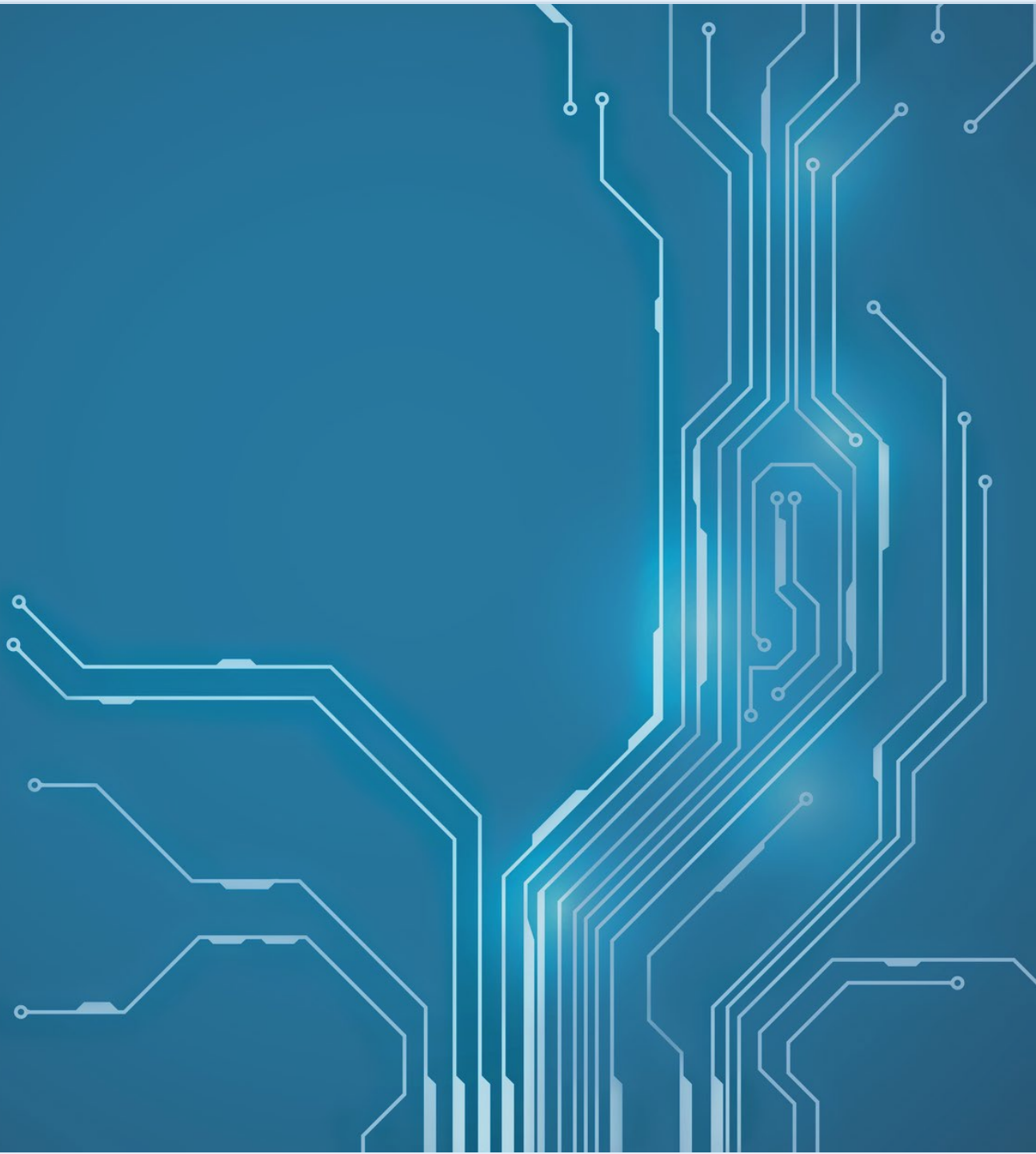inducta++

iVOMS
Voucher management system

What is iVoms?

