

Technical Specification for Data Sharing through Software Fiscal Device with BRA Version 1.0





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1INTRODUCTION

The purpose of the document is to facilitate Clients to understand methods for invoice data sharing with BRA. The software fiscal device will be installed on the same computer on which POS is installed. The Fiscal device will be integrated with POS system to fiscalize the invoice and returns Fiscal Invoice Number.

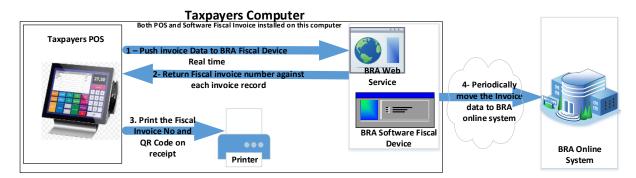


Figure 1 - Invoice Fiscalization Process

POS will be integrated with BRA as per following steps.

- Register each POS in BRA system from which you want to upload the data. Details are given in Section POS Registration.
- Download the software component from the BRA website.
- Install the software on the local computer(*internet connection is required for this step).
- Taxpayer will integrate their system with BRA software component as per provided details in the Section Integration of Taxpayer System with BRA System.

2 SCOPE

The scope of the document is limited to technical description of BRA software fiscal device component. BRA Software Fiscal Device will reside on the same system where the POS is installed by the taxpayer. It will fiscalize each invoice generated through the POS on real time and generate unique fiscal invoice number for each invoice to print on receipt with QR code. Software fiscal device will periodically move recorded invoices data to BRA online system through an independent process.

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3 DEFINITION AND ACRONYMS

ACRONYMN	DEFINITION
BRA	Balochistan Revenue Authority
BNTN	Balochistan National Tax Number

4 POS Registration

All Business sectors will register their POS for each branch using BRA portal by providing the required data.

For POS registration, log in on web site https://bra.gob.pk/ with your user credential and get registered by accessing the page Registration \rightarrow POS Client Registration

On successful submission of data, BRA will generate POS registration number which will be referenced in compiling each invoice into required format.



Figure 2 Business Information

Following is the detail of required data for POS registration:

Business Information

Field	Mandatory	Details
BNTN	System Generated	
Business Name	System Generated	

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Web Service Technical Specification



Brand Name	No	E.g. Outfitters
Products	No	Open field
Manufacturer	Yes	Yes/No
Estimated annual turnover	No	Open field (Numeric)
Estimated number of transactions per day	No	Open field (Numeric)
Website URL	No	Open field
POS Software name	No	Open field
POS software front/back end technologies	No	Open field
POS type	Yes	Cloud Based/Client Server
POS software vendor	No	Open field
In-house software development	Yes	Yes/No
Number of technical staff	No	Open field (Numeric)



Figure 3 Contact Information

Contact Information

Field	Mandatory	Field Information
Contact person	Yes	Contact Person Name
Mobile	Yes	Open field
Landline number	No	Open field
Email	Yes	Open field
Address	Yes	Open field
Contact Type	Yes	General/Technical

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Point of Sale Registration

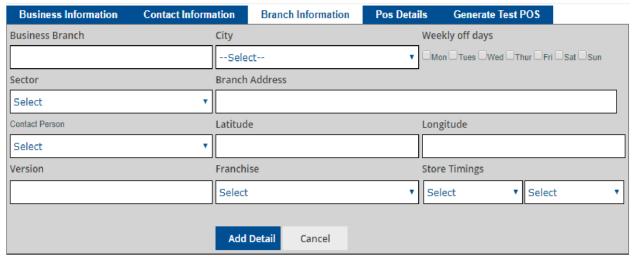


Figure 4 Branch Information

Branch Information

Field	Mandatory	Field Information
Business Branch	Yes	Branch Name
City	Yes	Branch City
Sector	Yes	Restaurants, Hotel, Courier, Beauty Parlor
Branch Address	Yes	Location of branch
Contact Person	Yes	Select Information entered in contact details tab
Latitude	No	From Google Map
Longitude	No	From Google Map
Version	No	POS Software Version
Franchise	Yes	Select option Yes or No
Store Timings	No	Operational hours of outlet
Week of Days	No	No of days outlet opens

