



# Testing as a Service - TaaS

TaaS is an "Outtasking Model" where companies outsource parts of their testing activities to service providers on an on-demand and per activity pricing-approach.



## What about...

With our Testing as a Service approach we try to address following challenges of our customer:

### Driver

- **Increasing technological complexities, costs, and security** issues
- Effective tests of applications require **extensive automation**
- **Customer focus** on developing **innovative products**
- **Increase the speed** of test execution

### Model

**Outtasking** of testing activities like regression testing, performance testing, load and stress tests, including the reporting, analyze and management of the results

### Advantages

- **Very short test execution cycle**
- **Less spending's** due to **On Demand** execution
- Access to **specialized skills** to **solve complex problems**
- **Cost savings** trough automation

## About the Insight.

A short overview about the content

1. Test Planning & Consulting
2. Static Test & Analysis
3. Dynamic Tests
4. The test process in practice
5. Automation as part of the test cycle



If you wish, we are happy to discuss and advice on the topics

- test requirements
- risk analysis
- test procedures
- test objectives
- test environment
- how to test
- test tools
- how to align to time & budget

and the reporting you would like to have.

As result of the discussion it might turn out as well to go one step before starting "tests with the application" itself.

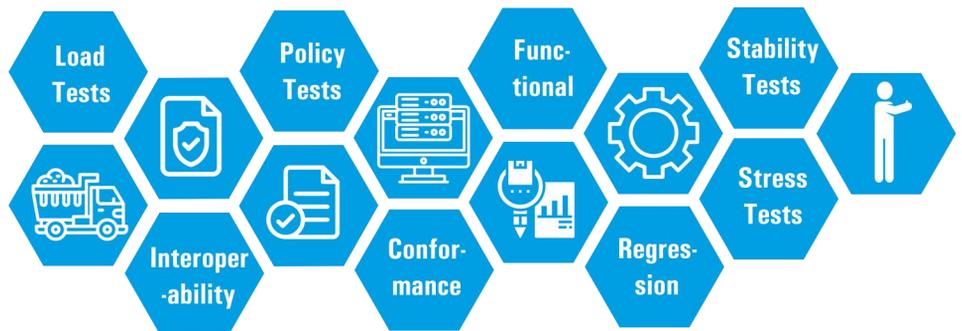
In certain cases it makes sense e.g. during early development stages, to analyze the services or applications in detail before.

## Static Testing and Analysis.

We can support you with Static Testing techniques, like formal & informal reviews like walkthroughs, technical reviews or inspection. Static Analysis tools are available as well e.g. Lint or CodeRush.



## Dynamic tests.



To verify the services and functionality of your network components we are able to provide following test scenarios for

- Policy tests
  - Load scenarios
  - Stress scenarios
  - Stability - failure resilience
  - Scaling tests
  - Interoperability
  - Usability
  - Conformance
  - Interoperability
- and final regression test.

## Dynamic tests..

### Equipment

CISCO, rtBrick, f5, IBM, IXIA, Spirent, NIKSUN, Juniper, NOKIA incl. Alcatel-Lucent, Infinera, Huawei, Fortinet, RAD, metaswitch, and so on....

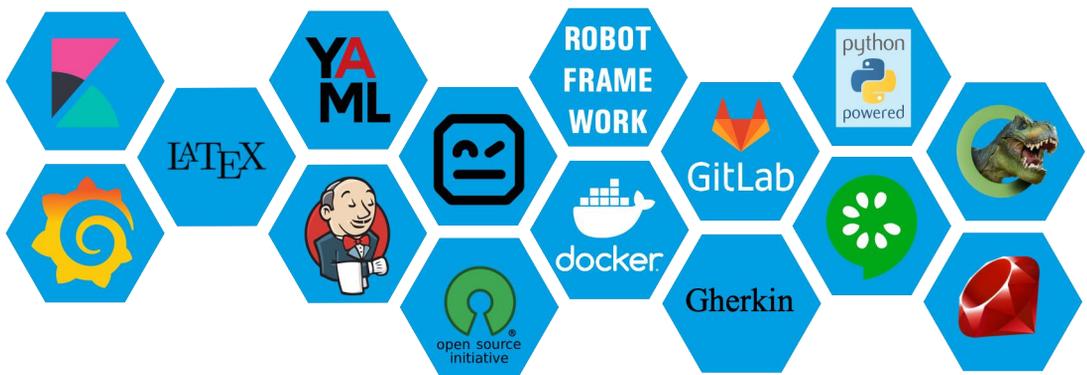
### Testing areas

IPTV, OSS, BSS, Security, Aggregation Networks, SD WAN, Controller, Backbone, Firewalls, Loadbalancer, Optic (e.g. SFPs, CFPs,..), DOCSIS, NFV, and so on.....

