xSIGHT™ Traffic Analysis Agent (TAA)

Mobile Network, Service, Customer KPI Generation

xSIGHT TAA uses Viavi-patented innovation to:

- Identify the application in use and to determine customer quality of experience (QoE)
- Deliver performance and QoE metrics up to 15x faster at a lower cost than traditional competing solutions

**xSIGHT Customer Experience Assurance (CEA) Portfolio**

The xSIGHT CEA portfolio consists of three layers:

- Agents that collect data from variety of sources including traffic, network elements (NEs), and probes
- A real-time intelligence platform that adapts, enriches, and correlates data
- A cloud-based portal providing operator access to xSIGHT analytical applications

TAA is an xSIGHT data access agent that passively monitors both control and user-plane IP-based traffic to build network, service, and customer (KPI) SMARTmetrics™ that are then fed to the xSIGHT RTI platform or to third-party key performance indicator (KPI) apps. The TAA is available in either a physical (server plus Viavi software) or virtualized (Viavi software for running on a virtual machine) configuration.

**Key Benefits**

- Increases visibility into customer application experience
- Significantly lower cost than traditional monitoring solutions for the same visibility and throughput levels

**Key Features**

- Fast response and high granularity user-plane visibility engine
- Patented service, app, and URL categorization process with very broad coverage
- Value-based KPI generation process
- SMARTmetrics KPI feed for third-party applications
- Virtualization-ready architecture

**Use Cases**

- Monitor mobile network, service, and customer performance in real time
- Troubleshoot mobile network, service, and customer performance faults
SMARTmetrics — Quickly Gain Deep and Granular User-Plane Visibility

Based on a streamlined, KPI generation process, the xSIGHT TAA quickly delivers SMARTmetrics insight into both control and user-plane performance. For control-plane KPIs, a record is generated for every low-volume event, but high-volume events generate records only for “fails,” along with the number count of successes. For user-plane KPIs, xSIGHT measures over a timed period rather than over the duration of an individual subscriber call/data session.

<table>
<thead>
<tr>
<th>Time</th>
<th>IMSI</th>
<th>Cell ID</th>
<th>IMEI</th>
<th>IP Addr</th>
<th>TCP</th>
<th>Win Size</th>
<th>Delay</th>
<th>Load Time</th>
<th>TTL</th>
<th>X Transmits</th>
<th>T-Put</th>
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<tr>
<td>UDP</td>
<td>Packet Loss</td>
<td>Jitter</td>
<td>T-Put</td>
<td>VoLTE MOS</td>
<td>Delay</td>
<td>Etc.</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Example of SMARTmetrics (user-plane) record

SMARTmetrics — Identify User Services, Apps, and URLs

Using a patented domain name system (DNS)-based method, or a powerful deep packet inspection (DPI) engine, the xSIGHT TAA can identify hundreds of end-user applications. With both the revenue value of traffic and the acceptable network performance requirements varying greatly depending on the end-user application, the ability to identify these applications is critical for effective mobile assurance.

- Line
- Whatsapp
- MSN
- Skype
- ... (Messaging)

- Quake
- XBox
- ... (Gaming)

- YouTube
- FaceTime
- Netflix
- ... (Video)

- Facebook
- Google+
- Twitter
- ... (Social Networking)

- IMAP
- POP3
- Gmail
- Hotmail
- ... (Mail)

- Bit torrent
- eDonkey
- Thunder
- ... (Peer to Peer)

Example user applications and categories

SMARTmetrics — Vary KPI Detail Based on Traffic Value

The xSIGHT TAA supports a new value-based KPI generation process that, based on user-entered (traffic) value definitions, automatically varies KPI generation depending on the traffic’s value. In the mobile broadband era, traffic value varies greatly so it does not make financial sense, from an assurance solution perspective, to analyze it all the same way.

Minimal processing is applied to low-value traffic to get basic, summarized performance analytics. However, more processing is applied to high value traffic, such as from high-revenue services or VIP business subscribers, to gain deep insight into the individual customer experience for services and over-the-top (OTT) applications.

