</b>	Business' hours of operation. Example - Su 00:00-00:00, Mo 10:00-19:00, Tu 10:00-19:00
<b>display_hours</b>	Business' hours of operation, as they should be displayed to the End User. Example - Sunday Closed, Monday 10:00AM-07:00PM, Tuesday 10:00AM-07:00PM
<b>business_time_zone</b>	Time zone in which the business is located.

Data Element	Description
<b>business_descriptor</b>	<p>Additional information that describes the business. This can be additional Categories that are assigned to the business, a list of credit cards accepted by this business, etc.</p> <p>Multiple business descriptors can be specified:</p> <ul style="list-style-type: none"> <li>JSON format - descriptor values are separated by commas. For example: "descriptors": [ "BICYCLE DEALERS", "SKATING SUPPLIES", "BICYCLE RENTALS" ]</li> <li>XML Format - Each descriptor has its own data element name/data value pair. For example: &lt;descriptor&gt;BICYCLE DEALERS&lt;/descriptor&gt; &lt;descriptor&gt;SKATING SUPPLIES&lt;/descriptor&gt; &lt;descriptor&gt;BICYCLE RENTALS&lt;/descriptor&gt;</li> </ul>
<b>event_url</b>	A third-party URL associated with the business that offers access to additional information, an event, or call to action (CTA).
<b>event_type</b>	<p>The third-party action type associated with the event_url.</p> <p>Valid values are:</p> <ul style="list-style-type: none"> <li>Make an Appointment</li> <li>Order Online</li> <li>Schedule Catering</li> </ul>
<b>social_media_url</b>	A third-party URL associated with the social media profile of the business. The social media site may be (but is not limited to) one of Facebook, Foursquare, LinkedIn, or Twitter.
<b>image_url</b>	A third-party URL for an image associated with the business. The image may represent one of the following image types: primary businesses image, business logo, storefront, exterior, or interior.
<b>business_association</b>	An association of which the business is a member or partner. For example, a chamber of commerce or better business bureau. The name of the association is a text string suitable for display.
<b>display_number</b>	<p>Business' telephone number.</p> <p><b>NOTE:</b> This number is for display purposes only. Do not use this number to complete a call for the End User.</p>
<b>completion_number</b>	<p>Business' call completion telephone number.</p> <p><b>NOTE:</b> Use this number if the End User requests to call this business.</p>

Data Element	Description
<b>number_valid_until</b>	<p>Date and time when the opportunity to generate revenue by calling the completion number expires, in UTC (Coordinated Universal Time) format:</p> <p>YYYY-MM-DDTHH:MM:SS.sssZ</p> <p>Where:</p> <ul style="list-style-type: none"> <li>▪ YYYY - 4-digit year</li> <li>▪ MM - 2-digit month</li> <li>▪ DD - 2-digit day</li> <li>▪ T - constant value</li> <li>▪ HH - hours in military time</li> <li>▪ MM - minutes</li> <li>▪ SS.sss - seconds (reported to the thousandth of a second)</li> <li>▪ Z - constant value</li> </ul>
<b>callback_relationship</b>	<p>Identifies <b>callback_link</b> as the Callback Request that generated this Callback Response. Provided for informational purposes only.</p> <p>Valid value is "self".</p>
<b>callback_link</b>	<p>Link used for the Callback Request that generated this Callback Response. Provided for informational purposes only.</p>
<b>callback_method</b>	<p>HTTP method used with <b>callback_link</b>. Provided for informational purposes only.</p>

### Callback Response Data Element Definitions

#### 7.4.3.4 JSON Callback Response Body Examples

The following sections provide examples of the JSON Response Body formats for each type of Callback Response.

- Presented
- Selected
- Selected With Details
- Get Details
- Get Completion Number
- Called Displayed Number
- Called Completion Number

##### 7.4.3.4.1 Presented Callback - JSON Example

The following is an example of the JSON Response Body that is returned in a **Presented** Callback Response.

```
{
  "data": [
    {
      "action": "select",
      "_links": [
        {
          "rel": "urn:soleo:businesses:selected",
```

```

        "href": "https://api.soleo.com/SearchNormalizationApplication/
businesses/selected/31203b77-66cd-481f-93eb-917befc4733f;jsessionid=
FB00CFBD956F1A068E803A77A2BF4A0B.0a0b01dd?APIKey=sp9q7fvjns5abbhh7dy2b6d9",
        "method": "POST"
    },
    {
        "rel": "urn:soleo:businesses:selectedwithdetails",
        "href": "https://api.soleo.com/SearchNormalizationApplication/
businesses/selectedwithdetails/31203b77-66cd-481f-93eb-917befc4733f;jsessionid=
FB00CFBD956F1A068E803A77A2BF4A0B.0a0b01dd?APIKey=sp9q7fvjns5abbhh7dy2b6d9",
        "method": "POST"
    }
]
},
{
    "_links": [
        {
            "rel": "self",
            "href": "https://api.soleo.com/SearchNormalizationApplication/businesses/
presented/31203b77-66cd-481f-93eb917befc4733f;jsessionid=FB00CFBD956F1A068E803A77A2BF4A0B.
0a0b01dd ?APIKey=sp9q7fvjns5abbhh7dy2b6d9",
            "method": "POST"
        }
    ]
}
}

```

#### 7.4.3.4.2 Selected Callback - JSON Example

The following is an example of the JSON Response Body that is returned in a **Selected** Callback Response.

```

{
    "data": [
        {
            "_links": [
                {
                    "rel": "urn:soleo:businesses:getdetails",
                    "href": "https://api.soleo.com/SearchNormalizationApplication/
businesses/details/f2d2beb4-adab-46ef-a3b9-8f7ed04d581a;jsessionid=
6CE3274D2EF8FB810B9FEF97EC942783.0a0b01dc?APIKey=sp9q7fvjns5abbhh7dy2b6d9",
                    "method": "GET"
                },
                {
                    "rel": "urn:soleo:businesses:getcompletionnumber",
                    "href": "https://api.soleo.com/SearchNormalizationApplication/
businesses/completionnumber/f2d2beb4-adab-46ef-a3b9-8f7ed04d581a;jsessionid=
6CE3274D2EF8FB810B9FEF97EC942783.0a0b01dc?APIKey=sp9q7fvjns5abbhh7dy2b6d9&ANI=5856414300",
                    "method": "GET"
                }
            ]
        }
    ]
}

