



TX1 - DESIGN DOCUMENT

Version 1.1

Effective Date: 15 May 2024

Invoice Data Submission Specifications

For GST InvoiceNow Requirement

Info-communications Media Development Authority of Singapore
E-Invoicing Project Office
(Developed in consultation with Inland Revenue Authority of Singapore)
10 Pasir Panjang Road
#03-01 Mapletree Business City
Singapore 117438

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CHANGE LOG

Version	Effective Date	Summary of Changes
1.0	15 April 2024	First Release
1.1	15 May 2024	Added a new InvoiceNow Ready Solution Providers (IRSP) definition and replace PRSP with IRSP.

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1. INTRODUCTION

To support the digital economy and ongoing transformation efforts to digitalise business in the context of the wider ecosystem and integrate tax into taxpayers' accounting and payroll systems, IRAS is requiring GST-registered businesses to use InvoiceNow solutions to transmit invoice data directly to IRAS for tax administration (**"GST InvoiceNow Requirement"**).

In addition to digitalisation benefits and cost savings from adopting InvoiceNow, businesses will enjoy greater benefits such as reducing compliance efforts in preparing data for submission to IRAS, and faster GST refunds from fewer and shorter audits. Businesses can also enjoy value-added services provided by the InvoiceNow solutions, such as receiving alerts on wrongful GST charges by suppliers that are not registered for GST. This translates to tangible savings and a lighter administrative burden, allowing businesses to focus their resources on business growth and innovation.

To implement the GST InvoiceNow Requirement, GST-registered businesses will need to be registered for InvoiceNow and be connected to an Access Point ("AP") provider to send invoices and credit notes through the network and to IRAS System. The connection will enable the transmission of invoice data to IRAS via Application Programming Interface ("API"). This is done by introducing a 5th corner ("Corner 5" or "C5") to the existing 4-corner model under InvoiceNow.

Businesses will also need to ensure that they are using InvoiceNow solutions that are compatible with GST InvoiceNow Requirement in order to transmit invoice data to IRAS. When businesses activate the feature within their solutions to transmit invoice data to IRAS, IRAS will receive a copy of the invoice data whenever businesses issue or receive invoices via the InvoiceNow network, or when they record other invoices received through alternate channels such as pdf, hardcopy or via EDI interactions into the InvoiceNow solutions (e.g. for sales made via point-of-sale systems)

It is important to note that businesses submitting invoice data to IRAS shall continue to be required under Goods and Services Tax Act to comply with the obligations of a GST registered person to submit GST returns.

2. PURPOSE

This document outlines the overall technical design of the invoice data submission process flow for implementing the GST InvoiceNow Requirement, the data requirements, data packaging and roles and responsibilities of all the parties involved.

Who is this document catered for?

This document is intended for system architects and developers/IT support personnel from the Access Points (APs), Solution Providers (SPs), and Businesses with their own ERP/Finance systems that are connecting their system to IRAS' System via the InvoiceNow network to implement the GST InvoiceNow Requirement.

This design document is complemented by these two other documents:

- a) Data Extraction and Transformation for C5 (TX2)
- b) Access Points Specifications for C5 (TX3)

3. SYSTEM DESIGN

To comply with the GST InvoiceNow Requirement, businesses will need to submit all their invoice data pertaining to taxable supplies (i.e. sales invoices, aggregated sales made from cash register/POS, credit notes) and standard-rated purchases (i.e. purchase invoice, aggregated petty cash purchases) to C5.

Today, GST Registered Business use solutions to generate GST compliant invoices that are used for summarised GST reporting. For the purpose of this document, these solutions are generally named "Invoice System". The Invoice System is either a single system or combination of systems that contain invoice details. This could include but not limited to:

