



Smart metering in practice of the Východoslovenska distribucna

Východoslovenská distribučná, a.s. · Ing. Jozef Dudiak, PhD. · 11.4.2017

AGENDA

1

IMS general overview
in Slovakia

3

Central system IMS –
SAP - processes

2

Central system IMS –
overview of activities

4

Second phase of the
project central system IMS
in VSD a.s.



IMS in conditions of Slovakia

Categories, criteria and plans

- Decree 358/2013 determines:
 - the minimum technical specifications of the IMS
 - the deadline for the implementation of IMS in each category
 - requirements for data transfers
 - categories for the implementation of IMS

Category	Division conditions			OZE	Funcionality	Deadline for implementation
	> 4 MWh	> 15 MWh	> 30 kW/45A			
Category 1	●	●	●		Advanced	31.12.2015
Category 2	●		●		Advanced	31.12.2016
Category 3	●				Basic	31.12.2020
Category 4				●	Special	31.12.2016

- IMS – inteligent metering system

IMS in conditions of VSD a.s.

Current state

- IMS includes 100,000 delivery points in accordance with Decree 358/2013
- Implementation of IMS central into productive operation
- Pilot testing technologies PLC PRIME and G3
- R&D projects – LoRa WAN, EnergoGadget

Overview and the number of meters IMS

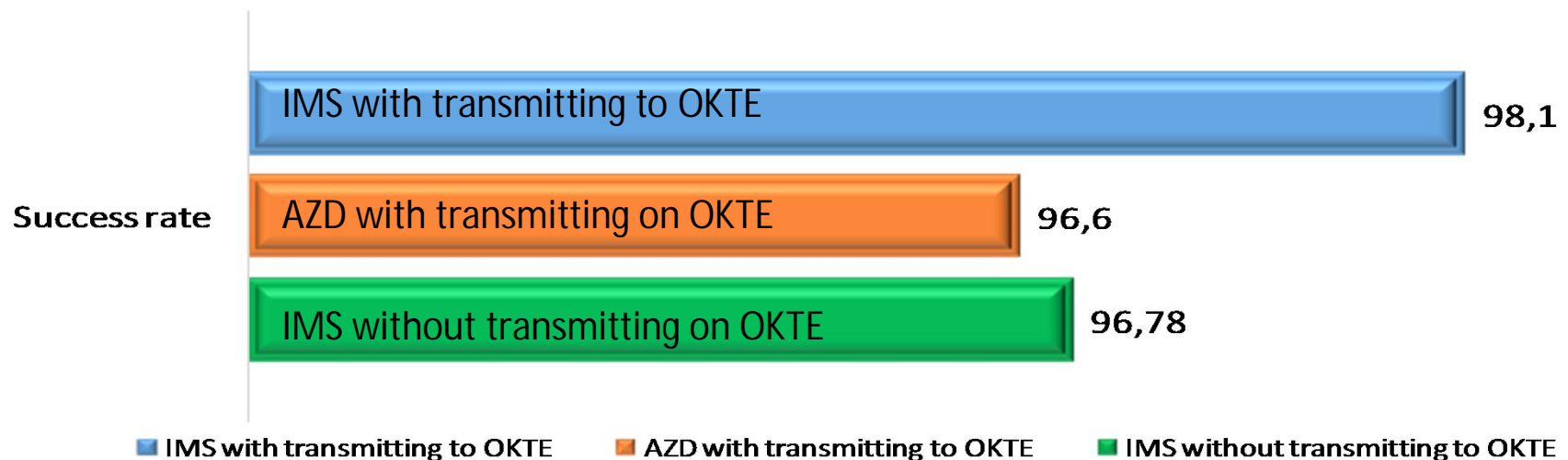
Functionality	Meter type	Installed meters	Month reading	Reading statistics
Basic	SANXING	6955	0	96,6%
Advanced	ADDAX	17907	16102	98,1%
Special	LZQJ-XC	302	302	96,5%

IMS in conditions of VSD a.s.

Success rate of collecting the daily profiles

- After the installation of IMS meter is the cleaning process in progress to remove unavailable meters
- The meters before the cleaning process aren't transmitted to OKTE

