Maintenance system for mobile and fixed number portability and personal numbers
NPU-Registry*

* **NPU-Registry** is the brand name and has protection of intellectual property in accordance with legislation.

➡ **Who are the Stakeholders and actors of the NPU-registry?**

Stakeholders are:

- Subscribers,
- Telcos,
- Administrator of the number portability,
- National Regulatory Authority.

➡ **Why NPU-registry system is needed?**

Almost all systems has been developed on the basis of the same standards and recommendations ITU, GSMA, 3GPP etc. Differences between systems are defined by the possibilities of the most completely, quickly and flexibly take into account the Customer's requirements . The modern system must provide the ability to work with converged services in any technology environment. All of this, our NPU-Registry implements. Additionally:

- We use solutions that allow us to quickly create and adapt the system for all customer requirements.
- We did a not 100% ready-made solutions that then will hard squeeze in the legislative and technological country-specific fields. Our approach allows us to harmonize and easily adapt our solutions to the specific conditions of each country.
- We pay great attention to security issues.
- We across the board use the cloud technology within processes of the implementation, post-implementation and maintenance of our systems.

➡ **Modularization and flexibility of adaptation**

➡ **Clusterization**

➡ **Cloud technologies support**

➡ **Full localization for languages which have the status of "Principal Language" in the country**

➡ **Detection of the unresolved and unacceptable situations during processing applications**

➡ **Support of the roaming subscribers**

➡ **Support of the individual and corporate subscribers**

➡ **Personal Numbers' support**

➡ **Accountability control on the portable process of each application**

➡ **High reliability parameters, annual availability (uptime) NP CDB, not less 99,9%**

➡ **Uniform data array, cross-data exchange possibility, and possibility of the integration with IMEI and ENUM systems**

➡ **No need deep upgrade of the Telcos software**

➡ **Keeps the history of portable transactions and processes**

➡ **Independent working station for all participants of systems**

➡ **Convergence and NGN/IP Multimedia Subsystem support**

➡ **Monitoring and loggin of all processes**

➡ The system can be adapted accordingly and implemented on any classic or combined realization of the number portability scheme in accordance with RFC 3482 (OR, QoR, ACQ ...)

➡ The system's architectural principles are based on cloud technologies. The critical requirements for connectivity between NPU-Registry and networks of system's other Stakeholders are absent. There are two remote Administrator clusters - the main site and backup site

➡ Technical architecture of the system has separate clusters for Telcos and administrator CDB. During processing of the number portability application the data transfer between Donor and Recipient clusters must and will handling only via the Cluster Administrator

➡ System is built using the principle of modularity, which makes it easy to upgrade or add new functionality and support for new services, with the possibility of technological and geographical scalability without the need for intervention UNOC staff in the system setup during operation

➡ Software has a modular architecture and consists of the server and client components. The server and client components are connected between each other by private and secure sessions

➡ The system comprises a central database (CDB) ported numbers which is the depositary for the local databases (LBD), located at the Telcos

➡ Routing of the ported numbers traffic is not made by system and does not depend on the system. It is carried out only by means of the Telcos. But system has options for carry out on routing by own means. This options must be activated only by Customer requirement.

➡ The system supports the alerts the subscriber via SMS and / or email

➡ System can be configured and adjust for different languages on demand of Customer

➡ Continuous operation mode 24*7*365

➡ **System support the requirements support of the DNS and ENUM technologies in accordance with ETSI TR 180 003 V3.1.1, ETSI TR 184 003 V3.1.1, ETSI TS 184 010 V3.1.1, 3GPP TS 23.506 V8.1.0, GSMA IR.67 (DNS Guidelines for Operators), ENUM and DNS RFCs: RFC1034, RFC1035, RFC1982, RFC1995, RFC1996, RFC2181, RFC2308, RFC2671, RFC2672, RFC2782, RFC3402, RFC3403, RFC3597, RFC3761, RFC4592, FC4694, RFC4769, RFC4904**

➡ **System provides the ability to support modern requirements for network operators: E.212 MCC / MNC, Service Provider Network, Number Portability Dip Indicator**

➡ **System provides the option to perform the Provisioning of the subscriber number by the Recipient in HLR**

➡ **System provides the ability to support advanced features of inter-operator interaction in the provision of services for the ported subscriber numbers : Interconnection for NGN (IMS / LTE), Number Portability Dynamic Correction, ENUM Data Hosting**

