Uhana by VMware FAQs
March 2020

What is Uhana by VMware?

Uhana by VMware is an advanced analytics and AI solution that provides real-time network and subscriber analytics. It enables mobile network operators to improve their customer experience management, optimize their operations, automatically detect and triage interference, predict future issues, and recommend appropriate remediations. All of this is done with the goal of achieving optimal control of mobile network operator's (MNO's) high-value cellular infrastructure in an automated fashion.

Why is it important to have access to fine-grain telemetry data?

While mobile network operators employ many of the best and brightest technologists and data scientists on the planet, even they are limited by the state of traditional RAN network analytics and telemetry. Coarse-grained telemetry data restricts capacity planning and performance measurements to historical analysis. Worse, because actual network conditions occur on very short time scales (seconds and milliseconds), any application performance, user experience or network efficiency guidance derived from coarse grained data (minutes) will suffer from "average blindness" and severely limited visibility.

What is 'Average Blindness' in a cellular network?

Today's network controllers, SONs and MMEs provide performance data counters on a cell site level, in 15 minute increments. This means that the peaks and valleys of performance within these 15 minutes will be smoothed out by averaging and may not be visible.   Network conditions that are critical to accurate guidance, will be masked by the average and hidden from the decision algorithm.

How does the Uhana AI platform work?

The Uhana AI platform ingests and processes concurrent data feeds from tens of thousands of cells, correlates with user session data and calculates real-time Key Performance Indicators (KPIs). This data is combined with application specific inputs and operator specified policies to deliver unprecedented network visibility, anomaly detection and real-time, predictive network intelligence, including application and/or RAN control guidance.

How does Uhana by VMware leverage deep learning and real-time neural networks for mobile operators?

Uhana by VMware applies breakthrough deep learning techniques, combined with application specific inputs and operator specified policies to deliver unprecedented network visibility, anomaly detection and real-time, predictive network intelligence, including application and/or RAN control guidance. For the first time, operators are able to offer application developers API access to accurate, fine-grained network intelligence and predictive "what-if" modeling. This network intelligence is applied to optimize application performance, dramatically improve subscriber quality-of-experience and programmatically control the RAN in conjunction with modern infrastructure automation platforms. With Uhana, mobile operators' vision for a programmable network services platform, beyond connectivity, can finally be realized.

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What does Uhana by VMware do?

o   Improves customer experience by understanding call quality and data performance on a per subscriber basis, in real-time

o   Prioritizes alerts based on subscriber and network impact

o   Detects, classifies and localizes issues in the mobile network in an automated fashion using ML

o   Automates Root Cause Analysis and recommend remediations via AI

o   Automates data preparation for data science analysis and realize time savings of 40%

Will Uhana impact the performance of my RAN?

No, Uhana is not collecting inline data and does not see customer payload. Uhana ingests information directly from the eNodeB and MMEs in the RAN. The data is collected offline and therefore has no impact on the performance of the network. Uhana enriches this information with real-time location data and customer data such as IMSIs for insights that are actionable by the mobile operator

Is Uhana by VMware offered in a SaaS model?

Uhana by VMware is delivered by VMware as a Managed Software-as-a-Service. It can run in an operator's cloud compute environment or on a public cloud.

Can Uhana be deployed on-premise?

Uhana can be deployed on-premise (or on a public cloud). The typical deployment scenario is that Uhana is installed in the mobile operator's cloud compute environment, however the portal can be accessed via a VPN. Together with the customer, VMware determines the required compute capacity and network access. The customer must provide the compute capacity and network access, however the platform is installed, operated, upgraded, maintained by VMware personnel.

Is Uhana cloud native?

Uhana was developed as a cloud-native application leveraging a microservices architecture. Built on Docker containers, microservices enable resiliency and scale-out. This also allows the platform to be deployed on bare-metal or virtual machine infrastructure.

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Are device analytics available?

Yes. Leveraging the eNodeB and gNodeB trace data, Uhana provides multi-vendor device performance comparisons (across different device models and software versions) at a cell, sector, or eNB / gNB level in order understand how different devices are performing and impacting the network. Uhana will also automatically establish device performance baselines and detect anomalies introduced by device and RAN software upgrades. Conversely, when new device hardware or software is introduced into the network, Uhana will characterize the performance impact this new hardware or software has had on the RAN. Mobile operators can further improve network operations, improve customer experience and speed up the troubleshooting of issues by joining device analytics output with MME and packet core traces for richer insights.

What is the importance of having performance data in real-time?

Changes to network conditions occur within seconds and milliseconds. Traditional performance counter KPIs offer information in 15 minute segments. After the KPI is computed, it may take anywhere from 30 minutes to 2 hours to get to the hands of an operator or SON system that can take action. By then, network conditions have changed and the previous information is not longer accurate. This severely limits the corrective actions that can be taken. For example, imagine subscriber performance is poor during a sporting event. By the time traditional systems notify operators of issues, the event is over. Uhana uses streaming telemetry information to visualize and analyze network and device conditions in real-time so operators can take action in the moment it is needed.

What is the benefit of a KPI Composer?

Agility. Creating custom KPIs with current operator processes can take weeks. Uhana's KPI Composer gives mobile operators a simplified way to rapidly create new KPIs needed for analytics use cases and provide metrics tailored to the requirement at hand. Drop down options make defining new KPIs easy and multiple metrics can be combined to create a comprehensive, tailored KPI that meets individual operator's requirements.

How is VMware by Uhana licensed?

VMware by Uhana is licensed on a per cell basis (not per cell tower or cell site). Each cell will need to be licensed. E.g. a site with three sectors and four bands each, will result in 12 cells to be licensed.

Will Uhana work in 5G networks?

Yes, VMware by Uhana will work in both 4G and 5G networks. Please contact your Telco field specialist for any specific technical questions.