



Radisys

SOLUTION BRIEF

Evolve Two-Factor Authentication with In-Network Biometric Authentication

Preventing unauthorized access using in-network real-time voice and video analytics

Today's fixed and wireless networks are delivering higher bandwidth, faster speed, and improved processing performance that real-time applications need. Linking the power of the network with cloud computing and Radisys computer-vision and speaker verification solution provides the ability to use in-network biometric authentication - cost-effectively and at scale - and offer new monetization services like secure access to applications and locations.

Better Security Rises from Better Technologies

With the increased sophistication of identity thieves, businesses are using a wide variety of techniques to keep their networks and applications safe from unauthorized access. Unscrupulous hackers use covert tactics to pry data from unsuspecting employees that ultimately enables unauthorized access and these tactics are becoming cleverer every day. These information thieves create identity profiles that use “knowledge” oriented attributes often used to create account profiles, which IT teams often use to “confirm” identities. A successful breach occurs when the hacker provides the correct responses to the challenges used for authenticating the user, allowing the fraudulent person to assume their identity, which can often lead to significant headaches, monetary loss, and private data exposure for both the employee and the business.

Security systems are using new tactics to improve security and multi-factor authentication is one of these new tools. In most common two-factor authentication (2FA) systems, the valid users provide correct responses to two unique methods that confirm their identity. The methods rely on attributes like knowledge of and receipt of information: a person remembers their password and they enter a number sent by text or phone call to complete the authentication process. While more effective than a single password, this technique is inherently slow and less than fool-proof. The user must wait until they receive the text or phone call that delivers the final portion of the authentication process. Delays in communication can cause failure in the process if the text or email or call does not arrive promptly.

Machine Learning (ML) and Artificial Intelligence (AI) technologies combined with more powerful and accessible computing resources, are improving the security of user authentication solutions. AI-powered computer vision and speaker verification capabilities allow authentication systems to use biometric characteristics in the user authentication process. Biometric information, which includes images of facial features or palm prints, scans of retinas, or voice samples, are unique physical attributes that uniquely identify a person.¹

The global biometric authentication and identification market is projected to grow over US\$51 Billion by 2023 at a CAGR of 22.54% (2018-2023).² These technologies are often implemented in end-user devices or local customer premise systems, limiting their use and security for business and network-based applications. The plethora of vendors and devices outside of service provider or enterprise control means capabilities and performance will vary and control is limited. As a result, these approaches are not cost effective, scalable, or even viable in applications like banking, customer support, telehealth, and other communication applications where reliable authentication is critical.

Today’s Communication Service Provider (CSP) networks, which have more stringent performance level guarantees and reach closer to the user or business edge, can quickly and efficiently process speech and video streams. This enables reliable authentication services using AI-driven computer-vision and

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1. <https://www.grandviewresearch.com/industry-analysis/biometrics-industry>

2. <https://www.prnewswire.com/news-releases/global-biometric-authentication-and-identification-market-focus-on-modality-face-eye-fingerprint-palm-and-vein-motility-application-and-technology-trends-analysis-and-forecast-2018-2023-300830180.html>

Passwords are...	Biometric Answers
Vulnerable to forging, guessing, or forgetting	Face/voice cannot be duplicated, forged, or forgotten
Changed frequently to mitigate unknown theft	No changes required due to unique traits
Supposed to be different for every service	Inherent attributes used across any connected service
Complex and long, causing confusion or fatigue	Typing long strings replaced with speaking or looking

speaker verification capabilities. Engage Media Analytics solution enables in-network computer vision and voice recognition in a scalable and cost effective manner. Rather than relying on inherently unreliable capabilities of endpoints, service providers can use their existing communication network infrastructure to process high volumes of media streams that can enable cost effective and scalable services for enterprises and consumers.