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Web Service Technical Specification





Figure 5 POS Detail

POS Details

Field	Mandatory	Field Information	
POS Branch	Yes	Select branch added from Branches Tab	
POS Counter Number/Name	Yes	The counter number/name identification of POS System (Unique)	
POS Type	Yes	Select from list of Types	
		(You can select any option. Mostly Primary is selected for daily used POS PC)	
MAC Address	Yes	MAC Address of the POS System	
IP Address	Yes	IP Address associated with the POS System	

Point of Sale Registration



Figure 6 Test POS ID

For pre-production integration, generate your test BRA POS IDs and integrate the IMS Component with your POS System.

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5 Integration of POS with BRA Software Fiscal Device

BRA has provided the local software fiscal device to all business sectors to share the invoice data with BRA. This component will be accessible only to registered POS Clients. Transaction handling and relevant data dissemination to BRA PRAL will be the responsibility of registered POS Clients. BRA will impose such restrictions so that no un-authorized POS Clients have access to the software fiscal device. To facilitate taxpayers, 2 modes are available in software component for testing and live transactions

For the integration of taxpayer POS with BRA software fiscal device require following steps:

1. Download the Software Fiscal Device from BRA Web Site

https://bra.gob.pk/NewsDirectory/User Guide/IMSSetup.zip

Note: The setup is same for Test and Production environments. During installation for Test please select "Sandbox" option and enter the Test POS ID generated in Figure-6 and for Live/Production select "Production" and enter the POS ID generated in Figure-5 and select Option "Production"

POS ID	Access Code	Sandbox	O Production	n	
Directory	Browse destination folder			Browse	Install

- 2. Install the Setup as instructed in section Installation of the BRA Software Fiscal Device
- 3. After the installation, a Self Hosted Http service will be configured on following address bindings to be integrated with POS:

http://localhost:8524/api/IMSFiscal/get

It will show "Service is responding"

Note: To verify the successful installation of fiscal service. Please confirm fiscalization service is up and running in the system services list (service.msc) as shown in Figure -3.

Consume the local fiscal service (http://localhost:8524/api/IMSFiscal/get) in the POS according to given instruction in Section Steps of Integration for Service Consumption

- 4. Consume the local fiscal service (http://localhost:8524/api/IMSFiscal/get) in the POS according to given instruction in Section Steps of Integration for Http Service Consumption
- 5. BRA service will return the invoice number against each record.

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- 6. The BRA Invoice number should be printed on the Customer invoice receipt along with QR Code.
- 7. The invoice data will be periodically uploaded on BRA Servers by the Software fiscal device automatically.
- 8. IMS Component generates its file at the provided Folder for syncing it with BRA. Keep that file safe at your end.

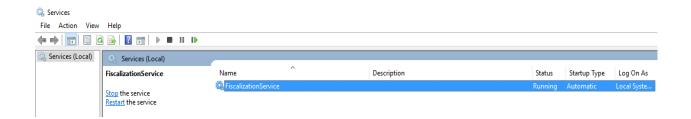


Figure 7 Fiscalization Service

6 Installation of the BRA Software Fiscal Device

Following are the pre-requisites for the installation of Software Component.

- Windows Based Operating System (Win 7 and above).
- .Net Frame Work 4.5 or above required.
- Installation User must have the administrator rights.

Following are the Steps for the installation of the BRA Software Component.

