2022/10/15

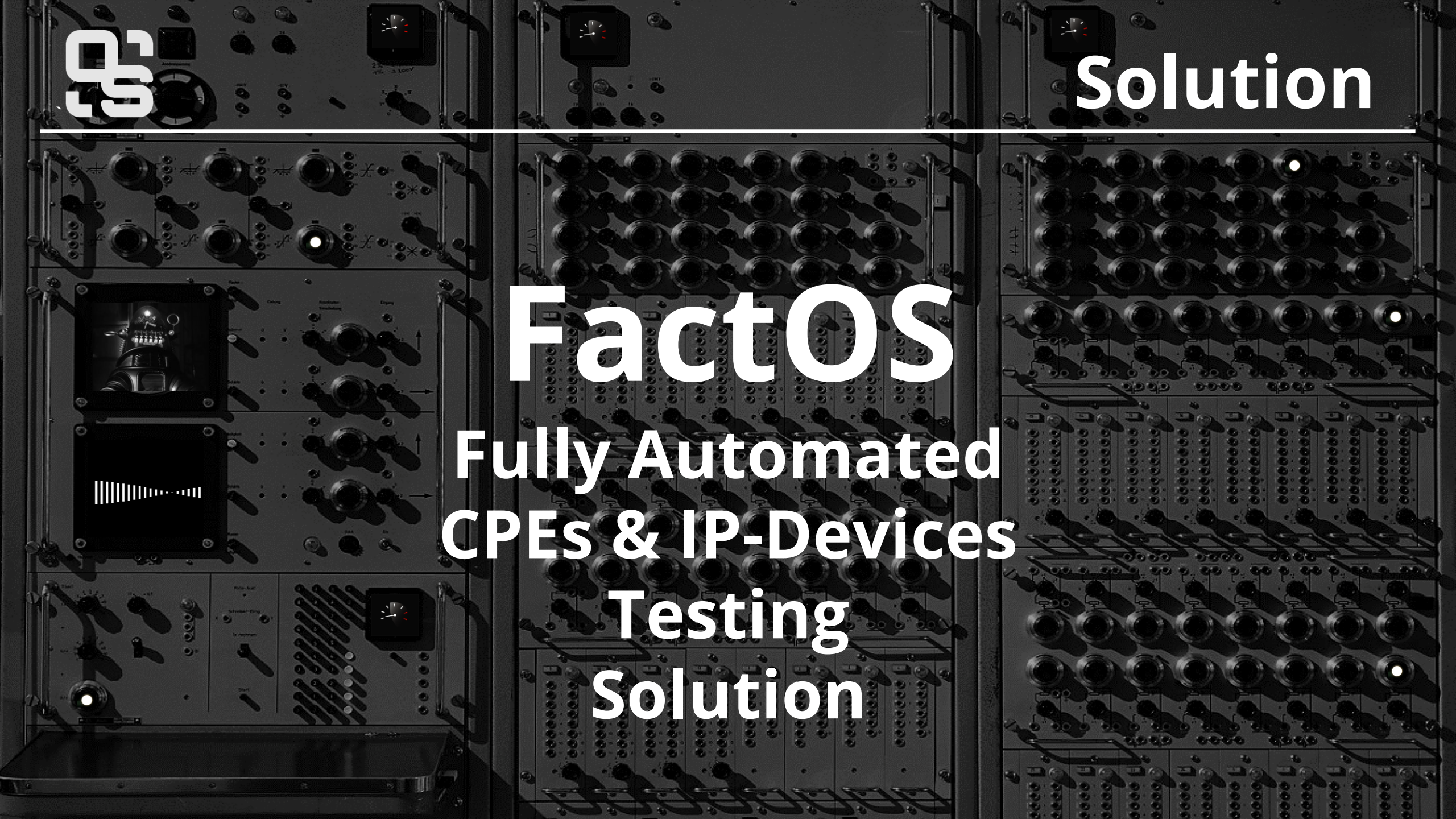
FactOS-2022-10-A0

About Us

OutSys

OutSys delivers innovative carrier-grade solutions and services to implement, simplify, and speed up the integration, provisioning, management, and testing processes in the Broadband Service Providers Networks and their Information Technology Systems