High-performance robust voucher management system providing support for the whole voucher lifecycle, from voucher generation, starting from voucher delivery to the printing company (or system for electronic distribution of vouchers) and voucher activation by end user request.

It includes flexible loyalty and campaign possibilities that Operator can use to effectively execute its marketing activities.

iVoms is **prepaid system, independent, and can be integrated with all main billing and prepaid system vendors.** Additionally, it is independent from recharging request channel and supports IVR, USSD, SMS, WEB, WAP and generic SOAP interfaces for recharging requests.

Features

- Voucher generation
- Voucher housekeeping
- Voucher distribution to Printing company and electronic distribution system (e.g. iRecharge)
- Voucher activation via system integrated over SMPP and SOAP protocol
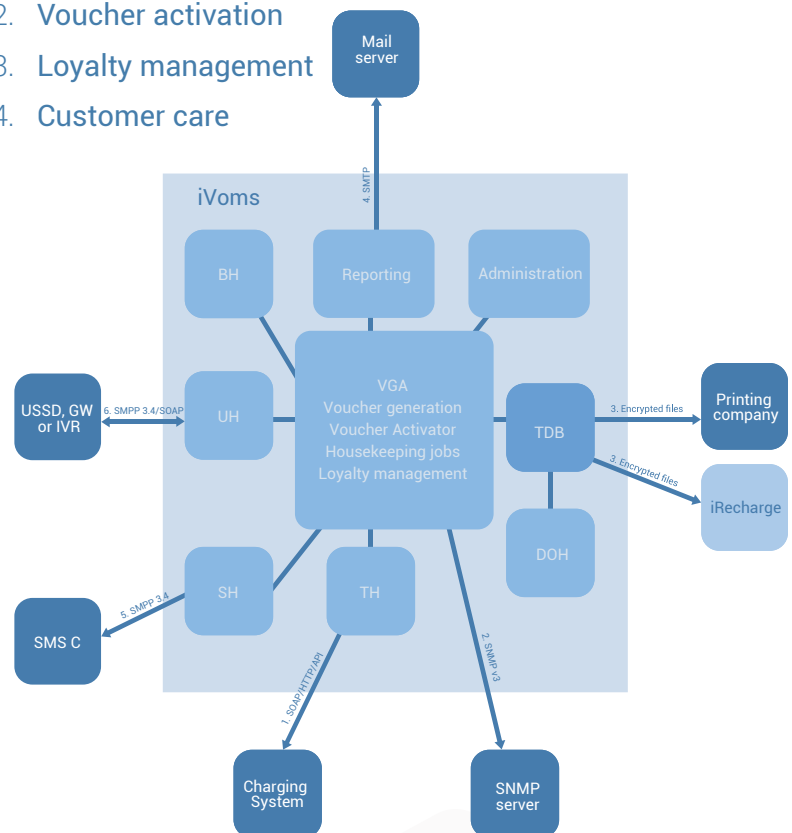
    USSD

    IVR

    Web

    SMS

    WAP

- Expiry date management
- Promotion campaigns
- Loyalty campaigns

How does iVoms work?

iVoms is providing following functionalities:

1. Voucher administration
   - Generation
   - Distribution
   - Housekeeping
2. Voucher activation
3. Loyalty management
4. Customer care

1. **Charging System** – recharging of the prepaid account in Top Up transactions

2. **O&M** - SNMP based interface for monitoring and alarms

3. **Printing house and iRecharge** – encrypted files with voucher data

4. **Mail server** – SMTP based interface for sending automatic reports and notifications

5. **SMS Center** – SMPP 3.4 based interface for receiving request from prepaid user containing Hidden Recharge Number (HRN)

6. **External activation gateways** – Generic SMPP/SOAP interface for connecting with external systems interacting with users and requesting Voucher activation from iVoms.
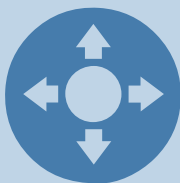
Functionalities of iVoms system 1/3

Voucher administration

Voucher generation

Voucher generation is initiated on User request over iVoms Administrator GUI based on Web technology. **User needs to define voucher type, number of vouchers to be generated and Loyalty parameters connected to the voucher (e.g. extra minutes, top up extension period, free service counters, tariff change)**. Vouchers are generated, encrypted and saved in iVoms database.

