

**TECHNICAL SPECIFICATION OF TRADER INVOICING SYSTEM (TIS) FOR
ONLINE AND VIRTUAL SALES CONTROL UNIT (OSCU & VSCU) v2.0**

Introduction

Kenya Revenue Authority is currently using an Integrated Software that collects and manages domestic tax revenues. The said tax system handles the internal taxpayer registry and other tax processes but doesn't manage taxpayers' business transactions as they occur in real time. The Electronic Tax Invoice Management System has introduced a supply chain management capability and integration with other KRA systems.

Area of application

KRA seeks to introduce the usage of Online and Virtual Sales Control Unit (OSCU & VSCU) capable of handling a richer dataset than the traditional Electronic Tax Register system. **This guideline includes specific requirements concerning the Trader Invoicing System to be used together with an Online or Virtual Sales Control Unit.**

Definitions

- “Authority” means Kenya Revenue Authority
- “User” means a taxpayer, user of Trader Invoicing System (TIS)
- “PIN” – Personal Identification Number
- “Commissioner General” means the Commissioner General of Kenya Revenue Authority;
- “Electronic Tax Invoicing Management System” means a system comprising of Trader Invoicing System and Online/Virtual Sales Control Unit connected together;
- “Trader Invoicing System (TIS)” means a system designated for use in business for efficiency management controls in areas of invoicing and stock management;
- “Receipt” means a Tax Invoice or a receipt for the provision of goods/ services provided to the customer (as applicable);
- “Signature” means receipt data used for integrity verification by Authority;
- An “Online & Virtual Sales Control Unit (OSCU & VSCU)” is a software module communicating with both the TIS and the Authority for processing receipts;
- “Receipt data” means every receipt data provided by TIS which needs to be processed by OSCU/VSCU;

- “Response data” means every information sent from OSCU/VSCU to TIS;
- “Internal data” means encrypted information related to the current receipt and saved to internal storage of OSCU/VSCU;
- “OSCU/VSCU serial number” - Virtual Sales Control Unit unique serial number with designation of its certificate;
- “Remote verification” - function of OSCU/VSCU to establish two-way communication with remote server designated by the Authority in order to transfer required information.
- “Local verification” - function of OSCU/VSCU to provide information from its internal memory to a removable storage media;
- “POS” - Point of Sale.

TIS specification for Virtual SCU

1. A Trader Invoicing System (TIS) can be any electronic cash register, any terminal with cash register software, any computer using invoicing software, or any other similar system used for registration of outbound transactions.

2. A TIS shall not be able to receive importation and purchase data or produce invoices unless connected to a functional Virtual Sales Control Unit assigned for the same PIN. This OSCU/VSCU preserves in an irrevocable and secure manner all relevant data of the outbound transactions, uses this data to calculate an encrypted value that must be printed on the final receipt, in accordance with this guideline.

3. A Trader Invoicing System shall generate receipts, which must show, among others, the data enumerated in Items 'a' to 'n' of this Article as minimum required information:
 - a. Taxpayer's name;
 - b. Personal Identification Number;
 - c. the address at which the sale takes place;
 - d. Personal Identification number of the buyer;
 - e. receipt type and transaction type;
 - f. serial number of the receipt from an uninterrupted ascending number series per receipt type;
 - g. registered items and/or services with description, quantity, price, with any other action that may be done such as cancellations, corrections;
 - h. total sales amount;
 - i. tax rates applied;
 - j. the value added tax added to the sale amount;
 - k. means of payment;
 - l. SCU information:
 - i. Date and time stamped by OSCU/VSCU;
 - ii. Sequential receipt type number;
 - iii. Receipt signatures;
 - iv. OSCU/VSCU identification number;
 - m. Date and time stamped by TIS;

4. Each receipt issued by Trader Invoicing System is formed from a combination of receipt type and transaction type.

- 4.1.** Receipt types are:
- 4.1.1.** NORMAL
 - 4.1.2.** COPY
 - 4.1.3.** TRAINING
 - 4.1.4.** PROFORMA
- 4.2.** Each receipt type is attributed with one of the following transaction types:
- 4.2.1.** SALE;
 - 4.2.2.** CREDIT NOTE.
 - 4.2.3.** DEBIT NOTE
- 4.3.** Trader Invoicing System shall assign a unique receipt label to each combination of receipt type and transaction, so that the Virtual Sales Control Unit can interpret them unambiguously. The table below gives the combinations of receipt labels:

RECEIPT TYPE	TRANSACTION TYPE	RECEIPT LABEL
NORMAL	SALES	NS
NORMAL	CREDIT NOTE	NC
COPY	SALES	CS
COPY	CREDIT NOTE	CC
TRAINING	SALES	TS
TRAINING	CREDIT NOTE	TC
PROFORMA	SALES	PS

- 5.** For the purpose of signing an invoice, the data flow between the Trader Invoicing System and the Virtual Sales Control Unit will be as follows for each receipt type:
- 5.1.** the TIS sends the following receipt data to the OSCU/VSCU at the time when the receipt is being produced:
 - 5.1.1.** date and time;
 - 5.1.2.** Personal Identification Number;
 - 5.1.3.** Buyer's PIN (Optional);
 - 5.1.4.** receipt number;
 - 5.1.5.** receipt type and transaction type;
 - 5.1.6.** tax rates;
 - 5.1.7.** total amounts with tax;
 - 5.1.8.** tax amounts.