Active Member of the Broadband-Forum



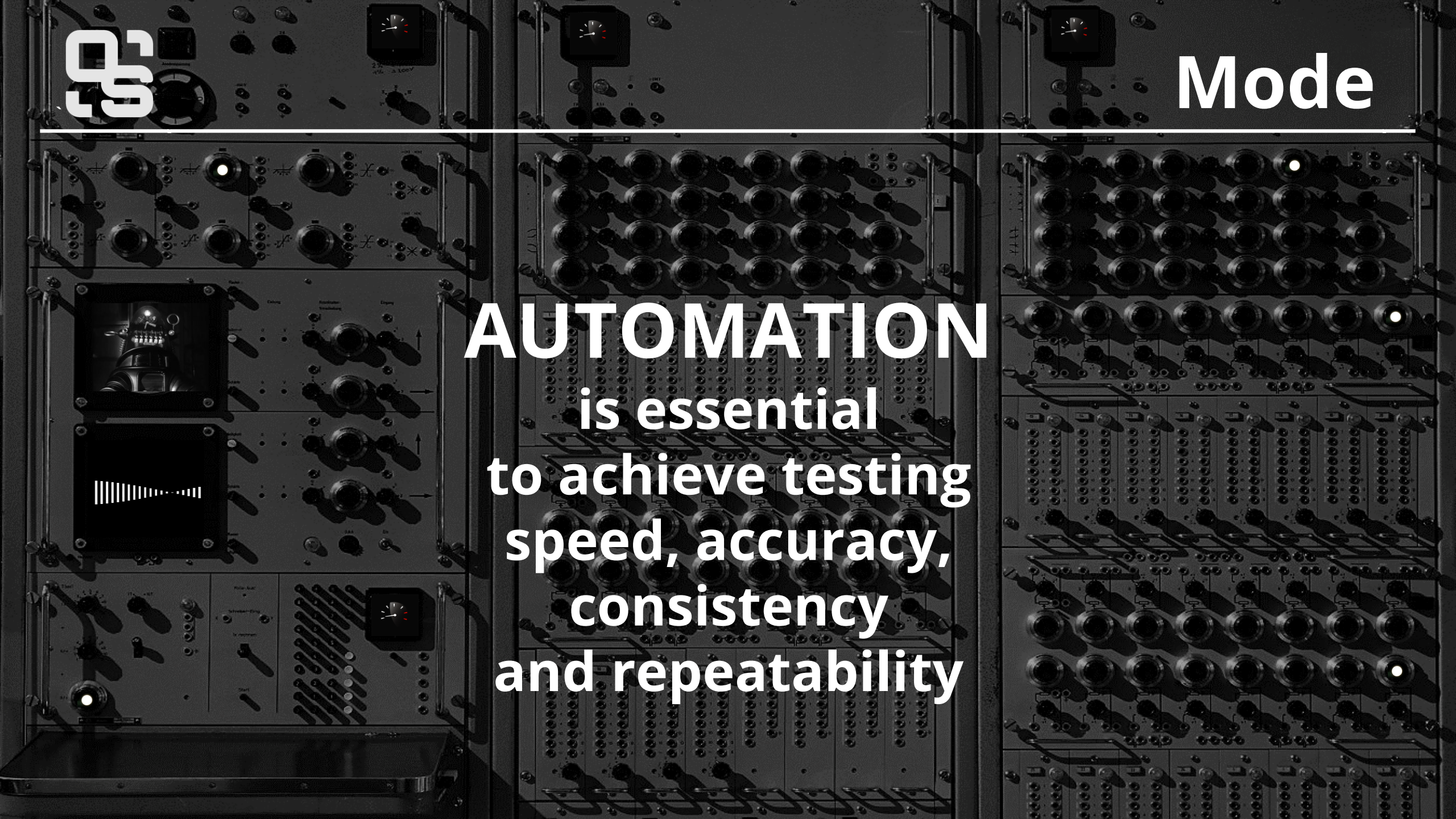
Solution

FactOS

Fully Automated CPEs & IP-Devices Testing Solution

Portfolio

FactOS is part of the CPEs, IP Devices, and Network Services Laboratory Testing Solution Portfolio