Long term success rate of collecting the daily profiles before 8:00

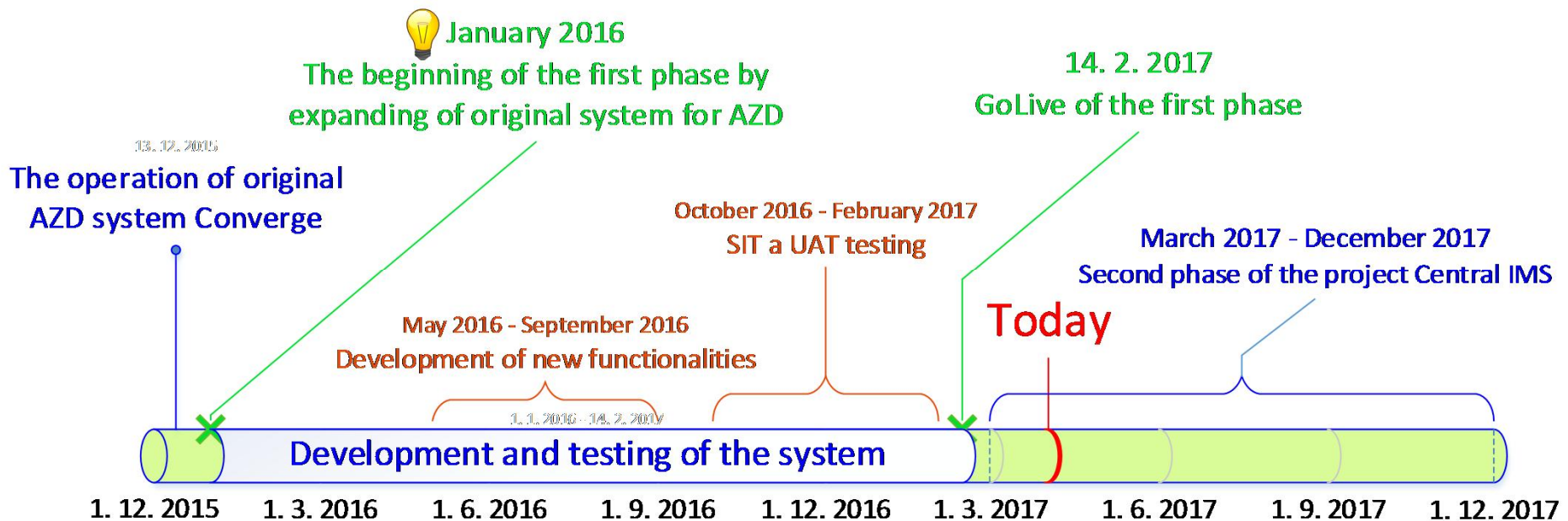


- OKTE – operator of short-term electricity market
- AZD – automated data collection - technology which is used primarily for data collection from industrial measurements

Summary of activities in project Central IMS

Project overview

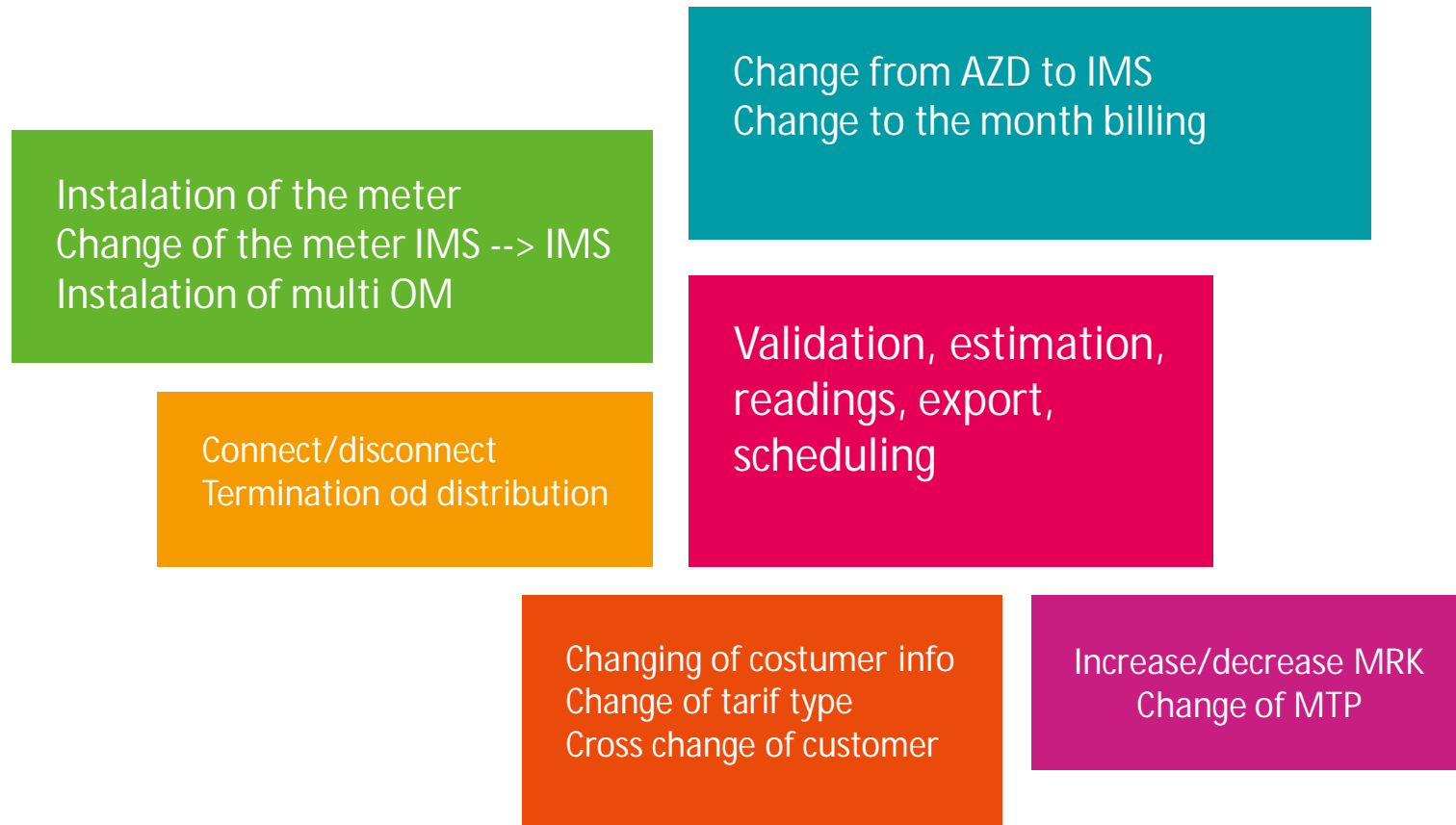
- Technical solution is based on platform of the original central for industrial measurement
- Time scale of the project for the first phase is about one year
- The necessity of compliance the legislative requirements