SMARTmetrics — KPI Feeds for Third-Party Applications

In addition to feeding xSIGHT applications, the TAA can supply SMARTmetrics insight to non-Viavi third-party applications. Flexible TAA feed content can be configured to output only the data a third-party application requires. This minimizes the processing burden placed on the third-party application, lowering the costs of the overall solution. TAA feeds cover both control- and user-plane insight, and the data can be streamed as it is collected or output in batches at timed intervals.

Value-based monitoring concept
Virtualization-Ready Architecture

The TAA was designed from day one to support deployment in virtualized networks. Without relying on proprietary hardware (unlike its traditional equivalents), the agent can run on either commercial off-the-shelf (COTS) servers or virtual machines. This allows the TAA to access traffic on virtual network interfaces and assure services carried over NFV and hybrid (physical/NFV) networks. See the “Complementary Products and Services” section for more details on the virtualized TAA.

Use Case — Monitor Network, Service, and Customer Performance in Real Time

The xSIGHT TAA is the ideal agent for generating traffic-based mobile KPIs that Viavi xSIGHT and third-party monitoring applications use for identifying pending, or recently occurring, customer-impacting issues. Its ability to deliver quick SMARTmetrics identifying user apps’ service functionality and value-based KPI analytics makes the xSIGHT TAA much more effective than similar products—and at a lower cost.

Use Case — Fault Troubleshooting

Traditionally, troubleshooting mobile faults involved only protocol transaction tracing and decoding, a very technical task that only highly skilled staff could perform. Now, the xSIGHT apps can be used for initial fault troubleshooting using KPI metrics—a faster, easier process the xSIGHT TAA enables via SMARTmetrics. Users can also define new KPIs that are instantly reported in the next batch of results.

Complementary Products and Services

Virtualized Traffic Analysis Agent (vTAA) — The virtualized version of the TAA is configured for use in NFV networks, where it is able to access traffic at virtual network interfaces. The vTAA is supported for use in VMware ESX and RedHat KVM virtual machine environments. Please contact your Viavi representative for details of support on other virtualized environments.

Traffic Storage Agent (TSA) — TSA is an xSIGHT data access agent that captures and stores control-plane traffic with a Viavi-patented indexing method for quick retrieval by transaction-tracing troubleshooting applications. The TSA also passively monitors both control- and user-plane IP-based traffic to build network, service, and customer (KPI) SMARTmetrics that are then fed to the xSIGHT mediation component or to third-party KPI-based apps. The TSA is available in either a physical (server plus Viavi software) or virtualized configuration (Viavi software for running on a virtual machine).
Customer Experience Assurance (CEA) Applications — These xSIGHT applications deliver multidimensional KPI analysis in real time, linking the customer experience to the underlying network and service performance. It enables the industry’s most powerful assurance workflows with customer QoE “impact analysis” of detected issues and problem diagnosis via fast metric (KPI) drill-down.

Viavi Professional Services — xSIGHT solutions are deployed, transitioned to production environments, and supported by our industry-leading professional services team.

- Rapid turnkey deployment with acceptance testing ensures full satisfaction before handover
- Maximize investment through user-adoption services
- Keep systems up to date through software upgrades
- Increase productivity with ongoing access to industry-leading experts that get to know your network, services, and your customers

The initial solution price includes competitive support package with first year telephone support and software updates

Our services organization spans the globe and, on average, our service consultants have over 15 years of experience.

Specifications

<table>
<thead>
<tr>
<th>Physical Parameters</th>
<th>Size</th>
<th>Weight</th>
<th>Power</th>
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</thead>
<tbody>
<tr>
<td>Server information</td>
<td>1U</td>
<td>19.8 kg</td>
<td>2 AC (750 W) or 2 DC –48 V (1100 W)</td>
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<tr>
<td>Interface configuration</td>
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<tr>
<td>KPI output format</td>
<td>CSV feed (SFTP/SCP – TAA runs client)</td>
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</tbody>
</table>

KPI Generation — Interface Support

- 2G/3G voice service control-plane interfaces
- 2G/3G/LTE data service control-plane interfaces
- 2G/3G/LTE data service user-plane interfaces
- VoLTE service control-plane interfaces
- VoLTE service user-plane interfaces

Ordering Information

Please contact your Viavi representative for more information or for ordering assistance.