```

```

    }
  ],
  "_links": [
    {
      "rel": "self",
      "href": "https://api.soleo.com/SearchNormalizationApplication/businesses/selected/f2d2beb4-adab-46ef-a3b98f7ed04d581a;jsessionid=6CE3274D2EF8FB810B9FEF97EC942783.0a0b01dc ?APIKey=sp9q7fvjns5abbhh7dy2b6d9",
      "method": "POST"
    }
  ]
}

```

#### 7.4.3.4.3 Selected With Details - JSON Example

The following is an example of the JSON Response Body that is returned in a **Selected With Details** Callback Response.

```

{
  "data": [
    {
      "details": {
        "isOpen": "Yes",
        "hours": "Su 00:00-00:00, Mo 10:00-19:00, Tu 10:00-19:00, We 10:00-19:00, Th 10:00-19:00, Fr 10:00-19:00, Sa 10:00-17:30",
        "displayHours": "Sunday Closed, Monday 10:00AM-07:00PM, Tuesday 10:00AM-07:00PM, Wednesday 10:00AM-07:00PM, Thursday 10:00AM-07:00PM, Friday 10:00AM-07:00PM, Saturday 10:00AM-05:30PM",
        "timeZone": "GMT-4",
        "descriptors": [],
        "thirdPartyData": [
          {
            "eventURL": "",
            "eventType": ""
          }
        ],
        "socialMedia": {},
        "images": {},
        "associations": []
      },
      "_links": [
        {
          "rel": "urn:soleo:businesses:getcompletionnumber",
          "href": "https://api.soleo.com/SearchNormalizationApplication/businesses/completionnumber/d49c4e2e-2ba1-4b59-8f22-4c7f4266ae58;jsessionid=A923360853BD68CD5DEA213691667733.0a0b01dd?APIKey=sp9q7fvjns5abbhh7dy2b6d9&ANI=5856414300",
          "method": "GET"
        }
      ]
    }
  ],
}

```

```

    "_links": [
      {
        "rel": "self",
        "href": "https://api.soleo.com/SearchNormalizationApplication/businesses/
selectedwithdetails/d49c4e2e-2ba1-4b59-8f22-4c7f4266ae58;jsessionid=
A923360853BD68CD5DEA213691667733.0a0b01dd?APIKey=sp9q7fvjns5abbhh7dy2b6d9",
        "method": "POST"
      }
    ]
  }
}

```

#### 7.4.3.4.4 Get Details - JSON Example

The following is an example of the JSON Response Body that is returned in a **Get Details** Callback Response.

```

{
  "data": [
    {
      "details": {
        "isOpen": "Yes",
        "hours": "Su 00:00-00:00, Mo 10:00-19:00, Tu 10:00-19:00, We 10:00-19:00, Th
10:00-19:00, Fr 10:00-19:00, Sa 10:00-17:30",
        "displayHours": "Sunday Closed, Monday 10:00AM-07:00PM, Tuesday 10:00AM-
07:00PM, Wednesday 10:00AM-07:00PM, Thursday 10:00AM-07:00PM, Friday 10:00AM-07:00PM, Saturday
10:00AM-05:30PM",
        "timeZone": "GMT-4",
        "descriptors": [],
        "thirdPartyData": [
          {
            "eventURL": "",
            "eventType": ""
          },
          {
            "socialMedia": {},
            "images": {},
            "associations": []
          }
        ]
      },
      "_links": [
        {
          "rel": "self",
          "href": "https://api.soleo.com/SearchNormalizationApplication/businesses/details/
f2d2beb4-adab-46ef-a3b9-8f7ed04d581a;jsessionid=6CE3274D2EF8FB810B9FEF97EC942783.0a0b01dc?
APIKey=sp9q7fvjns5abbhh7dy2b6d9",
          "method": "GET"
        }
      ]
    }
  ]
}

```

#### 7.4.3.4.5 Get Completion Number - JSON Example

The following is an example of the JSON Response Body that is returned in a **Get Completion Number** Callback Response.

```
{
  "data": [
    {
      "action": "call",
      "displayPhoneNumber": "5853341083",
      "completionPhoneNumber": "8777607449",
      "validUntil": "2016-10-01T01:58:23.657Z",
      "_links": [
        {
          "rel": "urn:soleo:businesses:calleddisplaynumber",
          "href": "https://api.soleo.com/SearchNormalizationApplication/businesses/called/25a0ecdf-c882-4c80-95a9-89aa35da4115;jsessionid=586A9626FE3C6C2AA4387BF609647402.0a0b01dc?displayNumber=5853341083&APIKey=sp9q7fvjns5abbhh7dy2b6d9",
          "method": "POST"
        },
        {
          "rel": "urn:soleo:businesses:calledcompletionnumber",
          "href": "https://api.soleo.com/SearchNormalizationApplication/businesses/called/25a0ecdf-c882-4c80-95a989aa35da4115;jsessionid=586A9626FE3C6C2AA4387BF609647402.0a0b01dc?completionNumber=8777607449&APIKey=sp9q7fvjns5abbhh7dy2b6d9",
          "method": "POST"
        }
      ]
    },
    {
      "rel": "self",
      "href": "https://api.soleo.com/SearchNormalizationApplication/businesses/completionnumber/25a0ecdf-c882-4c80-95a9-89aa35da4115;jsessionid=586A9626FE3C6C2AA4387BF609647402.0a0b01dc?APIKey=sp9q7fvjns5abbhh7dy2b6d9&ANI=5856414300",
      "method": "GET"
    }
  ]
}
```

#### 7.4.3.4.6 Called Displayed Number - JSON Example

No data is returned in the **Called Displayed Number** Callback Response; therefore, it does not contain a Response Body.