### Services

Man in the Middle, QoS Tests, BGP (sessions, runtimes, flaps,...), Layer 2 & 3 BSA, EVPL, L2X (VLAN, Frames Sizes, etc.), DCIP, Dial in Services, PPPoE, IPv6 conformance, Layer 2 Tunneling, ISIS function, and so on.....

## The test process in practice - Agile & Automated.

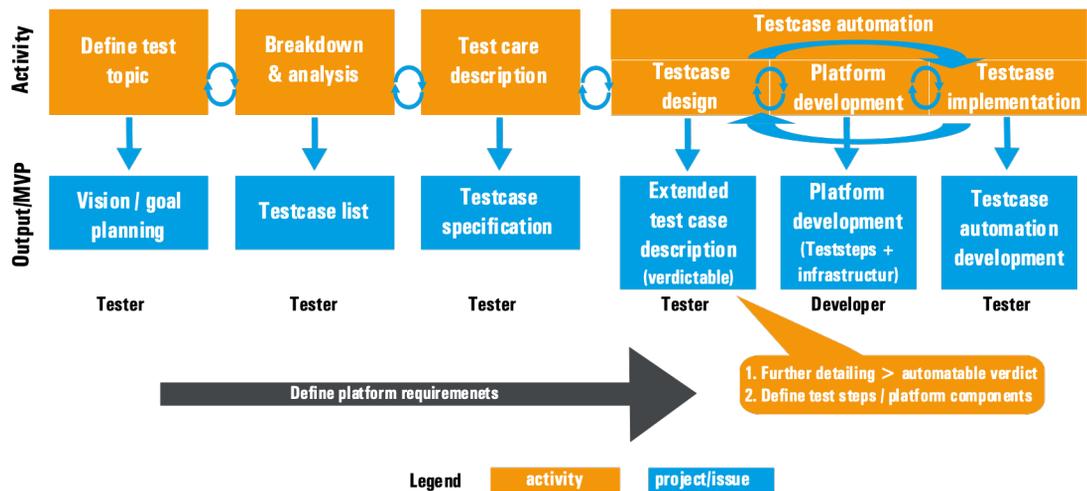


Although we are guided by the fundamental test process according to ISTQB in most cases we enhanced the process for two issues:

- The agile way of working is reaching the network world as well, doesn't matter for NFV reasons or Network Disaggregation
- Without automation it is impossible to execute the test within the sprint or release cycles

# The test process in practice - Agile & Automated..

## Overview process



## Minimum Viable Product (MVP)

Important, we align the test process including the automation to the development cycle for services and applications of our customer.

Following this, the results for test and automation are aligned with the expectations for

- Time & schedule
- Budget

No unnecessary wasted resources and the learning curve is shared on both sides!

## Automation as part of the test cycle.

Typically we automate the test execution during the test cycle. The goal is always to reduce the efforts for manual regression as far possible.

Benefit for the customer are

- faster execution within the next sprint or release test
- difficult test scenarios are easier to execute and the knowledge about "how to" remains within the customer department

Its final leads to cost reductions (OPEX) or the opportunity to capitalize investments during the test phase.