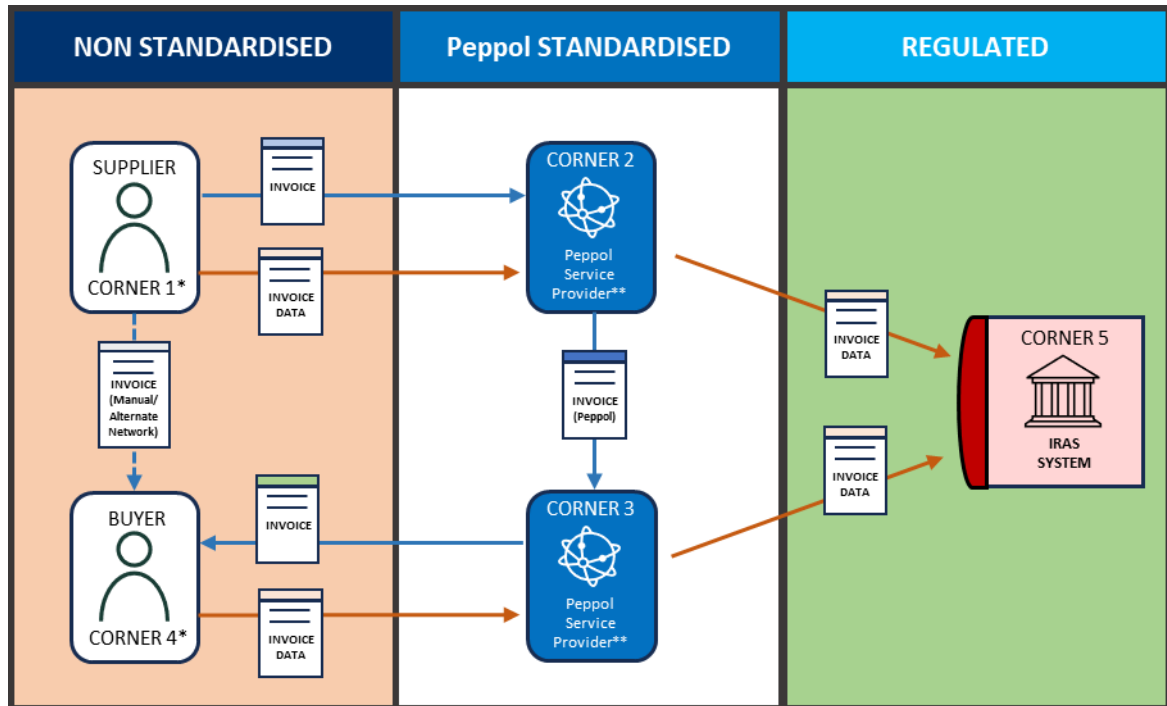
- i) ERP system
- ii) Billing system
- iii) Procurement system
- iv) Supply Chain system
- v) Accounts Payable/Receivable system
- vi) Accounting System
- vii) Other system that contains invoice data

In addition to the above, there may be middleware solutions that tie the various elements into a whole for invoice data submission.

These Invoice Systems will need to be enhanced to submit invoice data to the IRAS System to meet GST InvoiceNow Requirements.

The modality and channel flow of the transactions will differ based on the type, channel, and direction of the transactions.

The overall architecture design of the IRAS System (known as Corner 5 or C5) working in conjunction with the Peppol Network is shown below. Specific details of data flow are represented from Figure 3 onwards.



* Corner 1 and Corner 4 represent Invoice Systems.

** Peppol Service Provider in this context is an Access Point accredited by IMDA

Figure 1

As part of regular business practice, supplier and buyers send invoices and credit notes directly to each other.

On the Peppol network, an invoice document is firstly created by the supplier (known as Corner 1 or C1), and sent to their Access Point (known as Corner 2 or C2). C2 will send the invoice document to the buyer's Access Point (known as Corner 3 or C3), who, will then forward the same to the buyer, (known as Corner 4 or C4).

Working in conjunction with the Peppol Network, invoice data will be channelled to IRAS system (C5) via C2 and C3.

To provide better understanding of mechanism for invoice data submission, we have classified each transaction type based on the business' point of view.

3.1 Data flow types and data packages

Data flows that are within the scope of the invoice data submission process flow can be broadly divided into 6 different types as illustrated in the diagram below (Figure 2), representing different transactional flows, transaction channels and type of document.