- 5.2.** the OSCU/VSCU receives receipt data from TIS

- 5.3. the OSCU/VSCU generates the following response data and sends it back to the TIS:
 - 5.3.1. SCU ID;
 - 5.3.2. date and time;
 - 5.3.3. receipt label;
 - 5.3.4. receipt counter per receipt type;
 - 5.3.5. receipt counter of all receipts;
 - 5.3.6. digital signatures (except for the receipt types TRAINING and PROFORMA);
 - 5.4. the TIS finalizes receipt by printing OSCU/VSCU information on designated place within the receipt.
 - 5.5. the TIS sends complete journal data of NS and NC receipt labels in text form to OSCU/VSCU.
6. TIS shall:
- 6.1. contain software (PC software or firmware) that controls the functions indicated in this document;
 - 6.2. have reprogrammable PIN under its service mode, for the purpose of ownership transfer, only if the change of PIN is conditioned by the reset which deletes all information saved
for previously programmed PIN;
 - 6.3. carry consecutive numbers in order to guarantee the completeness and the inalterability of the journal records. This means that the journal records in the electronic journal or the journal file (which includes all receipts of the various types, among other things) shall have maximum one ascending numbering per receipt type. In case of a total reset of the Trader Invoicing System, the aforementioned numbering shall recommence from the next number in the sequence as retrieved from the last transmitted invoice.
 - 6.4. have display screen showing the inputs and outputs of the sale with 2 decimal places;
 - 6.5. be able to produce Z daily report and X daily report. Z daily report refers to the summary of sales of a full day (from 00:00:00 to 23:59:59) of operations. X daily report refers to the summary of sales operations from the last Z report to the present;
 - 6.6. be issued with a version number which is a unique identifier of the software version and should be adapted for every change made to the software. TIS software version must be enabled for verification by Authority personnel;
 - 6.7. be able to issue receipts only if connected to OSCU/VSCU unit which is functioning under normal circumstances;
 - 6.8. be able to independently detect whether the OSCU/VSCU is operational or not, and inform user of its status in case of error;

- 6.9. not have any other functions than those stipulated in its documentation. The documentation shall be written in English and accompany the TIS on delivery;
- 6.10. have an inventory control, where the user is able to input and/or remove goods from stock and produce independent reports showing inventory status;
- 6.11. be able to register cash deposits and withdrawals;
- 6.12. be able to register a payment with different means of payment;
- 6.13. be equipped with paper journal or electronic journal or the log file which contains all the sales that immediately upon the creation of any printed material are recorded and shall not operate without it;
- 6.14. not to be constructed in such a way that it is possible to register a sales amount without simultaneously printing a receipt;
- 6.15. not be able to register the amount of a transaction without identifying the good and /or service;
- 6.16. not be able to correct a transaction without prior cancelation of the original transaction. Each cancelation must refer to the original erroneous SCU Receipt number. Moreover, an original transaction is allowed to be cancel only once;
- 6.17. print only one original receipt. Reprint shall have a watermark with mention Copy.
- 6.18. send receipt data to OSCU/VSCU in prescribed format defined in this guideline;
- 6.19. receive response data from OSCU/VSCU and add this information to final receipt structure;
- 6.20. allow, as programming/servicing function, input of:
 - 6.20.1. PIN,
 - 6.20.2. Registered company name and address,
 - 6.20.3. Date and time,
 - 6.20.4. TAX rates, labeled as: "A", "B", "C", "D" and "E" corresponding to indexes 1-5.
- 6.21. print each tax rate programmed with value > 0. The tax label and value must be appearing on every receipt even though the sale was not including that particular tax rate;
- 6.22. print the tax label and value for tax rate equal to zero, only when an item with this particular tax rate is used;
- 6.23. enable to print in a uniform layout response data received from OSCU/VSCU structured with following content:
 - 6.23.1. The designation "SCU Information"
 - 6.23.2. Time and date of OSCU/VSCU (Date: dd/mm/yyyy Time: hh:mm:ss)
 - 6.23.3. OSCU/VSCU identification "CU ID: KRACUo4XXXXXXXX"
 - 6.23.4. CU Invoice Number containing the CU ID and a sequential receipt number separated by a backslash symbol e.g. KRACUo4XXXXXXXX/1
 - 6.23.5. Receipt counter "A/B RT"

- 6.23.6. Internal data separate by dash after every 4th character
 - 6.23.7. Receipt signature separate by dash after every 4th character
 - 6.23.8. QR Code: made by *invoice_date(ddmmyyy)#time(hhmmss)#cu
number#cu_receipt_number#internal_data#receipt_signature*
 - 6.24. provide to authorized officers an interface for verification purposes, including an overview of software settings and database;
 - 6.25. have an item counter which presents the number of items shown on the receipt
 - 6.26. (excluding voids);
 - 6.27. continue or re-print last line in the case of power failure or after missing paper recovery
 - 6.28. print official KRA logo on each receipt regardless the type.
 - 6.29. not issue a receipt of goods when the corresponding stock is less than the requested quantity. However, TIS can issue a receipt for service item regardless the stock.
 - 6.30. be able to provide a closing stock of a given date by user.
7. Host Devices Compliance- Shall be approved by Kenya Bureau of Standards or compliant with the international safety standards for electronic equipment
8. The Trader Invoicing System functionalities shall not be affected or interrupted by any other accessory or electronic equipment connected to the same host device.

Receipt Specification

- 10. Trader Invoicing System shall not be able to print receipt of any type before the aforementioned data flow has been finalized. This means that it shall be impossible to issue receipt if the TIS did not receive any response from the OSCU/VSCU.
- 11. When the TIS provides a function for printing copies of the receipt, training or proforma tickets, it must be clearly distinguishable from the NORMAL receipt type. The designation COPY, TRAINING, PROFORMA has to be placed on the invoice below receipt header and above item description section and as a watermark. Moreover, in such cases the following text should appear below the amount totals of the ticket: "THIS IS NOT AN OFFICIAL RECEIPT". These identifying texts shall be at least twice bigger than the text that indicates the amount.
- 12. All corrections on the receipt should be performed before approving it.
- 13. **Normal Sale**, defined by receipt label NS, refers to a receipt that shall be produced and offered to the client. It is understood to be any receipt produced while the Electronic Tax Invoice Management System is in its normal registration mode, used to register sales of goods and/or services, including corrections and discounts.

Note That: The format of the Invoice is at the discretion of the trader. It must, however, contain all the prescribed fields as indicated in the sample below.

