INFOCOMM MEDIA DEVELOPMENT AUTHORITY

TX2 – DATA EXTRACTION AND TRANSFORMATION

Version 1.0

Effective Date: 15 April 2024

Invoice Data Submission Specifications

For GST InvoiceNow Requirement

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CHANGE LOG

Version	Effective Date	Summary of Changes
1.0	15 April 2024	First Release

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1. INTRODUCTION

1.1 This document serves as a guide on how the Invoice System, where the data for tax submission resides, may extract and submit data to their chosen Access Point for onward transmission to IRAS. There are generally two type of entities that have these solutions:

a) GST Registered Businesses who have their own Invoice System (from hereon will be named as **Transmitting Enterprise**)

b) Solution providers offer packaged system used by the GST Registered Businesses, termed as **Peppol-Ready Solution Provider or PRSP**. PRSPs are providers with solution that are pre-integrated to the InvoiceNow network via an IMDA Accredited Access Point. PRSPs are also principal providers who have direct control over product source codes and intellectual property. The solutions can be:
- Fully self-developed/wrapped around a technology base code/whitelabeled;
- Multi-tenanted/single-tenanted;
- Desktop-based/cloud-based.

1.2 The Transmitting Enterprises or the PRSPs are expected to implement a <u>data extraction, transformation and transmission</u> capability to support the tax submission. This capability models after how data is extracted for invoicing activity in InvoiceNow. It also means that if these parties already are users of InvoiceNow, the effort to implement requirements to support tax submission to IRAS is incremental in nature. If this is new, the parties will need to engage an IMDA accredited Access Point who will be familiar how data transformation and transmission can be implemented.

Most part of this document will be relevant to both Transmitting Enterprises and PRSPs, unless explicitly indicated.

1.3 This document will focus on technical guidance on enhancements relating to the Invoice System that are source of invoice data. For specific implementation details on connections to Access Points, the parties shall seek further documentation from the participating Access Points that represents them (e.g. how to call an API provided by the Access Point).

The reader may also refer to the Design Document for a broader understanding of the overall design.

2. DATA EXTRACTION

2.1 Tax Reporting Requirement

2.1.1 IRAS' required invoice/credit note activities to be reported can be defined broadly by 6 data flows representing different directions, transaction channels and point of views, as illustrated in the diagram below.
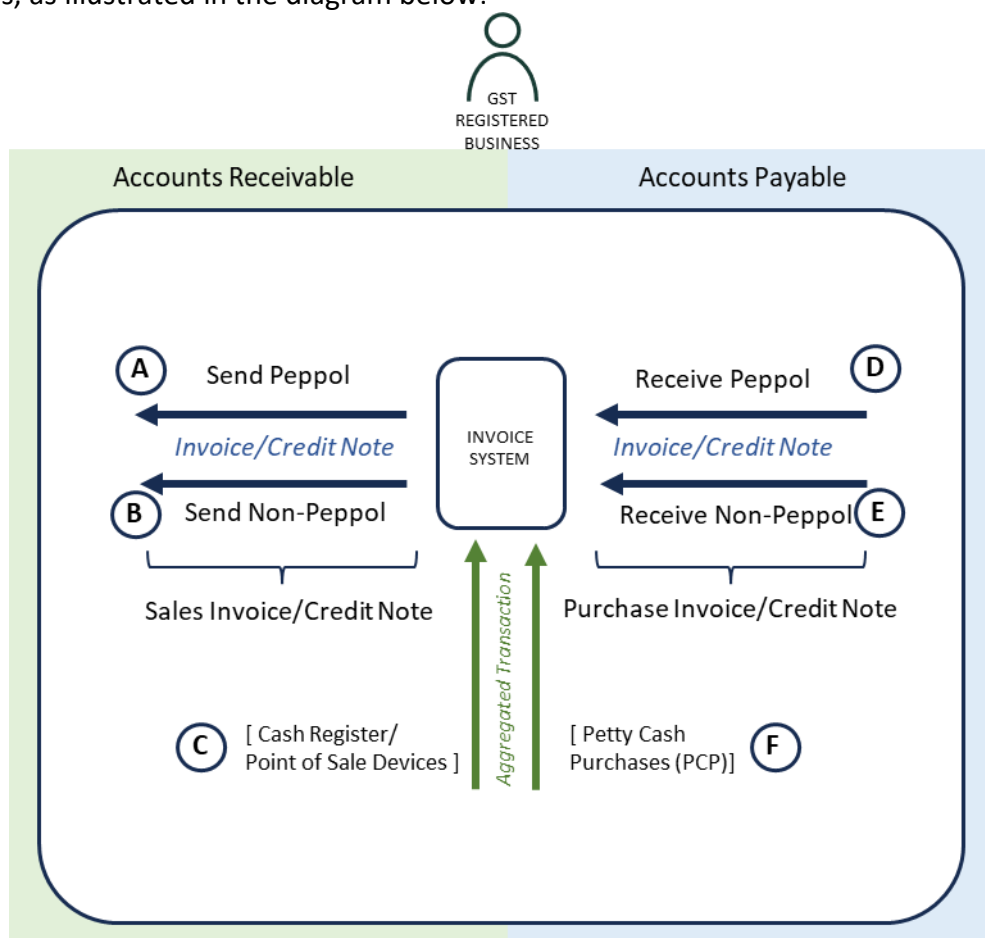
2.1.2 Flow type A, B and C are part of the Accounts Receivable process where businesses issue invoices/credit notes to their customers (type A and B) and where aggregated data from point of sale or cash register devices are recorded in their systems (type C).