# Customer case TaaS - Broadband Network Gateway.

## Context

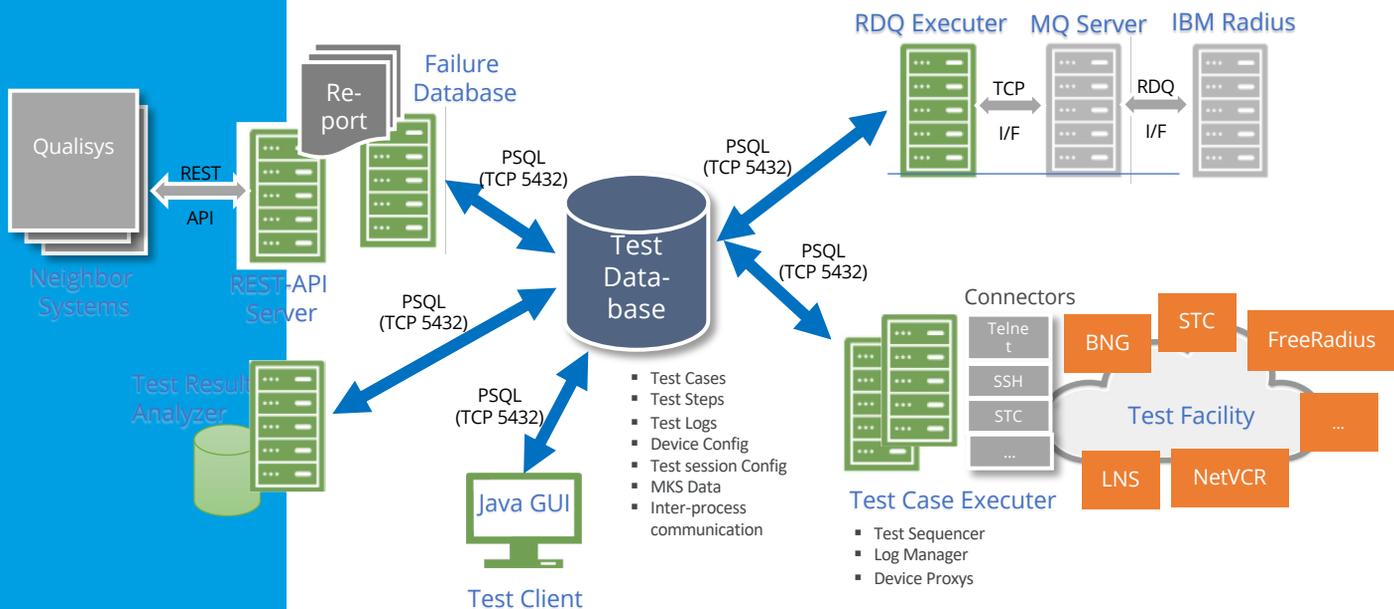
Operator prepares migration towards an efficient, harmonized production environment in network and IT for residential and business services.

As part of it the separation of network and services happens, with independent life cycles. The services are fully parameterized and dynamically configured during runtime via Radius protocol.

The approach is a flat network topology with the BNG to integrate Aggregation, BRAS, Video Edge and MPLS Edge Router into a centralized point for service creation.

## Overview

### System architecture



## Challenge

The customer is facing a high demand to verify new releases of the BNG with very short cycles. Within these cycles additional the substitution of former network services and the test of new services were urgent and beyond the resource's capabilities of the customer.

# Customer case TaaS - Broadband Network Gateway..

Work  
done

## Testing

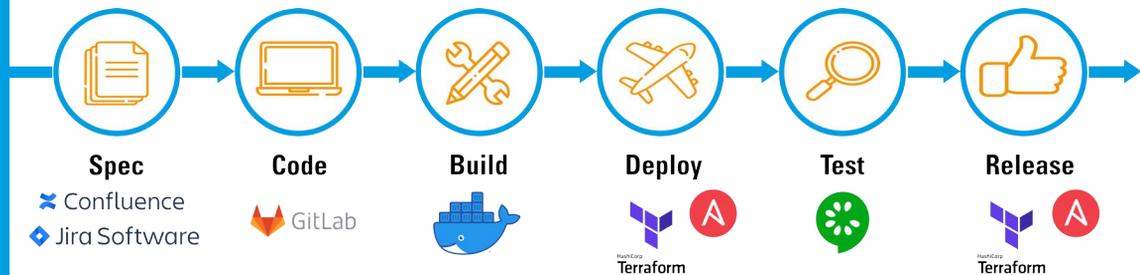
- Define and document test cases
- Implementation of the test bed setup
- Coordinate test equipment resourcing
- Execution of test cases
- Document, present and communicate test results

## Automation

- Drive automation platform development
- Automation of test cases as part of the delivery

## Processes

- Introduction of an Agile Way of working within the test center to deliver results on automatization, documentation and test results



All this executed with out of the delivery center with up to 12 FTEs with different profiles and backgrounds.

Results  
and client  
benefits

- **Solid test infrastructure** and well documented test results prepare BNG market rollout at minimized risks
- Establishment of a Delivery Center to secure know-how for the customer
- Delivery of **testcases, test descriptions and automatization** in an Agile Way
- Successful **introduction** of an **DevOps Tool Chain**

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