Mode

AUTOMATION

is essential
to achieve testing
speed, accuracy,
consistency
and repeatability

Paradigm

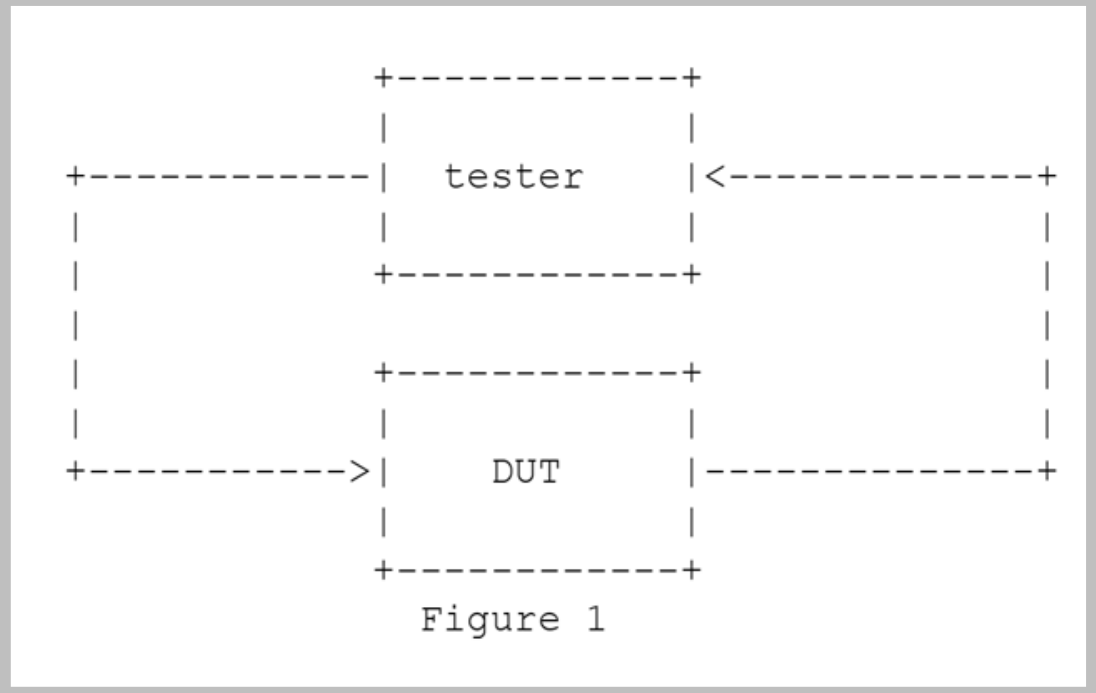
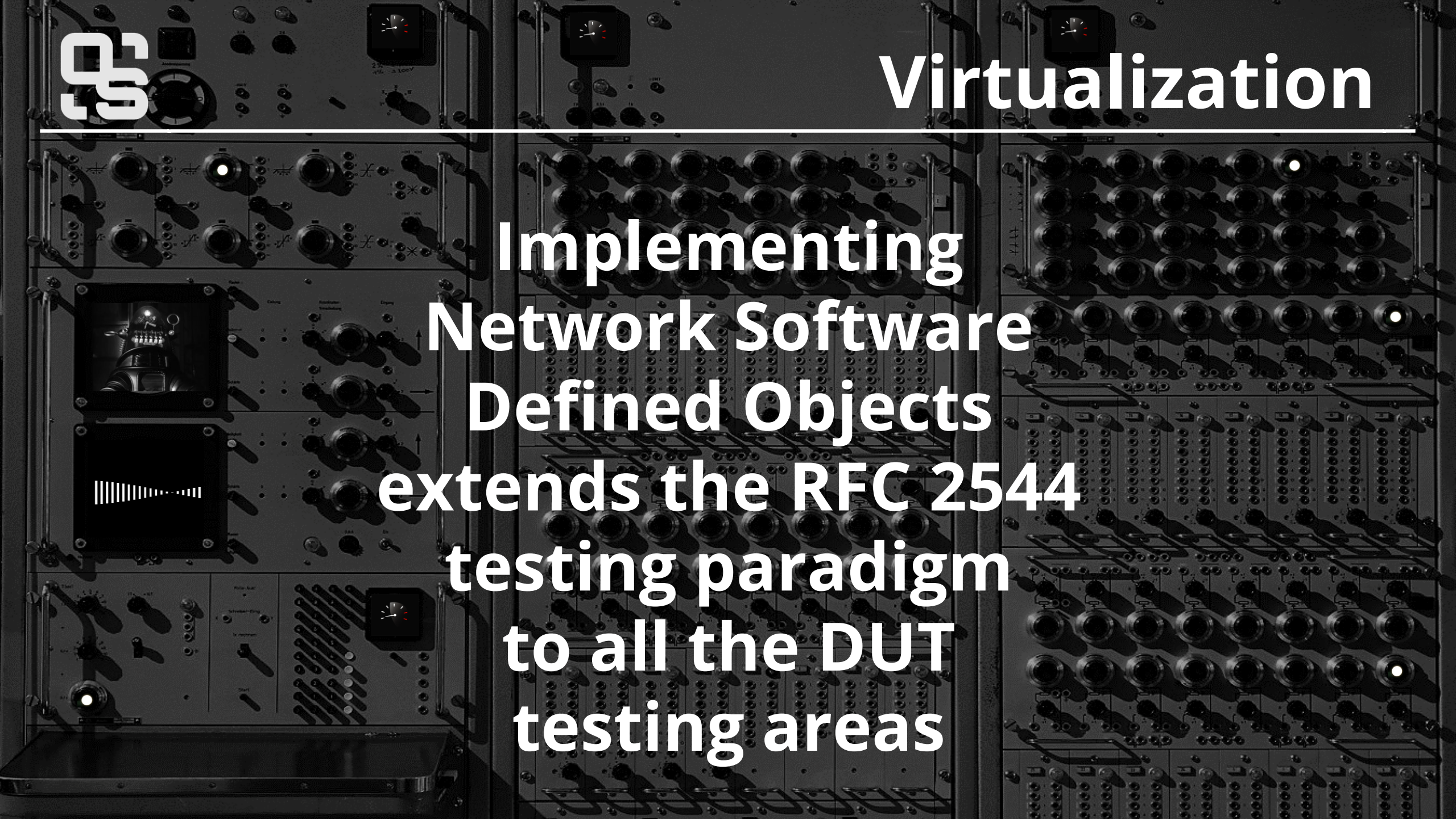


Figure 1

RFC 2544 Basic Layout

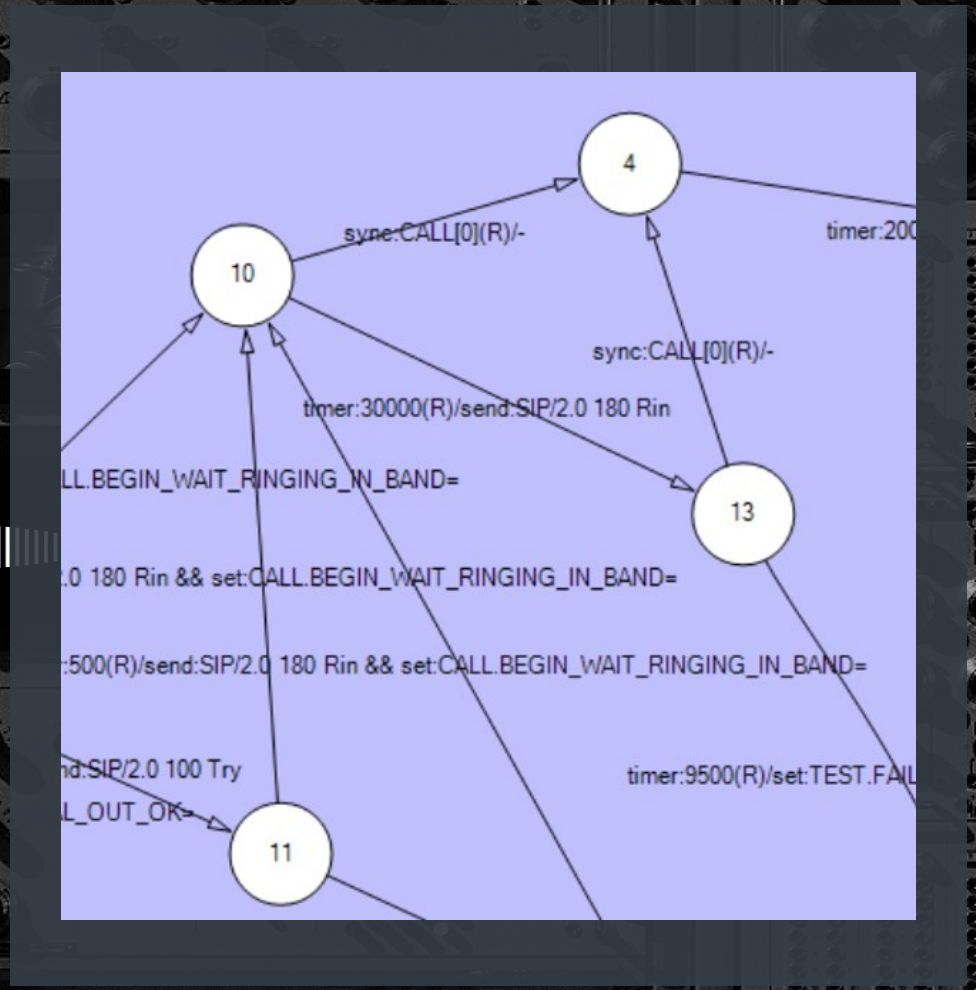
… The ideal way to implement this series of tests is to use a tester with both transmitting and receiving ports. Connections are made from the sending ports of the tester to the receiving ports of the DUT and from the sending ports of the DUT back to the tester …