Summary of activities in project Central IMS

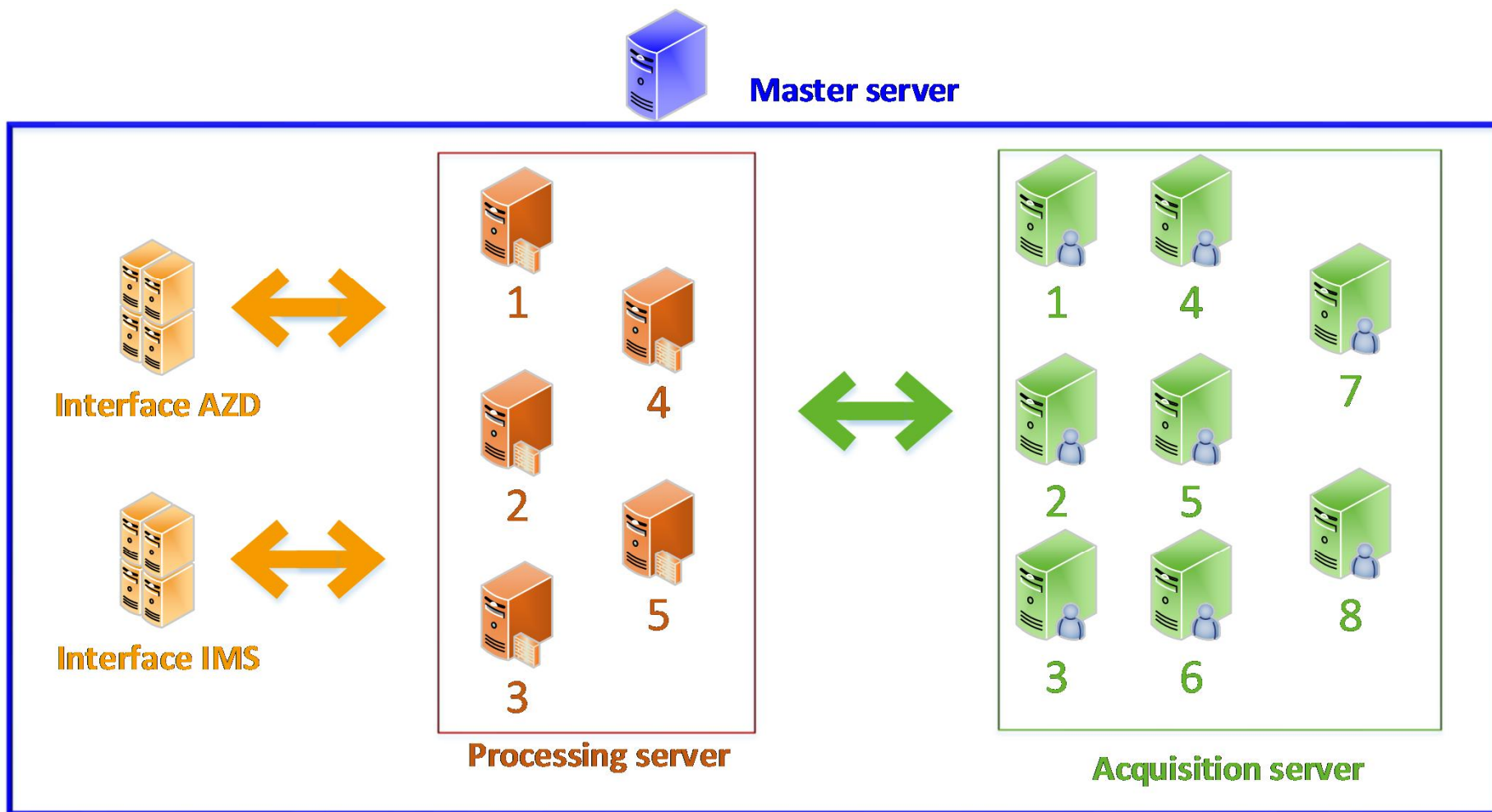
Summary of test scenarios

