New Discoveries by ATHENA To Deliver Higher Quality Video Streaming Experiences

Tuesday 23 March, 2021

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San Francisco, Calif., and Klagenfurt, Austria, March 23, 2021 -- Bitmovin, a world leader in online streaming video technology, announced today that ATHENA, its Christian Doppler (CD) Laboratory, and joint venture with the Institute of Information Technology (ITEC) at the University of Klagenfurt, is celebrating its first year with the discovery of several research milestones. Among its 19 research papers published in peer-reviewed journals and presented at numerous international conferences, two have advanced into Bitmovin's innovation pipeline. The first will improve how development teams measure and visualize media player performance; and the second introduces a more efficient approach to ensuring the best quality video is delivered to viewers.

ATHENA Innovations Improve Video Streaming Experience

The ATHENA research lab was formed to address the current and future challenges associated with the increasing and changing multimedia traffic on the Internet. Its application-oriented research is focused on innovating the HTTP Adaptive Streaming (HAS) technique which most over-the-top streaming service (OTT) providers use today. The HAS technique, which Bitmovin helped pioneer, enables streaming service providers to deliver the best possible video quality to viewers based on important variables such as available bandwidth, the capability of the device streaming the content, and the complexity of the content itself such as an action movie vs simple animation.

Visualizing Insights for a Seamless Viewer Experience

With so many variables to consider, content providers need to understand how well their media player is performing in order to make the necessary adjustments to meet viewer demands. With the introduction of CAdViSE, ATHENA's cloud-based, adaptive video streaming evaluation framework for the automated testing of media player algorithms, the new framework will enable media players to better manage network fluctuations such as bandwidth and latency among others.

Optimizing Encoding to Deliver Higher Quality Images

In order to deliver the best possible video images, content providers are required to encode content at different quality levels, which is time consuming and expensive. By introducing FaME-ML, fast multirate encoding for HTTP adaptive streaming using machine learning, the ATHENA team demonstrated it is possible to speed up this process, by 41% on average when compared to the HEVC reference software used in the testing environment.

"I'm very proud of the ATHENA team and the number of significant developments that our research papers have demonstrated for innovating a higher quality video streaming experience," **said Christian Timmerer, Associate Professor at the Institute of Information Technology (ITEC) at the University of Klagenfurt and ATHENA Laboratory Director and Co-Founder of Bitmovin**. "As we continue on our research path, we will continue to enable development teams to better understand and weigh the trade-offs between increasing content complexity, latency, and quality of experience, which are constantly evolving."

"Together with ATHENA, we are on a fast-paced track to the development of cutting-edge innovation for the video streaming industry," **said Chris Muller, Co-Founder, and CTO, Bitmovin**. "The findings discovered by the ATHENA research team demonstrate the potential for real-world solutions that improve how we consume and deliver video content to viewers."

About ATHENA

ATHENA stands for **A**dapt**i**ve Streaming over **H**TTP and **E**merging **N**etworked Multimedi**a** Services and is a research project at the University of Klagenfurt that is funded by the Christian Doppler Research Association and Bitmovin. ATHENA aims to research and develop novel paradigms, approaches, (prototype) tools, and evaluation results within the video streaming ecosystem. The seven-year project seeks to address current and future research and deployment challenges of the HTTP Adaptive Streaming (HAS) protocol and emerging streaming methods. The HAS technique, which Bitmovin helped pioneer, has been standardized as the MPEG Dynamic Adaptive Streaming over HTTP (MPEG-DASH) standard, which together with HTTP Live Streaming (HLS) by Apple Inc., is widely used by many of

today’s online video and TV providers.

About Christian Doppler Laboratories

In Christian Doppler Laboratories, application-oriented basic research is carried out at a high level, which involves renowned scientists cooperating with innovative companies. The Christian Doppler Research Association is internationally regarded as a best-practice example for promoting this type of cooperation. Christian Doppler Laboratories are jointly financed by the public sector and the participating companies. The primary public sponsor is the Federal Ministry of Digital and Economic Affairs (BMDW).

About Bitmovin

Bitmovin is an award-winning leading provider of video infrastructure for global digital media companies and service providers. The company has been at the forefront of industry innovation and significant developments in the digital video streaming industry. Bitmovin built the world’s first commercial adaptive streaming player and deployed the first software-defined encoding service that runs on any cloud platform. Its cloud-native technology offers the most flexible and scalable media encoding, playback, and analytics solutions available with unparalleled device reach, ease of integration, and world-class customer support. Bitmovin customers benefit from optimized operations, reduced time-to-market, and the best viewer experience possible.

Bitmovin’s dedication to innovation has won the company a Technology & Engineering Emmy® Award, including awards from the National Association of Broadcasters (NAB) and Streaming Media Europe Reader’s Choice Award.

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