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Leading Quality of Service

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QoS Monitoring Methodologies

Drive Testing

Stationary Testing

Counters

App crowdsourcing

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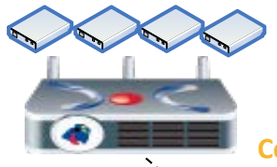
Architecture in 6 Phrases

Testing Interfaces (Up to 6)



Standard robot

Control and Scheduling

Test results Upload

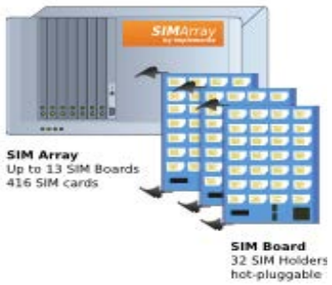
Communications Link LAN/WAN or 2.5G/3G

- System Operation
- Test Case Definition
- Test Case Scheduling
- Results Storage
- Reporting and Alarm
- OSS Integration

Control Center

SIM_Server

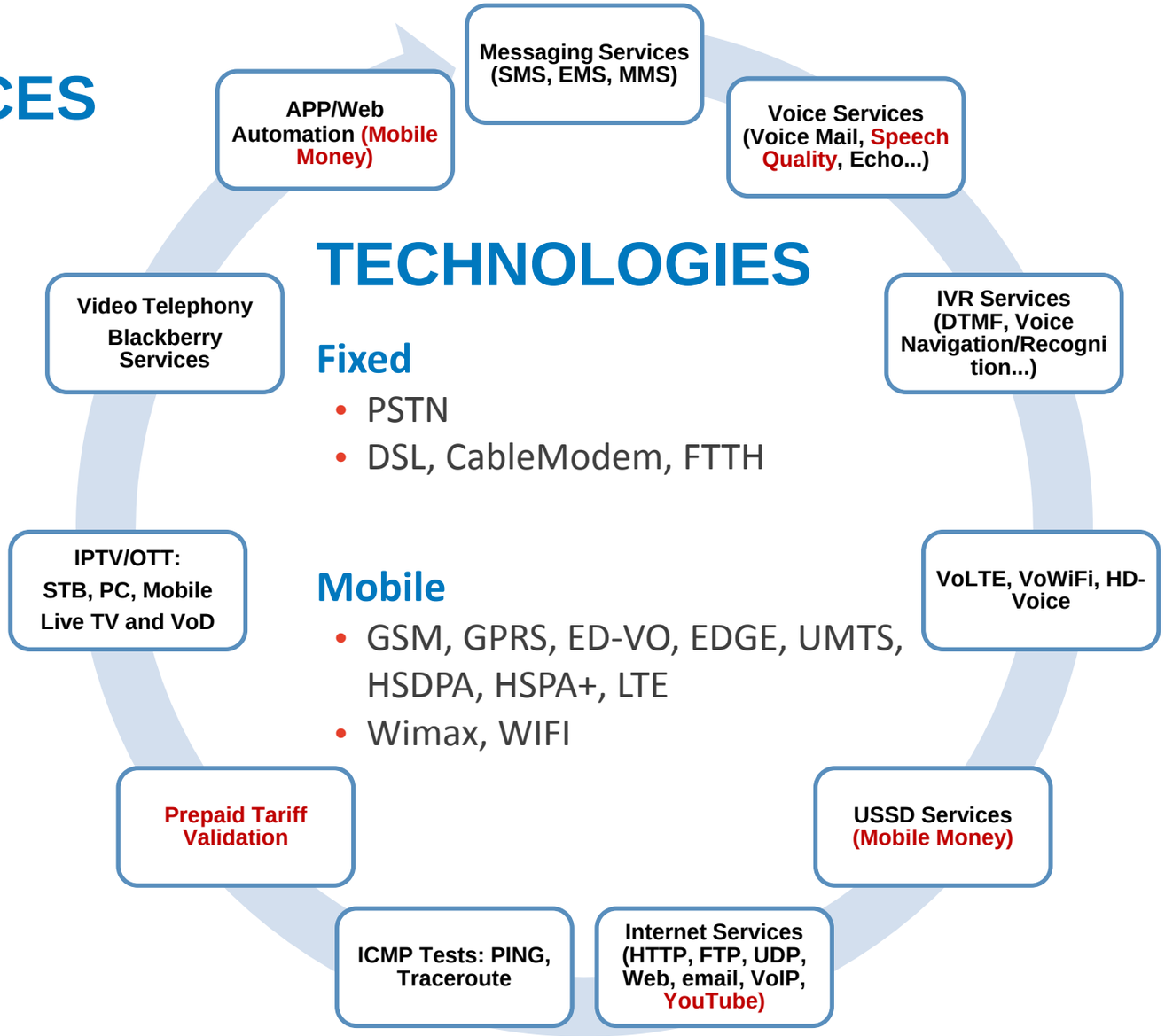
Allocates SIM-card resources



Users
Web –Based Access

Testing Portfolio

SERVICES



Why Stationary for Regulators?

1. Facilitate the implementation of a Testing Methodology with **statistical relevance**

Probes Distribution & Test Sample Size → ETSI/ITU

2. Services & Technologies:

a) Voice Quality (PESQ/POLQA)

b) Data Services (throughput, browsing, YouTube)

c) Mobile Money Services based on USSD & SMS

d) Tariff Verification → ETSI TS 102 845

e) Fixed Broadband

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OPTIONS of deployment

1. The NRA deploy the system

Examples: Zimbawe, Zambia, Botswana, Lesotho …

2. NRA defines a guidelines and requires Operators to deploy the robots based system and to submit the corresponding reports

Examples: Spain and some South American Regulators)

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Spanish Regulator - SESIAD

In 2006 set the criteria on how the Operators shall generate Quality reports for Voice Services based on **Counters** (ETSI 202 057-3) and for internet Access based on **Active Probes** (ETSI 202 057-4)

The guidance also included the need of an **Audit** performed by a third party to guarantee that the Operator was compliant with the criteria

From 2014 on, only internet access on Mobile & Fixed broadband is measured

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SESIAD – Internet Access - Summary

1. **KPIs:** download and upload with http/TCP (average, percentile 5 and percentile 95)
2. **Servers** at Operator Network
3. **Active Probes** → statistical relevance:
   - geographical distribution depend on active subscribers for fixed & mobile lines
   - Number of Tests → traffic pattern
4. **Reports Validity** --> system avalability shall be higher than 70%

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Why Stationary for Operators?

Drive Testing

Stationary Testing

Counters

Passive Probes

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Thank You

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