2.1.3 Correspondingly, flow type D, E and F are part of the Accounts Payable process where businesses receive invoices/credit notes from their supplier (type D and E) and where aggregated data from petty cash purchases are recorded in their systems (type F).

DATA EXTRACTION AND TRANSFORMATION

2.2   Data Packages

2.2.1   GST Registered Businesses are to submit data packages representing each of these data flows, as described in the following table.

| Data Flow	Peppol/ Non-Peppol	Item	Type of Transact-ion	Granularity of data to be sent	When invoice data is sent to C5	Data Package	Specifications
Type A	Peppol	Issued Invoices /Credit Note	Supply	Transaction level (Single)	When invoice is issued	Standard Peppol	Peppol Transaction (PINT-SG)
Type B	Non-Peppol	Issued Invoices /Credit Notes	Supply	Transaction level (Single)	The transactions should be submitted to C5 before or at the same time when the return is filed.	I	Solution-Extracted (Data specifications based on PINT-SG)
Type C	Non-Peppol	Aggregated Invoices from Cash Register/ Point of Sale Devices (B2C)	Supply	Aggregated level Such as daily cash register sales consolidated in a single invoice that is submitted to IRAS System on a regular interval		II	
Type D	Peppol	Accepted Invoices/Credit Notes	Purchase	Transaction level (Single/Bulk)		III	
Type E	Non-Peppol	Accepted Invoices/Credit Notes	Purchase	Transaction level (Single/Bulk)		IV	
Type F	Non-Peppol	Aggregated Petty Cash Purchases (PCP)	Purchase	Aggregated level Such as daily cash register sales consolidated in a single invoice that is submitted to IRAS System on a regular interval		V	

2.2.2   The table describes two types of data structures depending on how data can be obtained from the source:
   i.   Peppol Transaction (Type A) – refers to near real time transmission of invoices over InvoiceNow where copies of them will be channeled to IRAS
   ii.   Solution-Extracted (Type B-F) – refers to invoice data extracted from Invoice System and packaged for transmission to IRAS

For "Peppol Transaction data, the complete Peppol document, including the SBDH, will be submitted to IRAS as is with no modification. For "Solution Extracted" data, refer to detailed specification on data structure in Annex A and B.