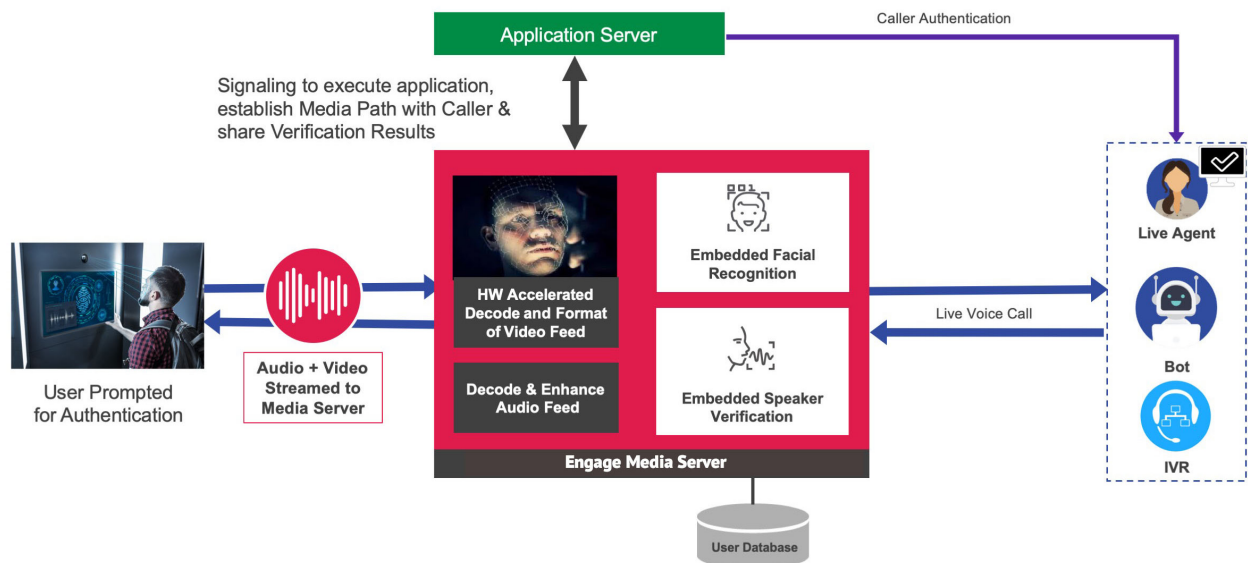
Radisys Engage Media Analytics Solution

The Engage Media Analytics solution leverages the industry-leading Engage Media Server platform currently deployed in 200+ global fixed and mobile networks. Within a single platform Radisys enables voice and video processing for real-time communication applications, such as VoIP, UC and VoLTE, audio and video mixing, speech recognition, and other Media Analytics features like biometric authentication.

The platform provides rich APIs to enable developers to add these capabilities easily to applications and business workflows.

The Engage Media Analytics solution provides the following benefits:

- On premise support for local processing of media content that has security or privacy requirements, eliminating the need to send sensitive content offsite to cloud-based processing solutions.
- Built in computer vision capabilities enable applications to process high volumes of media streams from cameras to support facial recognition on some streams and object or motion detection on different streams.
- High density and scalability, leveraging best-in-class hardware-assist technology to reduce the footprint and cost of supporting these features in public or private clouds.
- In-network processing allows inexpensive video cameras to forward video streams for processing rather than requiring video cameras to support onboard complex compute functions. This reduces the burden, cost and complexity of updates to take advantage of continuous improvements in media analytics algorithms by eliminating the need for firmware updates to dozens, hundreds, or thousands of cameras.
- Enabled by an easy software upgrade to an existing Engage Media Server.



Radisys Powered Biometric Authentication with Voice & Facial Recognition for Customer Care

Expanding Managed Security Opportunities with In-Call Media Analytics

With the availability of in-network computer vision and speaker verification services, communication service providers (CSPs) and system integrators (SIs) have a wide range of new opportunities for providing enhanced security services. Systems that leverage in-session biometric authentication benefit many user communities, including consumers, enterprises, and government entities.

