

ArrowSys – POS Integration for third-parties  
v0.1

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## Change history

Version	Date	Author	Changes
V0.1	2019-09-04	Marek Šíp	English translation

### Abbreviations

**FDSR** – Financial Directorate of the Slovak Republic

**CHDU** – chránené dátové úložisko – certified secure storage for receipts

**POS** – Point of Sale

**ORP** – Online registračná pokladnica – Advanced point of sale solutions that need to pass Slovak Tax Office certification.

**VRP** – Virtuálna registračná pokladnica – Virtual cash register, provided free of charge by Slovak Tax Office.

**EET** – Elektronická evidencia tržeb – Electronic registry of sales

**TP** – third-party

## Introduction

In order to simplify the fiscalization process to third parties (TP) we have adjusted the POS solutions to communicate with external API. In this way, POS system periodically fetches data from TP's API. When new (not yet fiscalized) receipt is received, the POS then registers the sale according to local fiscal requirements. That could be sending receipt to Online Tax Office registry and/or storing the receipt data to certified receipt storage. After the fiscalization process is finished, the POS sends the unique fiscal codes back to the TP's API. TP then provides their receipt with the fiscal codes.

### **About ArrowSys**

ArrowSys is software provider of accounting & POS solutions based in Tábor, Czech Republic, founded in 1992. We provide range of software solutions from Fiscal POS, Accounting, Invoicing, Stock keeping to dedicated systems for agriculture. Our solutions are used in Czech Republic, Slovakia and Germany by more than 7000 business.

## Cash register requirements in Slovakia

The new fiscal law requires businesses to register sales in eKasa fiscalization system beginning 1<sup>st</sup> January 2020. The government supports entrepreneurs and provides free of charge cash register system “VRP”. Functions of VRP are usually sufficient for micro or small businesses. Companies seeking customized POS solutions have a choice to use “ORP” cash registers. Such cash registers are designed by software companies and must pass FDSR certification consisting of:

- Implementing “CHDU” – physical secure storage in a form of USB/SD that permanently stores receipt records.
- Passing around 40 tests provided by FDSR verifying that POS has all functionalities to register sales, cash operations and POS location.

CHDU providers used by ArrowSys

CHDU USB module	
Swissbit SD	

## Cash register requirements in Czech Republic

Businesses are required to register sales to online Sales registry system “EET” by sending each receipt to Tax Office Web Service SOAP API.

# Cash register requirements Germany

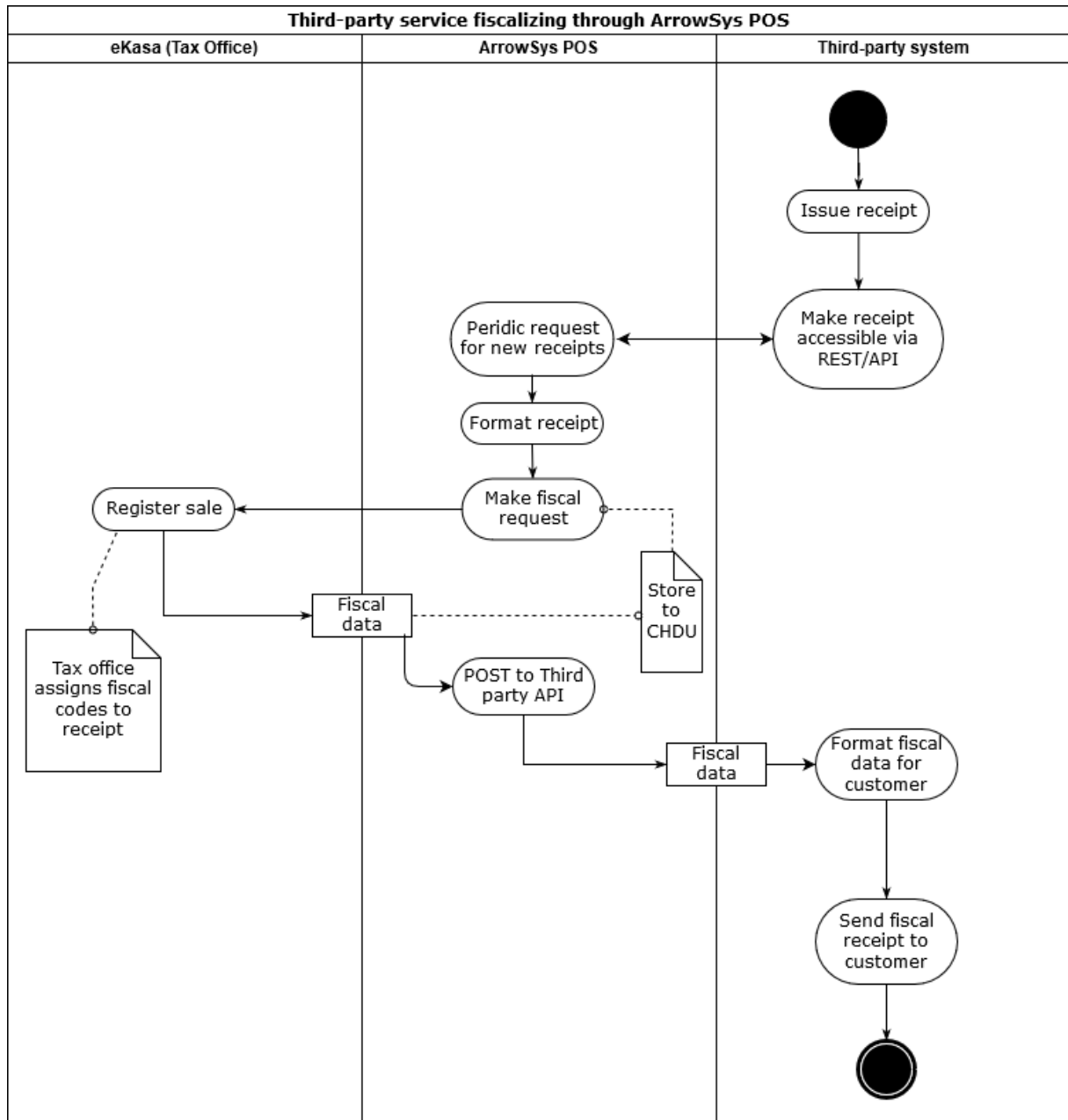
Fiscal law requires business to register sales in certified TSE (Technischen Sicherheitseinrichtung) devices. TSE device is storing the receipt data on USB stick or SD card. With each storage request, the receipt is referencing the previous one and making a continuous chain of digitally signed receipts. The receipts are **not send online** to Tax Office.