Distribution

Distribution of vouchers towards external partners is done over iVoms Administrator GUI based on Web technology. Files are encrypted with PGP and keys are exchanged using offline media in advance with external partners (e.g. USB Stick, …). After export voucher's status is changed to "exported".
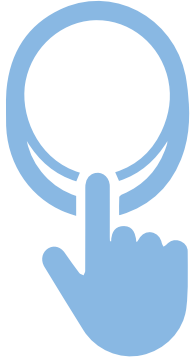
Housekeeping of vouchers is managed by two main modules:

- **Housekeeping jobs** - automatic procedures scheduled to execute periodically and performing actions like voucher archiving.
- **Housekeeping GUI** – is available via iVoms
- **Administrator GUI** - that enables User manipulation with vouchers (e.g. changing status, parameters, …)

iVoms supports following voucher statuses:

- **Generated** – voucher is generated and stored in iVoms database
- **Exported** – voucher is exported from iVoms database for printing or electronic distribution. When in this status, it is possible to activate teh voucher.
- **Blocked** – voucher is blocked before activation
- **Pending** – voucher activation request is received and voucher triggered recharging transaction that is pending (in progress)
- **Activated** – voucher is activated and connected transaction has finished.

Functionalities of iVoms system 2/3

Voucher activation

Using available voucher activation channels, voucher activation request is send to iVoms. **Voucher activation channel can be USSD, IVR, Web, WAP, SMS or Customer care.**
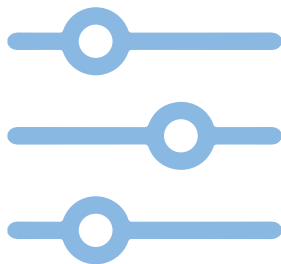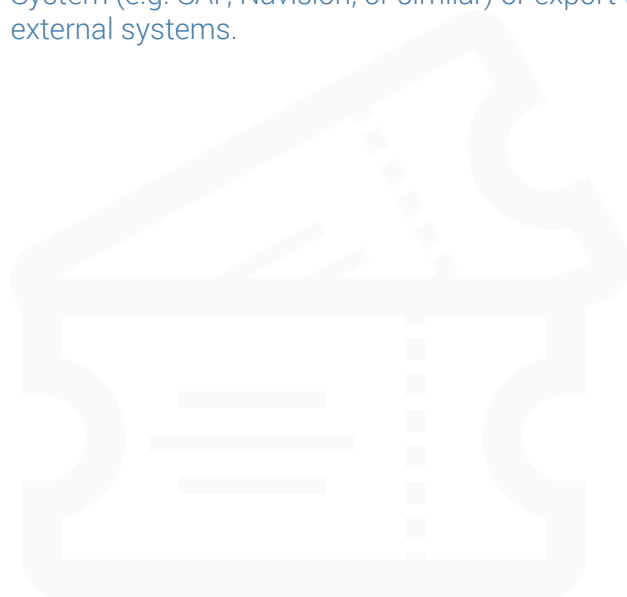
Coming to iVoms, each voucher activation request contains MSISDN of the prepaid subscriber and voucher Hidden Recharge Number (HRN). Based on HRN, voucher is selected in iVoms database or error is sent to the user in case that HRN doesn't exists or it has expired. In case that HRN is found in the database, recharging transaction is completed, based on the voucher type and loyalty parameters and sent to the billing/prepaid system.

Following parameters are set on the user account:

- Account balance
- Expiry date for the account
- Service counters value (optional, billing dependent)
- Tariff switch (optional, billing dependent)

After successful recharging - SMS message, containing information about the transaction and promotional text, can be sent to the subscriber.