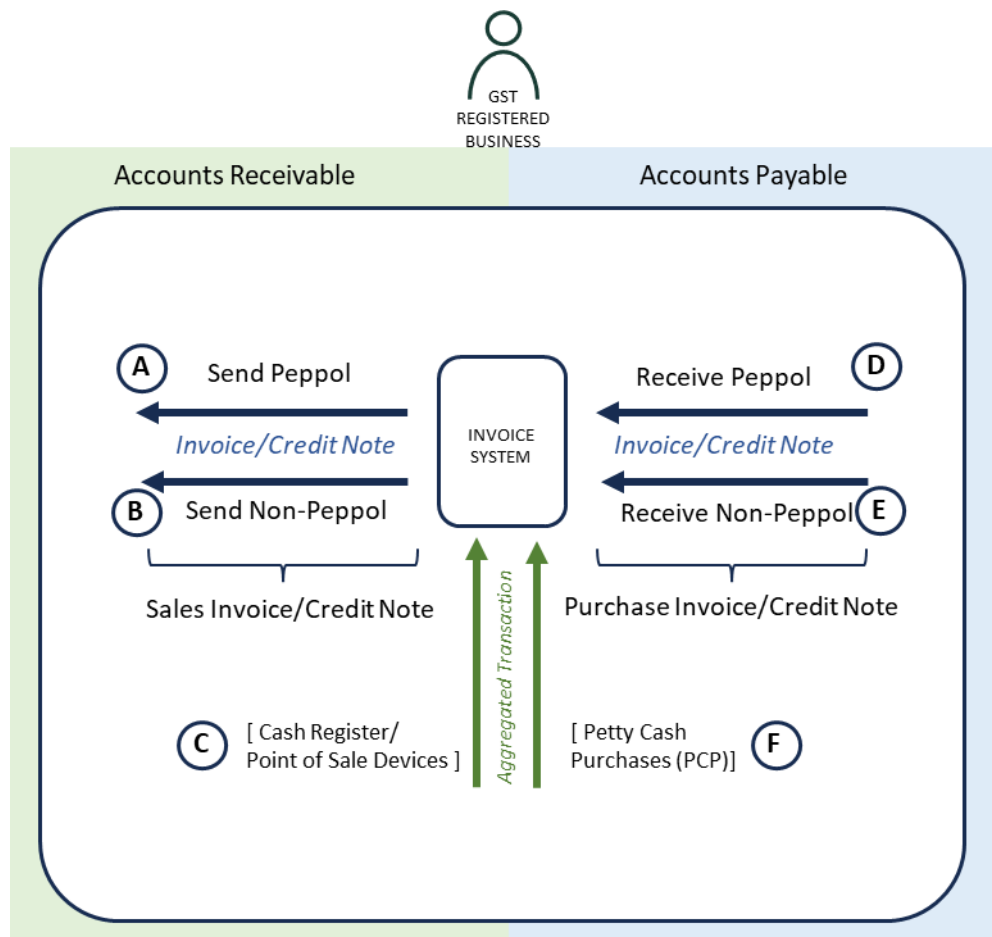


Figure 2

Flow type A, B and C are for businesses' Accounts Receivable. Flow A and B depict the scenarios whereby businesses issue invoices and credit notes to their customers through either Peppol or traditional channels. Flow C depicts the scenario where businesses perform sale transactions through Cash Register/Point of Sale devices, whereby such data is typically aggregated before it is recorded in the Invoice System.

Flow type D, E and F are for businesses' Accounts Payable. Flow D and E depict the scenario whereby businesses receive purchase invoices and credit notes from their suppliers. Flow F depicts the scenario whereby businesses make petty cash purchases and aggregate them before it is recorded in the Invoice System.

For invoice data submission to IRAS System, type A will be a copy of the in-line traffic that is transmitted via the Peppol Network (aka *Peppol Transaction*). For all the other types (B-F), the invoice data for submission to IRAS system will be extracted from the Invoice System after they have been processed.

Each data flow will require the corresponding data packages to be submitted to IRAS System as described in TX2.

3.2 Business Data Flow

For Type A (Standard Peppol)