#### 7.4.3.4.7 Called Completion Number - JSON Example

No data is returned in the **Called Completion Number** Callback Response; therefore, it does not contain a Response Body.

#### 7.4.3.5 XML Callback Response Body Examples

The following sections provide examples of the XML Response Body formats for each type of Callback Response.

- Presented
- Selected
- Selected With Details
- Get Details
- Get Completion Number
- Called Displayed Number
- Called Completion Number

##### 7.4.3.5.1 Presented Callback - XML Example

The following is an example of the XML Response Body that is returned in a **Presented** Callback Response.

```
<?xml version="1.0" encoding="UTF-8"?>
<results>
  <data>
    <action>select</action>
    <_links>
      <selected>
        <rel>urn:soleo:businesses:selected</rel>
        <href>https://api.soleo.com/SearchNormalizationApplication/
businesses/selected/cc9ba1a3-ad22-44cd-b4b1-2c3cc3048a78;jsessionid=5F3C35E51C0845B
6CE048A 65D6D33176.0a0b01dd?APIKey=sp9q7fvjns5abbhh7dy2b6d9</href>
        <method>POST</method>
      </selected>
      <selectedWithDetails>
        <rel>urn:soleo:businesses:selectedwithdetails</rel>
        <href>https://api.soleo.com/SearchNormalizationApplication/
businesses/selectedwithdetails/cc9ba1a3-ad22-44cd-b4b1-2c3cc3048a78;jsessionid=5F3C35E51C0845B
6CE048A65D6D33176.0a0b01dd?APIKey=sp9q7fvjns5abbhh7dy2b6d9</href>
        <method>POST</method>
      </selectedWithDetails>
    </_links>
  </data>
  <_links>
    <self>
      <rel>self</rel>
      <href>https://api.soleo.com/SearchNormalizationApplication/businesses/
presented/cc9ba1a3-ad22-44cd-b4b1-2c3cc3048a78;jsessionid=5F3C35E51C0845B
6CE048A65D6D3317 6.0a0b01dd?APIKey=sp9q7fvjns5abbhh7dy2b6d9</href>
      <method>POST</method>
    </self>
  </_links>
</results>
```

```

    </_links>
</results>

```

#### 7.4.3.5.2 Selected Callback - XML Example

The following is an example of the XML Response Body that is returned in a **Selected** Callback Response.

```

<?xml version="1.0" encoding="UTF-8"?>
<results>
  <data>
    <_links>
      <completionNumber>
        <rel>urn:soleo:businesses:getcompletionnumber</rel>
        <href>https://api.soleo.com/SearchNormalizationApplication/
businesses/completionnumber/75c182db-3297-4f04-93bb-f5e93aa978c4;jsessionid=F6BD35E8E09586D0E
73A33E4A8DD538C.0a0b01dc?APIKey=sp9q7fvjns5abbhh7dy2b6d9&ANI=5856414300</href>
        <method>GET</method>
      </completionNumber>
      <details>
        <rel>urn:soleo:businesses:getdetails</rel>
        <href>https://api.soleo.com/SearchNormalizationApplication/
businesses/details/75c182db-3297-4f04-93bb-f5e93aa978c4;jsessionid=F6BD35E8E09586D0E
73A33E4A8DD538C.0a0b01dc?APIKey=sp9q7fvjns5abbhh7dy2b6d9</href>
        <method>GET</method>
      </details>
    </_links>
  </data>
  <_links>
    <self>
      <rel>self</rel>
      <href>https://api.soleo.com/SearchNormalizationApplication/businesses/
selected/75c182db-3297-4f04-93bb-f5e93aa978c4;jsessionid=F6BD35E8E09586D0E
73A33E4A8DD538C.0a0b01dc?APIKey=sp9q7fvjns5abbhh7dy2b6d9</href>
      <method>POST</method>
    </self>
  </_links>
</results>

```

#### 7.4.3.5.3 Selected With Details - XML Example

The following is an example of the XML Response Body that is returned in a **Selected With Details** Callback Response.

```

<?xml version="1.0" encoding="UTF-8"?>
<results>
  <data>
    <details>
      <isOpen>Unknown</isOpen>
      <hours></hours>
      <displayHours></displayHours>
    </details>
  </data>
</results>

```

```

        <timeZone>GMT0</timeZone>
        <descriptors>
            <descriptor>BICYCLE DEALERS</descriptor>
        </descriptors>
        <thirdPartyData>
            <thirdPartyEvent>
                <eventURL></eventURL>
                <eventType></eventType>
            </thirdPartyEvent>
        </thirdPartyData>
        <socialMedia>
        </socialMedia>
        <images>
            <primary></primary>
            <logo></logo>
            <storeFront></storeFront>
            <exterior></exterior>
            <interior></interior>
        </images>
        <associations></associations>
    </details>
    <_links>
        <completionNumber>
            <rel>urn:soleo:businesses:getcompletionnumber</rel>
            <href>https://api.soleo.com/SearchNormalizationApplication
/businesses/completionnumber/2c83859d-0554-449b-8d54-9727ecbec40e;jsessionid=D55247269E556B
3F4684B3CCFBCA3435.0a0b01dc?APIKey=sp9q7fvjns5abbhh7dy2b6d9&ANI=5856414300</href>
            <method>GET</method>
        </completionNumber>
    </_links>
</data>
<_links>
    <self>
        <rel>self</rel>
        <href>https://api.soleo.com/SearchNormalizationApplication
/businesses/selectedwithdetails/2c83859d-0554-449b-8d54-9727ecbec40e;jsessionid=D55247269E556B
3F4684B3CCFBCA3435.0a0b01dc?APIKey=sp9q7fvjns5abbhh7dy2b6d9</href>
        <method>POST</method>
    </self>
</_links>
</results>