Enhance Customer Care Security

For a customer care representative, ensuring a customer's identity before discussing billing issues or service changes is paramount. The ability to automatically and accurately authenticate the caller as they are speaking with the customer care representative brings four key benefits to both the enterprise and the customer:

- **Reduced resolution time:** Since the discussion that requires multiple passphrases is not necessary, customer care representatives can complete each call faster and can therefore support more customers. This also allows the customer to finish their call quicker.
- **Shorter hold times:** Faster processing of customers means customers are not waiting as long to speak to the agent to resolve their case.
- **Higher customer satisfaction:** In-call verification eliminates the frustration often encountered by the customer who cannot remember their passphrases required in prior solutions.
- **Assurance of security and privacy:** Customers can be confident that their personal information is in good hands.

Whether the customer care representative works for a bank's call center or a hospital's records department, quick, transparent, and accurate in-call authentication of callers seeking help improves the customer care experience – ensuring customer retention and satisfaction.

Enable Faster Access to Cash, Tickets, and Valuables

Leveraging the cameras and microphones of systems like ATMs, ticket kiosks, and lockers containing high-value items, allow customers to perform transactions using credit or debit cards with significantly lower likelihood of fraud while also capturing confirmation of the exchange. The proof not only provides a record of the person conducting the deal but it also provides a level of security for those using the service, as law enforcement often seeks out ATM video feeds to track and identify persons of interest in criminal situations.

Using the CSP's media services, the system can cost effectively provide audio and/or video authentication of customers' transactions without the need for specialized on-site equipment. In-network authentication has the added benefit of reducing the transaction time by eliminating the prompt for a PIN or password, resulting in the ability to support more customers by the kiosk.

Enable Secure Access to Facilities

By combining speaker verification and face recognition capabilities available on the Engage Media Server, CSPs can offer confirmation services to businesses that need automated authentication of persons seeking access to restricted areas. By using face recognition in conjunction with speaker verification, enterprises can improve security and reduce costs using multi-factor biometric authentication hosted on the Media Server.

Whether the security service is for a remote business, government site, or a family home who subscribes to a CSP-deployed home security system, the Engage Media Server can quickly analyze and confirm the appropriate biometric factors to authorize access. The Engage Media Server, hosted in the service provider network, receives high-resolution video and audio for comparison to any approved images or audio files of persons authorized. Whether they are mission-critical employees or contracted maintenance staff, the Media Server provides the necessary confirmation to enable controlled access at remote, unstaffed sites.

Likewise, these same levels of comparison can apply to home security. The Media Server can authenticate the delivery person, cleaning crew, and repair staff needing access to a home and can capture images and voice samples for future use, when necessary.

Summary

With today's high capacity low-latency communication networks, new solutions continue to improve the operation and security of the network. CSPs and SIs can leverage new software-based capabilities that scale efficiently.

Engage Media Server leverages AI-based voice and image recognition that allows CSPs and SIs to provide highly secure authorization and authentication services to any application, enabling secure access to only those authorized for access. The software-based distributed approach of the Engage Media Server products enables flexible deployments where and when needed. By using an incremental approach to the increase of capabilities on media processing already in their networks, rather than deploying expensive new and proprietary systems, or adding cost and complexity to networks of video cameras, Radisys is enabling CSPs and SIs to cost effectively scale to support services that improve security and generate new revenues.

Engage Media Server Makes In-Network Biometric Authentication Possible

- Much lower cost than traditional approaches
- Embedded speech processing and computer vision increases recognition accuracy
- Cost effectively scales to support in-network recognition
- Optimizes performance by avoiding latency, complexity and extra processing
- Enables new services without requiring additional infrastructure costs

Why Radisys

- Dual competence: 28+ years of telco experience + IT data center expertise
- #1 media server vendor for 10 consecutive years (rated by IHS Market)
- 6 to 10 times higher capacity than alternative solutions
- Drives cost of out of service delivery platforms by consolidating all real-time media and speech processing onto a shared service agnostic platform
- Partner of choice for service provider IMS migration to open compute/open source platform
- Experienced resources well-versed in open source software development, multiple cloud infrastructure, such as ONAP, and traditional mobile and fixed
- Excellence in support services with technical center across the globe



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