New automated framework makes broadband networks more resilient
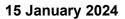
Two new industry standards championed by the Broadband Forum can help service providers further improve the quality of network services delivered to customers thanks to Artificial Intelligence (AI), as well as solve or anticipate network faults.

The Automated Intelligence Management (AIM) framework relies on AI, Machine Learning (ML), and automation to improve operational efficiency and reduce OpEx. It can reduce on-site maintenance and/or human intervention and anticipate faults before the user perceives or experiences any service problem.

"AIM promises to unlock new revenue streams and save costs for service providers, that have had to increase CapEx to scale their networks," said Bruno Cornaglia of Vodafone who also serves as a Broadband Forum SDN/NFV Work Area Director. "For improved network monitoring and maintenance, these innovative technologies and solutions are available to be adopted to provide increased flexibility and seamless integration within deployed networks via their cloud-native nature."

TR-436 (Access & Home Network O&M Automation/Intelligence) defines the AIM framework and TR-486 (Interfaces for AIM) defines its associated interfaces to allow seamless vendor interoperability. Both specifications complement the cloudified network automation, low-maintenance operations, and streamlined deployments provided by the CloudCO suite of standards.

One use case for the AIM framework is the monitoring and troubleshooting of the home Wi-Fi network. It automatically detects when service levels are not met, resulting in the generation of recommendations to fix this and reconfigurations to reestablish the expected levels.

Another use case of the AIM framework relies on network probes that recognize network performance between the subscriber premises and any location in the network. Closed-loop service assurance, implemented by the AIM framework, identifies the best network path for service flow and preserves user experience in case of network congestion. This use case also builds on the Broadband Forum's QED and subscriber session steering work and was demonstrated at Broadband Forum's recent CloudCO Demo at Network X.

"Service assurance with performance monitoring and automated traffic steering is an attractive proposition as it enables an automated and intelligent way to operate the network with minimal human intervention," said Mauro Tilocca of TIM - Telecom Italia who also serves as the Broadband Forum Service Provider Action Council Chair. "The new specifications deliver an entire framework to empower network capabilities, via AI/ML-based recommendations. The AIM pipeline components can be implemented as virtualized functions in a cloud-native environment, allowing a high degree of reusability per modern DevOps and GitOps paradigms, as well as flexible and seamless deployments."

The new standards provide the framework and interfaces for single domain and end-to-end root cause analysis and path degradation predictions, up to sophisticated end-to-end customer experience assessments and facilitating any recommended improvements.

For more information about Broadband Forum, visit: https://www.broadband-forum.org/.

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About the Broadband Forum

Broadband Forum is the communications industry's leading open standards development organization focused on accelerating broadband innovation, standards, and ecosystem development. Our members' passion – delivering on the promise of broadband by enabling smarter and faster broadband networks and a thriving broadband ecosystem.

Broadband Forum is an open, non-profit industry organization composed of the industry's leading broadband operators, vendors, thought leaders who are shaping the future of broadband, and observers who closely track our progress. Its work to date has been the foundation for broadband's global

proliferation and innovation. For example, the Forum's flagship TR-069 CPE WAN Management Protocol has nearly 1 billion installations worldwide.

Broadband Forum's projects span across 5G, Connected Home, Cloud, and Access. Its working groups collaborate to define best practices for global networks, enable new revenue-generating service and content delivery, establish technology migration strategies, and engineer critical device, service & development management tools in the home and business IP networking infrastructure. We develop multi-service broadband packet networking specifications addressing architecture, device and service management, software data models, interoperability and certification in the broadband market.

Our free technical reports and white papers can be found at https://www.broadband-forum.org/.

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