

# Optimizing Subscriber Quality of Experience for Mobile Video with Nokia and Gigamon

## The Challenge

Mobile networks are comprised of multiple technology layers and traffic types. As mobile networks have evolved and continue to evolve from 3G to 4G and now to 5G, the demand for mobile video content has continued to grow exponentially. Mobile video already accounts for more than 80 percent of traffic in many networks, and much of this is encrypted. Quality expectations amongst subscribers have also risen, driven by larger screens with better resolutions, and a desire to keep up with the latest home entertainment experiences and streaming content. For communications service providers (CSPs), which includes mobile operators, being able to continuously and easily monitor all video traffic is demanding. Attempting to copy and forward all of the video traffic from the network off to a huge packet-based probe and analytics farm tends to be unmanageable and cost-prohibitive. As a result, a new and different approach is necessary to ensure video quality and user experience is being maintained while keeping total cost of ownership (TCO) under control.

## Integrated Solution

Nokia AVA Predictive Video Analytics (PVA) offers powerful video analytics for providing real-time insights into mobile over-the-top (OTT) video traffic to enable actions to be taken to improve user experience.

Gigamon Visibility and Analytics Fabric™ (VAF) enhances the solution by acquiring and correlating copies of the 3G/4G or 5G user traffic from the mobile core network, generating video session data records and forwarding these records to Nokia AVA for analysis.

## Joint Solution Benefits

- Scalable and pervasive network traffic visibility across any 3G/4G or 5G mobile core (including non-standalone and standalone)
- Continuous video quality insights with automated recommendations to improve customer experience
- Optimized investment costs for deployment and ownership

## Introduction

Nokia AVA is a complete Artificial Intelligence-as-a-Service analytics platform, where video analytics is a key offering. Mobile operators are able to continuously see the performance and quality of the traffic for various OTT video services being accessed by subscribers, and receive automated recommendations to address any issues in their network in order to provide the most optimal experience for their customers.

Gigamon Visibility and Analytics Fabric (VAF) is the leading platform for network traffic acquisition, aggregation, optimization and transformation. It gives mobile operators the ability to access traffic in the mobile core, correlate user plane traffic with the control plane information, focus in on specific users, devices, network segments (such as RAN and network slice) and traffic types (such as video) and share these insights with other systems.

## The Nokia and Gigamon Joint Solution

Key benefits of the joint Gigamon and Nokia solution include:

- Deep insight into quality of experience (QoE)
- Quantified key end-to-end measurements that impact QoE
- Customized AI algorithms from QoE detection to geo-enrichment to data-driven root cause analysis
- QoE analysis without drive tests or user plane (S1U, N3) probes
- Improved net promoter score (NPS), increased average revenue per user (ARPU) and average profit per user (APPU)
- Better return on investment (ROI) in network investments
- Easy and rapid scalability across entire network
- Solid network improvement recommendations resulting in, for example, less buffering
- Easy access to physical and virtual network traffic
- Significant reduction in network traffic forwarded to the analytics layer
- Reduced cost, environmental and management overhead of video traffic acquisition and delivery

