Ukrainian Numbering, Naming and Addressing Operation Center
State University of Telecommunications

Functionality and identity management in 5G/LTE and IoT networks

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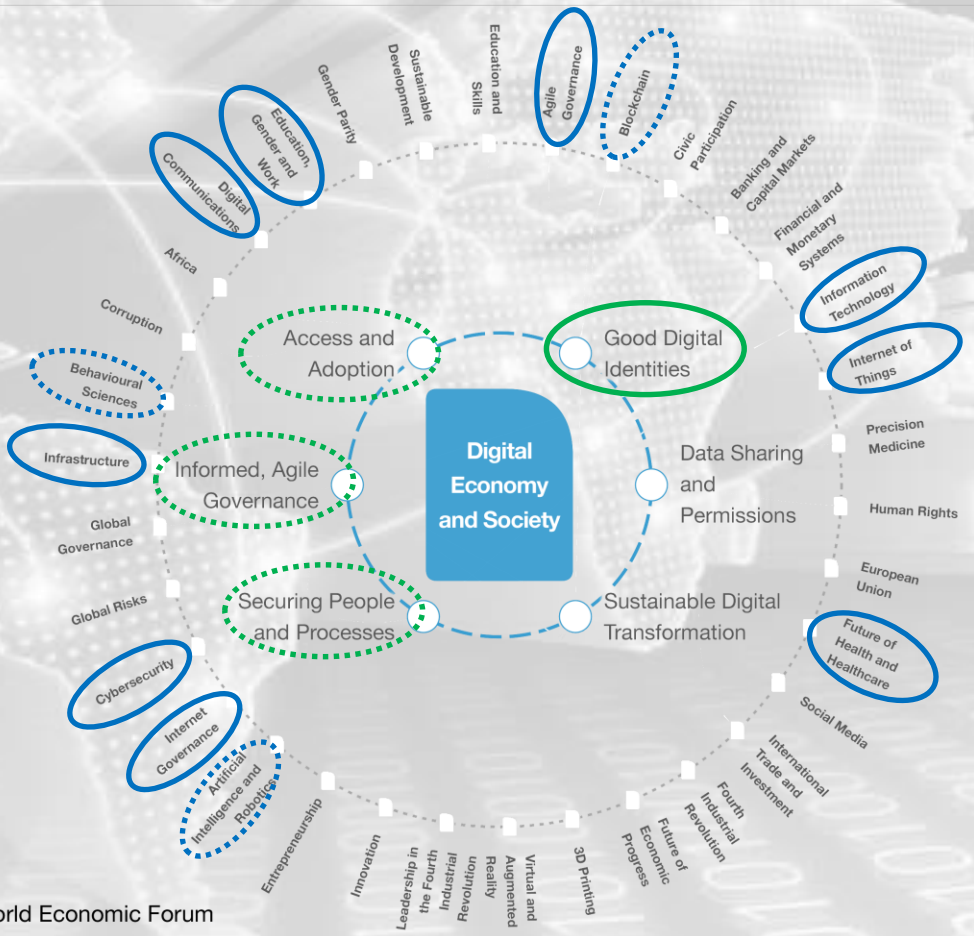
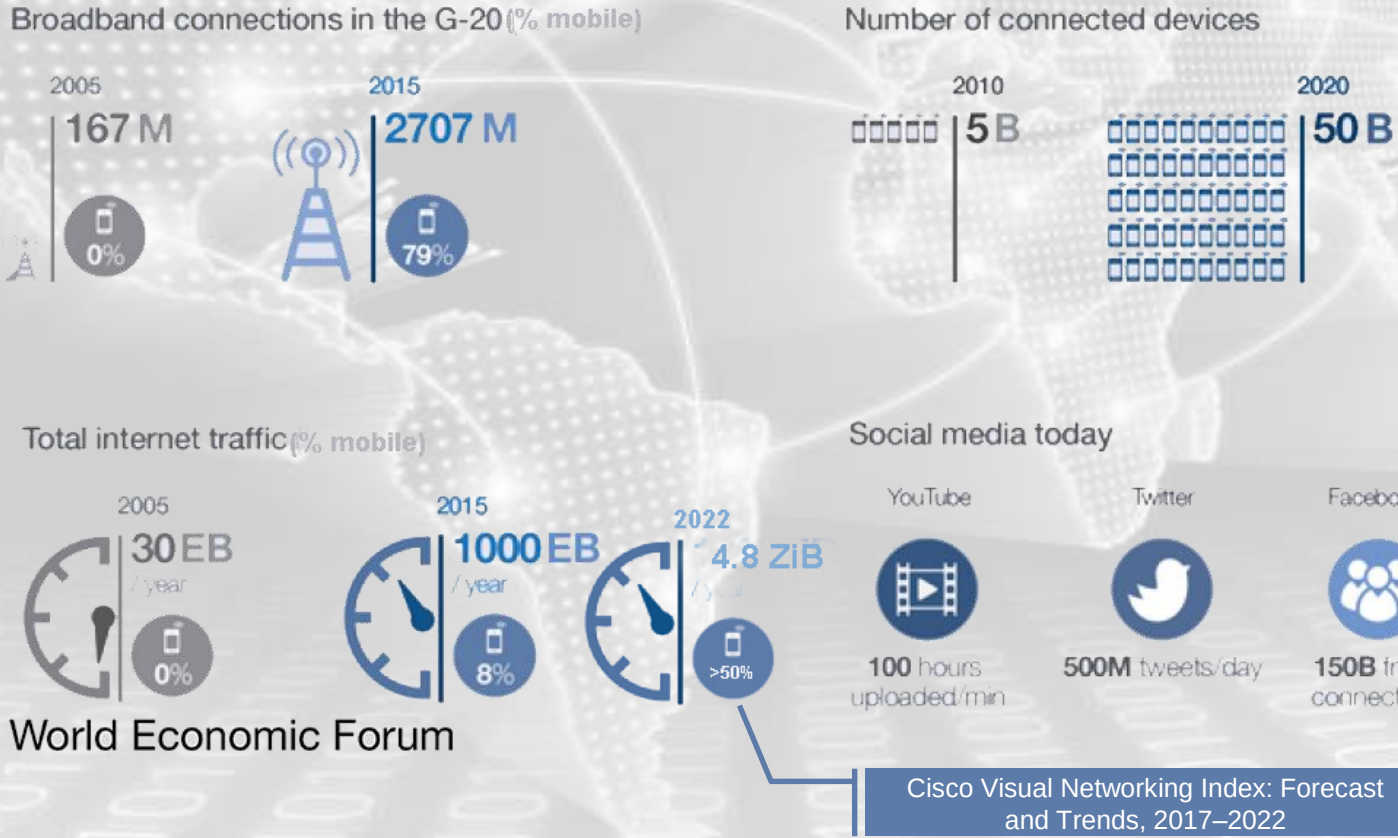
Digital Economy