- 1. Run the Setup.exe as administrator as shown in Figure 8.
- 2. Select the complete radio option and click Next as shown in Figure 10.
- During the installation, setup will prompt for POS Registration Number, Access Code, Test/Productions selection and Target Folder which is issued at the time of POS Registration as shown in figure - 11.
- 4. Press 'Change Button' and select the folder in which software component will generate local files.
 - *Note:* It is recommended to select the Drive other than C Drive for security purpose.
- 5. Provide the required POS Registration No and press next
- 6. Click 'Finish' to complete the set up

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Web Service Technical Specification

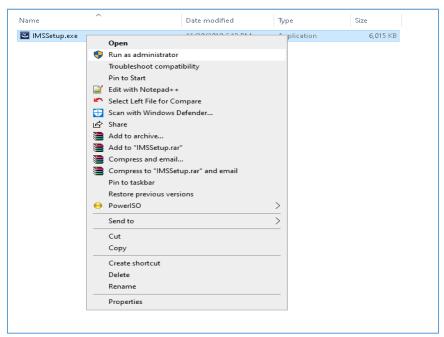


Figure 8 Set Up

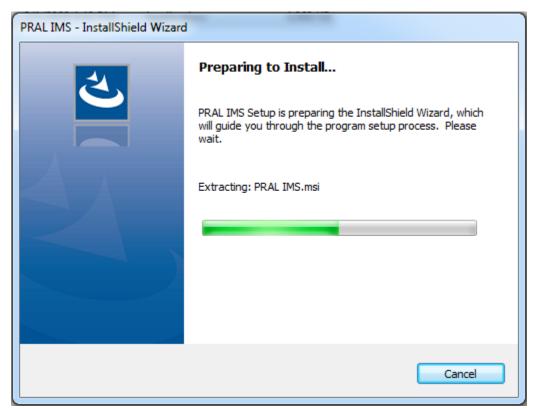
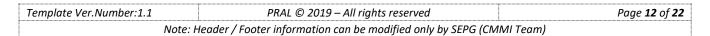


Figure 9 Installation







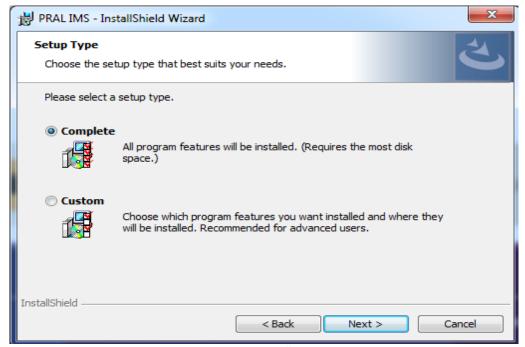


Figure 10 Installation

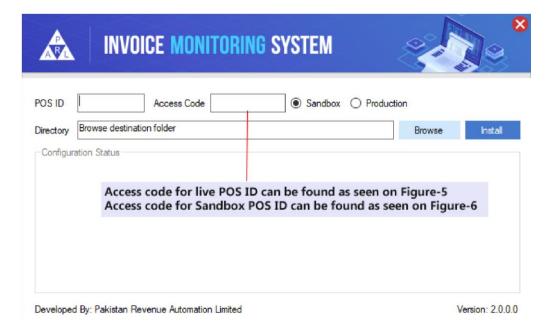


Figure 11 POS Registration Number, Access Code, Test/Production selection and Directory

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Figure 12 Installation Completed

7 Invoice Model Details

The fields of the invoice model are given below.

Name	Data Type	Status	Sample Value
InvoiceNumber	varchar(30)	Blank	
POSID (POS Registration Number		Compulsory	100000
given by BRA on registration)	bigint		
USIN (Business own Invoice		Compulsory	001897
Number)	varchar(50)		
RefUSIN (Business Reference		Optional	001896
Invoice Number in case of return)	varchar(50)		
DateTime	datetime	Compulsory	2018-11-01 00:00:00.000
BuyerName	varchar(150)	Optional	Shahzad Ahmed
BuyerNTN	Varchar(9)	Optional	1234567-8
BuyerCNIC	Varchar(13)	Optional	1111122222223
BuyerPhoneNumber	varchar(20)	Optional	923001234567