2.2.3   Once relevant invoice data are extracted and transformed according to the specifications of the data packages, they can be passed to Access Point to transmission to IRAS.
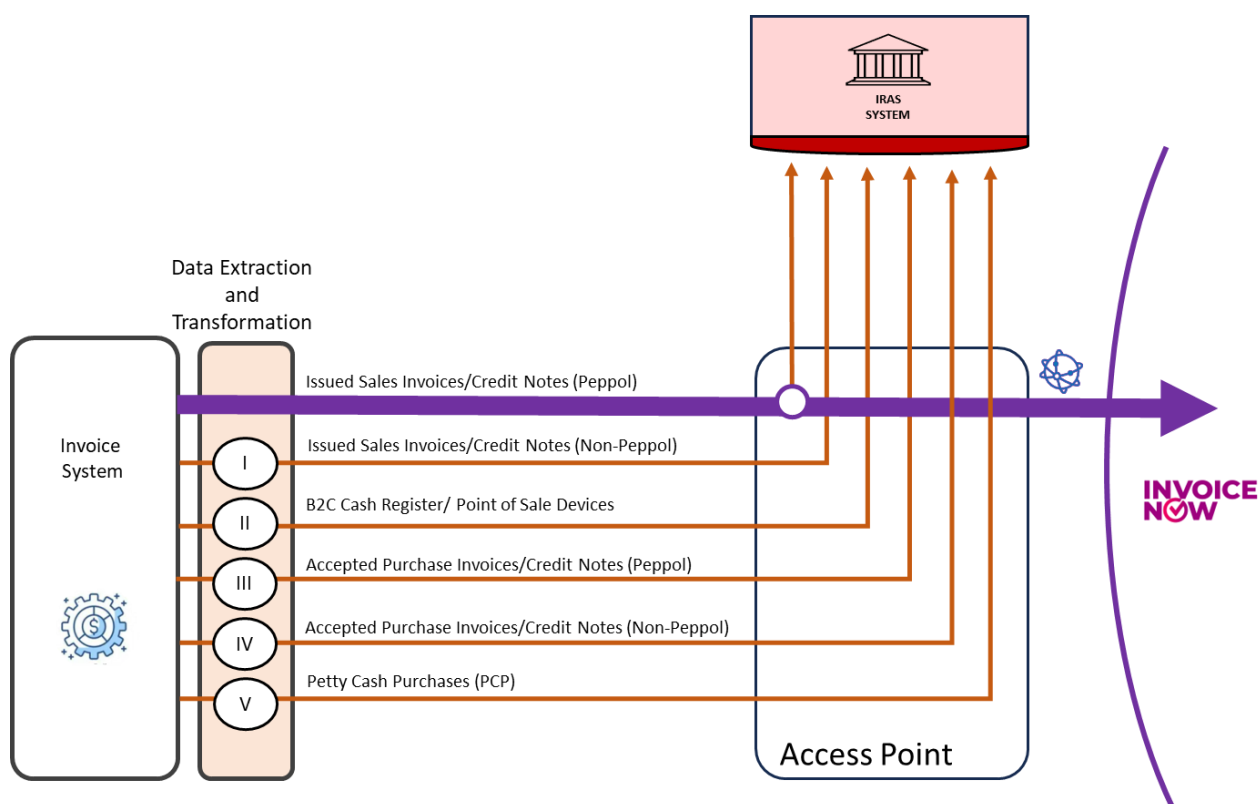
2.3   **Source of Data**

2.3.1   For PRSPs or Transmitting Enterprise with a central Invoice System, it is probable that all the data required for invoices and credit notes for both inbound and outbound resides in one or more data tables within the same system.