- Infrastructure
- Legislative and regulatory environment
- Personnel and Education
- Digital healthcare
- Information Security
- Agile Governance
- Smart city and village
- Science and Research

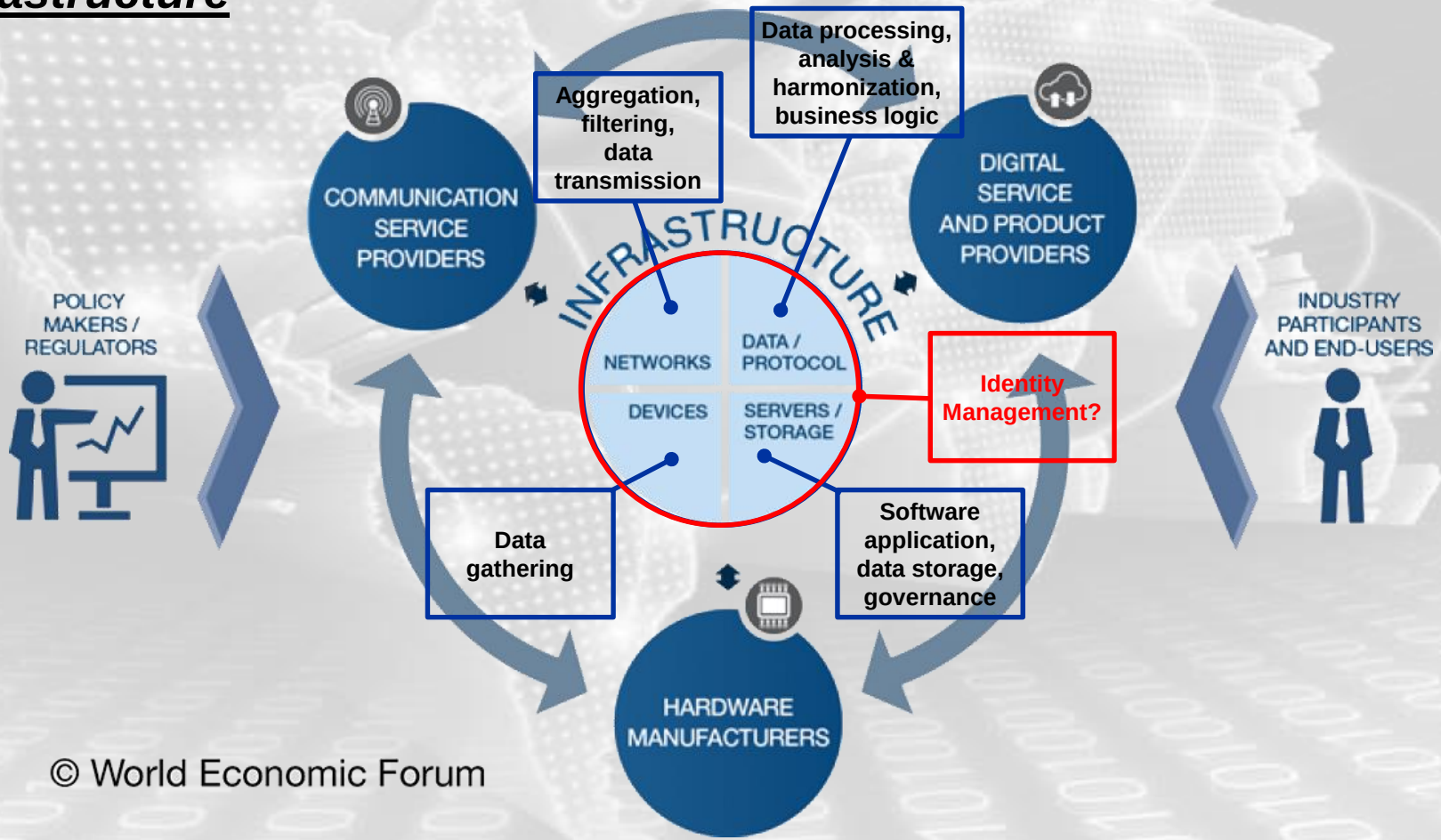


Demands on Digital Infrastructure Exploding

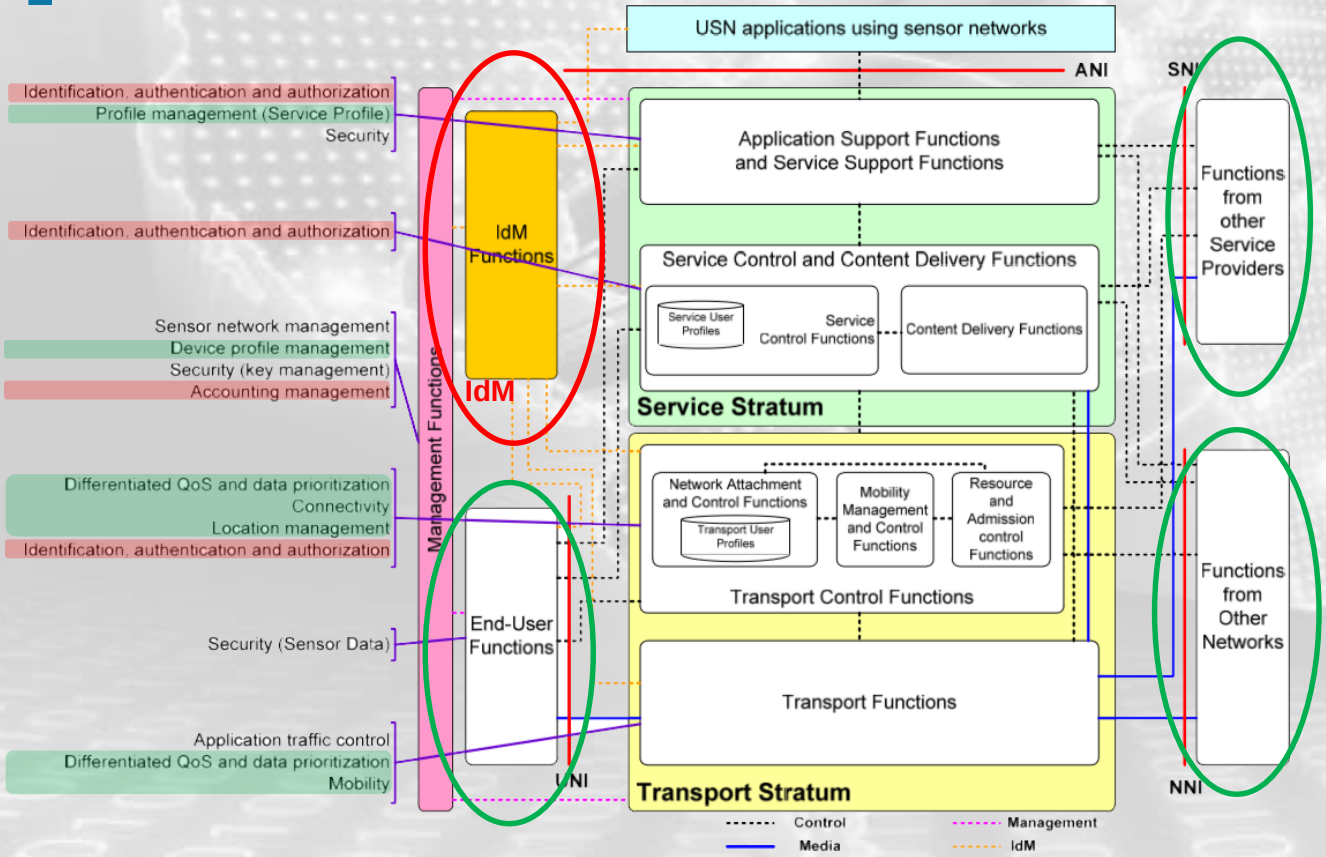


Cisco Visual Networking Index: Forecast and Trends, 2017–2022

Infrastructure



Overall functional architecture model



Y.2026 (12)
Functional requirements and architecture of the next generation network for support of ubiquitous sensor network applications and services

ANI	Application Network Interface
USN	Ubiquitous Sensor Network
UNI	User network interface
SNI	Service node interface
NNI	Network-to-network interface
IdM	ID Management

Place IdM in the general architecture

Applications

Applications

Governance

Governance

Services

Services

Data storage, analysis, business logic

Identity management systems of the digital objects

IdM

Networks

Networks

Aggregation, filtering, data transmission

Devices

Devices

Data gathering

Where is IdM place?