➡ **System supports the ability to provide the information on the correction of dynamic routing during the transition from the SS7 environment in IP-networks and back**

➡ **System provides the ability to support an unlimited quantity of subscriber service functions - tel, H.323, SIP, SMS, MMS, XMPP, Email, UNIMSG, iCall, etc., without reducing their inventory, quality and reliability of service during the subscriber's portation to the Recipient**

➡ **The system uses the open standards XML and / or CSV data format**

➡ **Communication and formation of commands to perform operations in the system is carried out only in an automated mode using EPP-protocol (RFC 5730, RFC 5731, RFC 5732, RFC 5733, RFC 5734). It allows to unify treatment processes and data exchange during the processing of applications and comply expanded reporting requirements and detailed step-by-step logging of all transactions**

➡ **System stores information on all attempts the portation - successful and rejected - of the subscriber numbers and corresponding logs which does not presume the ambiguous interpretations of the actions of any of the parties involved in data processing**

No.	The functional parameters of the system	Value
1	Quantity the requests on number portability that system can handle during 60 minutes, not less than	500'000,00
2	Quantity the ported numbers that can store into NP CDB after first system installation, not less than	5'000'000,00
3	The time required for monthly procedural operations without interruption of operation of system, not more than	22 min.
4	Duration of the backup software and system configuration settings on the resources of internal storage, not more than	10 min.
5	The time required for full recovery system software from a backup with verification and testing functionality, not more than	60 min.
6	The time interval that is necessary to stop the service to return to an older version of the system software, not more than	10 min.
7	The interval of time that is necessary to stop the service to extend the system hardware, not more than	10 min.
8	Update period (sync) Telcos' local databases (LDB) with the depositary NP CDB, provided at least 2 times a day	adjusted multiple of 60 min.
9	Period full backup of the NP CDB to backup storage, not less than	2 times per day
10	Storage period and availability of archived data on ported numbers in the system, not less than	5 years

| No.	The parameters of reliability of the system	Value
1	Annual availability (uptime) NP CDB, not less than	99,9%
2	Annual availability (uptime) directory services system, not less than	99,0%
3	Annual availability (uptime) web-service of registration and processing of number portability applications, not less than	99,0%
4	Annual availability (uptime) the processing of number portability applications, not less than	99,9%
5	Annual availability (readiness index) of the DNS / ENUM / EPP, not less than	99,9%
6	Annual availability (readiness index) of the logging system, not less than	99,9%
7	RTT of the sequence of packets from the start of the TCP connection to its end, during access session to the PN CDN or FTPS, for at least 95% of the queries, not more than	1500 ms
8	RTT of the sequence of packets from the start of the UDP connection to its end, during access session to the PN CDN or FTPS, for at least 95% of the queries, not more than	500 ms
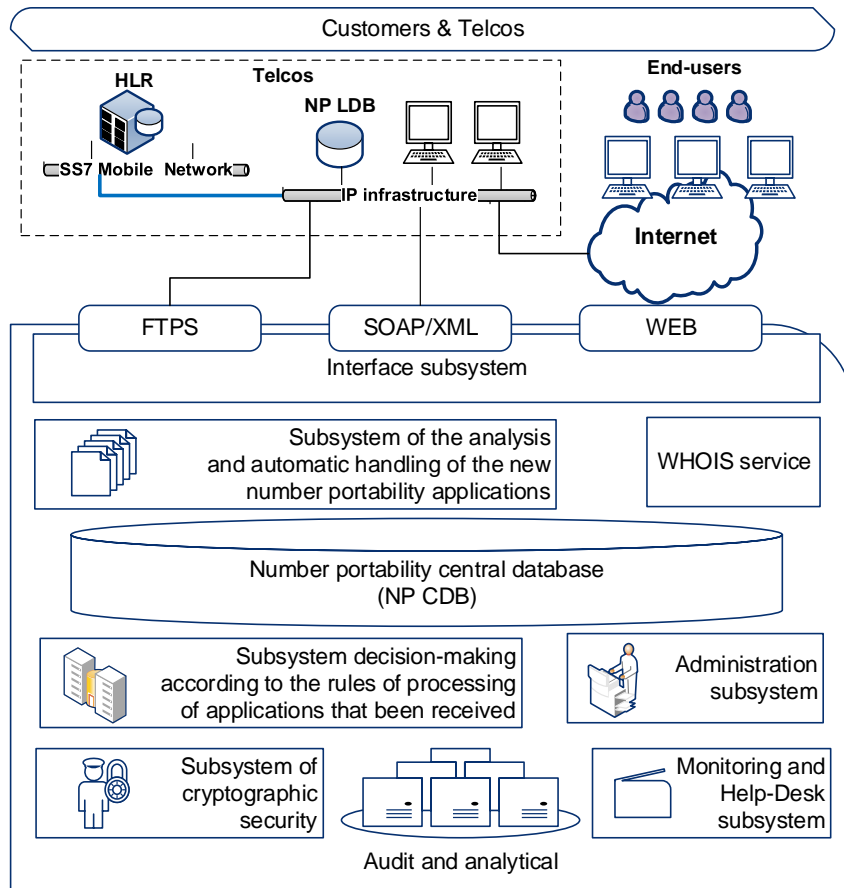
- **All UNOC decisions underwent technical testing and multistage testing from RIPE/IANA/ICANN in compliance with requirements for the central national and generic Registers**

