

# Remotely monitor your wireless network services end-to-end with TEMS<sup>™</sup> Sense

TEMS<sup>™</sup> Sense is a phone-based remote testing solution delivering fully automated monitoring and real-time analytics from locations across the network. It can be mounted in fixed locations such as airports and stadiums, or in vehicles such as taxis and public transport. Units are remotely managed and controlled. A proactive testing approach means staying ahead of potential issues and giving your subscribers the quality, they deserve.

Ensure early detection and correction of issues with 24x7 monitoring and root-cause analysis of service impact issues that occur in your network

Reduce your troubleshooting time and costs by connecting remotely to a TEMS Sense unit to perform ad-hoc tests without ever having to send a technician out into the field



Accurately validate network upgrades and changes with a TEMS Sense unit deployed in a fixed location

Validate every aspect of your network via advanced device forcing features and scripting, as well as the ability to test OTT services and applications

Monitor your network service as a non-operator to ensure your critical comms are continuously working at key locations

## **TEMS Sense use cases for operators**

#### Subscriber quality of experience monitoring

Stay one step ahead by quickly discovering and fixing service-impacting issues

Early detection and resolution of network issues is key for happy subscribers. By staying one step ahead, you avoid damaging customer escalations. TEMS Sense lets you monitor your end-to-end subscriber experience, 24x7. Using real-time root-cause analysis and the ability to run ad-hoc tests, TEMS Sense allows you to quickly discover and fix service-impacting issues.

#### Strategic location monitoring

Ensure that your network is performing as it should where it matters most.

Deploying TEMS Sense at airports, stadiums, shopping malls and other key strategic locations provides you with confidence that your network is performing as it should in these important locations. It can also be deployed at your retail stores to continuously validate that voice and data service quality is at the highest level for prospective customers. With support for 4 SIM cards, TEMS Sense units at strategic locations can also be used to benchmark your network against your competitors.

#### **Regression testing**

Easily identify if changes have degraded performance or improved it as intended.

When making changes to your network, you need to make sure all your services continue to perform reliably without any degradation. TEMS Sense makes it possible to validate network upgrades, new feature activations and any other changes that are made to the network. Continuous testing done at a fixed location provides a perfect baseline to confirm network changes have not adversely affected the network (or have improved it as intended) and it is easy to see if changes have degraded performance.







# Enterprise service-level agreement management

Confidently monitor and exceed your SLAs for your VIP customers.

Large enterprise mobility customers are not only the most profitable ones, but they are also the most expensive ones to acquire. Maximizing the lifetime value of these wireless customers makes good business sense. By deploying TEMS Sense at strategic customer locations such as corporate offices, it is possible to not only monitor service quality but also to confirm the users at that location are receiving service that exceeds their contractual SLAs.

### Roaming and revenue assurance

Understand your subscribers' roaming experience around the world.

Your roaming customers are typically your top-tier subscribers and knowing that they get excellent service quality abroad is vital to your roaming strategy. By placing TEMS Sense probes in key geographical locations worldwide, you get full visibility of your subscribers' roaming experience. This information is vital to your roaming partnership strategy and negotiations.





# TEMS Sense use cases for non-operators

#### Private 5G network assurance

Assure your business-critical network without the need to be an RF expert.

5G private mobile networks are being deployed in many industry verticals such as manufacturing, mining, and power utilities. While these networks are typically small, they are also business-critical. Service assurance solutions, however, are large, complex and expensive, and not a feasible option to validate performance for a network of just 10s of cells. TEMS Sense is the perfect solution to understand that your private network is working as expected without the need to be an RF expert.



#### **Critical communications monitoring**

Validate that first responder teams always have the network coverage they rely on.

With many first responders moving to public 5G networks, the need for the mobile network to deliver critical communications has never been greater. But how can you be confident the network your teams rely on is performing as expected? TEMS Sense gives the emergency services confidence in their 5G critical comms, enabling them to validate network performance at key first responder sites including police stations, fire stations and hospitals without the involvement of the network operator.