- In total it have been tested 200 of test scenarios



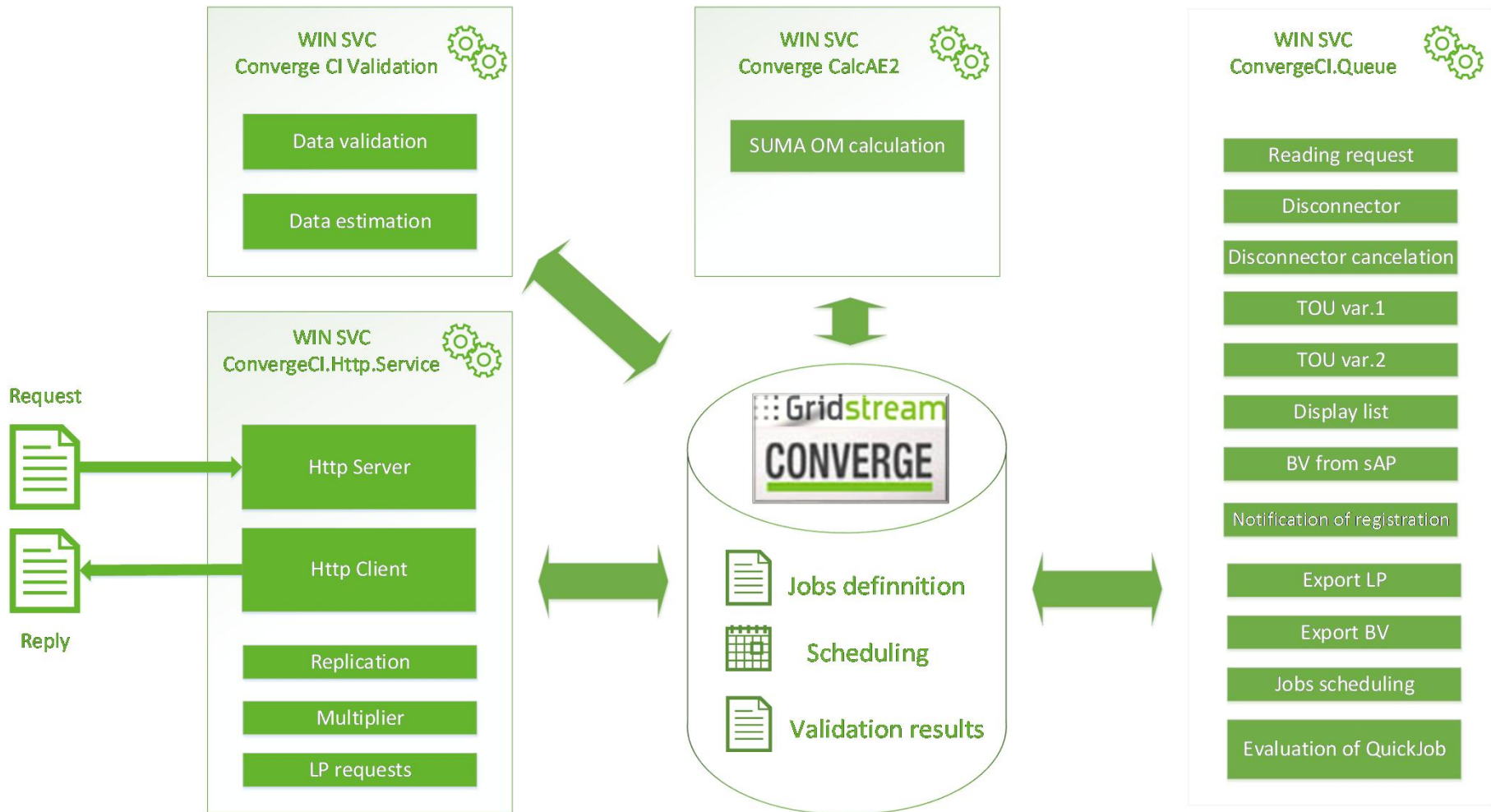
Summary of activities in project Central IMS

