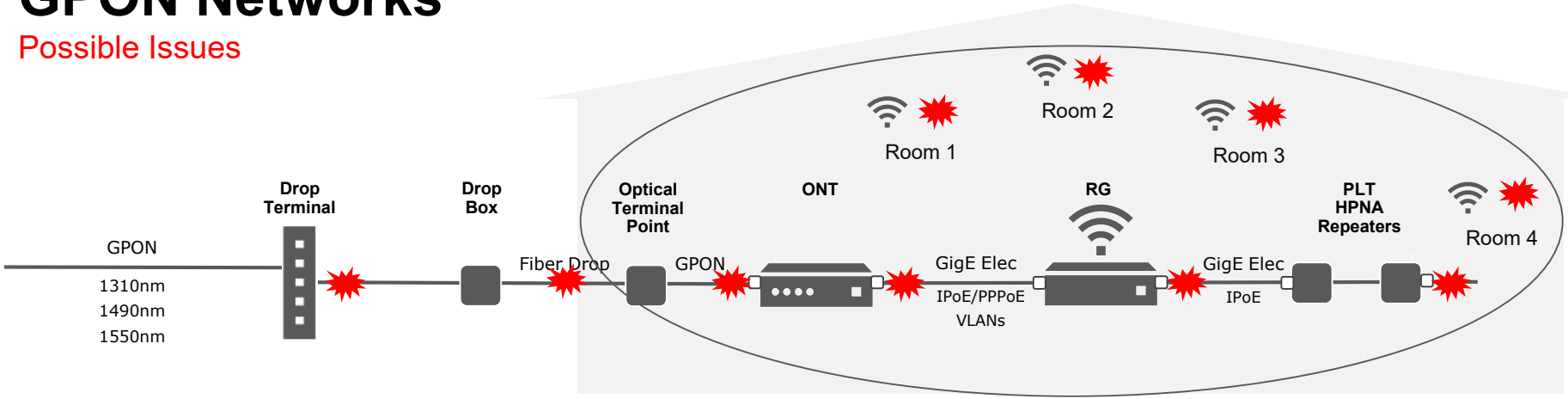
GPON installation made easy

4 Mar 2020

GPON Networks

Possible Issues



Business Impact

- Service failures / delays
- Customer satisfaction
- Support calls / churn

GPON	Ethernet	WiFi
Wrong Light	Poor Throughput	Poor Throughput
No Light / Low Light	No Internet	Weak Coverage

Challenges with GPON now field techs can solve quickly

Residential & Small Business PON

Service Provider Perspective	Test Requirements	Ideal Solution
Light Is Not Enough • A red LED on a CPE is helpless at Service Activation or Troubleshooting • Customer experience can still be down	Clear multiple sources of issues • Enough light • Sync with OLT & on the **right PON ID** • Get an IP address (PPPoE/VLAN right) • Access the internet	**Test All Layers** **Test Anywhere** Technician Efficiency • ONT Emulation • For demarcation e.g. GPON, Ethernet, WiFi
Customer Complaints Cost Customer expects speed they purchased • Expensive incoming calls • Very expensive dispatches & repeats • Hugely expensive churns	Performance vs Web connectivity • Speed Test (TCP Throughput) and verify all equipment well configured (profiles = what purchased)	**TCP Throughput Test** (on all access points) Customer Satisfaction • Service Performance over GPON, Ethernet, WiFi
WiFi Impacts Total Experience #1 Issue • WiFi = customer experience • GPON right but customer complains	Emulate WiFi devices & Test • WiFi Coverage (in each room) • Service performance (over WiFi in each room)	**WiFi coverage** **Service Performance** Customer Satisfaction • WiFi Performance up to high end 3x3 antenna devices

Challenges with GPON now field techs can solve quickly

Residential & Small Business PON

Service Provider Perspective	Test Requirements	Ideal Solution
Unskilled Techs Must Deal with Multiple Technologies • FTTH ramp up • New techs, workforce consolidation • Turnover • OPEX reduction trend (less skilled workforce)	Automation and Speed • Fully automated, guided tests • Fast tests, fast understanding (simple results analysis)	**1-button OneCheck Tests** **1-screen Test Results** **Technician Efficiency** • OneCheck PON (1 minute) • OneCheck Ethernet (1 minute) • OneCheck WiFi (1 minute per location) • Closeout Tests with Date / Time / Geolocation
Providers Need to Drive Compliance • Difficult to ensure all tech /contractors follow the process; everything works right the first time • Multiple techs / contractors working on PON doesn't help (miscommunication)	Work Tested Work Compliance Traceable • Simple & Fast Closeout Tests • Every time a Tech leaves a site • All recorded & accessible from a central point	**OneCheck Closeout Tests Central Server** **Provider Visibility** • Date / Time / Geolocation recorded • Requirement for all dispatches • At both (Physical) Network & (Customer Experience) Service levels