Virtualization

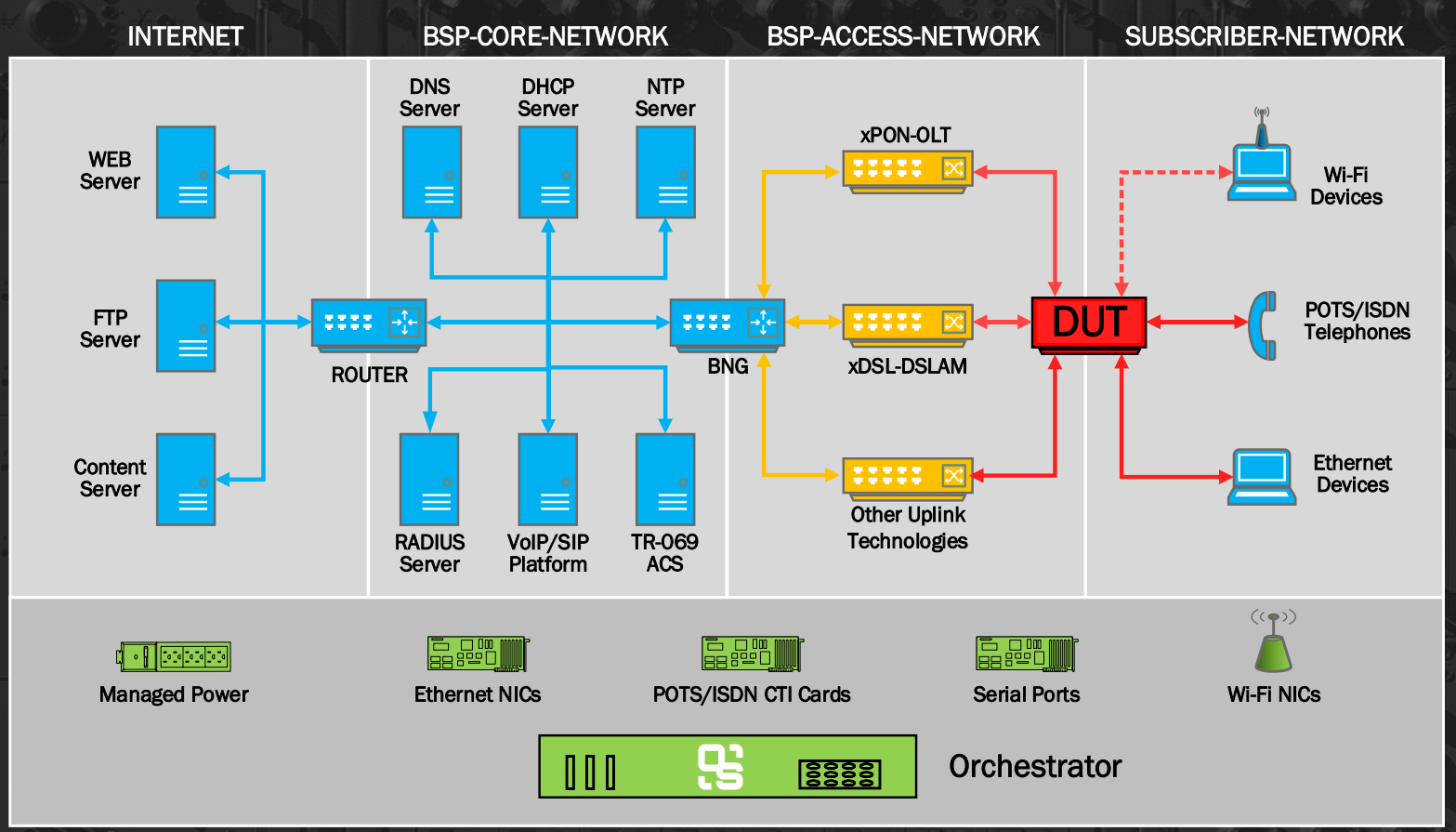
Implementing Network Software Defined Objects extends the RFC 2544 testing paradigm to all the DUT testing areas

NSDOs



All Network Software Defined Objects are implemented from Layer-2 and have their own programmable State Machine