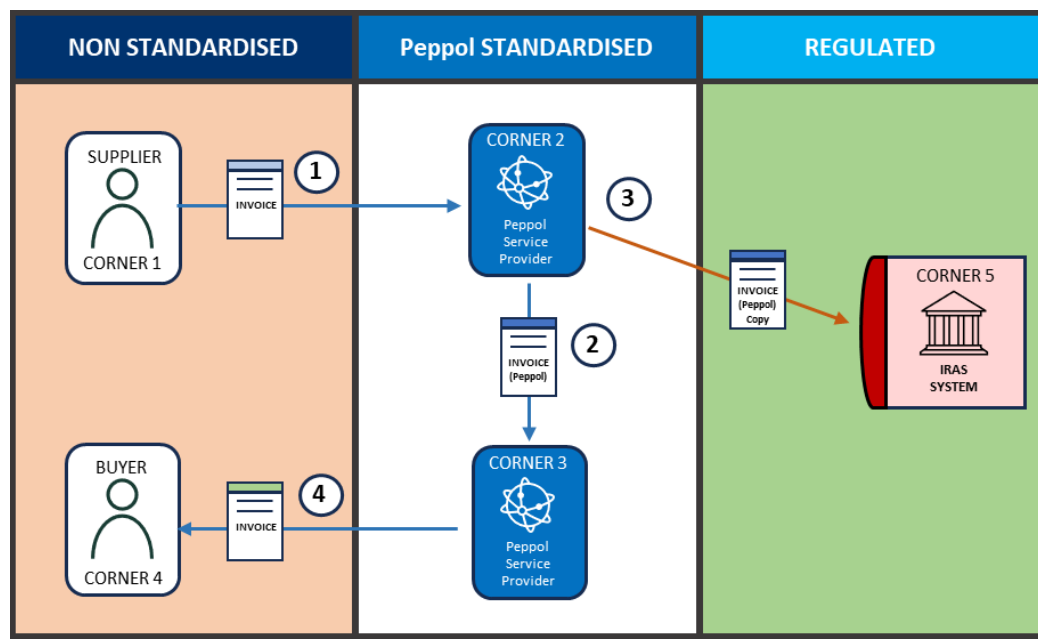


Figure 3

Invoice documents that are transmitted natively via the InvoiceNow network can be further extended so that a copy of the document is sent to IRAS System by the sender's Access Point (Corner 2). Transmission of the invoice document to IRAS should only happen after the invoice document is successfully sent to the recipient's Access Point (Corner).

It is important to note that not all invoice and credit documents sent via Peppol need to be transmitted to IRAS System. Submitting businesses have to apply a filter to send only specific types of invoice and credit note documents with at least one line item bearing the prescribed tax categories (specified in TX2). Corner 2 Access Point should only carry out the IRAS submission when instructed to do so by their customer (C1 in this case). This filtering logic is also applicable to Type B, D and E.

Sender's Access Point (Corner 2) needs to develop a mechanism so that its customer has a way to indicate if an outbound document is to be delivered to IRAS System. This mechanism could be the use of a different folder or file naming convention over

a SFTP connection or different parameters or end points on an API connection. The design of such a mechanism is not within the scope of this document.

When transmitting the invoice or credit note document to IRAS System, the exact copy that was sent to C3 should be sent to IRAS System as is, and without any modification or alteration. This applies to both in the invoice or credit note document payload as well as the header.

For Type B (Data Package I)

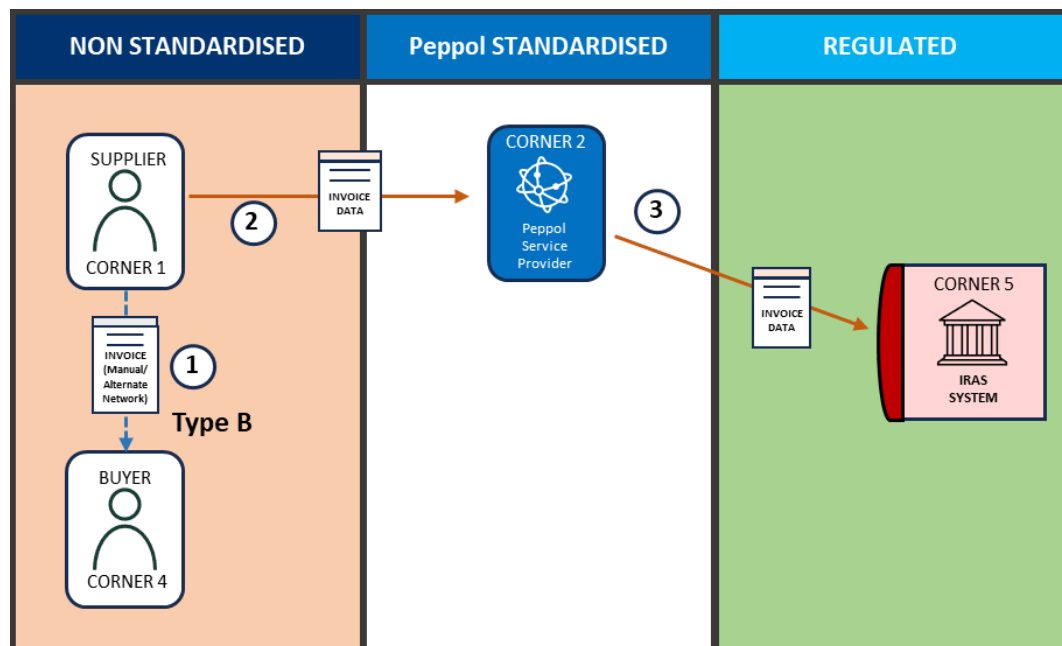


Figure 4

For outbound invoices that are not sent via the InvoiceNow Network such as hardcopy or PDF over email or via EDI or procurement platform, the invoice or credit note documents need to be extracted from the Invoice System and sent to IRAS System via its Access Point. Similarly, as long as there is at least one line item within the invoice or credit note document bearing the prescribed tax categories should be filtered for submission.