#### **Regulatory oversight**

Monitor that all your operators are meeting their license-mandated service levels.

As a regulator, a key part of your role is to ensure the operators within your country are delivering the quality of service expected by their customers (and defined in their license conditions). With each TEMS Sense unit capable of supporting 4 SIM cards, Regulators can deploy them at key locations across the network to monitor the performance of all the operators in their country without ever leaving the office.



### Coverage blocking validation

Maintain your security with continuous validation of cellular jammers.

Secure locations such as prisons or sensitive military bases often need to ensure that there is no mobile connectivity. TEMS Sense enables organizations operating these sites to maintain their security by continuously validating that cellular jammers are working, and that it is not possible to make calls or send data via mobile phones.



# A few TEMS Pocket highlights



### **Robust and reliable**

Unattended robust and reliable solution designed for stationary or mobile deployments and continuous data collection.



### Inbuilt intelligence

Not just a phone in a box, TEMS Sense features temperature and smart charging control, recovery handling, LAN/Wi-Fi support for data upload and remote control as well as Power Over Ethernet support.



### **SIM** multiplexing

Support for 4 SIM cards per unit enables testing of multiple networks from a single unit.



### **Social Media and OTT testing**

OTT service and application testing including voice, data, social media and streaming.



## Comprehensive technology support

5G, 4G, 3G, 2G support coupled with ETSI and ITU-R aligned test methodologies.



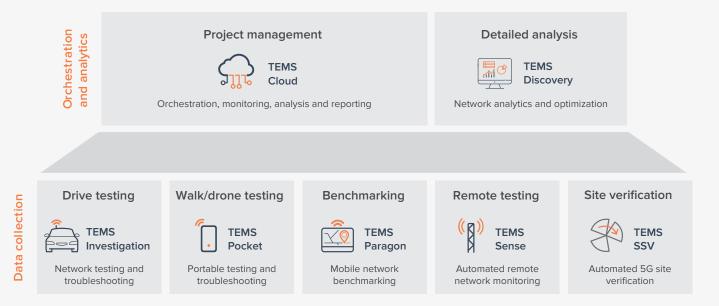
### **On-device measurement**

Measurements performed on handsets provide the closest alignment to actual end-user experience. TEMS Sense can control applications installed on test phones to perform voice and data test scenarios.

# Part of the Infovista TEMS Suite for mobile network testing

The TEMS Suite is our portfolio of solutions that allow you to address every aspect of testing and troubleshooting your network from a subscriber's perspective, whether it be just 5G or a combination of multiple technologies. If you are looking to verify the performance of new 5G sites, walk test strategic indoor locations, benchmark your network performance against your competitors, or any one of numerous other network testing use cases, TEMS has a solution to meet your needs.

- **TEMS Cloud** manage your network test projects with real-time control and analytics
- TEMS Investigation perform drive tests to verify, optimize and troubleshoot all your mobile network technologies
- **TEMS Pocket** walk test indoor locations and drone test hard-to-reach places
- **TEMS Paragon** streamline your mobile network benchmarking campaigns
- **TEMS Sense** proactively monitor your wireless network services end-to-end with active testing
- **TEMS SSV** automate site acceptance for faster 5G roll-outs with fewer personnel
- **TEMS Discovery** turn your network test data into analytics and actionable insights for optimization



## About Infovista

Infovista is the global leader in network lifecycle automation (NLA) for the next-gen networks era. With its unique NLA approach, Infovista allows communications service providers (CSPs) and enterprises to improve their network performance and customer experience, optimize their productivity, and reduce their costs, while maximizing return on their investments. Spanning the entire network lifecycle, Infovista's products and solutions leverage an open, integrated, cloud native portfolio that automates tasks, flows, analytics, and decisions to the greatest extent possible. More than 1,000 customers, including 400 Mobile Network Operators, around the world rely on Infovista to plan, design, deploy, test, operate, support, optimize, evolve, report on and monetize their networks.

# infovista

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