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TotalSaleValue TotalTaxCharged Discount	double double double	Compulsory Compulsory Optional	1,298 (Sum of Item Sales Values) Exclusive of Tax and Discount 221 (Sum of Item Tax) 380 (Sum of Item Discount)
FurtherTax	double	Optional	0.00 (Sum of Further Tax)
TotalBillAmount PaymentMode (Use Mixed payment mode in case of more than 1 payment method like cash + card)	Int	Compulsory	1,519 1. Cash 2. Card 3. Gift Voucher 4. Loyalty Card 5. Mixed 6. Cheque
InvoiceType	Int	Compulsory	 New (for new invoices) Debit Credit (Use Credit in case of Return/Cancel order/invoice)
List <invoiceitems></invoiceitems>	list	Compulsory	Table No 2

Invoice Data 1

Table No. 2 (recursive, will contain multiple items record in an invoice)

Name	Data Type	Status	Sample Value
ItemCode	varchar(50)	Compulsory	0001
ItemName	varchar(150)	Compulsory	Blanket
PCTCode	varchar(8)	Compulsory	01011000 (For no PCT Codes add
			00000000 as default)
Quantity	double	Compulsory	1.00
TaxRate	float	Compulsory	17
		Compulsory	1,298 (Actual Sale Price on which
			Tax Calculated) Exclusive of Tax
SaleValue	double		and Discount
Discount	double	Optional	380.00
FurtherTax	double	Optional	0.00
TaxCharged	double	Compulsory	221 (Actual Tax)

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TotalAmount	double	Compulsory	1,519
InvoiceType	Int	Compulsory	 New Debit
			2. Deoit
			3. Credit
RefUSIN(Business Reference Invoice Number in case of return)	Varchar	Optional (In case of Credit or Debit Note)	001897

Invoice Item 1

7.1 Return Fiscal Invoice Number

Json Response string from BRA Web API {\"InvoiceNumber\":90000520191112000369,\"Response\":\"Invoice received successfully\",\"Code\":\"100\"'}

7.2 .Net Code Example: Fill the invoice object

```
Invoice objInv = newInvoice();
objInv.InvoiceNumber = string.Empty;
objInv.POSID = 123123;
objInv.USIN = "123457";
objInv.DateTime = DateTime.Now;
objInv.BuyerNTN = "1234567-9";
objInv.BuyerCNIC = "12345-1234567-8";
objInv.BuyerName = "Buyer Name
objInv.BuyerPhoneNumber = "0345-1234567";
objInv.PaymentMode = 1;
objInv.TotalSaleValue = 0;
objInv.TotalOuantity = 0;
objInv.TotalBillAmount = 0;
objInv.TotalTaxCharged = 0;
objInv.Discount = 1000;
objInv.FurtherTax = 100;
objInv.InvoiceType = 1;
objInv.Items = Items();
private List<InvoiceItems>Items()
   List<InvoiceItems>lst = new List<InvoiceItems>();
InvoiceItemsobjItem = newInvoiceItems();
objItem.ItemCode = "0000";
objItem.ItemName = "Item Name";
objItem.Quantity = 3;
objItem.TotalAmount = Convert.ToDouble(3000.00);
objItem.SaleValue = Convert.ToDouble(3180);
```