2.3.2   Some Transmitting Enterprise may have multiple systems that separate the inbound and outbound invoices. Some businesses have different type of goods and services managed using different outbound billing systems. These businesses will have to consider the most optimum way to extract the required information. For example, funneling data in a central system or staging area/middleware before transmission may be preferred. There could also be situations where the businesses connect through more than one Access Point. The tax submission design can cater for all these scenarios.

Transmission of Sales Invoice Data

2.3.3   In a situation where the GST-Registered Business is using a PRSP and also has other sources of invoice data (non-PRSP) that is required by IRAS, the business may follow

the guidelines provided for Transmitting Enterprise to submit the non-PRSP invoice data to IRAS.

Transmission of Purchase Invoice Data

2.3.4   For Petty-Cash Purchases, individual transactions should not be submitted. Rather, the requirement is to provide aggregated information from the data which is likely already residing in the Invoice System in the same or different set of database tables than the invoice/credit note tables.

2.3.5   Similarly, for B2C Invoices from Cash Registers and Point-of-Sales Devices, the requirement is to provide aggregated information as they are captured in Invoice System. Individual transaction data should not be extracted from cash registers and point-of-sales devices for submission.

2.4   **Filtering of Data**

2.4.1   GST Registered Businesses are responsible for ensuring that all taxable documents, defined as both sales invoice and purchase invoices, as specified by IRAS are submitted to IRAS System. To ensure the invoice data are submitting with acceptable tax categories for Peppol and Non Peppol transactions, GST Registered Businesses can refer to the table below.

Tax category codes	Description
Supplies	
SR	Standard-rated supply of goods or services
SRCA-S	Customer Accounting supply made by supplier
SRCA-C	Customer Accounting supply accountable by the customer on supplier's behalf
SRLVG	Own supply of LVG
ZR	Zero-Rated supplies
SRRC	Imported services and LVG accountable by the customer under the reverse charge mechanism
SROVR-RS	Supply of remote services accountable by the electronic marketplace on behalf of third-party suppliers
SROVR-LVG	Supply of LVG accountable by the redeliverer or electronic marketplace on behalf of third-party suppliers
ES33	Regulation 33 Exempt Supplies
ESN33	Non-Regulation 33 Exempt Supplies
DS	Deemed supplies
OS	Out-of-Scope supplies
NG	Supplies from Non GST registered company
NA	Taxable supplies where GST need not be charged *where GST need not be charged under applicable GST schemes such as Gross Margin Scheme, Approved Marine Fuel Trader (AMFT)

	Scheme, Approved Third Party Logistics (3PL) Company Scheme and Gross Margin Scheme
Purchases	
TX	Standard-rated purchases
TXCA	Standard-rated purchase of prescribed goods subject to customer accounting
ZP	Zero-rated purchases
IM	Imports of goods (9% GST paid to Singapore Customs on the import of goods into Singapore)
ME	Import of goods under a Special Scheme where GST payable is suspended
IGDS	Imports of goods under the Import GST Deferment Scheme
BL	Disallowed Expenses
NR	Purchases from from Non-GST Registered Suppliers
EP	Exempt Purchases
OP	Out of scope purchases
TXRC-TS	Imported services and LVG directly attributable to the making of taxable supplies
TXESS	Standard-rated purchases directly attributable to Regulation 33 exempt supplies
TXRC-ESS	Imported services and LVG directly attributable to Regulation 33 exempt supplies
IM-ESS	Imports of goods directly attributable to Regulation 33exempt supplies
TX-N33	Standard-rated purchases directly attributable to Non-Regulation 33 exempt supplies
TXRC-N33	Imported services and LVG directly attributable to Non-Regulation 33 exempt supplies
IM-N33	Imported of goods directly attributable to Non-Regulation 33 exempt supplies
TX-RE	Residual input tax - Purchases from GST-registered suppliers that are subject to GST at 9% and are either attributable to themaking of both taxable and exempt supplies or incurred for the overall running of the business
TXRC-RE	Residual input tax - Imported services and LVG that are subject to reverse charge and are either attributable to the making of both taxable and exempt supplies or incurred for the overall running of the business
IM-RE	Residual input tax - Imports of goods that are subject to GST at 9% and are either attributable to the making of both taxable and exempt supplies or incurred for the overall running of the business

2.4.2   PRSPs will support the GST Registered Businesses by providing the invoice data submission feature on their platforms which includes filtering the IRAS required documents to be submitted to C5.