Normal Invoice

Trade Name Address, City PIN: P000000000Z TAX INVOICE		
----- Welcome to our shop Buyer PIN: A000000000Z -----		
Plain Bread		
1000.00x	1.00	1000.00A-EX
Gouda cheese		
33600.00x	0.200	6,720.00B
Discount narration and value: 25%		(1,680.00)
Wriggly gum		
60.00x	5.00	300.00B

TOTAL BEFORE DISCOUNT		8020.00
TOTAL DISCOUNT AWARDED		(1680.00)
SUB TOTAL		5,485.60
VAT		854.40
TOTAL		6340.00

CASH		6340.00
ITEMS NUMBER		3

Rate	Taxable Amount	VAT
EX	1000.00	0.00
16%	5,485.6	854.40
0%	0.00	0.00
Non-VAT	0.00	0.00
8%	0.00	0.00

SCU INFORMATION Date: 25/01/2023 Time: 11:07:35 SCU ID: KRACU0100000001 CU INVOICE NO.: {SCU ID}/Receipt Number Internal Data: TE68-SLA2-34J5-EAV3-N569-88LJ-Q7 Receipt Signature: V249-J39C-FJ48-HE2W 		

TIS INFORMATION RECEIPT NUMBER: 152 DATE: 25/01/2023 TIME: 11:07:36		

THANK YOU WE LOOK FORWARD TO EARNING YOUR BUSINESS		

TAXPAYER'S NAME

Shop address

Personal Identification number

Commercial message

Buyer's Personal Identification Number (optional)

Item description, unit price, quantity, total price and tax designation

Discount percentage, total price with discount

Display negative value of the total discount given

Total amount computed before discount

Total TAX exempted amount

Total amount without Tax

Total amount of TAX to be paid

Total price to be paid

Payment method

Number of items sold

Tabular presentation of the various tax components

Goods exempted from VAT

VAT at 16%

Zero rated goods

Non Vatable goods

VAT at 8%

Date and time originated from OSCU/VSCU

OSCU/VSCU Serial number

Receipt number originated from OSCU/VSCU

Internal data (separate by dash)

Receipt signature (separate by dash)

QR Code

 (<https://etims.kra.go.ke/common/link/etims/receipt/indexEti.msReceiptData?{KRA-PIN+BHF-ID+RcpSignature}>)

(Optional category for TIS specific info in OSCU and VSCU)

Receipt number originated from TIS

Date and time originated from TIS

Commercial message



14. **Normal Credit Note**, defined by receipt label NC, refers to a receipt that shall be produced, while Electronic Tax Invoice Management system is in credit mode, for a client upon request with information indicating that a previously printed Normal Sale receipt contains incorrect information or information on a refund for returned or discounted goods or services. Such credit note contains only negative, credit note amounts. Each receipt of this type requires a statement by user inputted to a special credit note log book containing receipt details and justification with description and the name of the credit note recipient.

14.1. Following is an example of receipt type NORMAL and transaction type CREDIT NOTE (NC)

<p>Trade Name Address, City PIN: P00000000Z</p> <hr/> <p style="text-align: center;">CREDIT NOTE</p> <p>ORIGINAL CU INVOICE NO.#: NNNN</p> <hr/> <p>CREDIT NOTE IS APPROVED ONLY FOR ORIGINAL SALES RECEIPT</p> <p>Buyer PIN: A00000000Z</p> <hr/> <table style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="3">Gravel /t</td> </tr> <tr> <td style="width: 20%;">9000.00x</td> <td style="width: 20%;">5.354</td> <td style="width: 60%; text-align: right;">-48186.00</td> </tr> <tr> <td>B -25%</td> <td></td> <td style="text-align: right;">-36139.50</td> </tr> <tr> <td colspan="3"><hr/></td> </tr> <tr> <td>TOTAL</td> <td></td> <td style="text-align: right;">-36139.50</td> </tr> <tr> <td>TOTAL B-16.00%</td> <td></td> <td style="text-align: right;">-36139.50</td> </tr> <tr> <td>TOTAL TAX B</td> <td></td> <td style="text-align: right;">-5512.81</td> </tr> <tr> <td>TOTAL TAX</td> <td></td> <td style="text-align: right;">-5512.81</td> </tr> <tr> <td colspan="3"><hr/></td> </tr> <tr> <td>CASH</td> <td></td> <td style="text-align: right;">-36139.50</td> </tr> <tr> <td>ITEMS NUMBER</td> <td style="text-align: center;">1</td> <td></td> </tr> </table> <hr/> <p style="text-align: center;">SCU INFORMATION</p> <p>Date: 25/01/2023 Time: 11:48:27 CU ID: KRACU0499999999 Invoice No.: KRACU0499999999/259 NC Internal Data: IR84-99TN-FCYY-CE22-4HWE-V5TA-EE</p> <p>Receipt Signature: 669X-TBMM-GPE4-445D</p> <div style="text-align: center;">  </div> <hr/> <p style="text-align: center;">TIS INFORMATION</p> <p>RECEIPT NUMBER: 153 DATE: 25/01/2023 TIME: 11:50:24</p> <hr/> <p style="text-align: center;">THANK YOU</p>	Gravel /t			9000.00x	5.354	-48186.00	B -25%		-36139.50	<hr/>			TOTAL		-36139.50	TOTAL B-16.00%		-36139.50	TOTAL TAX B		-5512.81	TOTAL TAX		-5512.81	<hr/>			CASH		-36139.50	ITEMS NUMBER	1		<p>TAXPAYER'S NAME Shop address Personal Identification number</p> <p>TITLE for CREDIT NOTE Original number based on which refund is issued (SCU receipt number)</p> <p>Buyer's Personal Identification Number (Optional)</p> <p>Item description, unit price, quantity, total price in NEGATIVE amount and tax designation Reduction of price in percentage and total amount</p> <p>Total amount of credit note (negative amount) Total amount with TAX (negative amount) Total amount of TAX per tax rate (negative) Total amount of TAX (negative)</p> <p>Payment method (negative amount) Number of items</p> <p>Date and time originated from OSCU/VSCU OSCU/VSCU Serial number Receipt number originated from OSCU/VSCU Internal data (separate by dash)</p> <p>Receipt signature (separate by dash)</p> <p><i>(Optional category for TIS specific info in OSCU and VSCU)</i> Receipt number originated from TIS Date and time originated from TIS</p> <p>Commercial message</p>
Gravel /t																																		
9000.00x	5.354	-48186.00																																
B -25%		-36139.50																																
<hr/>																																		
TOTAL		-36139.50																																
TOTAL B-16.00%		-36139.50																																
TOTAL TAX B		-5512.81																																
TOTAL TAX		-5512.81																																
<hr/>																																		
CASH		-36139.50																																
ITEMS NUMBER	1																																	

Trader Invoicing System shall have facility to generate detailed X daily report of the day's sale during which financial transactions were conducted since the previous Z daily report was generated.