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```
objItem.TaxCharged = Convert.ToDouble(180);
objItem.TaxRate = 6;
objItem.PCTCode = "00000000";
objItem.FurtherTax = 20;
objItem.InvoiceType = 1;
objItem.Discount = 500;
lst.Add(objItem);
returnlst;
}
```

7.2.1 Web Client to post data to provided URL and get the response

Below code is used to call the WebAPI. JSON string is passed to the function along with API URL to which data is being posted.

7.2.2 Web Client to post data from Cloud and get the response

Below code is used to call the WebAPI. JSON string is passed to the function along with API URL to which data is being posted.

Sandbox URL:

http://ims.pral.com.pk/ims/sandbox/api/Live/PostData

Token:1298b5eb-b252-3d97-8622-a4a69d5bf818

Production URL:

http://ims.pral.com.pk/ims/production/api/Live/PostData

Token: Will be provided on demand.

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```
usingSystem.Net.Http;
usingNewtonsoft.Json;
HttpClient client = newHttpClient();
client.DefaultRequestHeaders.Authorization = newAuthenticationHeaderValue("Bearer",
Token);
StringContent content = newStringContent(JsonConvert.SerializeObject(objinvoice),
Encoding.UTF8, "application/json");
System.Net.ServicePointManager.ServerCertificateValidationCallback = delegate {
returntrue; };
HttpResponseMessage response = client.PostAsync(URL,content).Result;
if (response.IsSuccessStatusCode)
Console.WriteLine("Response from API");
Console.WriteLine("-----
Console.WriteLine(response.Content.ReadAsStringAsync().Result);
7.2.3 Sample JSON Format to POST to IMS Component
   "InvoiceNumber":"",
   "POSID":000000,
   "USIN": "USINO",
   "DateTime": "2020-01-01 12:00:00",
   "BuyerNTN": "1234567-8",
   "BuyerCNIC": "12345-1234567-8",
   "BuyerName": "Buyer Name",
   "BuyerPhoneNumber": "0000-0000000",
   "TotalBillAmount":0.0,
   "TotalQuantity":0.0,
   "TotalSaleValue":0.0,
   "TotalTaxCharged":0.0,
   "Discount":0.0,
   "FurtherTax":0.0,
   "PaymentMode":1,
   "RefUSIN":null,
   "InvoiceType":1,
   "Items":[
         "ItemCode":"IT 1011",
         "ItemName": "Test Item",
         "Quantity":1.0,
         "PCTCode": "00000000",
         "TaxRate":0.0,
         "SaleValue":0.0,
         "TotalAmount":0.0,
         "TaxCharged":0.0,
         "Discount":0.0,
         "FurtherTax":0.0,
```





```
"InvoiceType":1,
         "RefUSIN":null
      },
{
         "ItemCode":"IT 1012",
         "ItemName": "Test Item",
         "Quantity":1.0,
         "PCTCode": "00000000",
         "TaxRate":0.0,
         "SaleValue":0.0,
         "TotalAmount":0.0,
         "TaxCharged":0.0,
         "Discount":0.0,
         "FurtherTax":0.0,
         "InvoiceType":1,
         "RefUSIN":null
      }
```

7.2.4 Posting Model in Postman

7.2.4.1 GET Endpoint

Request:

Open new tab in Postman and write URL: http://localhost:8524/api/IMSFiscal/Get . Now click send button to check the response from the Fiscalization Service.

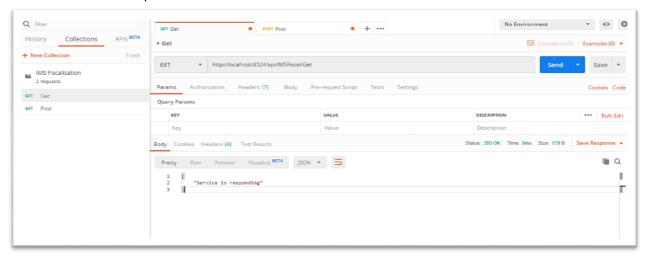


Figure 13 Check IMS Service Response

Response:

"Service is responding"]

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7.2.4.2 POST Endpoint

Request:

Open new tab in Postman and write URL:

http://localhost:8524/api/IMSFiscal/GetInvoiceNumberByModel

Change type from **Get** to **POST** and then Select **raw** radio button on Postman and change **Text** to **JSON**. Add the sample json mention in section 7.2.2 Sample JSON Format to POST to IMS Component.

Now click send button to check the response from the Fiscalization Service.

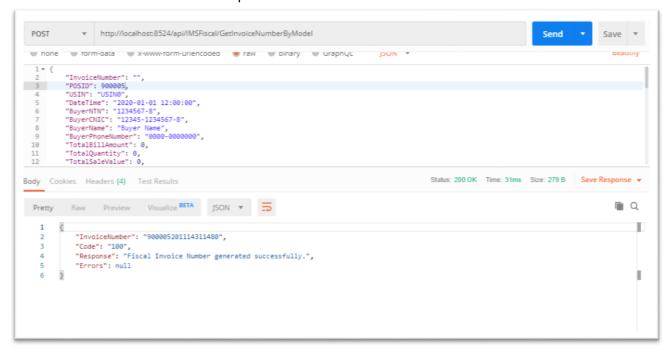


Figure 14 Post Data to Fiscalization Service

Response:

```
{
    "InvoiceNumber": "9000052011142444901",
    "Code": "100",
    "Response": "Fiscal Invoice Number generated successfully.",
    "Errors": null
}
```