Virtualized Test Bench Schema



FactOS Testing Platform

- FactOS Built-In Physical Objects
- FactOS Software Defined Objects
- FactOS Managed Physical Objects
- Device Under Test

Pros & Cons

Pros:

Repeatability – In-Depth

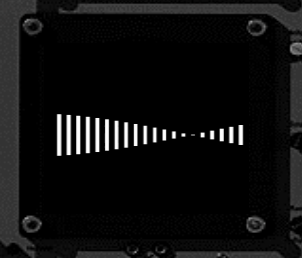
Scalability – Speed

Cost-Effective

Cons:

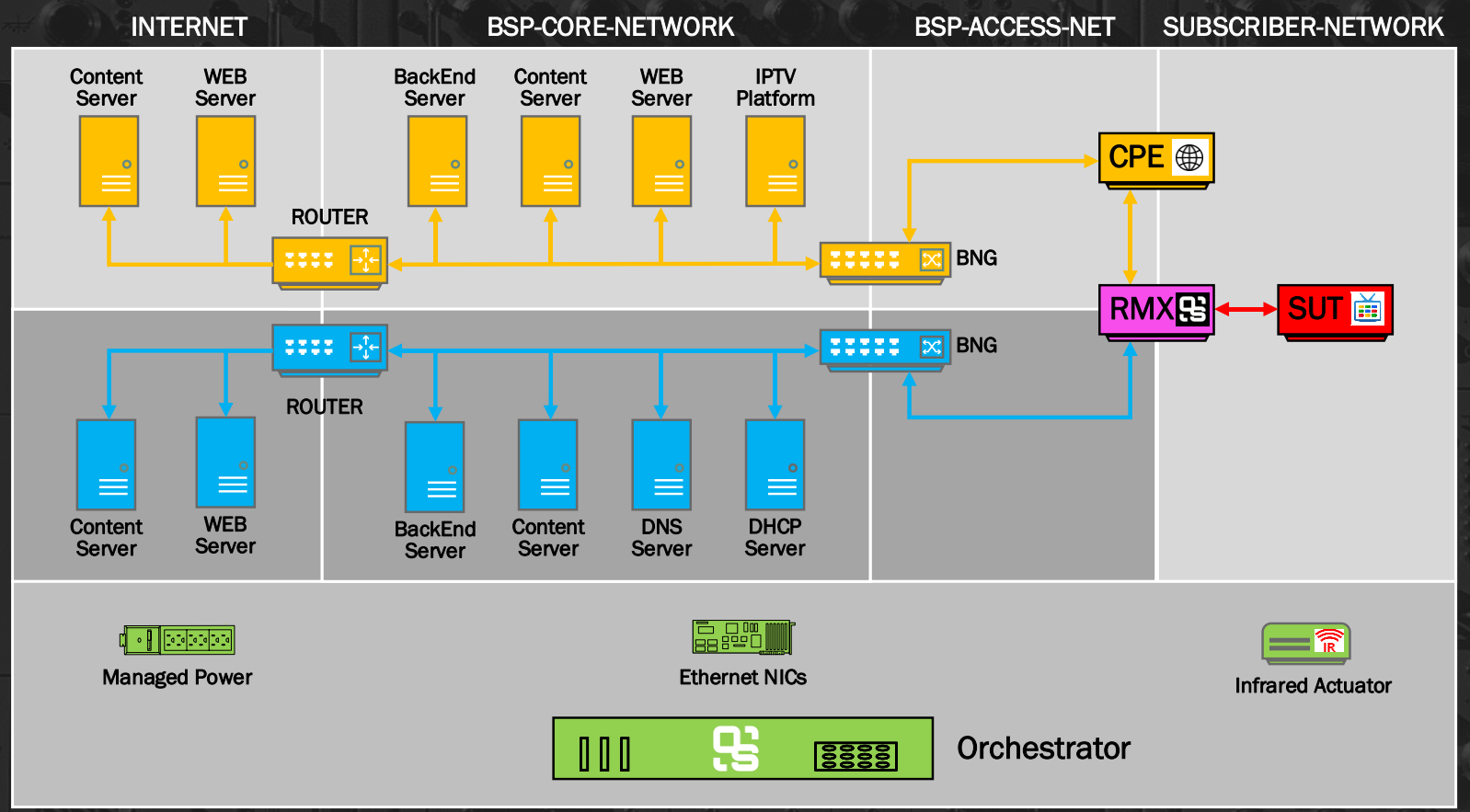
Not End-2-End

Hybridization



A Realm-Mixer Agent is used to achieve a Hybrid-Testing Platform with Software Defined Objects and Real Network Objects & Services

Hybrid Test Bench Schema



FactOS Testing Platform

- FactOS Built-In Physical Objects
- FactOS Software Defined Objects
- FactOS Realm Mixer
- Network Physical/Real Objs
- Set-Top-Box Under Test

Test Portfolio

Hundreds of test available:

Stack IPv4 & IPv6

IPoE (DHCP) / PPPoE

NTP – TR-069 Management

DHCP-Server – NAT – 6rd

VoIP SIP

etc.