15.1. Daily X report is produced by TIS and represents a summary of all sales records since the end of the previous Z daily report and it shall at least contain information on:

- 15.1.1.** trade name and Personal identification number;
- 15.1.2.** date and time;
- 15.1.3.** information showing this is an X daily report;
- 15.1.4.** TIS designation;
- 15.1.5.** total sales amount for all sales receipts labeled as NS, including tax;
- 15.1.6.** total sales amount for all sales receipts labeled as NS, including tax, for the different main groups if main groups are used;
- 15.1.7.** number of sales receipts labeled as NS;
- 15.1.8.** total credit note amount for all credit note receipts labeled as NC, including tax;
- 15.1.9.** number of credit notes receipts labeled as NC;
- 15.1.10.** taxable amounts per applicable tax rates divided between sales (NS) and credit notes (NC);
- 15.1.11.** tax amounts per applicable tax rates divided between sales (NS) and credit notes (NC);
- 15.1.12.** opening deposit;
- 15.1.13.** number of items sold;
- 15.1.14.** number of receipt copies labeled as CS or CC and amount with tax included;
- 15.1.15.** number of receipts in training mode labeled as TS or TC and amount with tax included;
- 15.1.16.** number of advance receipts in proforma mode labeled as PS and amount with tax included;
- 15.1.17.** sales total divided according to means of payment for sales (NS) and credit notes (NC) receipts;
- 15.1.18.** all discounts;
- 15.1.19.** other registrations that have reduced the day's sales and their amount;
- 15.1.20.** number of incomplete sales.

16. Trader Invoicing System shall have facility to generate detailed Z daily report at the end of each day during which financial transactions were conducted and certified receipts generated. This report will be regarded as a business and accounting record.

16.1. Daily Z report produced by TIS represents a summary of all registrations suitable for account of a day's sale and shall at least contain information on:

- 16.1.1.** trade name and tax identification number;
- 16.1.2.** date and time;
- 16.1.3.** information showing this is an Z daily report;
- 16.1.4.** TIS designation;
- 16.1.5.** total sales amount for all sales receipts labeled as NS, including tax;
- 16.1.6.** total sales amount for all sales receipts labeled as NS, including tax, for the different main groups if main groups are used;
- 16.1.7.** number of sales receipts labeled as NS;
- 16.1.8.** total credit note amount for all credit note receipts labeled as NC, including tax;
- 16.1.9.** number of credit notes receipts labeled as NC;
- 16.1.10.** taxable amounts per applicable tax rates divided between sales (NS) and credit notes (NC);
- 16.1.11.** tax amounts per applicable tax rates divided between sales (NS) and credit notes (NC);

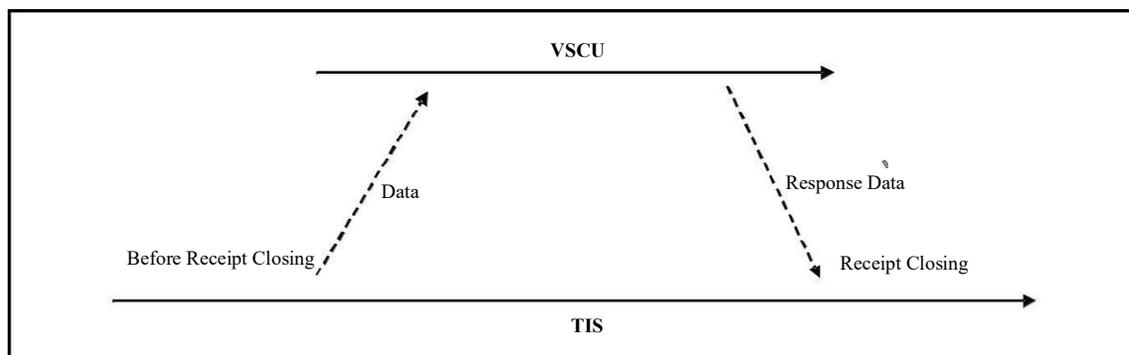
- 16.1.12. opening deposit;
 - 16.1.13. number of items sold;
 - 16.1.14. number of receipt copies labeled as CS or CC and amount with tax included;
 - 16.1.15. number of receipts in training mode labeled as TS or TC and amount with tax included;
 - 16.1.16. number of advance receipts in proforma mode labeled as PS and amount with tax included;
 - 16.1.17. sales total divided according to means of payment for sales (NS) and credit note (NC) receipts;
 - 16.1.18. all discounts;
 - 16.1.19. other registrations that have reduced the day's sales and their amount;
 - 16.1.20. number of incomplete sales.
17. When no report or only one of the above mentioned reports has been generated, the next report shall contain all the data for the entire period (from the time of the previous Z daily report to the time of the new report).
18. PLU report contains full details of each item, the quantities sold and the amounts collected for each item and category according to the user chosen interval of date.
- 18.1. PLU report shall at least contain information on:
 - 18.1.1. company name and tax identification number;
 - 18.1.2. interval date and time;
 - 18.1.3. information showing this is an PLU report;
 - 18.1.4. TIS designation;
 - 18.1.5. item code, item name, unit price, tax rate, quantity on sold;
 - 18.1.6. Remain quantity in stock.

Communication Protocol between TIS and OSCU/VSCU

19. Trader Invoicing System (CIS) shall connect to the Online and Virtual Sales Control Unit (OSCU/VSCU) via a web service API (SOAP or REST) or any other application service communication protocol available to the TIS and supported by the OSCU/VSCU;

Communication Flow between TIS and OSCU/VSCU

20. TIS sends a message containing a command for the OSCU/VSCU.
21. OSCU/VSCU executes the command and sends a response message to the TIS within a set time-out period. TIS must wait for a reply before sending another message to OSCU/VSCU.
- 21.1. Message sequence
 - 21.1.1. During communication, the OSCU/VSCU will always act as a service application responding to TIS requests.



21.2. Message Time-out

21.2.1. The TIS must ensure a 1000 ms time-out for receiving a reply. If no reply is received after the time-out, the TIS must resend the message. After a set number of failures, the

TIS must display a warning for disconnecting.