8 Uninstallation:

You have to uninstall the sandbox component properly before trying to reinstall the live component. Please do not uninstall IMS component from control panel. To properly uninstall the component, follow these steps:

- 1. Run the Setup.exe as administrator as shown in Figure 8.
- 2. The prompt will ask that do you want to perform an upgrade, press "Yes"
- 3. Click Next on wizard screen
- 4. In program maintenance screen, select "Remove" radio button. Press Remove button on next wizard screen. It will remove the component properly.
- 5. Close the wizard by clicking Finish Button. Your component has been uninstalled successfully.

9 FAQs

1. What is USIN, RefUSIN in Invoice Model?

USIN is the User Invoice Number is a unique number of the taxpayers own system to map BRAInvoiceNumber for cross reference. RefUSIN is Reference User Invoice Number, it is to be provided in case of Credit Invoice Type as a credit invoice type is created always against an already available original invoice to neutralize the net effect of original invoice for example if a customer buys something and invoice is issued upon return of that thing POS creates a credit invoice of same amount.

2. What is InvoiceType? Explain debit/credit possible value with scenario in reference of Restaurant Services.

Standard Invoice Type is 1=New, A credit Invoice type is used upon return of bought goods etc. scenario is shared in point 1 above.

3. What is PCTCode in Item List? What is the default value of PCTCode for local purchase item and Restaurant Services?

PCTCode is Pakistan Custom Terrif Code. One can get a complete list of PCT Codes by clicking on: http://download1.fbr.gov.pk/Docs/2018817158749999PakistanCustomTariff2018-19-CH1-9.pdf

While to find some specific code following link can be used https://fbr.gov.pk/categ/customs-tariff/51149/70853/131189

Following please find some of the PCT Codes that may relate to the restaurants. The default value may be provided by BRA officially to the taxpayers.

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*NOTE: The PCT Code in web service is to be provided without "." i.e. 1601.0000 will be shared as 16010000

Sr.#	PCT Code Detail	PCT Description
1	16010000	SAUSAGES AND SIMILAR PRODUCTS, OF MEAT, MEAT OFFAL OR BLOOD; FOOD PREPARATIONS BASED ON THESE PRODUCTS.
2	19042000	-PREPARED FOODS OBTAINED FROM UNROASTED CEREAL FLAKES OR FROM MIXTURES OF UNROASTED CEREAL FLAKES AND ROASTED CEREAL FLAKES OR SWELLED CEREALS
3	21042000	-HOMOGENISED COMPOSITE FOOD PREPARATIONS
4	21069030	FLAVOURING POWDERS FOR PREPARATION OF FOOD
5	21069040	EMULSIFING AGENTS FOR FOOD AND DAIRY PRODUCTS
6	33021020	FLAVOURS AND CONCENTRATES FOR USE IN FOOD INDUSTRY
7	33049920	TONICS AND SKIN FOOD
9	84198100	FOR MAKING HOT DRINKS OR FOR COOKING OR HEATING FOOD
10	84388010	FOR CEREAL FOOD MANUFACTURE
11	19022000	-STUFFED PASTA, WHETHER OR NOT COOKED OR OTHERWISE PREPARED
12	73211110	COOKING RANGES

4. What is the URL of QR Code/Invoice verification portal for customers?

For Search invoices you may kindly use:

https://bra.gob.pk//IMSFiscalReport/SearchPOSInvoice Report.aspx

*NOTE: Please note that QR Code functionality is at vendors end. Need to provide the desired Invoice Number in textbox in above link.

10 Technical Support:

• Email: esupport@bra.gob.pk

Phone +92-081-2841023 , 081-2301850

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