The transactions should be submitted to C5 before or at the same time when the return is filed. This 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.

The above submission frequency and deadline is also applicable all subsequent types (Type C, D, E and F).

When such documents are extracted for submission, they are to be packaged into a format similar to Peppol PINT data structure. [The same for Type C, D, E and F.]

For Type C (Data Package II)

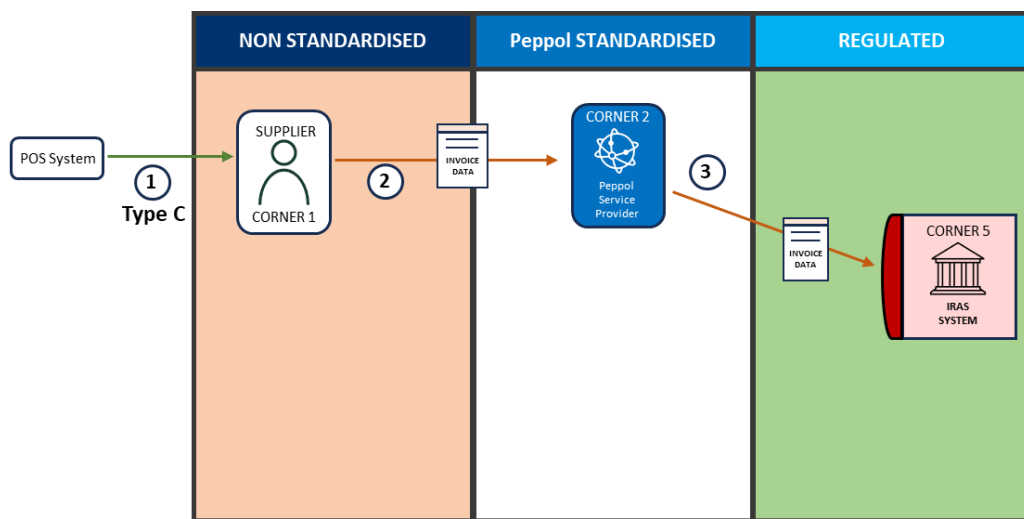


Figure 5

Type C is aggregated cash sales data collected from cash register/POS system in B2C transactions. They are allowed to be aggregated as the transactions are typically small in value and voluminous in nature. To further ease compliance, the frequency of aggregation will align with the business' existing process. For instance, a business may aggregate all sales transactions in the POS system for posting into its accounting system on a daily basis.

These documents will be extracted directly from the solutions and should be submitted to C5 on a fixed interval, similar to Type B.

The business who is sending the aggregated non-Peppol B2C invoice to C5 is not required to provide customer details where details should be defaulted to "B2C" in the data package. Please refer TX2 Annex B on the details to be provided for Type C.

For Type D (Data Package III)