```

#### 7.4.3.5.4 Get Details - XML Example

The following is an example of the XML Response Body that is returned in a **Get Details** Callback Response.

```

<?xml version="1.0" encoding="UTF-8"?>
<results>
    <data>

```

```

    <details>
      <isOpen>Unknown</isOpen>
      <hours></hours>
      <displayHours></displayHours>
      <timeZone>GMT0</timeZone>
      <descriptors>
        <descriptor>BICYCLE DEALERS</descriptor>
        <descriptor>SKATING SUPPLIES</descriptor>
        <descriptor>BICYCLE RENTALS</descriptor>
        <descriptor>BICYCLES REPAIR & SERVICE</descriptor>
      </descriptors>
      <thirdPartyData>
        <thirdPartyEvent>
          <eventURL></eventURL>
          <eventType></eventType>
        </thirdPartyEvent>
      </thirdPartyData>
      <socialMedia>
      </socialMedia>
      <images>
        <primary></primary>
        <logo></logo>
        <storeFront></storeFront>
        <exterior></exterior>
        <interior></interior>
      </images>
      <associations></associations>
    </details>
  </data>
  <_links>
    <self>
      <rel>self</rel>
      <href>https://api.trutedlistings.com/SearchNormalizationApplication/businesses
/details/ 57a64723-90bf-4527-bc3d251f447f24e;jsessionid=44AF921B47C7CA9DF1FDD297D8AFB494.
0a0b01dc?API Key=sp9q7fvjns5abbhh7dy2b6d9</href>
      <method>GET</method>
    </self>
  </_links>
</results>

```

#### 7.4.3.5.5 Get Completion Number - XML Example

The following is an example of the XML Response Body that is returned in a **Get Completion Number** Callback Response.

```

<?xml version="1.0" encoding="UTF-8"?>
<results>
  <data>
    <action>call</action>
    <displayPhoneNumber>5853341083</displayPhoneNumber>
  </data>
</results>

```

```

    <completionPhoneNumber>8777610533</completionPhoneNumber>
    <validUntil>2016-10-03T19:29:24.481Z</validUntil>
    <_links>
      <calledDisplayNumber>
        <rel>urn:soleo:businesses:calleddisplaynumber</rel>
        <href>https://api.soleo.com/SearchNormalizationApplication/
businesses/called/75c182db-3297-4f04-93bbf5e93aa978c4;jsessionid=F6BD35E8E09586D0E7
3A33E4A8DD538C.0a0b01dc?displayNumber=5853341083&APIKey=sp9q7fvjns5abbhh7dy2b6d9</href>
        <method>POST</method>
      </calledDisplayNumber>
      <calledCompletionNumber>
        <rel>urn:soleo:businesses:calledcompletionnumber</rel>
        <href>https://api.soleo.com/SearchNormalizationApplication/
businesses/called/75c182db-3297-4f04-93bb-f5e93aa978c4;jsessionid=F6BD35E8E09586D0E7
3A33E4A8DD538C.0a0b01dc?completionNumber=8777610533&APIKey=sp9q7fvjns5abbhh7dy2b6d9</href>
        <method>POST</method>
      </calledCompletionNumber>
    </_links>
  </data>
  <_links>
    <self>
      <rel>self</rel>
      <href>https://api.soleo.com/SearchNormalizationApplication/
businesses/completionnumber/75c182db-3297-4f04-93bb-f5e93aa978c4;jsessionid=F6BD35E8E09586D0E7
3A33E4A8DD538C.0a0b01dc?APIKey=sp9q7fvjns5abbhh7dy2b6d9&ANI=5856414300</href>
      <method>GET</method>
    </self>
  </_links>
</results>

```

#### 7.4.3.5.6 Called Displayed Number - XML Example

No data is returned in the **Called Displayed Number** Callback Response; therefore, it does not contain a Response Body.

#### 7.4.3.5.7 Called Completion Number - XML Example

No data is returned in the **Called Completion Number** Callback Response; therefore, it does not contain a Response Body.

## 8 Future Functionality

The following functionality is under consideration for future releases of the Soleo Local Search™ API:

1. Events - Ability to search for events (concerts, festivals, parades, etc.) in a specific geographic location.
2. Images – Ability to have images for a website returned.
3. API Customer Reports - provide API Customers access to reports that track End User activity by Reference ID, Source ID, IP Address, End User Device information, Called Display Number, etc.

4. Enhanced Parsing of the Free Form Query - The Local Search API would support a special case of parsing within the FreeFormQuery text string. This parsing divides the text string into a “What” component and a “Where” component and is useful for API Customer applications that combine multiple elements of the business search criteria into one string. The topic models would include a location model that could identify locality information based on;
  - City, state
  - Neighborhood
  - Well Known site (i.e. historic monument, well known bridge)

Example, a text string of “New car dealerships in Akron OH” would be treated as a search for “New car dealerships” in the location of Akron, Ohio.

# **Appendix A: Glossary**

---

This appendix defines the terminology that is used in this document.