2.4.3   There is a further layer of filter to accept documents with prescribed tax categories required by GST InvoiceNow Requirement.

Issued invoices and credit notes (from supplier's perspective) that contain at least one line item that bears the prescribed tax categories below will need to send such invoice data and credit notes to IRAS' System.

No.	Tax category codes	Description
1	SR	Standard-rated supply of goods or services
2	SRCA-S	Customer Accounting supply made by supplier
3	SRCA-C	Customer Accounting supply accountable by the customer on supplier's behalf
4	SRLVG	Own supply of LVG
5	ZR	Zero-rated supplies
6	NA	Taxable supplies where GST need not be charged Such taxable supplies fall under specific GST schemes such as Gross Margin Scheme, Approved Marine Fuel Trader (AMFT) Scheme, Approved Third Party Logistics (3PL) Company Scheme

Invoices not having any of the above tax codes should not be included in the submissions.

* For aggregated data from Point of sale or cash register transactions, the invoice can be consolidated into a single line item.

2.4.4 Filter conditions for received invoices and credit notes (from customer's perspective) are based on tax code and approval status:

a) For tax code filtering, include invoices that contains at least one invoice line matches any of the stipulated tax codes below:

TX	Standard-rated - Taxable purchases
TXCA	Standard-rated - Taxable purchases subject to customer accounting
TX-RE	Residual input tax - Purchases from GST-registered suppliers that are subject to GST at 9% and are either attributable to the making of both taxable and exempt supplies or incurred for the overall running of the business

b) For Approval Status: only received invoices that have been approved/accepted (i.e. marked) for payment should be filtered for submission to IRAS.

* Petty cash purchase transactions can be consolidated into a single line item and submitted as aggregated data to IRAS System.

2.5 Data schema validation

2.5.1 GST Registered Businesses and PRSPs that are submitting data to IRAS system must ensure that data entered are compliant with the tax regulations, specifically with respect to the mandatory data elements to form a valid tax invoice.

2.5.2 The invoice data for transmission to IRAS shall follow a Peppol like syntax where some optional Peppol elements are made mandatory to comply with the Tax regulations. GST Registered Businesses and PRSPs should ensure that all mandatory data elements are provided for transmission to IRAS. These mandatory field details can be found in Annex A and B.

2.5.3 A Schematron file will be published so that PRSPs and Transmitting Enterprises can use to validate and make sure invoices submitted to IRAS are in the correct xml structure. PRSPs and Transmitting Enterprises may utilize the Schematron files to validate their invoice data extraction when developing their solution for IRAS submission. Where possible, PRSPs and Transmitting Enterprises should validate any invoice being generated and handle any errors.

2.6 Frequency of Submission

2.6.1 For type A (Peppol transmitted document), submission happens immediately after C2 Access Point successfully delivering the document to C3 Access Point. In most cases, this should be within minutes, but it should not exceed an hour.

2.6.2 For other data flow types, the transactions should be submitted to C5 before or at the same time when the return is filed. This is also mean that the transactions should be submitted to C5 no later than the return due date (along with the return). However, such document data extraction is recommended to be carried out on a regular basis such as daily or weekly, after the document is booked in the system for issuance to their business partner. This will allow the businesses sufficient time to correct any submission errors by spreading the reconciliation effort over the GST filing period. This also help to avoid peak time loading on systems involved.

2.7 Inclusion of attachment

2.7.1 For native Peppol outbound invoices forwarding to IRAS, attachment should be kept if attachment is included while sending to the customer.