Multiple identifiers harmonization system

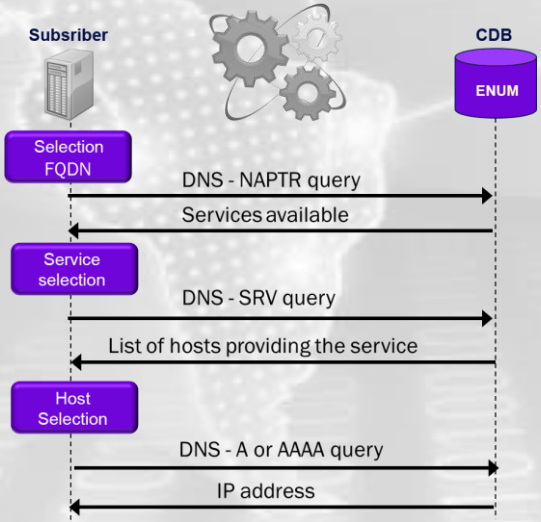
What is a basic ID?

ID = MSISDN

If a basic ID is missing and there are complex IDs in the combination

How does this work?

NAPTR records
$ORIGIN domain.iot.uz
NATPR 10 100 ‘’s” ‘’service+protocol” .....



Example on the transport system

Functionality of the IdM systems for Transport Systems

(1) any user

(2) at any time

(3) in any place

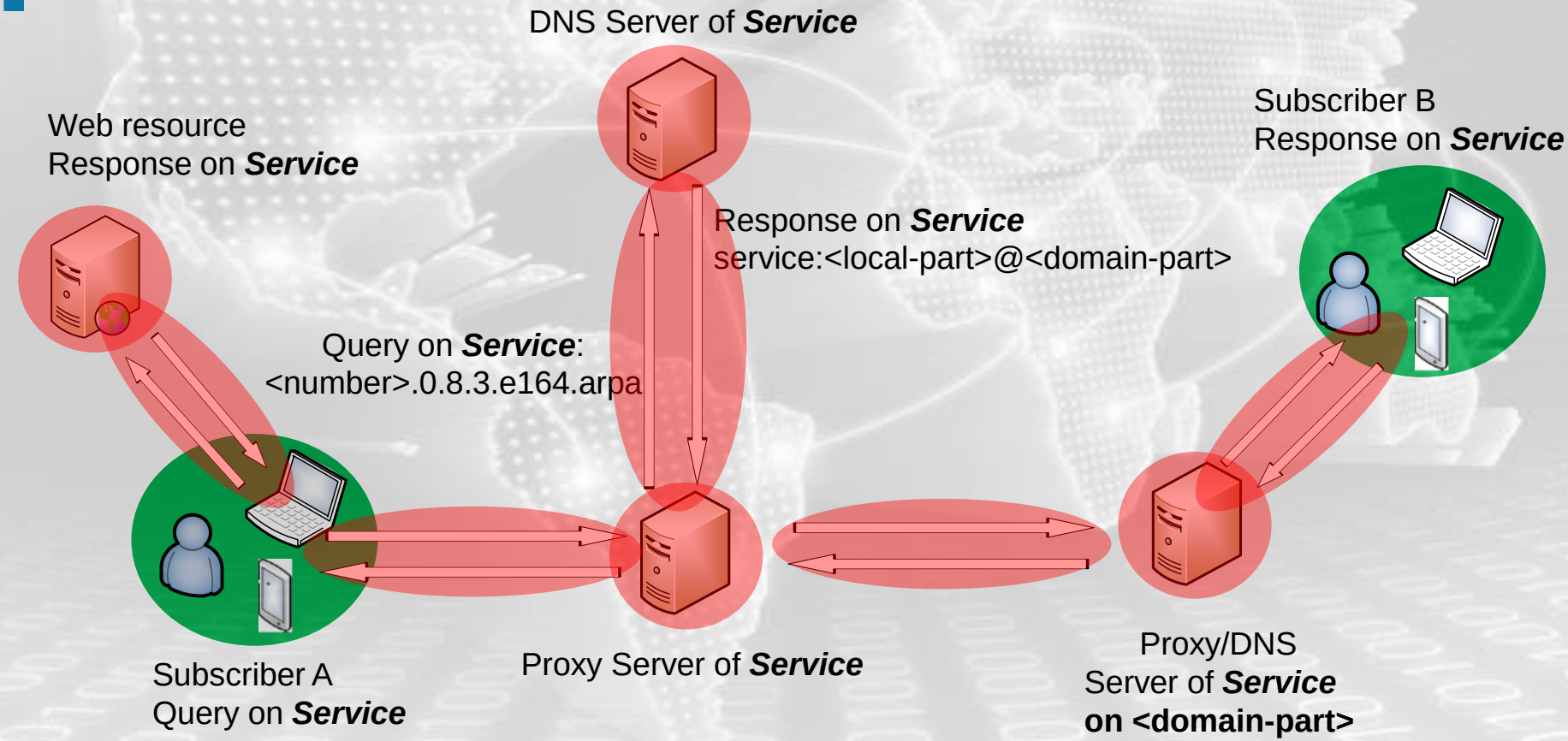
(4) with any own identifier (s)