21.2.2. TIS messages shall be sent in xml format.

21.3. Errors while processing the request

21.3.1. In the case of an error, OSCU/VSCU has to reply with an error code message.

21.4. Data Format

21.4.1. Decimal numbers are presented with two decimal places. Decimal separator is dot ('.'). For example: '16.00'. Zero value is always presented as '0.00'.

21.4.2. Date format is 'DD/MM/YYYY'. For example: '20/01/2023' for 20 January 2023.

21.5. Message formatting between TIS and OSCU/VSCU

Messages from the TIS to the OSCU/VSCU	
<PIN>P999999999Z</PIN>	
<CMD></CMD>	
<DATA></DATA>	
<CMD>	Command code
<DATA>	Data field

Messages from the OSCU/VSCU to the TIS	
<PIN>P999999999Z</PIN>	
<CMD></CMD>	
<DATA></DATA>	
<STATUS>P</STATUS>	
<CMD>	Command code
<DATA>	Data field
<STATUS>	Status of the OSCU/VSCU

21.6. OSCU/VSCU status code <STATUS>

21.6.1. The OSCU/VSCU current state is coded and sent in each reply message:

General usage
'P' – if command is successfully
'E' – if there is an error with the command

21.6.2. Error codes are listed by their priority. Whatever error is first detected, it is the one that should be shown as the error code.

21.6.3. OSCU/VSCU Error codes:

- i. 00 – no error;
- ii. 11 – internal memory full;
- iii. 12 – internal data corrupted;
- iv. 13 – internal memory error;
- v. 20 – Real Time Clock error;
- vi. 30 – wrong command code;
- vii. 31 – wrong data format in the TIS request data;
- viii. 32 – wrong PIN in the TIS request data;
- ix. 33 – wrong tax rate in the TIS request data;
- x. 34 – invalid receipt number in the TIS request data;
- xi. 40 – OSCU/VSCU not activated;
- xii. 41 – OSCU/VSCU already activated;
- xiii. 42 – OSCU/VSCU Authentication error
- xiv. 90 – Internet error;
- xv. 91 – Backup error;
- xvi. 99 – Hardware intervention is necessary.

21.6.4. Warning codes:

- i. 0 – no warning;
- ii. 1 – OSCU/VSCU internal memory is near to full (it is at more than 90% of capacity);
- iii. 2 – OSCU/VSCU internal memory is near to full (it is at more than 95% of capacity).

21.7. Detailed command description

21.7.1. This command is used to send TIS receipt data to OSCU/VSCU:

CMD: SEND_RECEIPT	
Data field:	<Rtype><TType>,<PIN>,<Date><Space><Time>,<RNum>,<TaxRate1>,<TaxRate2>,<TaxRate3>,<TaxRate4>,<Amount1>,<Amount2>,<Amount3>,<Amount4>,<Tax1>,<Tax2>,<Tax3>,<Tax4>[,<ClientsPin>,<Clientphone>]
Response:	<Code><ErrorCode>
Comment:	
<i>RType</i>	Receipt type: N - normal; C - copy; T - training; P - proforma
<i>TType</i>	Transaction type: S – sale; NC – Credit Note
<i>PIN</i>	Tax registration number of the taxpayer
<i>Date</i>	Date of issuing the receipt: DD/MM/YYYY
<i>Time</i>	Time of issuing the receipt: HH:MM:SS
<i>RNum</i>	Receipt number
<i>TaxRate1,...,TaxRate4</i>	Percentage Tax rates
<Amount1>,...,<Amount4>	Receipt amounts corresponding to each Tax (taxable amounts)
<Tax1>,...,<Tax4>	Calculated taxes corresponding to each Tax (tax amounts)
<i>ClientsPin</i>	Tax registration number of the client.

<i>Clientphone</i>	Phone number of the client
<i>Code</i>	‘P’ – the command is executed ‘E’ – error
<i>ErrorCode</i>	Warning number when <i>Code</i> is P. Error number when <i>Code</i> is E

21.7.2. This command is used to get OSCU/VSCU information for the last receipt processed by OSCU/VSCU:

CMD: RECV_RECEIPT	
Data field:	<RNumber>
Response:	<SNumber>,<TNumber>,<GNumber>,<RLabel>,<Date><Space><Time>,<Receipt Signature>,<Internal Data>
Comment:	
<i>Rnumber</i>	Receipt number
<i>SNumber</i>	OSCU/VSCU serial number as a string
<i>TNumber</i>	Receipt number per receipt type
<i>GNumber</i>	Total receipt number
<i>RLabel</i>	Receipt label, based on receipt type (N, C, P, T) and transaction type (S, R): <receipt type><transaction type>, for example: NS
<i>Date</i>	Date of accepting the receipt by the OSCU/VSCU: DD/MM/YYYY
<i>Time</i>	Time of accepting the receipt by the OSCU/VSCU: HH:MM:SS
<i>Receipt Signature</i>	Receipt Signature, sent as a string
<i>Internal Data</i>	Internal Data, sent as a string
Exemplary responses:	SCU999123456,300234,234556,NS,19/01/201212:39:05,JVPGPLYGD JRSMXF2,2ASOSCU/VSCUZBZ5AH3TZVVIKEXRW6IQ

21.7.3. This command can be used to read the signatures for the last receipt processed by OSCU/VSCU:

CMD: SIGNATURE_REQUEST	
Data field:	<Type><RNumber>
Response:	<Signature>
Comment:	
<i>Type</i>	R – Receipt Signature I – Internal Data
<i>Rnumber</i>	Receipt number
<i>Signature</i>	OSCU/VSCU signature, sent as a string
Exemplary responses:	For the Receipt Signature: JVPGPLYGDJRSMXF2 For the Internal Data: 2ASOSCUZBZ5AH3TZVVIKEXRW6IQ