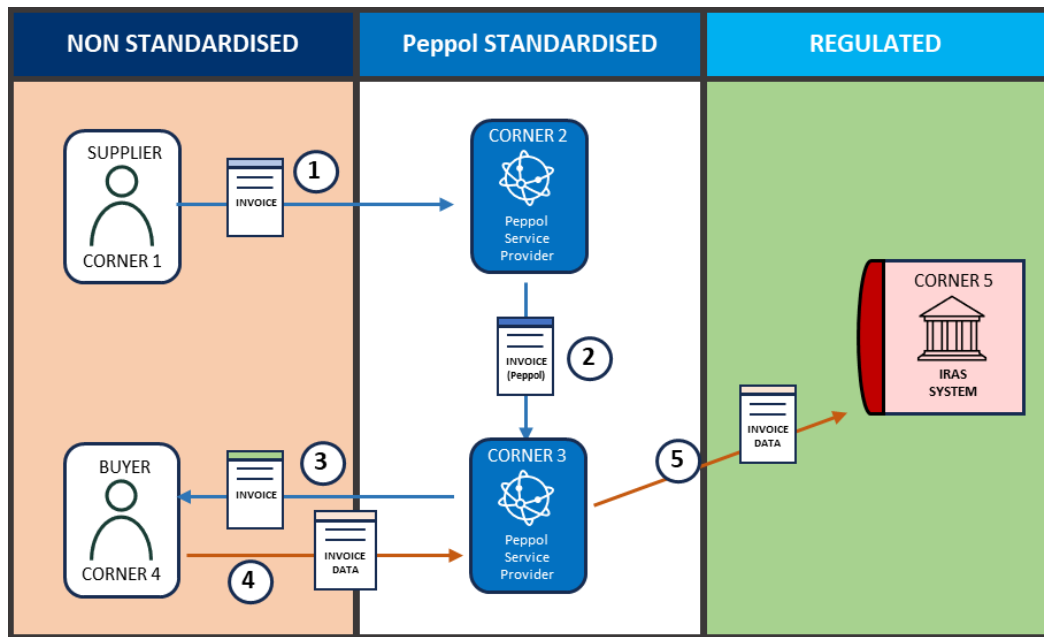


Figure 6

When a buyer receives the invoice or credit note documents from supplier via Peppol network, the invoice or /credit note will be ingested into the buyer's Invoice System and be flipped into a purchase invoice. The invoice or credit note documents will be further processed with inputs required from the buyer (e.g. assigning correct purchase tax code, taxable purchase value etc).

Once the buyer has accepted the invoice into the Invoice System, the accepted invoices are extracted directly from the solutions according to the data specifications and transmitted to C5. Accepted invoices are defined as purchase invoices where buyers (C4) have approved for payment.

These documents will be extracted directly from the solutions and should be submitted to C5 on a fixed interval, similar to Type B.

Type E (Data Package IV)

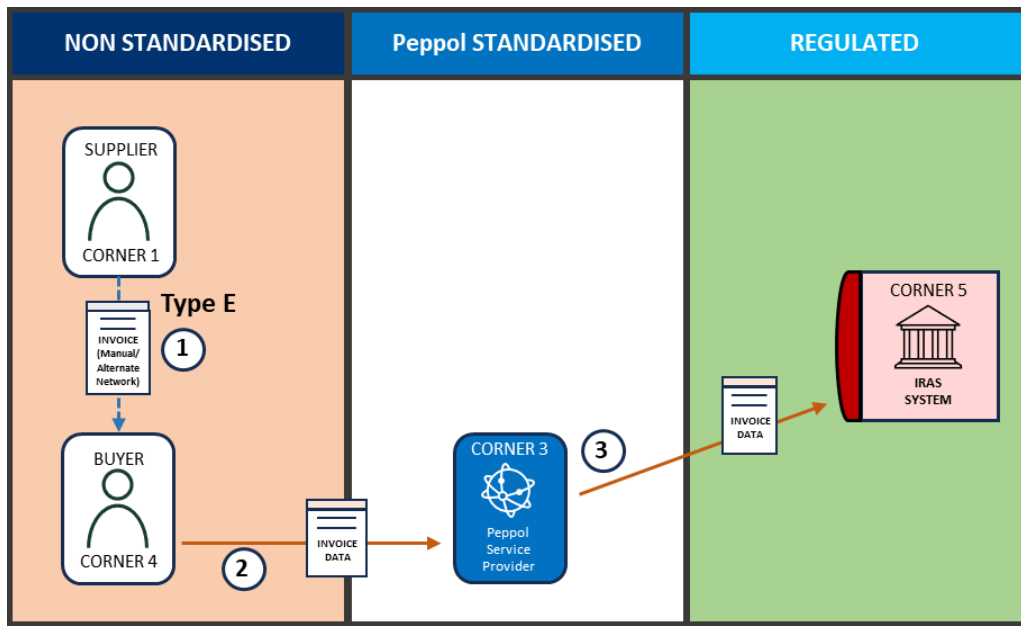


Figure 7

Like Type D, invoice or credit note documents received from Non Peppol delivery, using a traditional manual method (hardcopy or PDF over email) or an alternate mechanism (e.g. EDI or procurement platform), needs to be extracted and sent to IRAS System.

These documents will be extracted directly from the solutions and should be submitted to C5 on a fixed interval, similar to Type B.

Type F (Data Package V)