Challenges with GPON now field techs can solve quickly

Residential & Small Business PON

Technician Efficiency

Customer Satisfaction

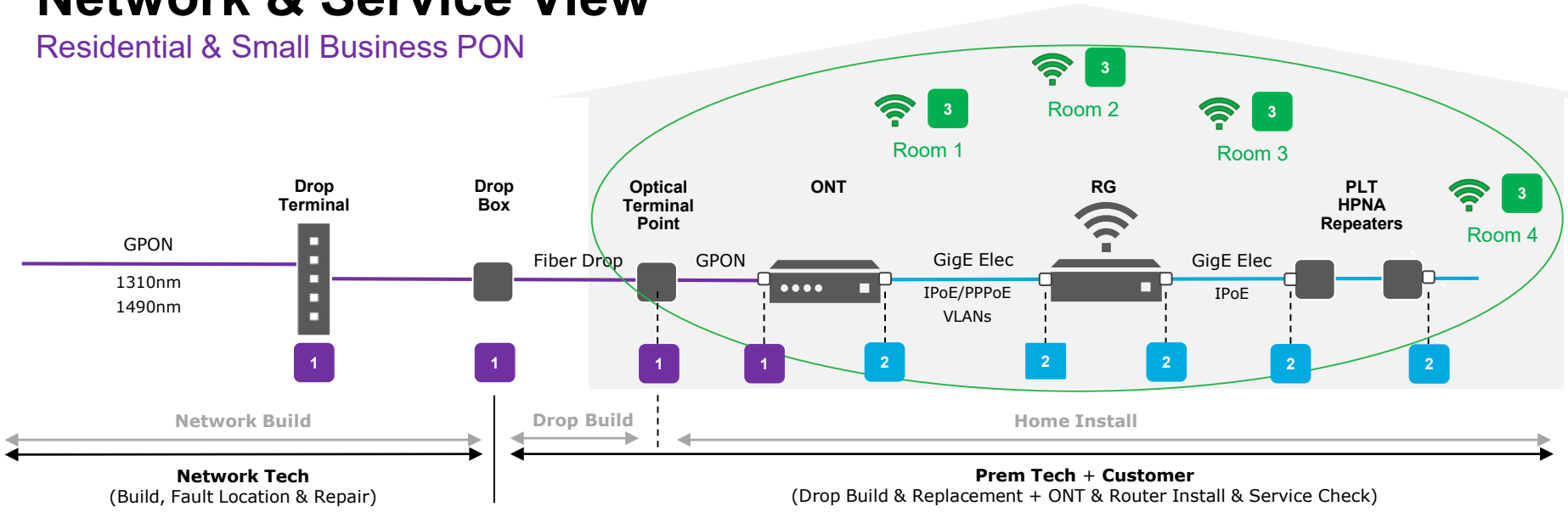
Provider Visibility

Problems to solve	Test Applications	
Clean connectors?	Fiber Inspection	●
Enough light?	Optical Power Level	●
Right Light?	PON ID	●
Get an IP Address?	IPoE / PPPoE, VLAN	●
Connectivity to the Web?	HTTP Connectivity	●
Expected Service Performance? *(Customer Experience)*	**TCP Throughput Test** *(Speed Test)*	●
Excessive Loss (Breaks, Bad Splices, Bad Connectors, Bends)?	OTDR	○
Any In-home wiring issues?	Ethernet Test	●
Are WiFi Coverage & Performance good in all rooms?	WiFi	●