Term	Description
ANI	<p>Automatic Number Identification - a telecommunications service that provides the calling telephone number to the receiver of that telephone call.</p> <p>ANI is an optional, yet very valuable Business Search parameter. It enables Soleo to correlate End User activity with sponsored content monetization. Typically, the API Customer's application/website must specify the End User's ANI in the Business Search Request in order to monetize sponsored listings. If the API Customer's application/website does not know or have access to the End User's ANI, options are provided that enable the API Customer to monetize sponsored listings without the ANI (see <b>ANI-less</b> and <b>ANI-switch</b> definitions).</p>
ANI-less	<p>The End User's ANI must be specified in the Business Search Request in order to receive Callback links in the Business Search Response. These links are used to generate revenue for certain End User activity with sponsored listings.</p> <p>If the API Customer wants to monetize the sponsored listings returned in the Business Search Response, but the API Customer's application/website does not have access to the End User's ANI, the API Customer's API Key can be configured to be "ANI-less". This allows Callback links to be returned in the Business Search Response, even though an ANI was not specified in the initial Business Search Request.</p>
ANI-switch	<p>The End User's ANI must be specified in the Business Search Request in order to receive Callback links in the Business Search Response. These links are used to monetize certain End User activity with sponsored listings.</p> <p>If the API Customer's application/website does not know the End User's ANI when the initial Business Search Request is created but can obtain the End User's ANI later in the user's session, the application/website can provide a place-holder ANI (any valid phone number) in the Business Search Request. This allows Callback links to be returned in the Business Search Response.</p> <p>If the API Customer's application/website wants to subsequently perform a <b>Called Displayed Number</b> or <b>Called Completion Number</b> Callback Request, it must replace the place-holder ANI in that request with the End User's ANI, before submitting the Callback Request to the Local Search API.</p>
API	<p>Application Programming Interface - a set of routines, protocols, and tools that enable software components to communicate with each other and pass data between themselves. The <b>API</b> defines how the system components should interact with each other and is typically used when programming graphical user interfaces (GUIs).</p>



Term	Description
API Key	<p>Uniquely identifies the API Customer that submitted a Local Search API Request. It is assigned to the API Customer when they request a key via the Soleo Developer site.</p> <p>An active API Key must be included in each API Request that the API Customer's application/website submits to the Local Search Engine, via the Local Search API. The Local Search Engine uses the API Key to locate the API Customer's Service Plan, in order to determine what types of listings the API Customer can access and what search thresholds apply to this API Customer.</p> <p>Refer to the <a href="#">Quick Start Guide</a> to learn more about API Keys, including instructions on how to obtain a key.</p>
Callback	<p>Callbacks are links that are included in the initial Business Search Response and subsequent Callback Responses that are returned to the API Customer's application/website, via the Local Search API. These Callback links are used by the API Customer's application/website to submit Callback Requests to perform the following functions:</p> <ol style="list-style-type: none"> <li>1. Obtain additional information for a selected business listing.</li> <li>2. Notify the Local Search API that a specific End User action occurred.</li> <li>3. Notify the Local Search API that a specific End User action occurred with a sponsored business listing and claim revenue for that action.</li> </ol> <p>The API Customer's application/website uses the Callback data (Callback URN, Callback Link, and Callback Method) returned in the initial Business Search Response or a subsequent Callback Response to build the Callback Request.</p>
Category	<p>Identifies the commercial offering that is provided by a business. Each business listing is assigned one or more categories when it is added to the Local Search database.</p> <p>Examples of categories are: "Florist", "Italian Restaurant", "Auto Repair", and "Dry Cleaner".</p>
Completion Number	<p>Telephone number the End User must use to call a business, in order for the API Customer to claim revenue for completing a call to that business.</p> <p><b>NOTE:</b> The API Customer can only generate revenue for completing a call to this number, if the <b>monetization criteria</b> specified for this business listing is met (either the End User remains connected to the called business for the minimum duration specified by <b>monetization criteria</b> or the End User performs the action specified by <b>monetization criteria</b>).</p>

Term	Description
Content-Type	<p>One of the HTTP Response Headers included in the Business Search and Callback Responses - defines the format of the text in the Response Body. The content-type can be one of the following:</p> <ul style="list-style-type: none"> <li>▪ "application/json;charset=utf-8" - indicates JSON format</li> <li>▪ "application/xml;charset=utf-8" - indicates XML format</li> <li>▪ "text/plain;charset=utf-8" - indicates an error occurred (error message returned is plain text)</li> </ul>
Cost Criteria	Defines an action that results in a cost to the API Customer.
Display Number	Business' telephone number. This number is for display purposes only - revenue cannot be generated by completing calls to this number.
Endpoint	<p>Component of Business Search Requests and Category List Requests - identifies the resource you want to access. The following endpoints are available for Business Search Requests:</p> <ul style="list-style-type: none"> <li>▪ <b>/organic</b> - only search organic business listings for specified search criteria.</li> <li>▪ <b>/sponsored</b> - only search sponsored business listings for specified search criteria.</li> <li>▪ <b>/businesses</b> - search all business listings (organic and sponsored) for specified search criteria.</li> <li>▪ <b>/expresscall</b> - only search sponsored business listings for specified search criteria.</li> </ul> <p>The following endpoint is available for Category List Requests:</p> <ul style="list-style-type: none"> <li>▪ <b>/category</b> - retrieve all categories that can be used to describe businesses.</li> </ul>
Geocode	Geographic coordinates (Latitude and Longitude) for a specific location.
GET	<p>HTTP Method used by the API Customer's application/website when requesting data from the Local Search API.</p> <p>The Business Search Requests always use "GET" as the HTTP Method.</p> <p>The Callback Requests use either "POST" or "GET". The following Callback Requests use "GET":</p> <ul style="list-style-type: none"> <li>▪ Get Details</li> <li>▪ Get Completion Number</li> </ul> <p>The remaining Callback Requests use "POST":</p> <ul style="list-style-type: none"> <li>▪ Presented</li> <li>▪ Selected</li> <li>▪ Selected With Details</li> </ul>