(5) with own device (s)

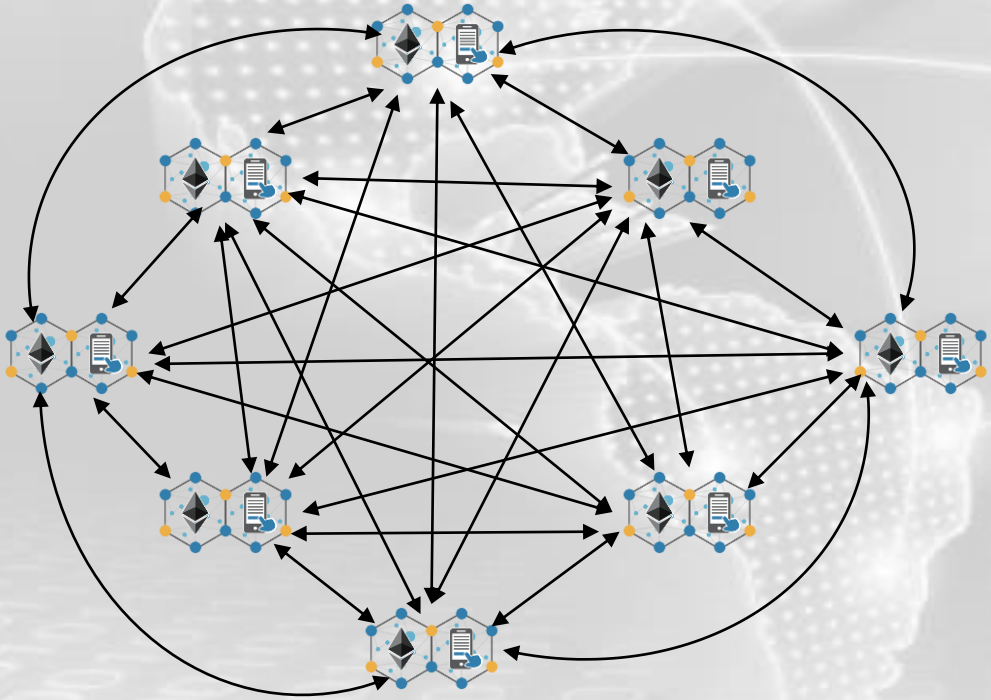
(6) in the network of any chosen operator