### TSE providers used by ArrowSys

Swissbit SD	
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## Integration diagram

ArrowSys POS is installed on Windows/Android device where it can run as a background service. For Slovakia the POS needs to have accessibility to attached secure fiscal module “CHDU” through USB interface. The end device can be dedicated cash register or central cash register server.





## Communication protocol

Example of third-party receipt data that ArrowSys POS gets from TP API.

Sample url: <http://provider-sample.com/api/ekasa/orders>

```
[
  {
    "items": [
      {
        "name": "Pizza",
        "price_including_vat": "5.00",
        "count": 1,
        "vat": 20,
        "plu": "444030"
      },
      {
        "name": "Burger",
        "price_including_vat": "5.50",
        "count": 1,
        "vat": 20,
        "plu": "528760"
      }
    ],
    "order_id": "6131098059",
    "type": "K"
  },
  {
    "items": [
      {
        "name": "Coke",
        "price_including_vat": "5.00",
        "count": 1,
        "vat": 20,
        "plu": "444030"
      },
      {
        "name": "Burger",
        "price_including_vat": "5.50",
        "count": 1,
        "vat": 20,
        "plu": "528760"
      }
    ],
    "order_id": "6811862287",
    "type": "K"
  }
]
```

Body	array of receipts to be fiscalized
Items	array of receipt items to register
Name	name of the receipt item
Price_including_vat	price of item
Count	quantity
Vat	VAT percentage

	<ul style="list-style-type: none"> <li>- 10/20 for Slovakia</li> <li>- 10/15/21 for Czech Republic</li> </ul>
Plu	PLU code
Order_id	Unique identification of order
Type	"K" for sale. "Z" for void receipt.

#### Fiscal data send to TP

```
{
  sig_code_cz: string
  secure_code_cz: string
  online_code_cz: string
  sig_code_sk: string
  secure_code_sk: string
  online_code_sk: string
  timestamp: int
}
```

sig_code_cz	Signature code for offline receipts in Czech.
secure_code_cz	Secure code for receipts in Czech.
online_code_cz	Online code obtained from Czech Tax Office after successfully registering the sale to their system.
sig_code_sk	Signature code for offline receipts in Slovakia.
secure_code_sk	Secure code for receipts in Slovakia.
online_code_sk	Online code obtained from Slovakia Tax Office after successfully registering the sale to their system.
timestamp	UNIX timestamp when the receipt was created.

## Certificate from FDSR

Links public list of FDSR with certified solutions:

- <https://www.financnasprava.sk/sk/podnikatelia/dane/ekasa/vyrobcovia-ekasa>
- [https://www.financnasprava.sk/\\_img/pfsedit/Dokumenty\\_PFS/Podnikatelia/eKasa/2019/2019.09.02\\_dat\\_ulozisk.pdf](https://www.financnasprava.sk/_img/pfsedit/Dokumenty_PFS/Podnikatelia/eKasa/2019/2019.09.02_dat_ulozisk.pdf)

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## Implemented by

<https://orderox.sk/> - Digital waiter sending orders directly from smartphone. Payment is processed through credit card by Orderox.

<http://www.speedlo.cz/> - Online order system for door-to-door food delivery