Term	Description
	<ul style="list-style-type: none"> <li>▪ Called Displayed Number</li> <li>▪ Called Completion Number</li> </ul> <p>Which HTTP Method to use is defined in the initial Business Search Response and subsequent Callback Responses for each Callback link provided in those responses.</p>
Local Search Engine	Soleo's search and matching engine that is used to find localized business listings that match specified search criterion.
jsessionId	<p>ID used internally by the Local Search Engine to manage sessions. The jsessionId is included in the Callback links that are returned in the Business Search and Callback Responses (automatically populated by the Local Search API).</p> <p><b>Do not modify this value in any way.</b></p>
JSON	JavaScript Object Notation - one of the formats supported for the Business Search and Callback Responses. XML is also supported, but JSON is the preferred format.
Mashery	API management platform that Soleo uses to manage access to the Local Search API. Mashery, Inc. is a division of TIBCO Corporation.
Monetization	<p>Converting an End User action into revenue for the API Customer.</p> <p>Sponsored listings exist for businesses that have agreed to pay mobile application and website providers (API Customers) for the promotion of their business. Revenue can be generated from these sponsored listings when a specific action occurs that meets pre-defined criteria for generating revenue for that action (monetization criteria).</p>
Monetization Criteria	Defines the criteria that must be met in order for the API Customer to claim revenue for an End User action. Each sponsored business listing that is returned in a Business Search Response includes the monetization criteria ( <b>revenue action</b> and <b>revenue criteria</b> ) for that business listing.
Organic Listing	Business listing for a business that is not supported by advertising and does not offer revenue generating opportunities to the API Customer.
Pay-per-call	Revenue generating opportunity when the End User calls a selected business' Completion Number. In order to generate revenue for this action, the monetization criteria specified by the selected business listing's <b>monetization criteria</b> must be met (either the End User remains connected to the called business for the minimum duration specified by <b>monetization criteria</b> or the End User performs the action specified by <b>monetization criteria</b> ).

Term	Description
Place-holder ANI	<p>If the API Customer's application/website does not know the End User's ANI when a Business Search Request is created but can obtain the End User's ANI later in the user's session, the application/website can provide a place-holder ANI (any valid phone number) in the Business Search Request. This allows Callback links to be returned in the Business Search Response.</p> <p>If the API Customer's application/website wants to subsequently perform a <b>Called Displayed Number</b> or <b>Called Completion Number</b> Callback Request, it must replace the place-holder ANI in that request with the End User's ANI, before submitting the Callback Request to the Local Search API.</p>
POST	<p>HTTP Method used by the API Customer's application/website when sending data to the Local Search API.</p> <p>The following Callback Requests use "POST":</p> <ul style="list-style-type: none"><li>▪ Presented</li><li>▪ Selected</li><li>▪ Selected With Details</li><li>▪ Called Displayed Number</li><li>▪ Called Completion Number</li></ul> <p>The remaining Callback Requests use "GET":</p> <ul style="list-style-type: none"><li>▪ Get Details</li><li>▪ Get Completion Number</li></ul> <p>Which HTTP Method to use is defined in the initial Business Search Response and subsequent Callback Responses for each Callback link provided in those responses.</p>
Presented	<p>A sponsored business listing is displayed to the End User.</p> <p>Revenue can be generated when a sponsored business listing is presented to the End User. In order to claim revenue for this action, the API Customer's application/website must notify the Local Search API that this action occurred by submitting a <b>Presented</b> Callback Request using the <b>Presented</b> Callback link that is provided in the search results for that business listing.</p>
Radius	<p>Forms a circular fence (in miles) around the geographic area in which you want to search.</p>
Reference ID	<p>Optional string identifier generated by the API Customer's application that uniquely identifies the Business Search Request. The content of this data element is defined by the API Customer's application. Typically, it is the ID of the End User device making the request or the version number of the API Customer's application. This is used in reports for tracking purposes.</p>

Term	Description
Self	<p>Every Business Search Response and every Callback Response contains a set of "self" data elements at the end of the response. These data elements define the API Request that generated the API Response.</p> <ul style="list-style-type: none"><li>▪ In the Business Search Response, the "self" data includes the initial Business Search Request that generated this response.</li><li>▪ In the Callback Response, the "self" data includes the Callback Request that generated this response.</li></ul> <p>This data is provided for informational purposes only. It can be used to confirm that the API Request the Local Search Engine received is what you meant to send.</p>
Source ID	<p>Optional string identifier generated by the API Customer's application that identifies the source that issued the Business Search Request. This can be the End User or the API Customer's application name or website. This is used for reporting purposes only.</p>
Sponsored Listing	<p>Business listing for a business that is supported by advertising and provides revenue generating opportunities for the API Customer. This is referred to as monetization.</p>
Taxonomy	<p>Hierarchical classification of categories into ordered groupings. The Soleo taxonomy consists of approximately 2400 categories that are organized into three tiers.</p>
URN	<p>Uniform Resource Name - name of the resource to use when submitting a request to the Local Search API.</p>
XML	<p>eXtensible Markup Language - one of the formats supported for the Business Search and Callback Responses. JSON is also supported, which is the preferred format.</p>

# **Appendix B: Search Response Codes**

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A Response Status is included in all Business Search Responses and Callback Responses. It is an HTTP response code that indicates the status of the Business Search or Callback Request. The following defines the HTTP response codes that can be returned and explains the reason for receiving each code. If a response code indicates an error occurred, the following also tells you how to troubleshoot the problem.

## 200

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Indicates a Business Search Request or a Callback Request was successful. The results are provided as a JSON or XML document in the Response Body of the Business Search or Callback Response.

**NOTE:** The Accept Header provided in the Business Search or Callback Request specifies the format of the results (JSON or XML). If an Accept Header is not provided, the results are returned in JSON format.

## 201

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Indicates a **Called Displayed Number** or **Called Completion Number** Callback Request was successful. No data is returned in these types of Callback Responses; therefore a Response Body is not returned. The **Called Displayed Number** and **Called Completion Number** Callback Responses only contain HTTP Response Headers. The purpose for these responses is it to let the API Customer's application/website know the **Called Displayed Number** or **Called Completion Number** Callback Request was successful.

## 400

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Indicates there was a problem with the Business Search Request. There are several possible causes, but the most common ones are:

- **Missing required parameters** - A required parameter is not specified in the Business Search Request.
- **Invalid parameter values** - A parameter contains an invalid value.
- **Invalid parameters** - The Business Search Request contains an unexpected parameter.