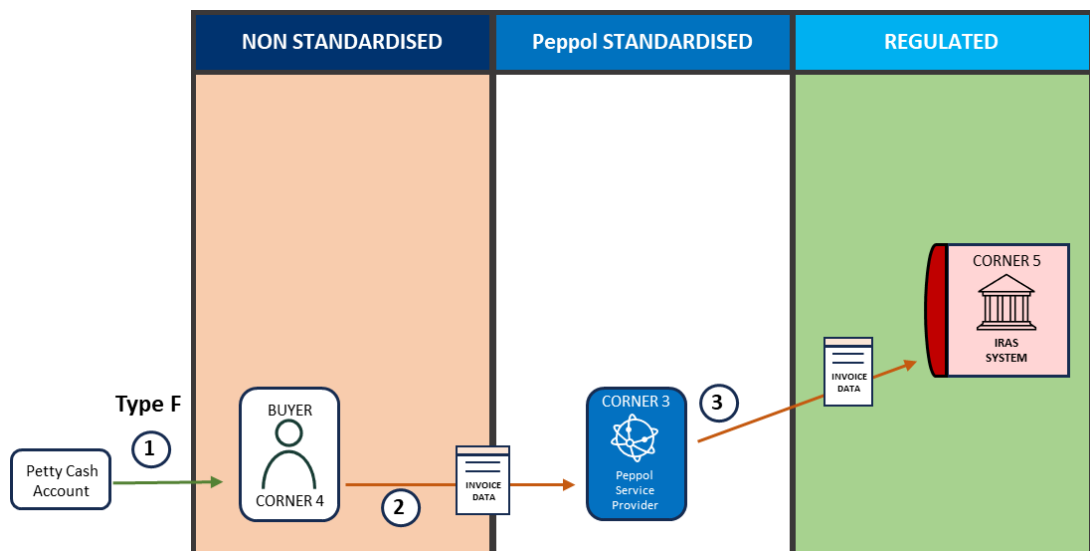


Figure 8

Type F are aggregated data from petty cash purchases (PCP) to be extracted and transmitted to IRAS System.

As such data may be voluminous, the invoice data for such transactions are to be aggregated on a regular basis e.g. daily/weekly/monthly before they are sent to IRAS.

Hence like type C, there is no need to uniquely identify each supplier in the data package. Instead, where supplier details are required, it should be defaulted to “PCP”. Please refer TX2 Annex B on the details to be provided for Type F.

These documents will be extracted directly from the solutions and should be submitted to C5 on a fixed interval, similar to Type B.

The table below summarises the data flows as explained above.

Data Flow	Peppol/ Non-Peppol	Item	Type of Transaction	Granularity of data to be sent	When invoice data is sent to C5
Type A	Peppol	Issued Invoices /Credit Note	Supply	Transaction level (Single)	When invoice is issued
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.
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	
Type D	Peppol	Accepted Invoices/Credit Notes	Purchase	Transaction level (Single/Bulk)	
Type E	Non-Peppol	Accepted Invoices/Credit Notes	Purchase	Transaction level (Single/Bulk)	
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	

4. GENERAL ROLES AND RESPONSIBILITIES

There are three parties who will need to implement system changes to meet the GST InvoiceNow Requirement and send invoice data to IRAS System. Details of technical and implementation specifications are provided in TX2 and TX3. Below is a summary of who they are and what they need to do:

4.1 IMDA Accredited Access Points

- a) Connect to IRAS System using the API interfaces.
- b) Provide interface options (typically API or SFTP) for solution providers and enterprises to transmit invoice and credit note documents to IRAS System. This interface is like what is currently provided for InvoiceNow data transmission with a differentiated paths to deliver document transactions for different destinations below:
 - Peppol only
 - IRAS only
 - Peppol and IRAS
- c) Provide the traceability and tracking of submissions to IRAS by sending the acknowledgement and status of each transaction to the solution providers and enterprises.
- d) Provide an Invoice Data Submission Activation interface for solutions providers and direct GST Registered Businesses.
- e) Maintain whitelist of entities allowed to submit invoice data to IRAS System
- f) [Optionally] Provide passthrough Check GST Register API interface for solution providers and GST Registered Businesses.

4.2 InvoiceNow Ready Solution Providers (IRSP)

- a) Extract all required data from the solution according to data specifications and package them for submission. IRSPs may choose to offload the data packaging to the Access Points. However, the responsibility of the data packaging remains with the IRSPs. There is no need for additional extraction of outbound invoices and credit notes that are already sent via InvoiceNow.
- b) Connect Invoice System to Access Point to transfer the data.
- c) Provide the traceability and tracking of submissions to IRAS by storing and displaying status of each transmission in the solution using transmission feedback from the Access Point.
- d) For all sales invoice documents created, add a Document UUID field and make sure it is included in the data extracted and submitted to IRAS.
- e) Incorporate a Invoice Data Submission Activation function for their users.
- f) [Strongly recommended] Embed a Check GST Register algorithm to validate against the supplier GST Number (or "GSTN") on the invoices and credit notes

and check if they are valid GSTNs. This is done through the use of the Check GST Register API, which may be obtained from the AP or directly from IRAS. With this API, solutions can check on incoming and outgoing transactions to ascertain if the business or its suppliers are wrongly charging GST when they are not GST Registered and advise the business accordingly.