2.7.2 For all other invoices that are Solution Extracted, <u>no attachment</u> is required to be included, only invoice data shall be included in the submission data.

2.8   **Size limit**

2.8.1   IRAS API supports a data package up to 10 MB in size. For data flow A, where Peppol Access Points can support to a minimum of 100MB, the auto submission on the invoice data package above 10MB to IRAS system will fail. In such situation, a recovery mechanism should be activated (refer to 2.8.3).

2.8.2   Access Point will be required to provide the PRSP or Transmitting Enterprise customers with the failure code stating reason for the rejection.

2.8.3   PRSP or Transmitting Enterprise customers would need to re-submit the tax document without attachment to IRAS system.

2.8.4   The PRSP or Transmitting Enterprise customer should ensure that they do not re-send the document via the Peppol network a second time.

2.9   **Assigning Counterparty Label for Non Peppol Delivered Documents**

2.9.1   Invoice Systems are <u>required to store the mode of sending and receipt of invoices to be able to differentiate data flow between type A and B, and type D and E</u> to meet the submission requirement.

2.9.2   To support this requirement, a special label is introduced to denote the supplier or customer involved in a non Peppol delivery invoice/credit note. The label is derived as follows:

Format: 0195:C5UIDYYYYYYYYYY

Where:
C5UID stands for C5 Special Prefix for Unique ID.
YYYYYYYYYY is the UEN of the customer (if known) or else can be the first five characters of the name (without spaces) plus a random five digit alphanumeric.

	Supplier	Customer
Type A	Peppol ID	Peppol ID
Type B	Peppol ID	0195:C5UIDYYYYYYYYYY
Type D	Peppol ID	Peppol ID
Type E	0195:C5UIDYYYYYYYYYY	Peppol ID

3. DATA TRANSFORMATION AND TRANSMISSION

3.1 Data Transformation

3.1.1 The data transformation involves packaging the data into an XML format that complies to IRAS' requirement as indicated in section 2. The specifications on this can be found in Annex A and B of the TX2.

3.1.2 The complete packaging of the data for submission includes preparing the envelop information, called the SBDH (Standard Business Document Header).

3.1.3 In some situation, the Access Point providers may offer data transformation services based on agreed data exchange format between the party and the Access Point (for example, data in JSON or CSV format). There may also be situations where the party prepares the XML while the Access Point complete the work with the SBDH. For detailed arrangement, please discuss with your Access Point provider. Similar to how an InvoiceNow compliant invoice is generated, a service provider may create the files on behalf of a business. However the responsibility to provide all the required data elements remains with the GST registered business.

3.2 Data Transmission

3.2.1 The data transmission between party with Access Point is done typically in two popular ways; an API call or SFTP. Firewall and network configuration may be required to allow connection to the Access Point. For detailed arrangement, please discuss with your Access Point provider.

4. GST CHECK

4.1 As part of the C5 implementation, IRAS is looking at solutions to implement GST validation checks on invoices being generated or received with the aim of ensuring that invalid GST charges are not allowed.

The validation at supplier Invoice System ensure that only e-invoices issued by GST-registered entities may include GST charges. This prevents a non-GST registered entity wrongfully charging GST on an invoice.

Implementing this check in the buyer Invoice System aids in making tax compliance easier for participating businesses is strongly recommended. This additionally assures buyers transmitting their invoices to C5 that their non-GST-registered suppliers have not wrongly charged them GST and they subsequently are not incorrectly claiming GST refund from IRAS. It also flags out such cases so that buyers can follow up with suppliers who may have wrongly charged them GST.

4.2   IRAS provides a check GST registered API. Some Access Points may also provide such API as a passthrough service which allows the user to check if a company is GST registered. It is recommended that the Invoice System utilizes any one of these APIs to build a GST check function, so that proper treatment may be applied at invoice creation and invoice processing. User can make an API request by passing in the company's GST number to receive a positive or negative return that indicates if that GST number is Registered, De-registered or Will be de-registered status.