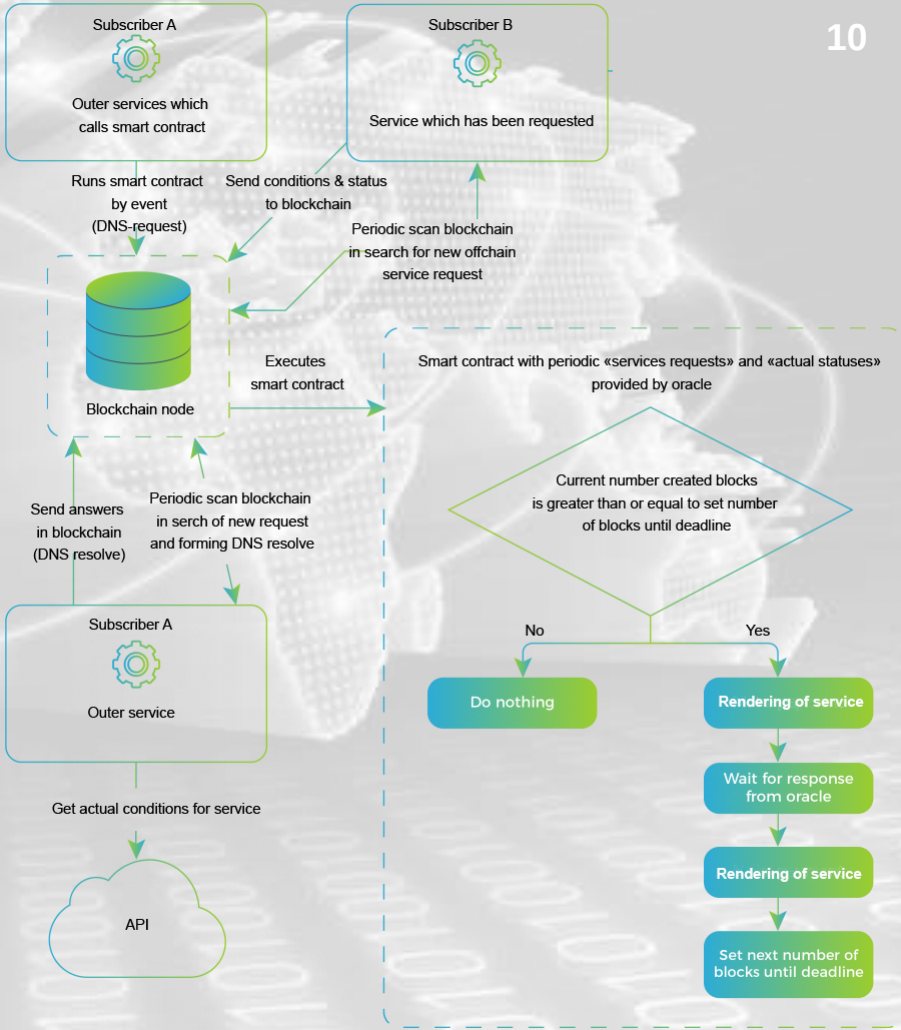
(7) can get any services

IdM & ENUM/DNS security



IdM/Blockchain Scandy security





Generations of the IdM systems

Only the basic function of the IdM (i.e. MNP or IMEI) and the supporting portability, fight against counterfeiting, smuggling, fraud, fishing etc.