21.7.4. This command can be used to read the counters for the last receipt processed by OSCU/VSCU:

CMD: COUNTERS_REQUEST	
Data field:	<RNumber>

Response:	<TNumber>,<GNumber>,<Date><Space><Time>
Comment:	
<i>RNumber</i>	Receipt number, sent by the TIS
<i>TNumber</i>	Receipt number per receipt type
<i>GNumber</i>	Total receipt number
<i>Rlabel</i>	Receipt label, based on receipt type (N, C, P, T) and transaction type (S, R): <receipt type><transaction type>, for example: NS
<i>Date</i>	Date of accepting the receipt by the OSCU/VSCU: DD/MM/YYYY
<i>Time</i>	Time of accepting the receipt by the OSCU/VSCU: HH:MM:SS
Ex. response:	300234,234556,NS,19/01/2023 12:39:05

21.7.5. This command is used to read the date and time of OSCU/VSCU:

CMD: DATE_TIME_REQUEST	
Data field:	<i>No data</i>
Response:	<Date><Space><Time>
Comment:	
<i>Date</i>	<i>Current date of OSCU/VSCU: DD/MM/YYYY</i>
<i>Time</i>	<i>Current time of OSCU/VSCU: HH:MM:SS</i>

21.7.6. This command is used to read the serial number of OSCU/VSCU:

CMD: ID_REQUEST	
Data field:	<i>No data</i>
Response:	<SNumber>
Comment:	
<i>SNumber</i>	OSCU/VSCU serial number as a string

21.7.7. EJ Data:

CMD: EJ_DATA	
Data field:	<String>
Response:	<Flg>
Comment:	
<i>String</i>	String that represent invoice print out. Each string of line must be ended by “\n”
<i>Flg</i>	'P' - operation succeed 'E' - operation failure

21.7.8. OSCU/VSCU Status:

CMD: STATUS

Data field:	<i>No data</i>
Response:	<i><Snumber>,<FWver>,<HWrev>,<CurrentZ>,<LastRemoteDate>,<LastLocalDate></i>
Comment:	
<i>Snumber</i>	OSCU/VSCU serial number
<i>FWver</i>	Firmware version
<i>HWrev</i>	Hardware revision
<i>CurrentZ</i>	The number of current OSCU/VSCU daily report
<i>LastRemoteDate</i>	Last remote audit date and time
<i>LastLocalDate</i>	Last local audit date and time

21.7.9. A Trader Invoicing System must stop operating, whenever a communication error appears, due to the disconnection from the OSCU/VSCU or due to power failure interruption. After the error has been cleared, the continuation of the printing process must be enabled

21.8. These commands are used to define the type of data to be shared between OSCU/VSCU and CIS. They are sent in XML format. The data flow transmission should be schedule to a maximum of 15 min.

Tag	Description
------------	--------------------

<CMD>	<ol style="list-style-type: none"> 1. SEND_RECEIPT: Used when OSCU/VSCU sends to Authority Server one or many <i>Receipt</i> records. 2. SEND_RECEIPTITEM: Used when OSCU/VSCU sends to Authority Server one or many <i>Receipt Item</i> records. 3. SEND_PURCHASE: Used when OSCU/VSCU sends to Authority Server one or many <i>Purchase</i> records. 4. RECV_PURCHASEITEM: Used when OSCU/VSCU receives one or many <i>PurchaseItem</i> records from the Authority Server. 5. SEND_PURCHASEITEM: Used when OSCU/VSCU sends to Authority Server one or many <i>Purchase Item</i> records. 6. SEND_INVENTORY: Used when OSCU/VSCU sends to Authority Server one or many <i>Current Stock</i> records. 7. SEND_ITEM: Used when OSCU/VSCU sends to Authority Server one or many <i>Item description</i> records. 8. RECV_ITEM: Used when OSCU/VSCU receives one or many <i>Item description</i> records from the Authority Server. 9. RECV_IMPORT_ITEM: Used when OSCU/VSCU receives one or many <i>Importation</i> records from the Authority Server. 10. SEND_IMPORT_ITEM: Used when OSCU/VSCU sends one or many <i>Importation</i> record confirmations to the Authority Server. 11. RECV_SYSCODECLS: Used when OSCU/VSCU receives one or many <i>System Code Classification</i> records from the Authority Server. 12. RECV_SYSCODE: Used when OSCU/VSCU receives one or many <i>System Code</i> records from the Authority Server. 13. RECV_TAXPAYER: Used when OSCU/VSCU receives one or many <i>Taxpayer</i> records from the Authority Server.
<tin>	Taxpayer Identification Number owning the OSCU/VSCU

Each <DATA> tag contains different types of tags depending on the value in <CMD> as described below:

	Tag name	Description	Sample data
	taxRateD	Tax rate D	0
	totTaxablAmtA	Total taxable amount A	0
	TotTaxablAmtB	Total taxable amount B	295000
	TotTaxablAmtC	Total taxable amount C	0
	totTaxablAmtD	Total taxable amount D	0
	totTaxablAmtE	Total taxable amount E	0
	totTaxA	Total tax amount A	0
	totTaxB	Total tax amount B	45000
	totTaxC	Total tax amount C	0
	totTaxD	Total tax amount D	0
	totTaxE	Total tax amount E	0
	totTax	Total Tax amount	45000

totAmt	Total amount	295000
rcptDt	Invoice date	21062017131534 (DDMMYYYYHHMMSS)
sdcRcptNo	CU invoice number	285
totSdcRcptNo	CU invoice number	285
internalData	CU invoice Internal data	G7ZTMX4DSSAPNR5C6UTSJYKRNA
signature	CU invoice signature	OHYYSNKC2XQ2N3AM
journal	Electronic journal	[RECEIPT TEXT]
regusrId	Register User id	2
regusrNm	Register user name	Test
rptNo	Report number	2
regDt	Send date	2017-06-21 13:15:35

24.8.2. For <CMD>value = SEND_RECEIPTITEM

Tag name	Description	Sample data
invId	Invoice ID	12
bhfId	Branch ID	00
itemSeq	Item sequence	1
itemClsCd	Item Classification Code	3026530000
itemCd	Item Code	KE2BEXUXXX0000001
itemNm	Item Name	Bar 12mm
bencId	Customer PIN number	A999999999Z
pkgUnitCd	Packaging unit code	BE (Sys Code:17)
pkgQty	Packaging quantity	0
qtyUnitCd	Quantity unit code	U(Sys Code:10)
qty	Quantity	50
untpc	Unit price	5900
splpc	Supplier price	295000
dcRate	Discount rate	0
dcAmt	Discount amount	0
taxablAmt	Taxable amount	295000
taxTyCd	Tax type code	B(Sys Code:4)
tax	Tax amount	45000
totAmt	Total amount	295000

24.8.3. For <CMD>value = RECV_PURCHASE

The request for the <CMD> RECV_PURCHASE doesn't require the data. However its response can contain zero or many rows.