4.3   PRSPs are suggested to perform GST-checks on their customers on a daily basis to keep their GST status updated in the Invoice System.

4.4   For processing of purchase invoices, it is recommended that the Invoice System performs GST-checks on all invoices involving GST charges. For better efficiency, the checks can be performed at the invoice level with GST-registration statuses for entity checked maintained as a daily cache.

5. TRACEABILITY AND TRACKING OF SUBMISSIONS

5.1   SBDH is required for all documents submitted to IRAS (both Peppol and Solution Extracted documents). To ensure that every document and every transmission of content on the network is being uniquely identified for tracking purposes we have two UUIDs:
   i.   **Document UUID** - which identifies the invoice/credit note document, and
   ii.   **Transmission UUID** - which identifies the unique transmission of the document over the network.

UUID should be represented in hexadecimal value, eg.
`bfeac3d0-82d8-4195-9d88-53b3547f83a3`

5.2   **Document UUID**
For sales invoices, a UUID is required to be assigned as a system field and should be included in the Peppol Invoice sent to the buyer as well as IRAS.

The field to store this UUID is ubl:Invoice/cbc:UUID or ubl:CreditNote/cbc:UUID. Peppol PINT-SG schema will be updated at a later date to include this field.

For purchasing invoices received via Peppol network, the Invoice System should record the original UUID value, and when the purchasing invoices are extracted for submission to IRAS, the UUID value from the original supplier invoice should be included.

For purchasing invoices received outside Peppol Network, recording the UUID value from the supplier invoice is recommended if feasible.

5.3 Embedding Document UUID into SBDH

In order for AP to be able to maintain traceability, the document UUID should also be appended to SBDH in the following sections as illustrated below:

```
<BusinessScope>
  <Scope>
      <Type>DOCUMENT_UUID</Type>
      <InstanceIdentifier>bfeac3d0-82d8-4195-9d88-53b3547f83a3</InstanceIdentifier>
  </Scope>
</BusinessScope>
```

5.4 Transmission UUID

A UUID is expected to be populated in the DocumentIdentification/InstanceIdentifier field to identify the transmission of documents on the network. The UUID MUST be unique for each Business Message Envelope being created.

The UUID MUST be globally unique e.g. 118e3040-51d2-11e3-8f96-0800200c9a66

The UUID should be generated by the party packaging the tax data to be encoded into the SBDH of the Solution-Extracted tax data.

```
<DocumentIdentification>
    <Standard>urn:oasis:names:specification:ubl:schema:xsd:Invoice-2</Standard>
      <TypeVersion>2.1</TypeVersion>
    <InstanceIdentifier>553a0065-b2c0-40c6-bf63-fd1463d59478</InstanceIdentifier>
    <!-- reduced instance file>
</DocumentIdentification>
```

5.5 Packaging the SBDH

Package	Peppol Delivered	Solution Extract				
	Peppol Standard	I	II	III	IV	V
	Peppol Inv/CN	Non-Peppol Inv/CN	B2C/ Cash Register	Peppol Inv/CN	Non-Peppol Inv/CN	PettyCash
Sender	Supplier Peppol ID			Customer Peppol ID		
Receiver	Customer Peppol ID	"IRAS"				
Document_UUID	NA	UUID of payload				
Source	NA	AP Identifier + Submitter Identifier (Enterprise UEN/GSTN or PRSP Solution identifier)				

The above table defines the content to be included in the SBDH according to the data packages.

Sender   -   The sender on the SBDH denotes the GST-Registered Business submitting (aka "Submitter") the invoice data to IRAS system. Use Peppol IDs of the Submitter.

Receiver   -   For Peppol Standard package, the original Peppol document is sent as is, where Receiver will be the Customer's Peppol ID. For all the Solution Extracted packages, the Receiver will be "IRAS".