Composition of central system IMS



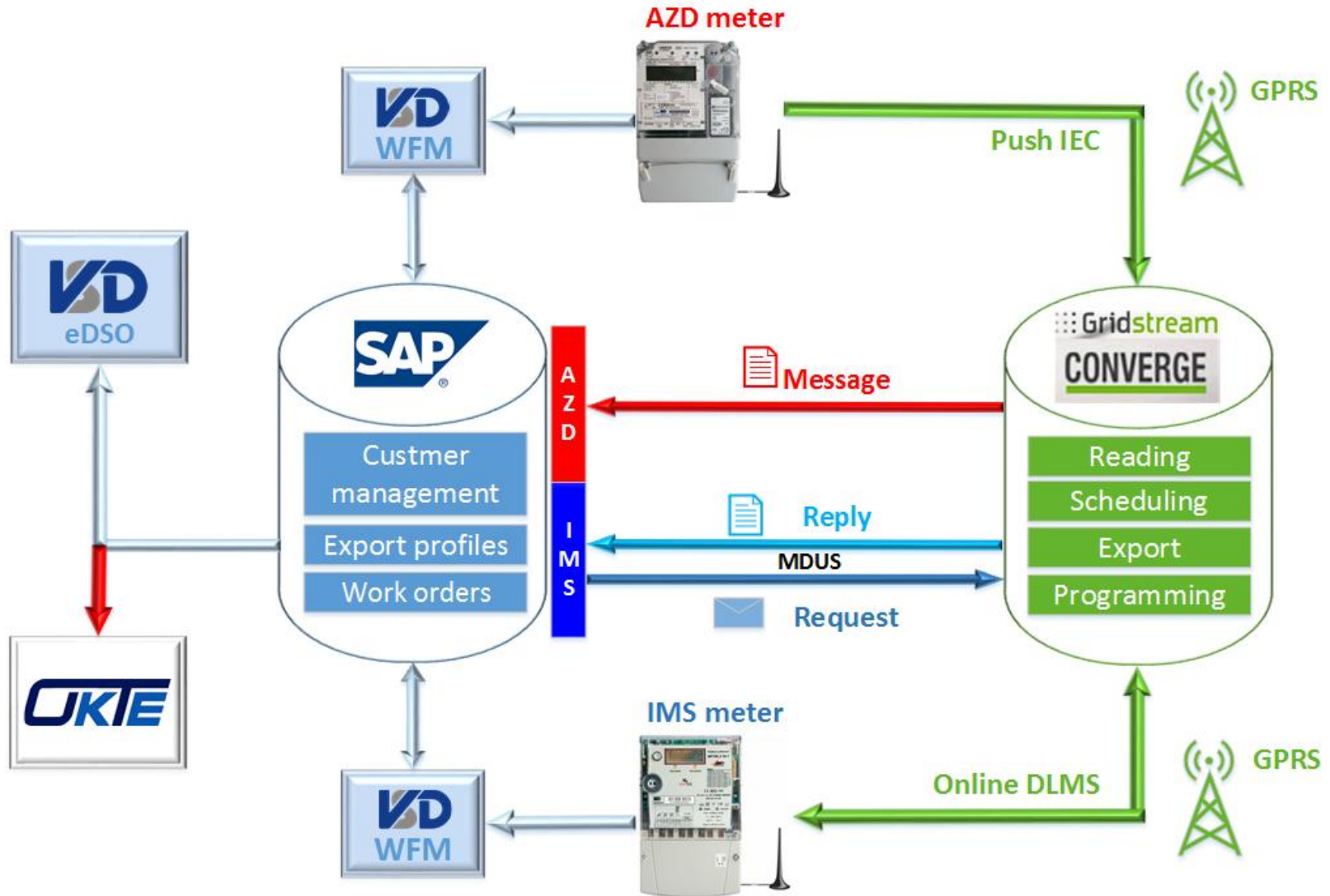
Processes SAP – Central system IMS

Overview of services



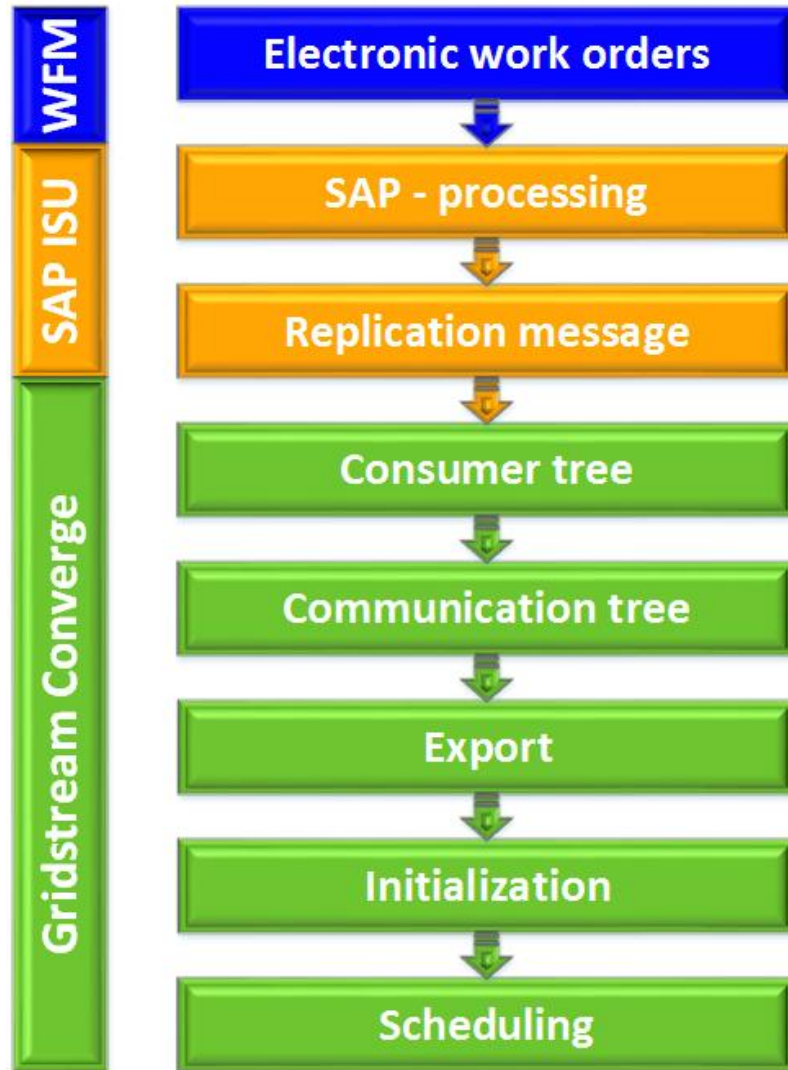
Processes SAP – Central system IMS

Implementation of IMS Converge



Processes SAP – Central system IMS

The installation process of IMS meter



Installation the meter in the field, verification of remote communication

Processing of exchange in SAP is automatic - exceptions are in manual processing