1G

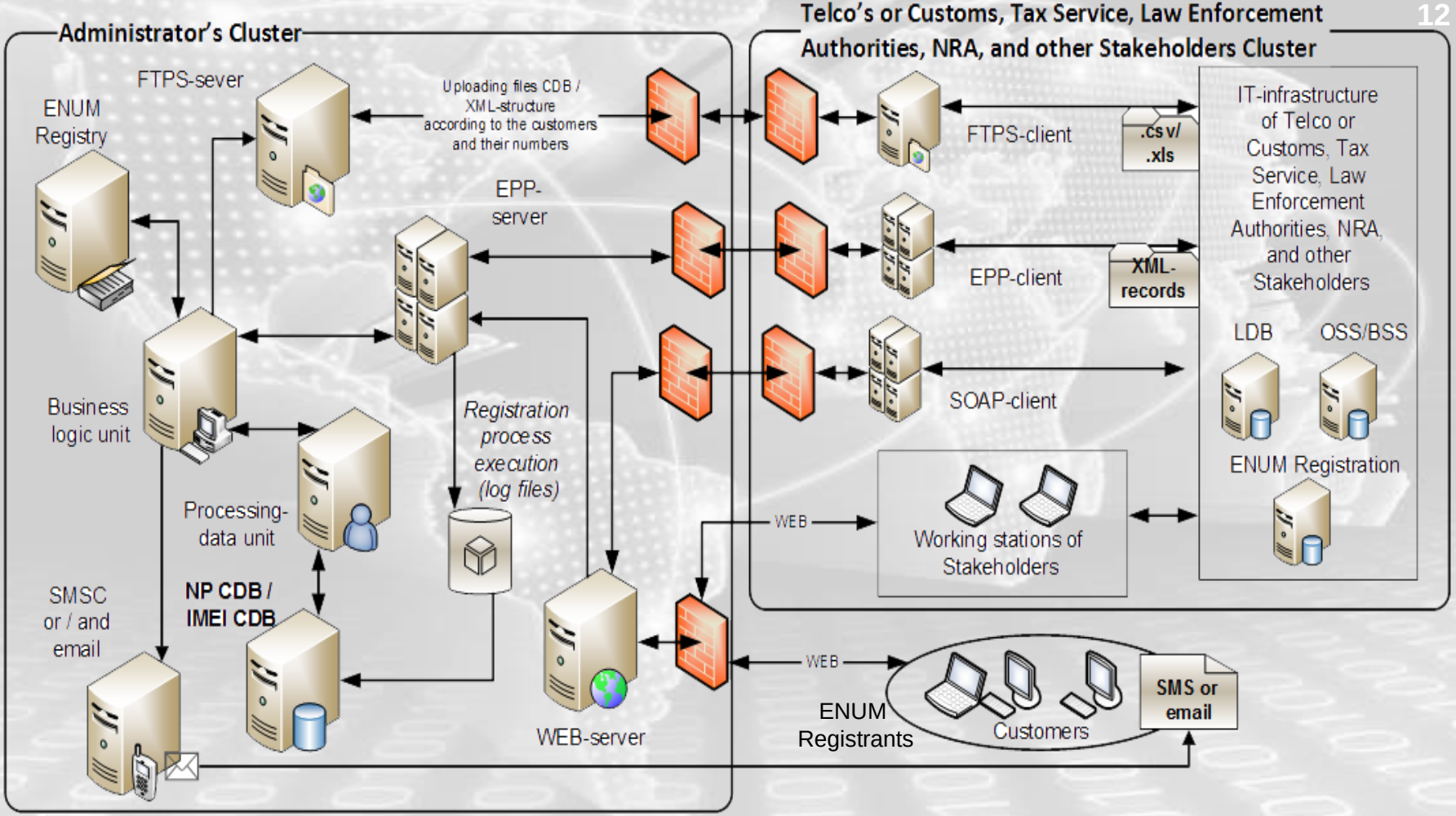
2G

There are advanced functions for processing complex transactions (npdi, dynamic number portability correction) within mobile and fixed networks, roaming and geolocation, support for non-geographic and nomadic numbers

3G

Creation of a unified and integrated data environment and decision-making policy using prediction algorithms, support for all types of subscriber's IDs at any time and in any place, including personalization of subscriber services

Formation of the basis of a convergent environment in which any user at any time, in any place, using any own ID (s) and own device (s), can receive from any chosen operator the necessary service “here and now” …. on the ENUM platform


Administrator's Cluster
Telco's or Customs, Tax Service, Law Enforcement Authorities, NRA, and other Stakeholders Cluster
FTPS-sever
ENUM Registry
Uploading files CDB / XML-structure according to the customers and their numbers
EPP-server
FTPS-client
.csv/ .xls
EPP-client
XML-records
IT-infrastructure of Telco or Customs, Tax Service, Law Enforcement Authorities, NRA, and other Stakeholders
LDB
OSS/BSS
SOAP-client
ENUM Registration
Business logic unit
Registration process execution (log files)
Processing-data unit
WEB
Working stations of Stakeholders
SMSC or / and email
NP CDB / IMEI CDB
WEB-server
WEB
ENUM Registrants
Customers
SMS or email

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Thanks!
Questions?

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