New Tests

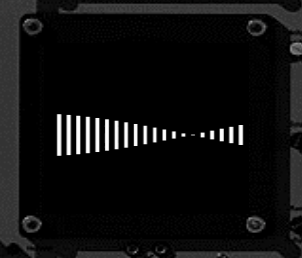
FactOS is a flexible and extensible framework that allows the development of new tests in a easy, fast, and straightforward way

Areas

Testing Areas:

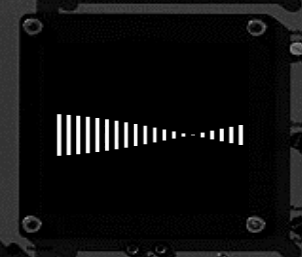
Functional
Interoperability
Performance
Load
Stress
Security

Areas



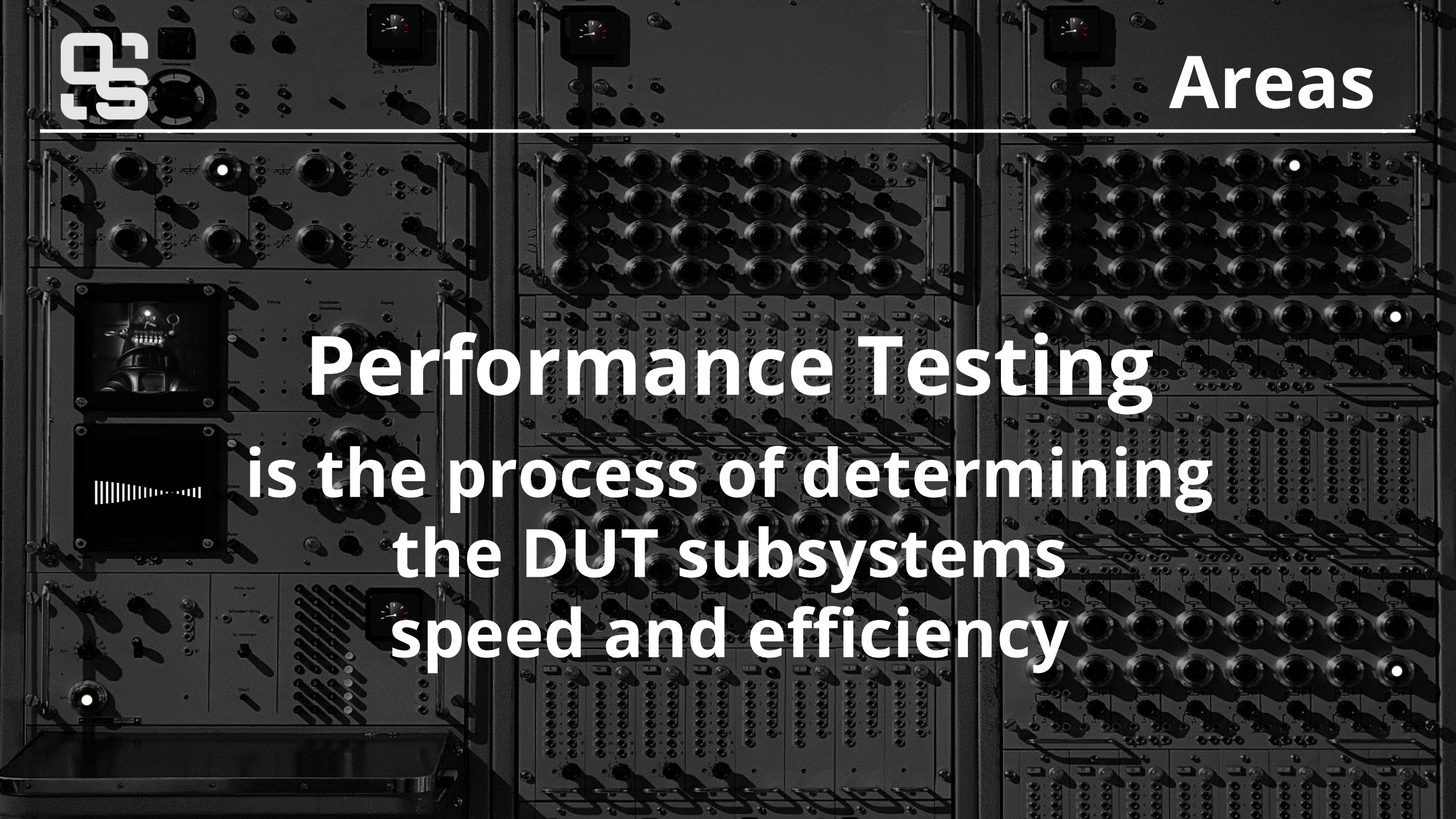
Functional Testing

is the process of determining the DUT subsystems compliance and adherence to standard and custom protocols & requirements