The replication message contains all the basic information of consumer tree: EIC code, equipment, profile number etc...

Creation of consumer tree is automatic, additional master data shall be transmitted additionally

The communication path is conditioned by the existence of an IP address for the device from replication messages

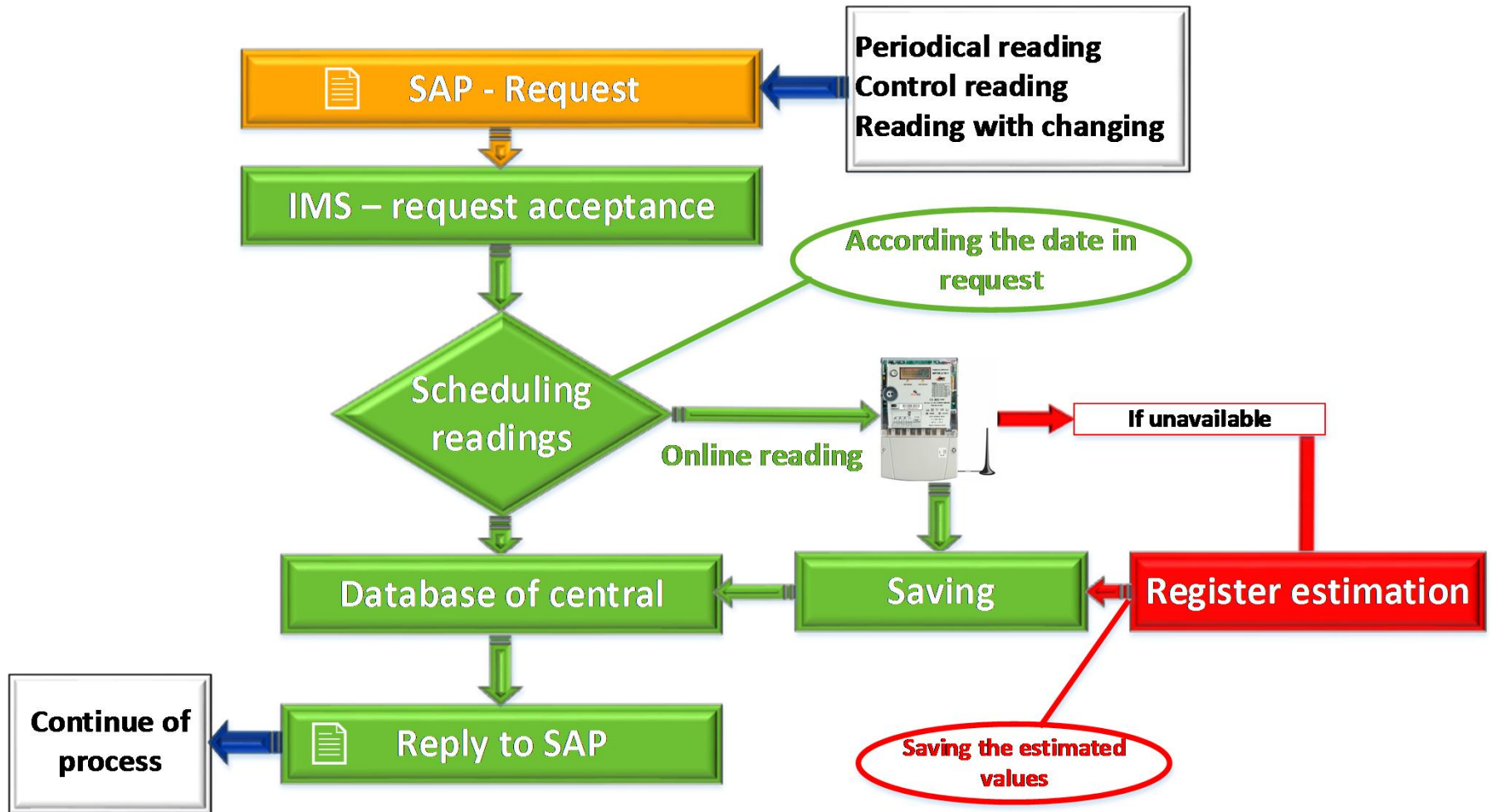
Assign profiles of IMS for virtual meter, assigning a register code from SAP