4.3 GST-Registered Business

- a) If the GST-Registered Businesses are using a InvoiceNow Ready Solution, they can participate in the submission of invoice data using the facilities provided by the solution. For GST-Registered Businesses who manages their own Invoice System, the responsibilities are described below.
- b) Connect their Invoice System to an Access Point to transact on InvoiceNow (if the enterprises have not done so).
- c) Extract all required data from the system and package them for submission to IRAS. GST-Registered Businesses may choose to offload the data packaging to the Access Points. However, the responsibility of the data packaging remains with the GST-Registered Businesses. No need for additional extraction of outbound invoices and credit notes that area already sent via InvoiceNow.
- d) Connect to Access Point to transfer the invoice data.
- e) Enable the traceability and tracking of submissions to IRAS by storing the status feedback by the Access Point.
- f) For each sales invoices generated, add a Document UUID field and make sure it is included in the data extracted and submitted to IRAS.
- g) [Strongly recommended]. Embed a Check GST Register algorithm to validate against the supplier GST Number (or "GSTN") on the invoices or credit notes and check if they are valid GSTNs. This is done through the use of the Check GST Register API, which may be obtained from the AP or directly from IRAS. Using this API, solutions can check on incoming and outgoing transactions to ascertain if the business or its suppliers are wrongly charging GST when they are not GST Registered and advise the business accordingly.

ANNEX - GLOSSARY

Document UUID	<p>A unique value used to uniquely identify the invoice or credit note document for submission to IRAS System</p> <p>In general, a UUID (Universal Unique Identifier) is a 128-bit value used to uniquely identify an object or entity on the internet.</p>
GST registered business	A business entity that is registered with IRAS for GST claims and submissions.
Invoice	<p>An invoice is a business document issued by a seller to a buyer relating to a sale transaction and indicating the products, quantities, and agreed-upon prices for products or services the seller had provided the buyer.</p> <p>Unless otherwise specified, the use of the term Invoice in this document also applies to credit note, which is a business document issued by the seller and sent to the buyer when there is a reduction in the amount payable to the seller.</p>
Invoice Data	A generic term used to include all business documents included in the submission requirement starting with invoices and including credit notes.
Invoice System(s)	<p>GST Registered Business will use solutions to generate tax compliant invoices that conforms to IRAS' requirement. For the purpose of this document, these solutions are generally named "Invoice System". The Invoice System is either a single system or combination of systems that contain invoice details. This could include but not limited to:</p> <ul style="list-style-type: none"> i) ERP system ii) Billing system iii) Procurement system iv) Supply Chain system v) Accounts Payable/Receivable system vi) Accounting System vii) Other system that contains invoice data <p>In addition to the above, there may be middleware solutions that tie the various elements into a whole for invoice data submission.</p>
InvoiceNow	The nationwide e-invoicing network, used interchangeably with the term 'Peppol' in most cases.
Peppol Network	An e-delivery network enabling secure and reliable business document exchange between suppliers and buyers based on

	<p>defined international standard that specifies the structure and content of data being exchanged through intermediary Peppol Service Providers.</p> <p>Used interchangeably with InvoiceNow Network when referring to the Singapore implementation.</p>
PRSPs (Peppol Ready Solution Providers)	These are providers with productized solution that are pre-integrated to the InvoiceNow network via an IMDA Accredited Access Point. PRSPs are principal providers who have direct control over product source codes and intellectual property.
IRSPs (InvoiceNow Ready Solution Providers)	These are PRSPs with solutions with features supporting IMDA's mandatory document support and Peppol connectivity as well as meet the GST InvoiceNow Requirements.
SBDH (Standard Business Document Header)	Peppol Message Envelope is a customization of the UN/CEFACT Standard Business Document Header (SBDH). The specification of SBDH can be found here https://docs.peppol.eu/edelivery/envelope/Peppol-EDN-Business-Message-Envelope-2.0.1-2023-08-17.pdf
Solution Extracted	Refers to invoice data extracted from the Invoice System and packaged for transmission to IRAS.
Submitter	GST Registered Business who are obligated to comply to IRAS requirement for invoice data submission
Transmission UUID	<p>A unique value used to uniquely identify the transmission of the invoice or credit note to IRAS System.</p> <p>For Peppol documents, the instance identifier standard UUID in the header will serve this purpose.</p> <p>In general, a UUID (Universal Unique Identifier) is a 128-bit value used to uniquely identify an object or entity on the internet.</p>
Transmitting Enterprise	A GST registered business who uses their own Invoice System to perform the function of transmitting invoice data to IRAS System.