Interoperability Testing

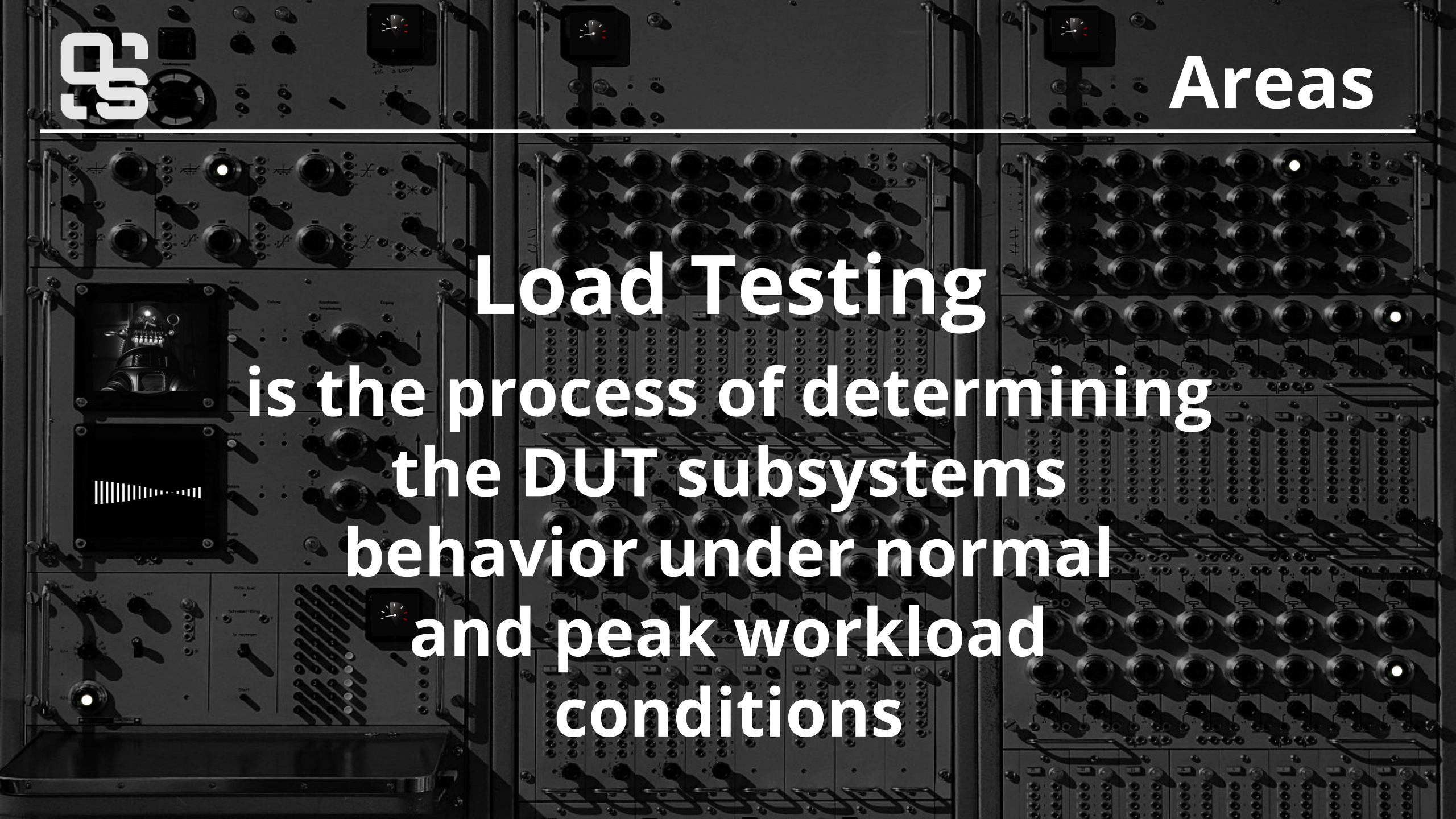
is the process of determining if the DUT subsystems can work in conjunction with other software and hardware systems



Areas

Performance Testing

is the process of determining
the DUT subsystems
speed and efficiency

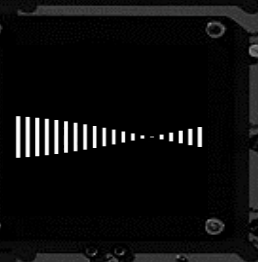


Areas

Load Testing

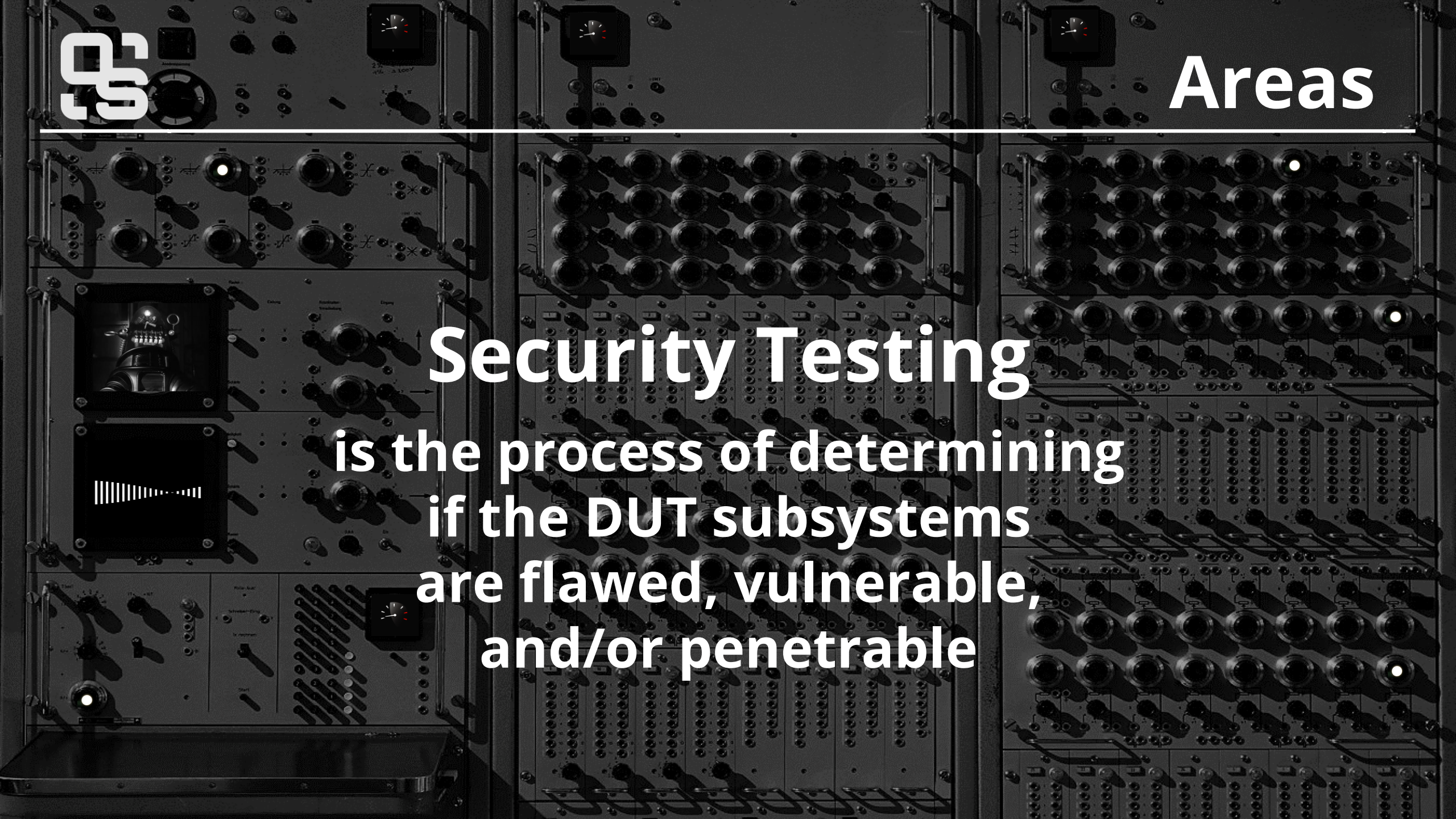
is the process of determining the DUT subsystems behavior under normal and peak workload conditions