To troubleshoot a 400 Response Code, compare your Business Search Parameters against the Local Search API documentation to ensure your Business Search Request complies with the requirements and rules defined in the **Business Search Parameters** section of that document:

- Make sure all required parameters are specified.
- Make sure you used the correct parameter names.
- Double-check your parameter names to ensure they have the correct case, as all parameter names are case- sensitive.
- Make sure all parameter values are valid.
- Make sure you did not include unexpected/unknown parameters.

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## 404

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Indicates one of two possible conditions:

- The Business Search or Callback Request contains an invalid endpoint (resource you want to search, e.g. /business).
- The Local Search API session expired.

**NOTE:** If you received a 404 Response Code, you can expect to receive an error for any subsequent API Requests to the same Endpoint.

To troubleshoot a 404 Response Code, check the endpoint specified in your API Request to ensure you specified a valid endpoint (e.g., /**businesses**).

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## 405

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Indicates GET was the required HTTP Method, but the Business Search Request or Callback Request did not use GET.

To troubleshoot a 405 Response Code, check the HTTP Method specified in the header of your API Request to ensure you specified GET.

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## 406

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Indicates the Business Search Request or Callback Request contains an invalid Accept Header.

To troubleshoot a 406 Response Code, compare your Accept Header against the Local Search API documentation to ensure your API Request complies with the requirements and rules defined in the **HTTP Request Headers** section of that document:

- Make sure all required data is specified.
- Make sure all values are valid.

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## 410

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Indicates the opportunity to generate revenue from this business listing for the Callback you requested has expired and is no longer available (date and time specified by **monetization validUntil** for this Callback has passed).

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## 500

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Indicates the Local Search Engine has experienced an internal error and could not process your API Request.

**Report this error to your Soleo representative.**



# Revision History

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Document Revision	Document Date	
Revision 10	11/28/2018	<p>Corrected case for Query Strategy – FreeFormQuery. In previous version it was spelled “FreeformQuery” which is incorrect.</p> <p>Remove references to endpoint “nearhere” functionality which is not currently supported.</p> <p>Added table to define the response Data Element names.</p> <p>Updated description of hoursdisplay and hourssearch in the Response Data Element Definition table in section 6.</p> <p>Moved the information about FreeFormQuery locality in query to Futures section.</p>
Revision 9	12/15/17	<p>Revert to Soleo branding.</p> <p>Minor corrections to parameter descriptions</p>
Revision 8	10/18/17	<p>Rebrand the “Soleo Local Search API” as the “TrustedListings API”.</p> <p>Include new business listing fields of url, image, verified, and score.</p> <p>Include new business listing details for social media, images, and associations.</p> <p>Reverse order of revision history.</p>
Revision 7	03/28/17	<p>Changes throughout to document support for links to third party content on a per listing basis. These links can include Calls To Action (CTAs), such as appointment scheduling.</p>
Revision 6	01/17/17	<p>Updated version number to 2.1.</p> <p>Include support for /nearhere endpoint.</p> <p>Describe “near;” embedded processing within FreeFormQuery field.</p> <p>Note that use of the Free Form Query is subject to Service Plan settings.</p>
Revision 5	10/20/16	<p>Monetization Overview - changed "A sponsored listing can be monetized when any of the following actions occur" to "A sponsored listing can be monetized when the following actions occur".</p> <p>Free Form Query - changed “where can I find goat cheese pizza” to “where can I find pizza”.</p> <p>Future Functionality, CTA Button - changed “request a car” to “request a ride”.</p> <p>Fixed formatting "issues" that appeared on the website.</p> <p>Added cross-references back in.</p>
Revision 4	10/19/16	<p>Changed Callback "versions" to Callback "formats".</p> <p>Changed "Category Search Request" to "Category List Request".</p> <p>Changed "Category Search Response" to "Category List Response".</p> <p>Business Listing Data Model, Categories - added NOTE that Categories are updated on a regular basis.</p>

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User Parameters Rules - ANI Parameters Options Table:

- Changed column 4's header name from "Business Search Request - ANI" to "Search Request - ANI Parameter".
- Column 1 - changed "ANI" option to "Standard ANI" option.
- "ANI-switch" option - Changed "Contact your Soleo Account Manager to enable this option for your account" to "Contact your Soleo Account Manager, if you plan to use this option."

Results Parameters Definitions, Sort By Value - Changed "Organic listings have an estimated value of zero." to "Organic listings have a value of zero."

## Results Parameters Examples:

- 1<sup>st</sup> example - changed "**MaxSponsoredCount**" from 20 to 3.
- 2<sup>nd</sup> example - changed "**MaxOrganicCount**" from 5 to 7.

JSON Document Format - revised 1<sup>st</sup> paragraph for clarity purposes.

## JSON v1 Format:

- Added NOTE regarding tag misspellings.
- Changed "monetizationCriteria" and "costCriteria" to "monetizationCriteria" and "costCriteria", respectively.

JSON v1 Response Body Example and JSON v2 Response Body Example - changed all occurrences of "monetizationCriteria" and "costCriteria" to "monetizationCriteria" and "costCriteria", respectively.

JSON XML Document Format - revised 1<sup>st</sup> paragraph for clarity purposes.

## Response Data Element Definitions:

- Revised NOTE regarding Callback links and ANI.
- Added reference to User Parameters Rules.
- completion\_number - revised NOTE.
- Revenue action - deleted COMPLETION NUMBER REQUESTED from the valid values.

Added "Event" to the criteria for generating revenue when the End User calls a business' Completion Number:

- Monetization Overview - revised last bullet (End User calls the selected business' Completion Number ...).
- Business Parameters Definitions, Type parameter - revised "called" description.
- Business Parameters Examples - revised text describing the "Type" examples.
- Response Data Element Definitions - revised **revenue action** (CALLED description) and **revenue criteria** Descriptions.
- Callbacks - revised last bullet under item #2 (End User calls the selected business' Completion Number ...).

## Callbacks:

- Revised 2<sup>nd</sup> NOTE regarding Callback links and ANI for clarity purposes.
- Added reference to User Parameters Rules.