Complete information about the recharging process is written in the iVoms database and is available for further analysis needed by reporting, export to Enterprise Planning System (e.g. SAP, Navision, or similar) or export to some other external systems.

Loyalty management

The iVoms system tracks all voucher activations and maintains the recharge counter per subscriber level. Same counters, combined with the time period (start and end date) make a base for a **promotion plan**. This plan also contains the target counter values.

Once counters reach the predefined value the iVoms executes additional credit recharge and/or expiry date extension for the prepaid account.

The promotion plan is defined with the following attributes:

- **Start date** and **End date**

- **Target recharge value** – minimum amount of the credit recharge that a subscriber must use in a given time period to qualify for bonus recharges.

- **Target recharge count** – minimum count of top ups bonus recharges.

- **Bonus recharge amount** – fixed amount to recharge to subscriber's prepaid account once the promotion condition is met.

- **Bonus counters recharge** – counter for free service usage is set (e.g. SMS, MMS, …)

- **Bonus expiry days** – number of days to add to account expiry date once promotion conditions are met.

- **Promotional text** – a text message that is sent to the subscriber via SMS once the prepaid account is recharged with bonus amount/expiry date update.

Customer care

Two main functionalities are available for Customer Care:

- **Query transaction status** - based on MSISDN and/or voucher serial number all available data about transaction is available for troubleshooting subscriber's problem.

- **Voucher activation** – with MSISDN of the subscriber and voucher Hidden Recharging Number (HRN), voucher activation request is initiated and activation status is returned to Customer Care Web GUI.

Advantages of using the iVoms application

- Systematic approach
- Highly secure voucher selling process
- Voucher activation control
- Increased efficiency
- High performance
- Decreased OPEX
- Increased cost-effectiveness
- Independence from recharging request channel
- Customized distribution through various channels
- Predefined profiles with role rights
- Scheduled or on demand reports

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Security

The most important security aspect of the iVoms system is **encryption of the hidden recharge number and passwords of system users**.

The iVoms is using the Rijndael symmetrical algorithm to encrypt sensitive data. The Rijndael is actually a public version of Advanced Encryption Standard which is known for its strengths as it is used around the world to encrypt top-secret documents.

When distributing files with vouchers to printing company the iVoms is using a PGP algorithm and software to protect the file content. This is the asymmetrical algorithm with two keys. One key is used for file encryption and only the matching pair key can be used for decryption.

The PGP allows iVoms and printing company to authenticate between each other and protect the file content during transfer.

Inducta is a company specialized in ICT solutions adapted to needs of our Customers from various industries.

Our portfolio consists of the following services:

ICT Consulting

Based on our experience and knowledge of the ICT (Information and Communication Technology) trends and developments, together with our understanding of Customer's business, we recommend appropriate ICT solutions to our Customers. Optionally, we select the best solution together with the Customer, depending on the current situation and business plan.
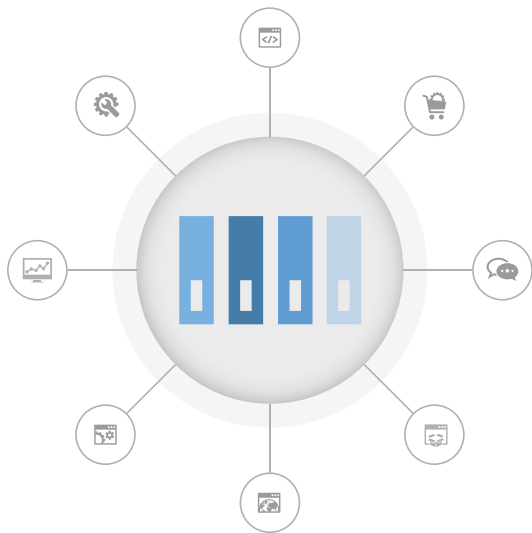
Development of ICT solutions

We design, develop and test solutions according to Customer-specific requirements. In the process we take advantage of our knowledge and experience in the field of ICT solutions architecture, which come from our work on numerous projects in various industries around the world.

Delivery of ICT solutions

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