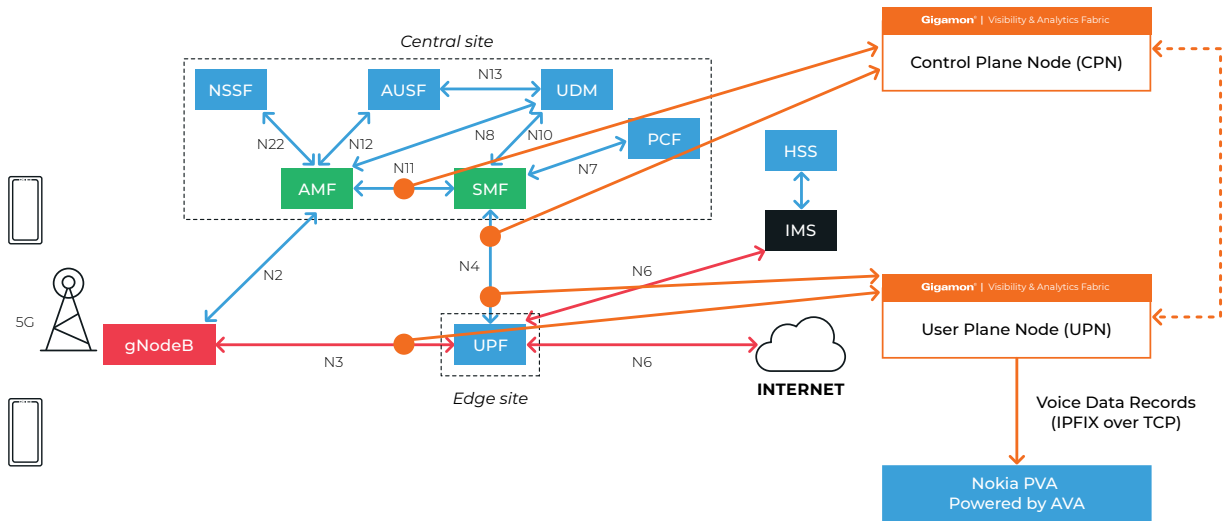
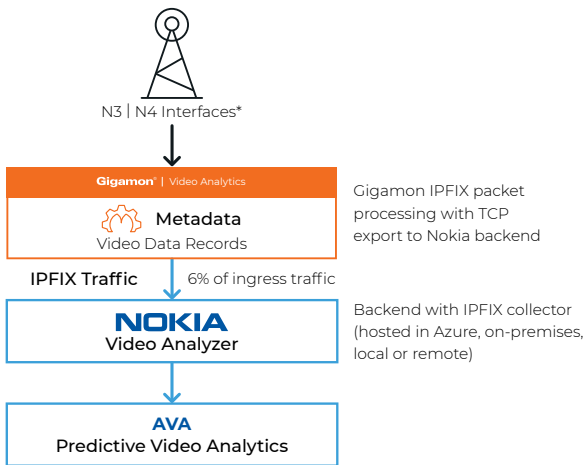


Figure 1: Gigamon VAF and Nokia PVA Joint Solution Accessing Traffic from a 5G core network.



\*N3 – This is the interface between the gNodeB and UPF in a 5G network.  
 N4 – This is the interface between the SMF and UPF in a 5G network.

Figure 2: Gigamon VAF and Nokia PVA joint solution providing high-definition video analytics for a 5G core network.

## About Gigamon

Gigamon is the first company to deliver complete network visibility and analytics on all information in motion, from raw packets to apps, across physical, virtual and cloud infrastructure. We aggregate, transform and analyze network traffic to solve for critical performance and security needs, including rapid threat detection and response, freeing your organization to drive digital innovation. Gigamon has been awarded over 75 technology patents and enjoys industry-leading customer satisfaction with more than 3,000 organizations, including over 80 percent of the Fortune 100. Headquartered in Silicon Valley, Gigamon operates globally. For the full story on how Gigamon can help you to run fast, stay secure and innovate, please visit [gigamon.com](http://gigamon.com).

## About Nokia

We create the technology to connect the world. With our commitment to innovation, driven by the award-winning Nokia Bell Labs, we are a leader in the development, deployment, and operation of 5G networks. The 5G era requires communications service providers (CSPs) to rethink their operations to ensure better quality, increased agility, lower costs and robust security. That's where Nokia can help – as the only vendor to combine deep network domain expertise with solutions throughout the end-to-end service lifecycle. We'll help you simplify your operations by leveraging automation and AI. Adhering to the highest ethical standards, we transform how people live, work and communicate. For our latest updates, please visit us online [www.nokia.com](http://www.nokia.com) and follow us on [@nokia](https://twitter.com/nokia).

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