Initialization script consists of reading profile registers setting TOU, setting scrolling display, time, passwords

Classification of meter to meter reading groups by the type - scheduling readings

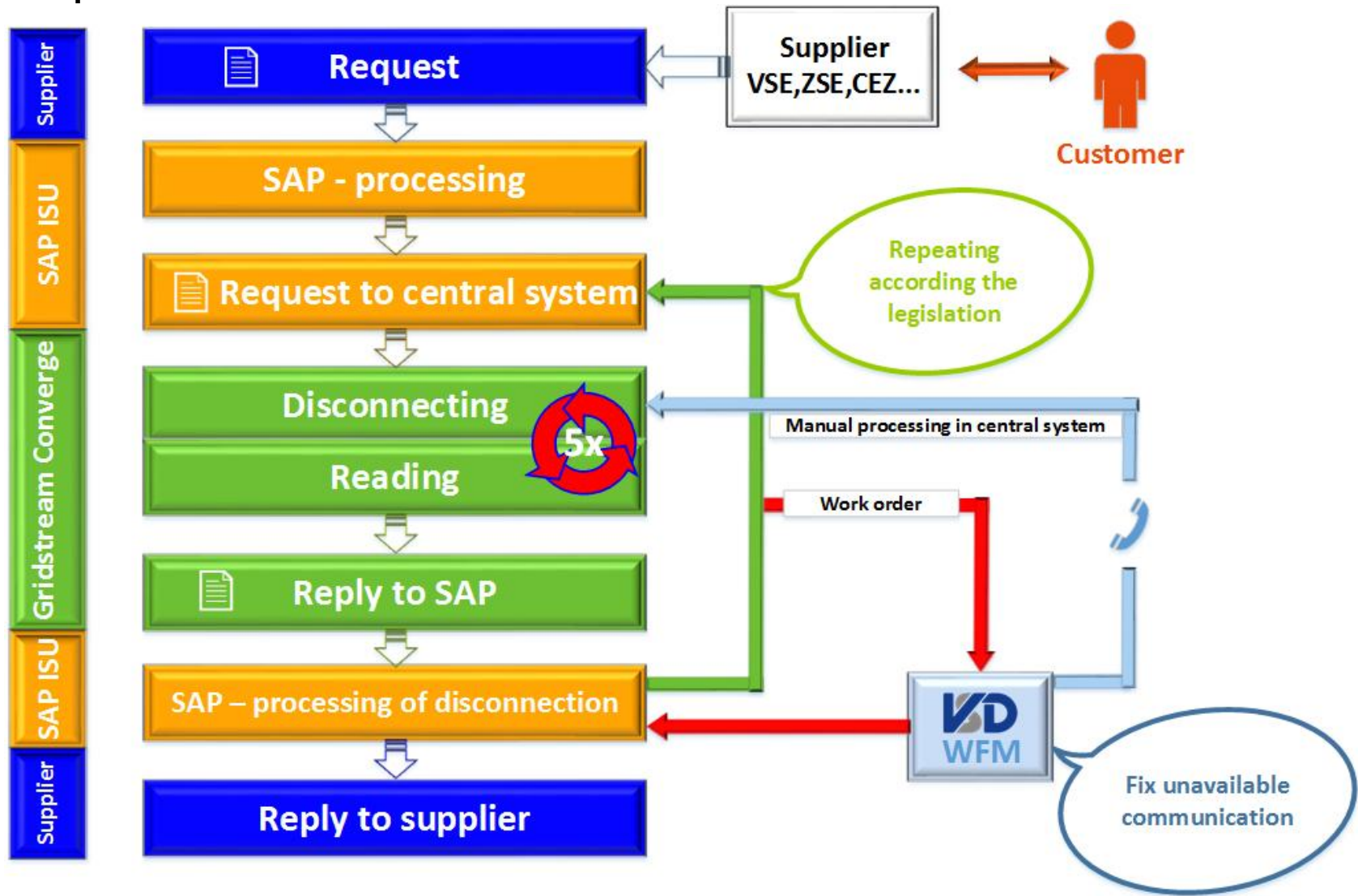
Processes SAP – Central system IMS

The reading process of IMS meter



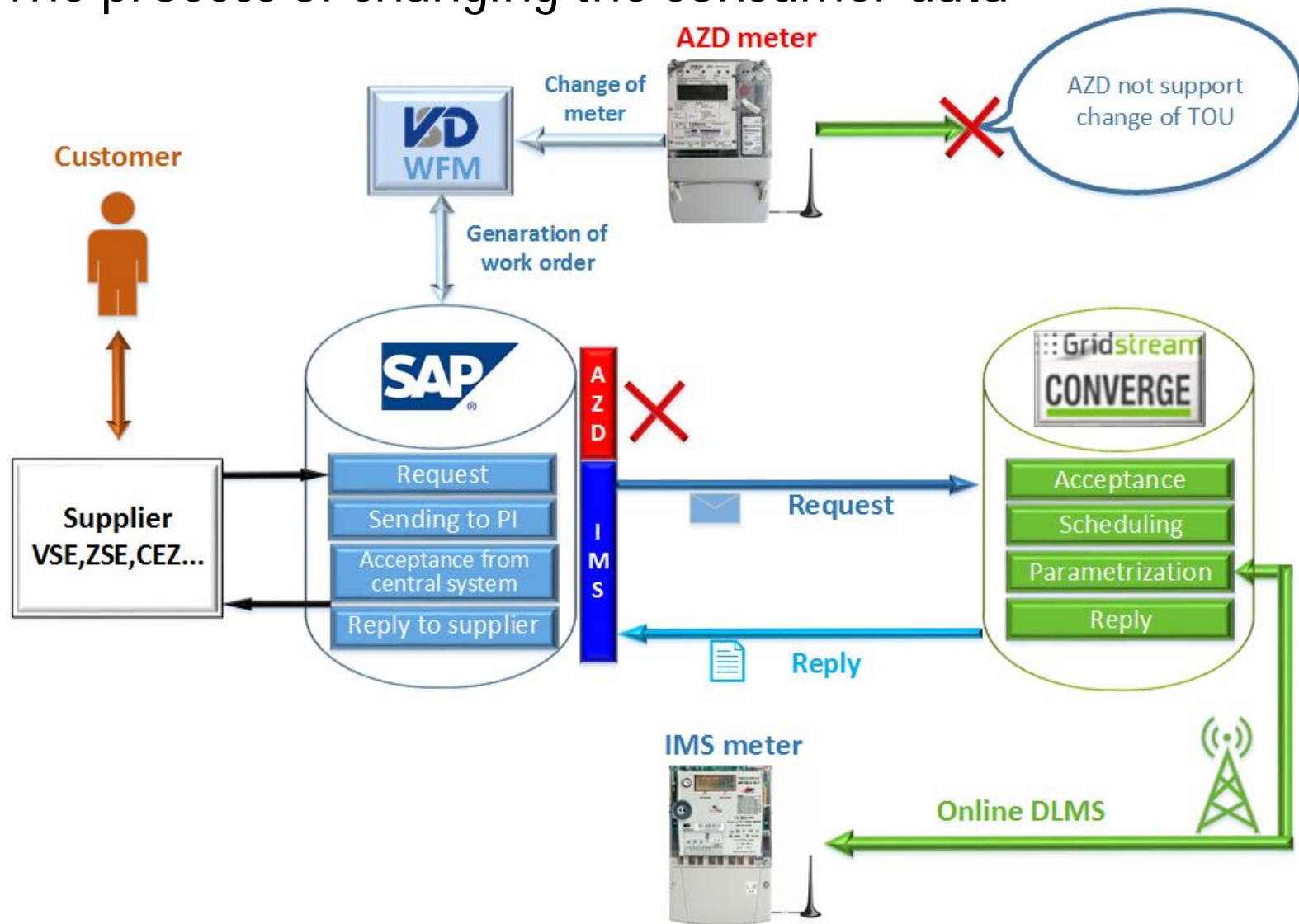
Processes SAP – Central system IMS

The process of consumer disconnection



Processes SAP – Central system IMS

The process of changing the consumer data



Second phase of the project „Central IMS“ in VSD a.s. Expanding of the system



- Optimization of the application
- Implementation of dashboard
- Monitoring of the system, processes, application
- Mass parametrization of the IMS meters
- Processing the quality profiles according the decree of IMS

SUMMARY



General overview of IMS

- Oservance of decree about IMS
- Maintenance the daily success rate of meter reading
- Testing of new PLC technologies

Central IMS – overview of the processes

- Automatisation of the processes
- Monitoring on the high level

Processes central IMS – SAP

- Many scenarios for complete testing of the system
- Robustness of the system

Second phase of the project

- Optimalisation of the system
- New possibilities for the development of the system

Contact

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Thank you for your attention