- **UNOC has experience of developing a full set of the technical documentation**

- **UNOC has experience of the organization and maintenance the Help Desk system in 365*24*7 mode with detent "check-ticket"**

- **Since starting the Help Desk in 2013, there has not been a single incident of "orange" and "red" levels of the threat**
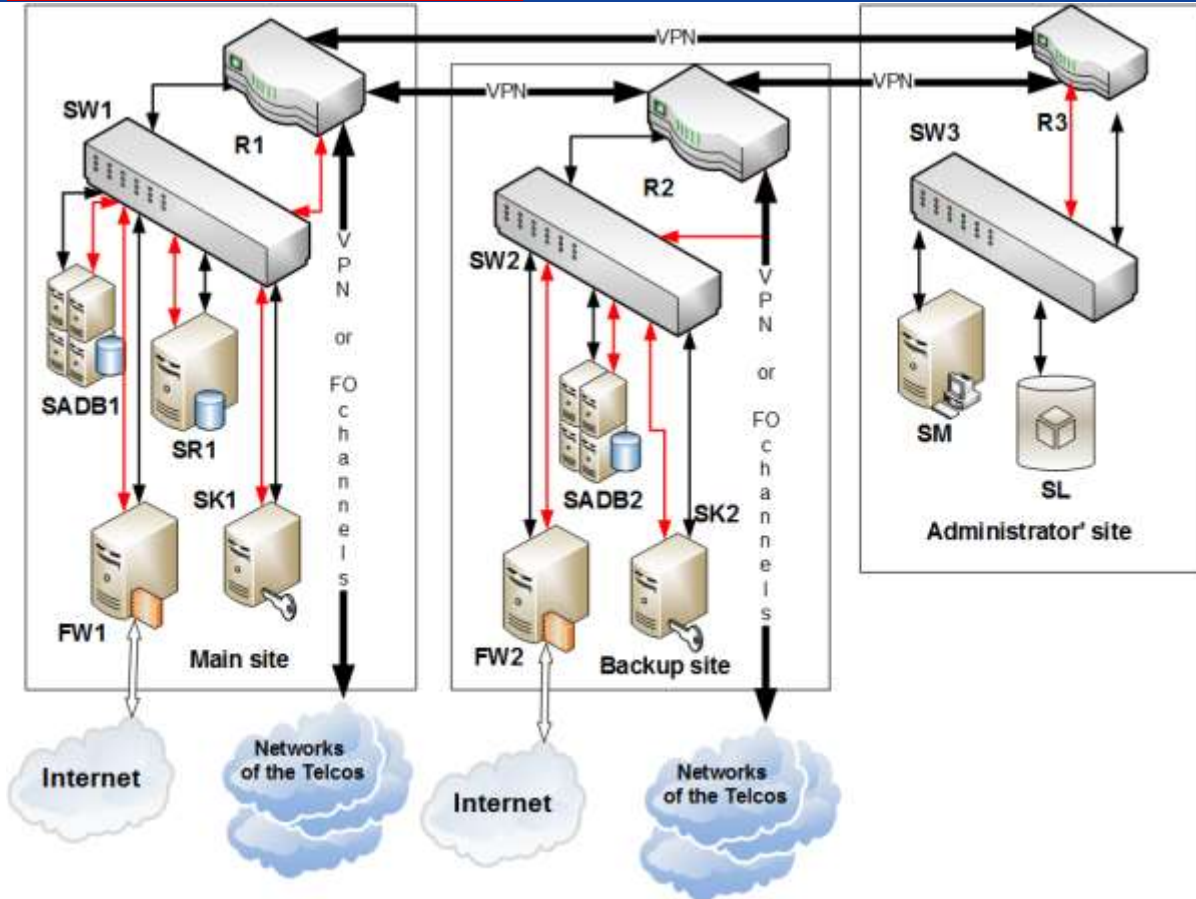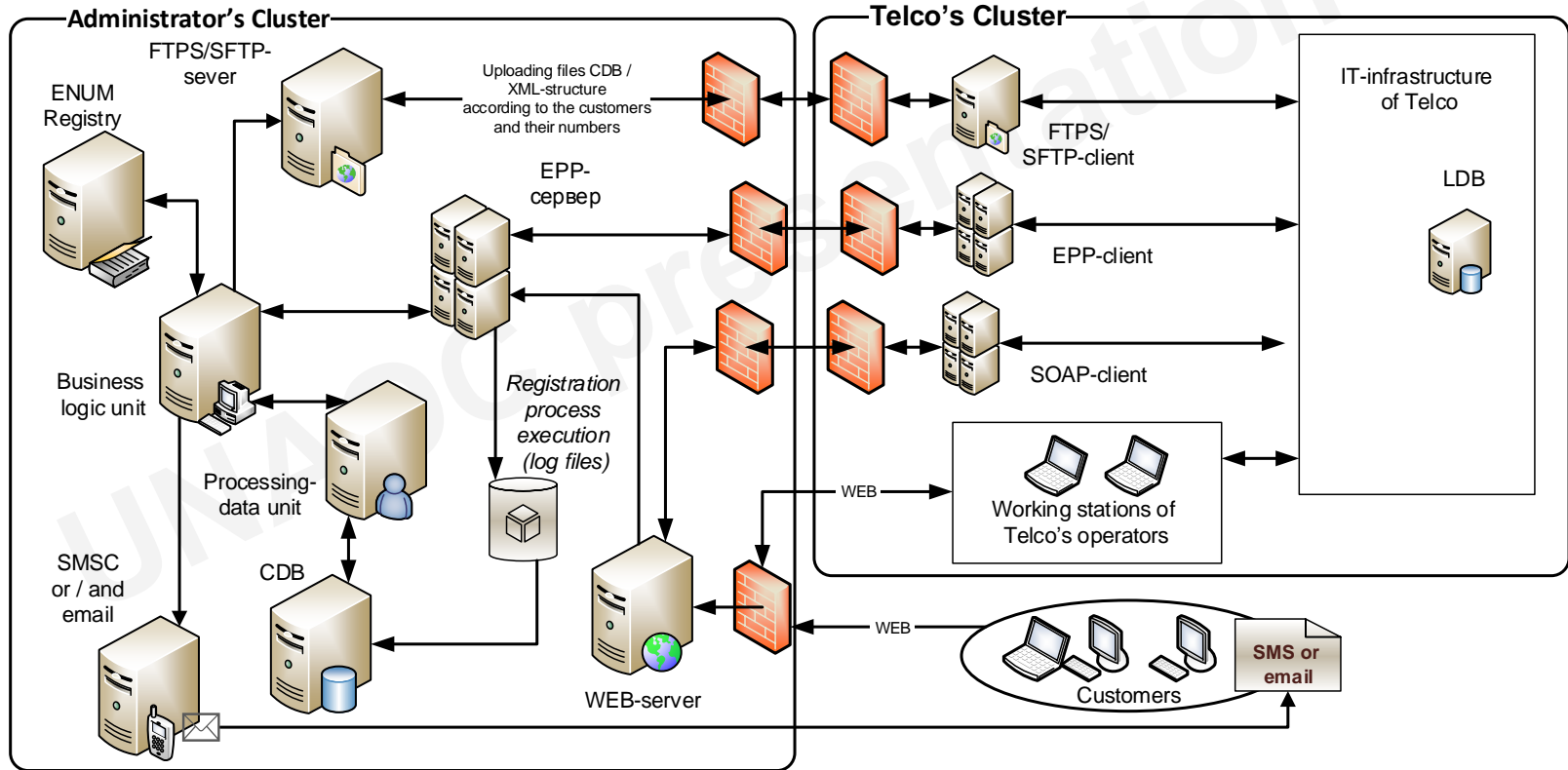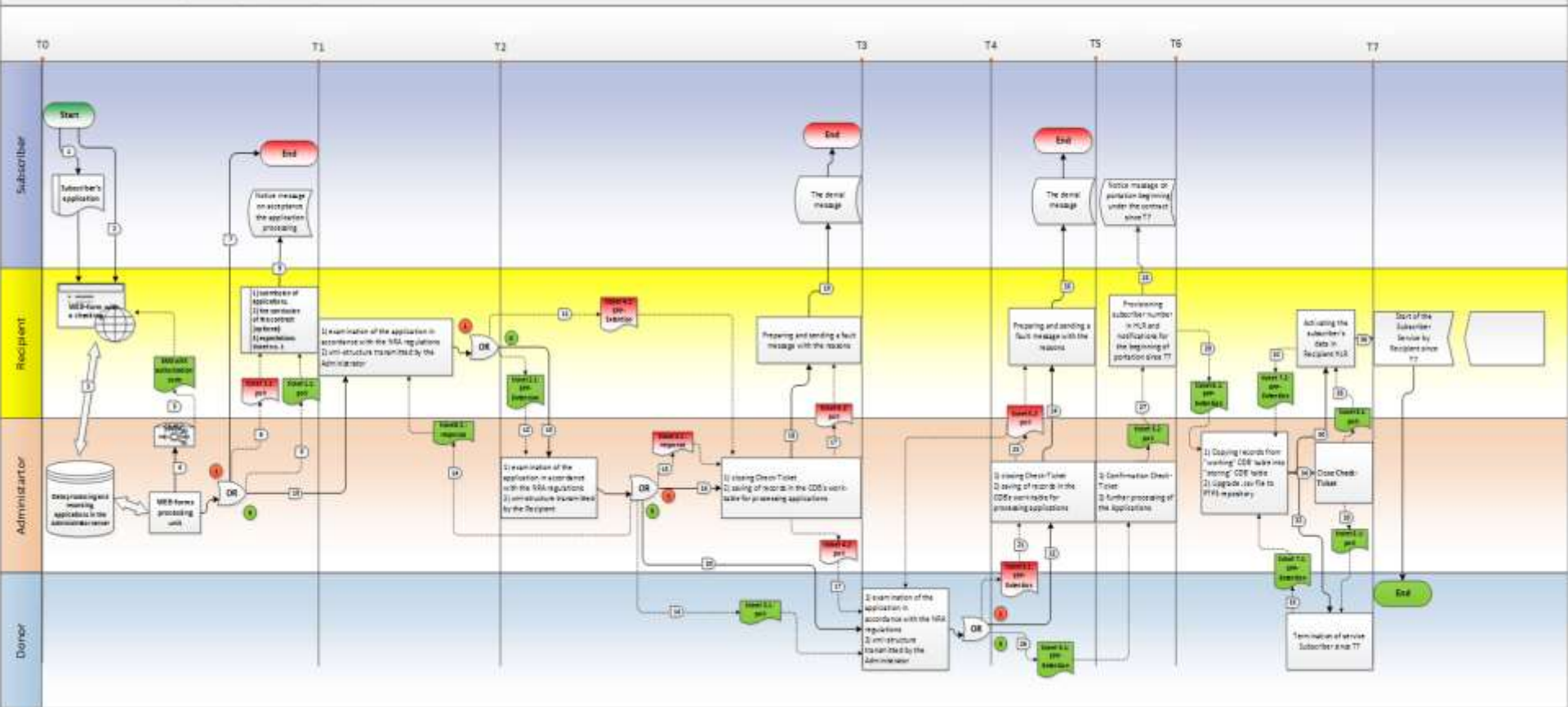
The workflow of the data exchange during the processing of the Application with the conclusion of the contract between Telco and Subscriber in time of the submission of the Application

Thank you!

We are waiting for you!

If you want to test system, please request a Demo