Source   -   This represents where the packages sent to the IRAS system come from. For Solution Extracted packages, it will contain a concatenated field comprising of the AP Identifier and Submitter Identifier. A unique identifier will be issued to all Accredited APs and PRSP Solutions. If the Submitter is a Transmitting Enterprise, their UEN/GSTN will be used.

IMDA will provide the process on how the identifiers will be issued at a later date.

5.6   IRAS's Acknowledgment ID

IRAS's API will return a unique identifier after every successful invoice submission. The Invoice System needs to store the acknowledgement ID and status of each transmission as part of the system logging.

6. REPORTING

6.1   PRSPs and Transmitting Enterprises should provide logging and reconciliation facilities to keep track of transmission of data to IRAS. These logs should be stored for a period in accordance with IRAS' record keeping requirement. This will also enable users to troubleshoot and reconcile any mismatches or issues with GST claims submissions.

6.2   PRSPs and Transmitting Enterprises should use reports from Access Points to reconcile and validate GST claims submissions. Reports from Access Point are expected to contain the following:
- Date and time of invoice data submission
- Unique message Instance Identifier (UUID) of the transmission
- Unique message Instance Identifier (UUID) of the document
- Peppol ID of the entity submitting the invoice data
- Status of the submission of the invoice data to IRAS

6.3   Periodically, PRSPs or Transmitting Enterprises may be asked by IRAS to provide evidence of tax data submission using a UUID as the unique reference.

6.4 The data to aid tracing of submissions shall be kept according to IRAS' requirement to keep proper records and accounts. Please refer to link for details - https://www.iras.gov.sg/taxes/individual-income-tax/self-employed-and-partnerships/keeping-proper-records-and-accounts.

6.5 Note that the Access Point will not hold in storage invoice/credit note data (unless with their customer's explicit consent). The Access Points may keep records of all the UUIDs they have sent to IRAS for reporting and tracing. The Access Point may avail such reports to the GST Registered Businesses.

7. ONBOARDING AND ACTIVATION

7.1 There are 3 stages for any GST registered business to submit data to IRAS.
a. Register on InvoiceNow network
b. Activating data submission
c. Start transmitting invoice data

7.2 As a pre-condition to submit the tax data to IRAS through the InvoiceNow accredited Access Points, all GST Registered Business will need to be registered on the InvoiceNow network.

All PRSPs should have InvoiceNow registration capability. Transmitting Enterprise customers can leverage on their chosen Access point for the same.

7.3 To activate for tax submission to IRAS, the end user is required to complete additional authorization step using CorpPass. The Tax Submission Activation API will be made available by your Access Points provider as a pass-through service to be able to trigger the activation process.

By completing the activation process, GST registered businesses are creating a channel for themselves to send the tax data to IRAS. The actual sending maybe a follow-on process once the business is ready to start sending.

7.4 For Transmitting Enterprises, they will work with their Access Points provider to activate tax submission manually. Once the activation is completed, the Access Point will allow the submission of invoice data to IRAS system. Access Points will share their Unique AP identifier to the businesses so that the businesses can use the information to create the SBDH for Solution Extracted document packages to be sent to IRAS.

7.5 PRSPs are required to provide a user-driven Tax Submission Activation feature for the GST-Registered Business customers. This feature will tap on the passthrough API that the Access Point will provide. Upon successful completion of tax submission activation, PRSP shall maintain the activation status in their solution as an indicator

to decide if their customer's invoice/credit note data should be submitted to IRAS system.

7.6   Like activation, there will also be the requirement to support de-activation. A corresponding passthrough API will be provided by the Access Point. Likewise, the PRSPs are required to use deactivation indicators to block sending of invoice data to IRAS' system.

7.7   Access Point providers will reject any tax documents to IRAS if the SBDH of the package is incorrectly constructed. (e.g. incorrect unique identifier is used)