Hi! I’m Rolf
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Introducing

- Open Test Automation Project
- @ FOSDEM 2020
Agenda

- What is OpenTAP? (15 min)
- Demo (15 min)
Keysight Technologies is an electronics test and measurement company.

The best hardware + the best software => The best measurement solution

=> Customer Success
The Automation Challenge

- The ecosystem is split between home grown and proprietary systems.
  - Home grown: Costly, error prone
  - Proprietary: Vendor lock-in
- Oftentimes companies start new project implementing very similar automation solutions
  - Same GUI, Drivers, logging, result systems, etc. ...
- We want to help people share their work and leverage the work of others.

*Our goal is to make test and measurement automation effortless!*
The OpenTAP Ideals

**Simplicity** If you don't really need it, it's not in your way!

**Scalability** It is lightweight and integrates with other things!

**Speed** Test performance is important and speed of development is too!
What Is OpenTAP?

• A Test Sequencer
• Plugin Architecture
• Developer Friendly
• A Growing Community
• Based on .NET Standard
• Supported on Windows and Linux (Ubuntu, CentOS)
• Open Source: MPL-v2, 'Open Core'
What Is OpenTAP?

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Test Sequencer

A test sequencer is a piece of software that can be used to create, modify, and run a sequence of test steps.

- **Test Plan** A sequence of test steps.
- **Test Steps** Encapsulates a piece of functionality. Measurement, hardware control, etc.
- **Resources** Device Under Test, Measurement Instrument, ...
- **Result Listeners** For processing and storing results in various ways.
Test Steps & Test Plans

Test steps are the atoms of OpenTAP.

Test Steps
• Encapsulates some functionality
• Has Settings
• Sometimes uses resources
• Can have child test steps

Test Plans
• Setup / tear down resources
• Sequence of test steps

Step 1
Step 1.1
Step 1.2
Step 2
Step 3
Step 3.1
Step 3.1.1
Step 3.1.2
Step 3.2
Example Test Plan Flow

- **Control Flow**
  - Step 1
  - Step 2
  - Step 3

- **Open Assigned Resources Phase**
  - DUT
  - Instr.
  - Results.

- **Run Test Steps Phase**
  - Step 1 Run
  - Step 2 Run
  - Step 3 Run

- **Close Assigned Resources Phase**
  - DUT
  - Instr.
  - Results.
Results

Many test steps generate results, for example:

- Just a verdict: pass / fail
- The results of a measurement
- A simple log message

A message passing system used for results. E.g writing to CSV files or SQL databases.

- Test Plan Runs
- Test Step Runs
- Result Tables
- Log messages
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Packages

OpenTAP

Keysight Floating Licensing

SDK

WPF Controls

Demonstration

CSV

Developer's System

OSIntegration

CSV, XML, and XSD

OpenTAP

By OpenTAP

https://opentap.io/OpenTAP/opentap

6.5.094

Download

How to Install?

<table>
<thead>
<tr>
<th>OS</th>
<th>Linux</th>
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<tbody>
<tr>
<td>Architecture</td>
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packages.opentap.io
5G Smartphone Benchmark

Testing phone performance from a user perspective.

- Battery Drain
- UI Framerate
- Click Latency
- Network throughput

Device Under Test: Phone
Web API Tester

A plugin for testing HTTP APIs

Device Under Test: HTTP Server
Pocket Science Lab

Subject of our demo.

- Frequency sweep
- Phase sweep

Oscilloscope
5-5kHz Wave Generator

Oscilloscope Channel 1&2
Wave Generator 1&2
Connected to PC

PSLab
Basic TUI
Python CLI
OpenTAP
Demo Time!
Thank You!

For more info

- **Webpage:** opentap.io
- **Documentation:** doc.opentap.io
- **Plugins:** packages.opentap.io
- **Source:** gitlab.com/OpenTAP/opentap
- **And please come to our stand!**

OpenTAP Plugin Developer Camp

- 7-11 September 2020
- opentap.io/events