

voipfuture

WHITEPAPER

2015

Waveform Analysis with Passive Monitoring

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Detecting echo, noise & silence

CERTIFIED IN 2015

Waveform analysis of full live traffic

In 2007, Voipfuture invented RTP monitoring to measure and evaluate voice over IP traffic. The approach allows to assess the quality of service of full live traffic.

The underlying assumption is: Call quality deteriorates if packets are lost or do not arrive in time.

Consequently, passive monitoring primarily focuses on the characteristics of the RTP flows and their packets. This provides essential information on the quality.

Nevertheless, other deteriorations of a call can occur – like echo or fuzzy voice. The only way to detect those impairments is to analyze the encoded signal (waveform) contained in the payload.

In 2015, for the first time a certified passive waveform monitoring is available to check live traffic for degraded audio signals.

The Voipfuture waveform tool examines the payload to detect noise, echo, amplitude clipping (fuzzy voice) and silence. No additional reference or test signal is needed to precisely spot these types of quality degradations.

The methodology was tested and certified by the MESAQIN.com laboratory. As experts in the field of speech, audio and multi-media transmission quality measurements and subjective testing, MESAQIN.com has contributed to various standardization bodies including ETSI, ITU and 3GPP.

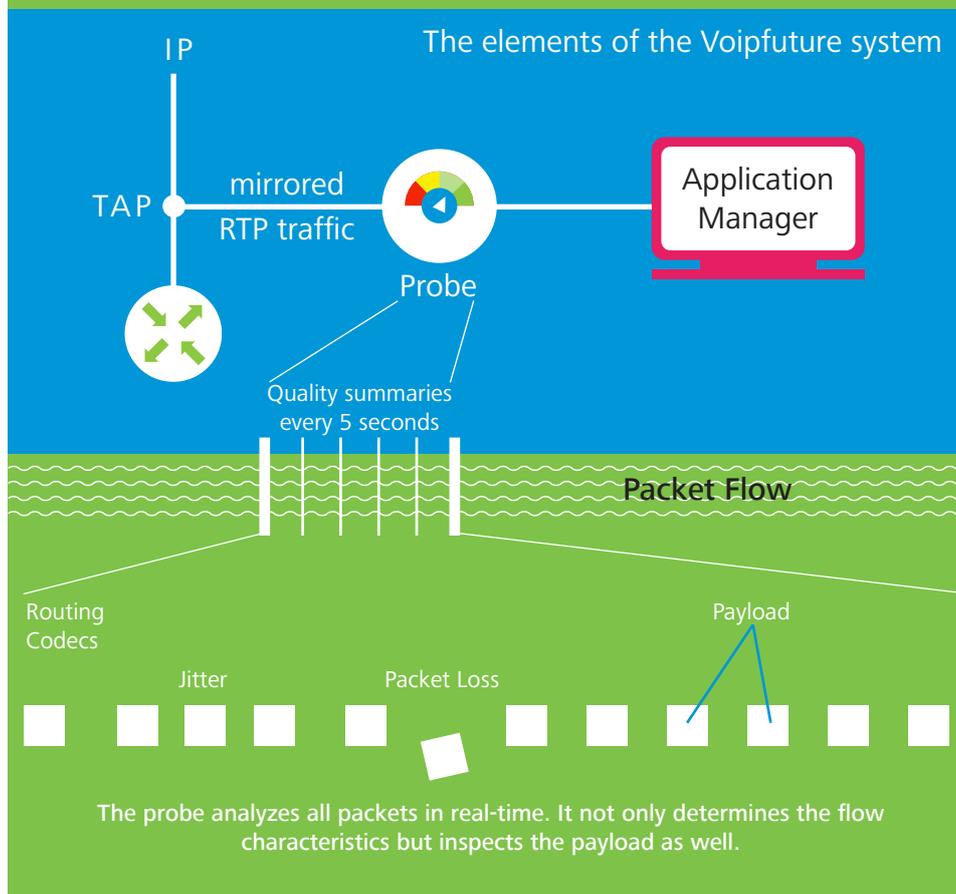
REAL-TIME DETECTION OF

Noise The solution precisely delivers the signal-to-noise ratio between a signal or meaningful information and background noise.

Echo From simply annoying to absolutely unbearable: Echo is caused by user equipment and hybrid connections. The severity of echo depends on the echo delay and amplitude loss.

Fuzzy voice Amplitude clipping may be caused by bad noise cancellation. The effect: The voice sounds compressed, buzzy or metallic.

One-way calls Only one party receiving audio is an issue which is difficult to troubleshoot. Silence in the payload is one of the main causes...



Some significant advantages compared to other solutions

In-Service Non-intrusive Measurement Devices (INMD)* do not require test signals. They automatically analyze real communications. The measured parameters relate either to protocols and signaling or to audio signal characteristics.

Combining state-of-the-art RTP flow monitoring, signaling monitoring and waveform analysis, Voipfuture allows a highly detailed, yet comprehensive view.

The integrated analysis turns rich service quality data into deep insights, which individual measures cannot deliver.

For example, this makes it possible to identify combinations of effects, which only in sum lead to bad user experience.

In addition, the Voipfuture solution inspects audio without infringing on customer privacy. Protecting privacy while troubleshooting is an important issue and is certain to become even more so in the future.

And last, but not least: A solution that combines control and media plane monitoring with waveform analysis is very efficient. In terms of time to fix. And in terms of costs.

*as defined in ITU-T Recommendations P.561, P.562 and P.563

Voipfuture GmbH
Wendenstr. 4
20097 Hamburg
Germany
+49 40 688 900 10
www.voipfuture.com

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