Required ●
Optional ○

Network & Service View

Residential & Small Business PON



Companion

PON ID

Optical Power Level

OneCheck PON Closeout

ONT Emulation

SPEED TEST over Ethernet

Ethernet Layer

Physical Layer

OneCheck Ethernet Closeout

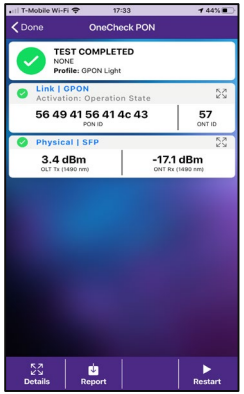
SPEED TEST over WiFi

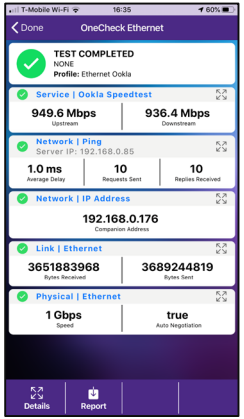
WiFi Connection

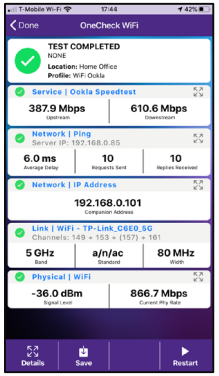
WiFi Coverage

OneCheck WiFi Closeout

Product Tour with a Controlling Device



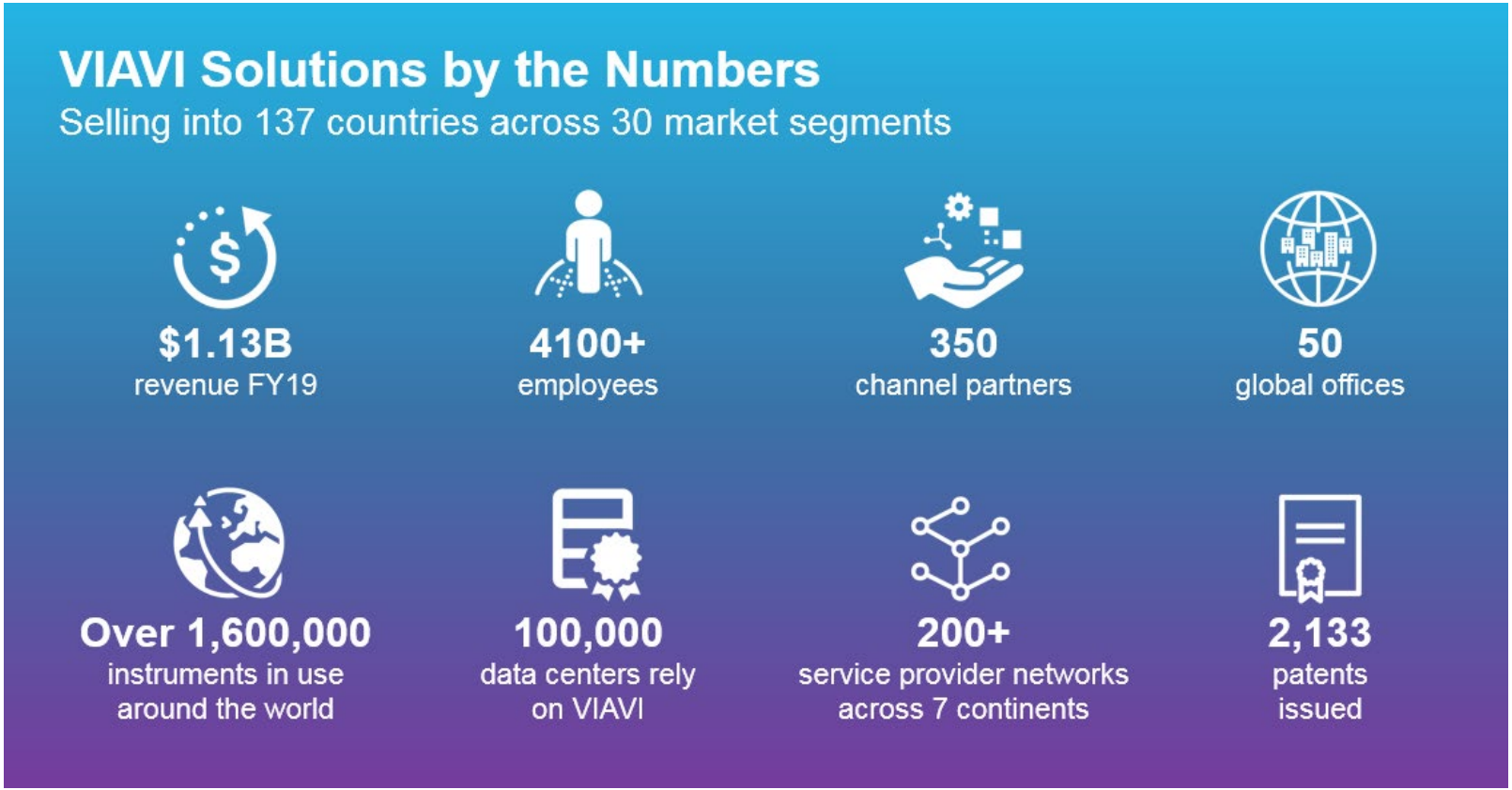




VIAVI R&D Center Bucharest

- 91 employees; started in 2017
- Software development for NSE; FPGA design
- Main areas: Fiber, Metropolitan networks, Cable and DSL, 5G networks
- Application software development for various meters; starting mobile software
- Platform support and application development for newest Viavi platforms
  - OneAdvisor 800
  - HetNet/ Cell Advisor

VIAVI Global



Q/A