

SCHEDULE 1
(Regulation 21(a))

TECHNICAL GUIDELINE FOR
ACCREDITED POSes

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1. Introduction

Each accredited POS should be able to connect to an E-SDC or V-SDC and issue a fiscal invoice. Accredited POSes are developed for different platforms, designed to use a variety of communication standards to connect to other software or hardware components. As wide acceptance and low cost of integration are crucial for successful fiscalisation, IRS is dedicated to providing detailed integration instructions for all manufacturers and software developers (suppliers).

This Guideline is the technical guideline for activation of accredited POSes and integration with an E-SDC or V-SDC service. This Guideline sets standards that will enable seamless integration of accredited POSes with the V-SDC that is part of the IRS System.

2. Interpretation

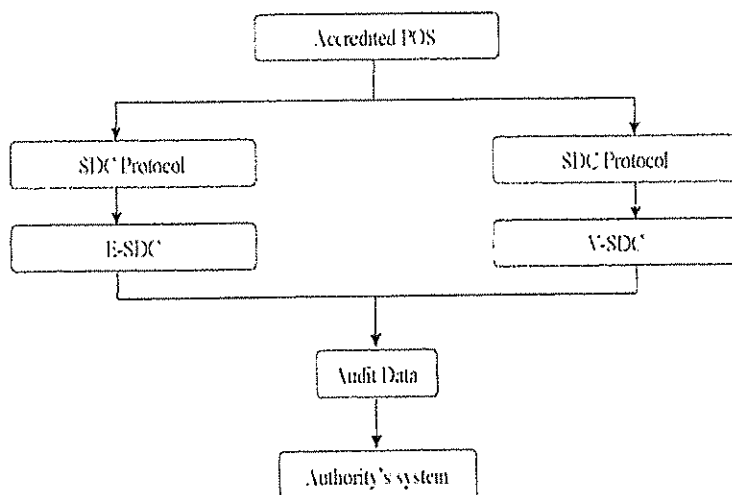
In this Guideline:

“ERP” means the enterprise resource planning software system that enables the integration of a POS with other systems operated by a taxpayer such as an accounting system;

“QR code” means a Quick Response code, which is a matrix barcode that is easily read with a device equipped with a bar code reader; and

“verification URL” means the unified resource location used to verify a particular fiscal invoice.

3. High Level Architecture of the IRS System



This Guideline describes high level requirements for an accredited POS for all possible scenarios.

3.1. Connected Scenarios

The simplest scenario is software application (taxpayer) creates receipts, designates taxes and calls V-SDC web service to fiscalise invoices. V-SDC authenticates caller (verifies taxpayer digital certificate), performs initial validation, calculates taxes, signs receipt and returns response to a taxpayer.

A response consists of digital signature of receipt or invoice data, internal data field containing an encrypted message to IRS, digital certificate metadata, textual representation of fiscal invoice and verification URL.

The taxpayer has to generate QR code from verification URL and print textual representation of fiscal invoice and QR code. In case fiscal invoice is delivered in electronic form, verification URL should be rendered as 'clickable' hyperlink in email or web page.

Advantages

1. Does not require specialised hardware.
2. Accredited POS can be implemented as mobile application.
3. Existing ERPs can integrate quickly.
4. Cost of fiscalisation is reduced.

Disadvantages

1. Internet connection is required to issue fiscal invoice.

3.2. Semi-Connected Scenarios

Semi-Connected systems are designed around E-SDCs to fiscalise receipts while internet connection is not available for short or long periods of time. Some E-SDCs could be designed to work offline all the time.

In order to fiscalise a receipt in semi-connected or disconnected mode, an E-SDC receives a receipt from an accredited POS, prepares it for signing and submits the same to the secure element (implemented as smart card containing digital certificate and special applet). The secure element returns signature and internal data to the E-SDC, the E-SDC adds metadata and creates textual representation of a fiscal invoice and returns it to the accredited POS.

As in the connected scenario, a response consists of digital signature of receipt or invoice data, internal data field containing an encrypted message to the tax authority, digital certificate metadata, textual representation of the fiscal invoice and verification URL.

A taxpayer has to generate QR code from verification URL and print textual representation of the fiscal invoice and QR code. In case the fiscal invoice is delivered in electronic form, verification URL should be rendered as 'clickable' hyperlink in email or web page.

The E-SDC will automatically take care of audit data delivery to IRS when the device comes online or manually, using SD cards or USB Flashes.

Advantages

1. Works without internet connection.

Disadvantages

1. Requires specialised hardware.
2. Prone to physical destruction.
3. Requires network of maintenance shops.

4. Development Environment

IRS will setup and run development environment accessible to all developers of accredited POS and E-SDC components. Development environment has to expose same application programming interfaces and protocols as production environment.

5. Obtaining Test Certificates

Everyone who registers as a software developer of an accredited POS on the Ministry website should receive

a set of test certificates, technical documentation and user manual. Test certificates should make possible to test failing scenarios like trying to fiscalise a receipt with an expired certificate.

6. Data Structures

A fiscal invoice consists of two parts. The first part (Invoice Request) is created by an accredited POS and contains the information specified in regulation 12(2)(a), (b), (c), (d), (e), (f), (g), (Commissioner), (i) and (j) and other industry specific information. An invoice request is then submitted by the accredited POS using protocol for communication to V-SDC or E-SDC, depending on implementation specifics of an accredited POS system and targeted audience.

The second part (Invoice response) is generated by V-SDC or E-SDC after data validation. A response contains the information specified in regulation 12(2)(k), (l), (m), (n) and (o). V-SDC or E-SDC returns response data to the accredited POS. Response data is an integral part of a fiscal invoice, and a receipt cannot be a fiscal invoice without it.