Category List Request - Revised wording for clarity purposes.

## Future Functionality - Booking Button:

- Changed "Booking Button" to "Call To Action (CTA) Button".
  - Changed "order an Uber" to "request a car".
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Document Revision	Document Date
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## Glossary:

- Revised Completion Number.
- Endpoint - identified Business Search endpoints and Category List endpoint.
- Added Mashery.

## Revised Pay-per-call

Revision 3     10/13/16

Changed "Callback Method" to "Callback Version" throughout document.

Business Search Strategies, Free Form Query - revised description of how ranked categories are used to search for business listings.

User Parameters Definitions - revised ANI and Reference ID Descriptions.

User Parameters Rules - Rewrote ANI rules and added table that defines ANI, ANI-switch, ANI-less, and No ANI options.

## Results Parameters Definitions:

- MaxSponsoredCount and MaxOrganicCount - changed "maximum is determined by a pre-defined system configuration (currently 100)" to "maximum is determined by a pre-defined system configuration".
- Sort By Value:
  - Changed "ascending" to "descending".
  - Added "Organic listings have an estimated value of zero."
- Sort By Value and Distance - changed "ascending value" to "descending value".

Moved Business Search Response into Searching For Businesses section.

Business Search Response, HTTP Response Headers - Deleted **X-Mashery Responder** and **Connection** headers.

## Response Data Element Definitions:

- Revised NOTE regarding Callback links and ANI.
- valid\_until - deleted "Sponsored" from "Sponsored/Organic" column.
- Rewrote definitions for all Callback data elements:
  - presented\_callback
  - presented\_callback\_link
  - presented\_callback\_method
  - called\_displayed\_callback
  - called\_displayed\_callback\_link
  - called\_displayed\_callback\_method
  - called\_completion\_callback
  - called\_completion\_callback\_link
  - called\_completion\_callback\_method

## Callbacks:

- Modified End User actions listed under items 1 and 2.
- Revised NOTE regarding Callback links and ANI.
- Modified "Descriptions" column in table.

## Callback Request:

Document Revision	Document Date	
		<ul style="list-style-type: none"> <li>Changed "Callback command" to "Callback Link".</li> <li>Rewrote HTTP Request Headers.</li> <li>Rewrote Callback Link (previously called Callback Command).</li> </ul> <p>Callback Data Element Definitions - revised "Descriptions" column for all callback URNs and Methods.</p> <p>Added:</p> <ul style="list-style-type: none"> <li>Category Search Request and Examples</li> <li>Category Search Response</li> <li>Category Search Data Elements</li> <li>Examples</li> </ul> <p>Moved <b>/category</b> endpoint from Business Search Request to Category Search Request.</p> <p>Future Functionality - revised 1<sup>st</sup> sentence and converted sub-sections into a numbered list.</p> <p>Glossary:</p> <ul style="list-style-type: none"> <li>Rewrote definitions for ANI, ANI-less, ANI-switch</li> <li>Added Place-holder ANI and URN</li> <li>Deleted Mashery</li> <li>Revised Reference ID</li> <li>Taxonomy - changed "consists of 2400 Categories" to "consists of approximately 2400 categories".</li> </ul> <p>Corrected some typos.</p>
Revision 2	10/07/16	<p>Rewrote Soleo Search Overview - Benefits section</p> <p>Added ANI requirement to:</p> <ul style="list-style-type: none"> <li>Business Search Request - User Parameters Rules</li> <li>Business Search Response - Response Data Element Definitions (Callback resource names, links, and methods)</li> <li>Callback Request</li> </ul> <p>Business Search Response, Response Data Element Definitions - added NOTE that National business listings do not contain location information</p> <p>Incorporated Product Management's feedback on Revision 1</p> <p>Generated better definitions for ANI-less and ANI-switch</p> <p>Modified all "self" href definitions for clarity purposes - changed:</p> <p>Changed all references to "Local Search Platform" to "Local Search Engine"</p> <p>Simplified names of API Requests and API Responses - changed:</p> <ul style="list-style-type: none"> <li>"Business Search API Request" to "Business Search Request"</li> <li>"Business Search API Response" to "Business Search Response"</li> <li>"Callback API Request" to "Callback Request"</li> <li>"Callback API Response" to "Callback Response"</li> <li>"Category Search API Request" to "Category Search Request"</li> </ul> <p>Modified all "self" href definitions for clarity purposes - changed:</p>

Document Revision	Document Date	
		<ul style="list-style-type: none"> <li>▪ "href_relationship" to either "bus_search_relationship" or "callback_relationship"</li> <li>▪ "href_link" to either "bus_search_link" or "callback_link"</li> <li>▪ "href_method" to either "bus_search_method" or "callback_method"</li> </ul> <p>Created 3-Tier Taxonomy Hierarchy Diagram</p> <p>Revised Glossary (Appendix A) for consistent use of terminology, word-smithed definitions, deleted terms not used in this document, added ANI-less and ANI -switch</p> <p>Revised Search Response Codes (Appendix B) for consistent use of terminology, word-smithed definitions</p> <p>Revised ANI, ANI-less, and ANI -switch definitions in the Glossary (Appendix A)</p>
Revision 1	10/03/16	<p><u>1<sup>st</sup> formal issue</u></p> <p>Revised Categories to include 3 tiers, instead of 2 tiers</p> <p>Business Search Response - created JSON v2 example</p> <p>Added Callback Request</p> <p>Callback Response - Added JSON and XML definitions and examples (Presented, Selected, Get Details, Selected With Details, Get Completion Number, Called Displayed Number, Called Completion Number)</p> <p>Defined Callback Response data elements</p> <p>Removed all references to "Event" as a revenue generating action (not included in Version 2.0)</p> <p>Added CategoryID and CategoryName</p> <p>Revised Future Features and Functionality</p> <p>Revised Glossary (Appendix A) for consistent use of terminology and word-smithed definitions</p> <p>Fixed formatting issues</p>