Areas



Stress Testing

is the process of determining the DUT subsystems long-term stability and reliability



Areas

Security Testing

is the process of determining
if the DUT subsystems
are flawed, vulnerable,
and/or penetrable

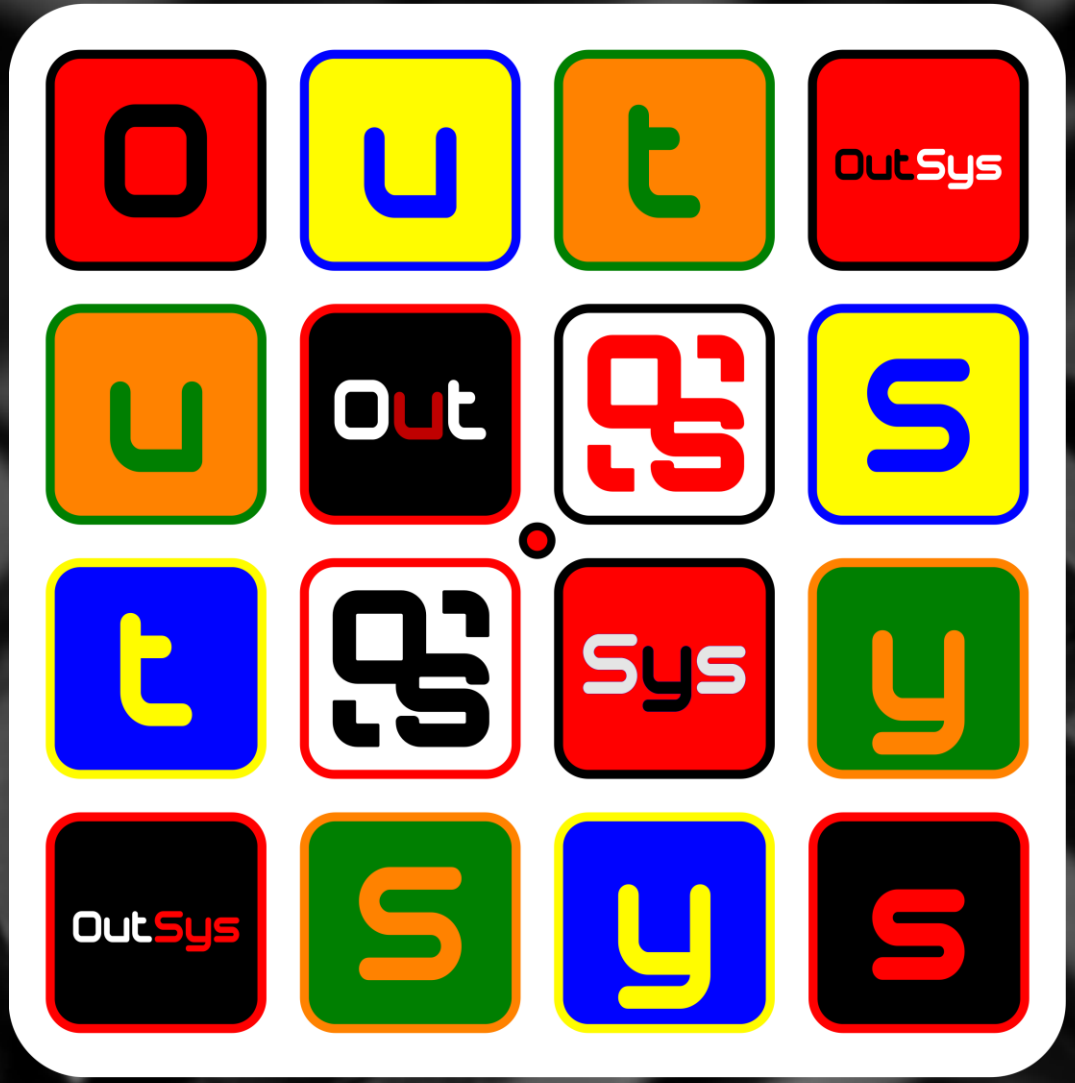
T&RC

CPE Test & Regeneration Center

On average less than one out of ten CPEs replaced in the field has hardware issues

A FactOS version is available to verify all the CPE hardware subsystems and upgrade their firmware to optimize and speed up the refurbishing process

FactOS

Available as Turn-Key or Testing-as-a-Service Solution

Thank You