Tag name	Description	Sample data
InvId	Invoice ID	251
bhfId	Branch ID	00
bencId	Customer PIN	A999999999Z
bencSdcId	Supplier CU ID	KRACUCCXXXXXXXXX
regTyCd	Registration Type code -M: Manual -A: Automatic	M
refId	Reference Id (Supplier invoice number)	2
payTyCd	Payment Type Code	01
invStatusCd	Invoice status code	02
ocde	Transaction Date	20161219
validDt	Valid Date	2016-12-19 09:05:12
CancelReqDt	Cancel Request Date	2016-12-19 09:05:12
canceledDt	Cancelled Date	2016-12-19 09:05:12

cancelTyCd	Cancel Type Code	
refundDt	Refund Date	2016-12-19 09:05:12
totNumItem	Total number item	1
totTaxablAmtA	Total taxable amount A	0
totTaxablAmtB	Total taxable amount B	630000
totTaxablAmtC	Total taxable amount C	0
totTaxablAmtD	Total taxable amount D	0
totTaxablAmtE	Total taxable amount E	0
totTaxA	Total tax A	0
totTaxB	Total tax B	96101.70
totTaxC	Total tax C	0
totTaxD	Total tax D	0
totTaxE	Total tax E	0
totSplpc	Total Supplier Amount	630000
totTax	Total Vat amount	96101.70
totAmt	Total Amount	630000
remark	Remark	[FREE TEXT]
regusrId	Register user ID	Teller
regDt	Register Date	20161219171600

24.8.4. For <CMD>value = SEND_PURCHASE

Tags in <DATA> with a corresponding sample value

	Tag name	Description	Sample data
Row (1..n)	table	Target table	TRNPURCHASE
	actionCd	Target data processing	ACT – INSERT
	InvId	Purchase ID	251
	bhfId	Branch ID	00
	bcncId	Supplier PIN	P123456789Z
	bcncNm	Supplier Name	TAXPAYER X
	bcncSdcId	Supplier CU Id	KRACCXXXXXXXXXX
	regTyCd	Registration Type Code	M
	refId	Reference Id	1
	payTyCd	Payment type code	02
	Tag name	Description	Sample data
	invStatusCd	Invoice Status Code	02
	ocde	Transaction date	20161219
	validDt	Valid Date	2016-12-19 09:05:12
	cancelReqDt	Cancel Request Date	2016-12-19 09:05:12
	CancelDt	Cancel Date	2016-12-19 09:05:12
	refundDt	Refund Date	2016-12-19 09:05:12
	cancelTyCd	Cancel Type Date	
	totNumItem	Total number item	1
	totTaxablAmtA	Total taxable amount A	0

totTaxablAmtB	Total taxable amount B	630000
totTaxablAmtC	Total taxable amount C	0
totTaxablAmtD	Total taxable amount D	0
totTaxablAmtE	Total taxable amount E	0
totTaxA	Total tax A	0
totTaxB	Total tax B	96101.70
totTaxC	Total tax C	0
totTaxD	Total tax D	0
totTaxE	Total tax E	0
totSplpc	Total Supplier Amount	630000
totTax	Total Vat amount	96101.70
totAmt	Total Amount	630000
remark	Remark	[FREE TEXT]
regusrId	Register ID	Teller
regDt	Register date	20161219171600

24.8.5. For <CMD>value = RECV_PURCHASEITEM

The request for the <CMD> RECV_PURCHASEITEM doesn't require the data. However its response can contain zero or many rows.

21.12.4.1 Tags in <DATA> with a corresponding sample value of response for <CMD>=RECV_PURCHASEITEM

Tag name	Tag description	Sample data
invId	Invoice ID	251
bhfid	Branch ID	00
itemSeq	Item sequence	1
itemClsCd	Item Classification Code	3026530000
itemCd	Item Code	KE2BEXUXXX0000002
itemNm	Item Name	Bar 10 mm
bcncItemClsCd	Supplier item class code	3026530000
bcncItemCd	Supplier item code	17350053850030
bcncItemNm	Supplier item name	10 mm Bar
pkgUnitCd	Packaging unit code	BE(Sys Code:17)
pkgQty	Packaging quantity	10
qtyUnitCd	Quantity unit code	U(Sys code:10)
qty	Quantity	150
expirDt	Expiry date	20200801
untpc	Unit price	4200
splpc	Supplier price	630000
dcRate	Discount rate	0
dcAmt	Discount amount	0
taxablAmt	Taxable amount	630000
taxTyCd	Tax type code	B(Sys Code:4)

tax	Tax amount	96101.70
totAmt	Total amount	630000
regTyCd	Registration type code	M

24.8.6. For <CMD>value = SEND_PURCHASEITEM

Tags in <DATA> with a corresponding sample value

Tag name	Tag Description	Sample data
invId	Invoice ID	251
bhfId	Branch ID	00
refId	Reference ID	1
itemSeq	Item sequence	1
itemClsCd	Item Classification Code	3026530000
itemCd	Item Code	KE2BEXUXXX0000002
itemNm	Item Name	Bar 10 mm
bcncItemClsCd	Supplier item class code	3026530000
bcncItemCd	Supplier item code	17350053850030
bcncItemNm	Supplier item name	10 mm Bar
pkgUnitCd	Packaging unit code	BE(Sys Code:17)
pkgQty	Packaging quantity	10
qtyUnitCd	Quantity unit code	U(Sys code:10)
qty	Quantity	150
expirDt	Expiry date	20200801
untpc	Unit price	4200
splpc	Supplier price	630000
dcRate	Discount rate	0
dcAmt	Discount amount	0
taxablAmt	Taxable amount	630000
taxTyCd	Tax type code	B(Sys Code:4)
tax	Tax amount	96101.70
totAmt	Total amount	630000

24.8.7.