7. Test Cases

7.1 Issue of Fiscal Invoice for a Normal Receipt

A receipt and fiscal invoice must contain visible markings indicating receipt type "NORMAL".

7.1.1. Steps

Cashier on an accredited POS selects the NORMAL type of receipt, and registers sale by: typing items, selecting items from previously made list or scanning with a bar code reader. At the end, cashier is choosing way of payment and finishing receipt.

An accredited POS is sending message to V-SDC or E-SDC. After positive invoice data verification, receipt is digitally signed, counters and totals are updated and internal data is finished.

V-SDS or E-SDC is sending back a fiscal invoice response to an accredited POS.

A fiscal invoice is issued to the customer.

7.1.2. Expected Results

A fiscal invoice is the final result of this process and can be printed or sent by SMS or email message if a customer requests it. A normal receipt is digitally signed. Internal data is stored in the data base of the IRS System. Internal data is shown at the end of the fiscal invoice in the form of a QR code. The invoice counter is in the form 5/7NS (5-number of normal receipts/ 7-total number of receipts issued by E-SDC or V-SDC, NS - designation of normal receipt.)

7.2. Issue of Fiscal Invoice for a Refund Receipt

A receipt and fiscal invoice must contain visible markings indicating "REFUND". The totals on refund receipts and fiscal invoices are negative, starting with "-".

7.2.1. Steps

Cashier on an accredited POS is selecting refund type of receipt, registering sale by: typing items, selecting items from previously made list or scanning with a bar code reader. At the end, cashier is choosing way of payment and finishing receipt.

An accredited POS is sending message to V-SDC or E-SDC. After positive invoice data verification, receipt is digitally signed,

counters and totals are updated and internal data is finished.

V-SDS or E-SDC is sending back a fiscal invoice response to an accredited POS.

A fiscal invoice is issued to the customer.

7.2.2. Expected Results

A fiscal invoice is the final result of this procedure and can be printed or sent by SMS or email message if the customer is asking for it. A receipt for refund is digitally signed. Internal data is stored in the data base of the IRS System. Internal data is present on the end of the fiscal invoice in the form of a QR code. A fiscal invoice counter is in the form 5/7NR (5-number of normal receipts for refunds/7-total number of receipts issued by E-SDC or V-SDC, NR - designation of normal receipt for refund).

7.3. Issue of Fiscal Invoice for a Copy Receipt

Receipts and fiscal invoices must contain visible markings indicating the receipt type "COPY".

7.3.1. Steps

(a) Cashier on an accredited POS is selecting copy type of receipt. Depending on the implementation method, an accredited POS may offer to select already issued receipt from the journal memory or recall receipt number. At the end, cashier is choosing the selected receipt and producing a copy of it.

(b) An accredited POS is sending message to V-SDC or E-SDC. After positive invoice data verification, a receipt is digitally signed, counters are updated.

(c) V-SDC or E-SDC is sending back a fiscal invoice response to an accredited POS.

(d) A copy of a fiscal invoice is issued to the customer.

7.3.2. Expected Results

A copy of already issued fiscal invoice is the final result of this procedure. A fiscal invoice counter is in the form 1/9 CS (1-number of copies of normal receipts/9-total number of receipts issued by E-SDC or V-SDC, CS - designation of copy of normal receipt).

7.4. Issue of Fiscal Invoice for a Training or Pro-forma Receipt

Receipts and fiscal invoices must contain visible markings indicating the receipt type "TRAINING" or "PRO-FORMA".

Training or pro-forma receipts and fiscal invoices are produced in the same way as normal receipts and fiscal invoices, with an exception that totals are not accounted for.

7.4.1. Steps

(a) Cashier on an accredited POS is selecting Training or Pro-forma type of the receipt, is registering sale by: typing items, selecting items from previously made list or scanning with a bar code reader. At the end, cashier is choosing way of payment and finishing receipt.

(b) An accredited POS is sending message to V-SDC or E-SDC. After positive invoice data verification, a receipt is digitally signed and counters are updated.

(c) VSDS or E-SDC is sending back a fiscal invoice response to an accredited POS.

(d) A fiscal invoice is issued.

7.4.2. Expected Results

Training or pro-forma fiscal invoice is the final result of this procedure. A fiscal invoice counter is in the form 3/8TS (3-number of receipts for training or pro-forma receipts/8-total number of receipts issued by E-SDC or V-SDC, TS - designation of receipts for training or pro-forma receipts).

7.5. Issue of Fiscal Invoice for Normal or Refund Receipt for a Business to Business

Transaction

A receipt and fiscal invoice must contain visible markings of receipt type "NORMAL", or "REFUND".

Receipts and fiscal invoices contain business customer data, name and TIN.

7.5.1. Steps

(a) Cashier on an accredited POS is selecting receipt type, is asking customer for and inputting provided TIN, is registering sale by: typing items, selecting items from previously made list or scanning with a bar code reader. At the end, cashier is choosing way of payment and finishing receipt.

(b) An accredited POS is sending message to V-SDC or E-SDC. After positive invoice data verification, a receipt is digitally signed, counters and totals are updated and internal data is finished.

(c) VSDS or E-SDC is sending back a fiscal invoice response to an accredited POS.

(d) A fiscal invoice is issued to the customer.

7.5.2. Expected Results

A fiscal invoice is the final result of this procedure and can be printed or sent by SMS or email message if the customer is asking for it. A normal or refund receipt is digitally signed. Internal data is stored in the data base of the IRS System. Internal data is shown at the end of the fiscal invoice in the form of a QR code. A receipt counter is in the form 5/7NS or NR number of normal receipts or normal receipts for refunds/7-total number of receipts issued by E-SDC or V-SDC, NS or NR - designation of normal receipt or normal receipt for refund).