regTyCd	Registration type code	M
---------	------------------------	---

For <CMD>value = SEND_INVENTORY

24.8.7.1. Tags in <DATA> with a corresponding sample value

Tag name	Description	Sample data
Pin	Personal Identification Number	P123456789Z
bhfId	Branch ID	00
itemClsCd	Item Classification Code	3026530000
itemCd	Item Code	KE2BEXUXXX0000001
qty	Quantity	120
updDt	Update date	2018-02-05 13:02:52

24.8.8. For <CMD>value = SEND_ITEM

24.8.8.1. Tags in <DATA> with a corresponding sample value

	Tag name	Description	Sample data
	itemCd	Item Code	KE2BEXUXXX0000028
	itemClsCd	Item classification code	5612180500
	itemNm	Item name	Bar 15mm
	itemTyCd	Item type code	2
	itemStd		
	OrgplceCd	Origin country	KE
	PkgUnitCd	Packaging unit code	JY
	QtyUnitCd	Quantity unit code	KG
	AdiInfo	Addition information	0001
	InitlWhUntpc	Initial unit price	2000
	InitlQty	Beginning stock	10
	Tag name	Description	Sample data
	AvgWhUntpc	Average unit price	2000
	dfltDlUntpc	Sale price	2000
	taxTyCd	Tax type code	B
	rm	Remark	[FREE TEXT]
	useYn	Item usage on market	Y
	regusrId	Register username	User1
	regDt	Register date	20180301144328 (YYYYMMDDHHmmSS)
	updusrId	Update username	User1
	updDt	Update date	20180301144328 (YYYYMMDDHHmmSS)
	safetyQty	Security stock quantity	0
	useBarcode	Use of barcode	N
	changeYn	Change yes/no	N
	useAdiYn		Y

24.8.9. For <CMD>value = RECV_ITEM

The request for the <CMD> RECV_ITEM doesn't require any row. However its response can contain zero or many rows.

24.8.9.1. Tags in <DATA> with a corresponding sample value of response for <CMD>=RECV_ITEM

	Tag name	Tag Description	Sample data
Row (1..n)	Table	Target table	ITMITEM
	actionCd	Target data processing	ACT – INSERT
	itemCd	Item Code	KE2JYXLTR0000016
	itemClsCd	Item classification code	5015151300
	itemNm	Item name	zahabu 3 litres

itemTyCd	Item type code	2
itemStd		
OrgplceCd	Origin country	KE
PkgUnitCd	Packaging unit code	JY
QtyUnitCd	Quantity unit code	LTR
taxTyCd	Tax type code	B
useYn	Item usage on market	Y
regusrId	Register username	User1
regDt	Register date	2017-04-24 16:18:00 (YYYY-MM-DD HH:mm:ss)
useBarcode	Use of barcode	N
changeYn	Change yes/no	N
useAdiYn		Y

24.8.10. For <CMD>value = RECV_IMPORT_ITEM

The request for the <CMD> RECV_IMPORT_ITEM doesn't require any row. However its response can contain zero or many rows.

24.8.10.1. Tags in <DATA> with a corresponding sample value of response for <CMD>=RECV_IMPORT_ITEM

	Tag name	Description	Sample data
	operationCd	Operation code	1141093
	dclrtDate	Declaration date	20160826
	itemSeq	Item Sequence	1
	hsCd	HS Code	84715000000
	itemNm	Item name	ETIMS INCOTEX 171 (2 IN 1)
	orgplceCd	Origin Code	BG
	expNatCd	Export Country Code	BG
	pkgQty	Packaging quantity	30
	qty	Quantity	298
	qtyUnited	Quantity unit code	NMB
	grossWt	Gross Weight	434
	netWt	Net weight	434
	supplierNm	Supplier name	AL-AZHAR AUTO SPARE PARTS P.O BOX 81694 DEIRA DUBAI-UNITED ARAB EMIRATES
	agentNm	Agent name	HATARI CLEARING AGENCY LTD
	invAmtFcx	Invoice Amount in foreign currency	34800
	invCurCd	Invoice currency	USD
	invCurRate	Exchange rate	804

24.8.11. For <CMD>value = SEND_IMPORT_ITEM

24.8.11.1. Tags in <DATA> with a corresponding sample value

	Tag name	Description	Sample data
--	----------	-------------	-------------

operationCd	Operation code	1141093
dclrtDate	Declaration date	20160826
itemSeq	Item sequence	1
approvalStatusCd	Approval status code	3
itemClsCd	Item classification code	
itemCd	Item code	
commF	Communication status	Y
remark	remark	(FREE TEXT)

24.8.12. For <CMD>value = RECV_SYSCODECLS

The request for the <CMD> RECV_SYSCODECLS doesn't require any row. However its response can contain zero or many rows.

24.8.12.1. Tags in <DATA> with a corresponding sample value of response for <CMD>=RECV_SYSCODECLS

	Tag name	Tag description	Sample data
Row (1..n)	table	Target table	SYSCODECLS
	actionCd	Target data processing	ACT – INSERT
	codeCls	Code classification	39
	codeClsNm	Classification name	Warning Type
	codeClsDc	Classification description	Different warning message
	useYn	In use Yes/No	Y

24.8.13. For <CMD>value = RECV_SYSCODE

The request for the <CMD> RECV_SYSCODE doesn't require any row. However its response can contain zero or many rows.

24.8.13.1. Tags in <DATA> with a corresponding sample value of response for <CMD>=RECV_SYSCODE

	Tag name	Tag description	Sample data
	codeCls	Code classification	38
	code	Classification name	R
	codeNm	Classification description	Refund
	codeDc	Code description	Invoice refund
	useYn	In use Yes/No	

24.8.14. For <CMD>value = RECV_TAXPAYER

The request for the <CMD> RECV_TAXPAYER doesn't require any row. However its response can contain zero or many rows.

24.8.14.1. Tags in <DATA> with a corresponding sample value of response for <CMD>=RECV_TAXPAYER



Tag name	Tag description	Sample data
Pin	Personal Identification Number	P123456789Z
bizCnd	Business activity	Wholesaler of different products
province	County	NAIROBI CITY
district	Sub-County	WESTLANDS
sector	Tax Locality	West of Nairobi
locDc	Physical Location	Chiromo Lane