

FACIAL RECOGNITION SYSTEM

Comprehensive Feature Overview

Introduction

See the Bigger Picture with VIEW

LENS introduces VIEW, an advanced video management software (VMS) designed for large-scale, mission-critical enterprise applications. Built to handle complex deployments, VIEW supports unlimited cameras, servers, and users while integrating Facial Recognition System (FRS) and AI-powered video analytics for enhanced security and intelligence.

Managing security across multiple locations can be overwhelming. VIEW by LENS simplifies this with its advanced VMS, seamlessly integrating Facial Recognition System (FRS) and AI-driven video analytics for proactive surveillance. Unlike traditional monitoring, VIEW's FRS enhances efficiency by automating identity verification, integrating with access control and security systems to enable real-time authentication and threat detection.

What sets VIEW apart is its intelligence. Developed through years of R&D in computer vision, video computing, artificial intelligence, and machine learning, the system leverages advanced AI-powered video analytics.

With VIEW, LENS raises the bar in video management—because managing video data shouldn't just be about keeping an eye on things. It's about seeing the bigger picture.

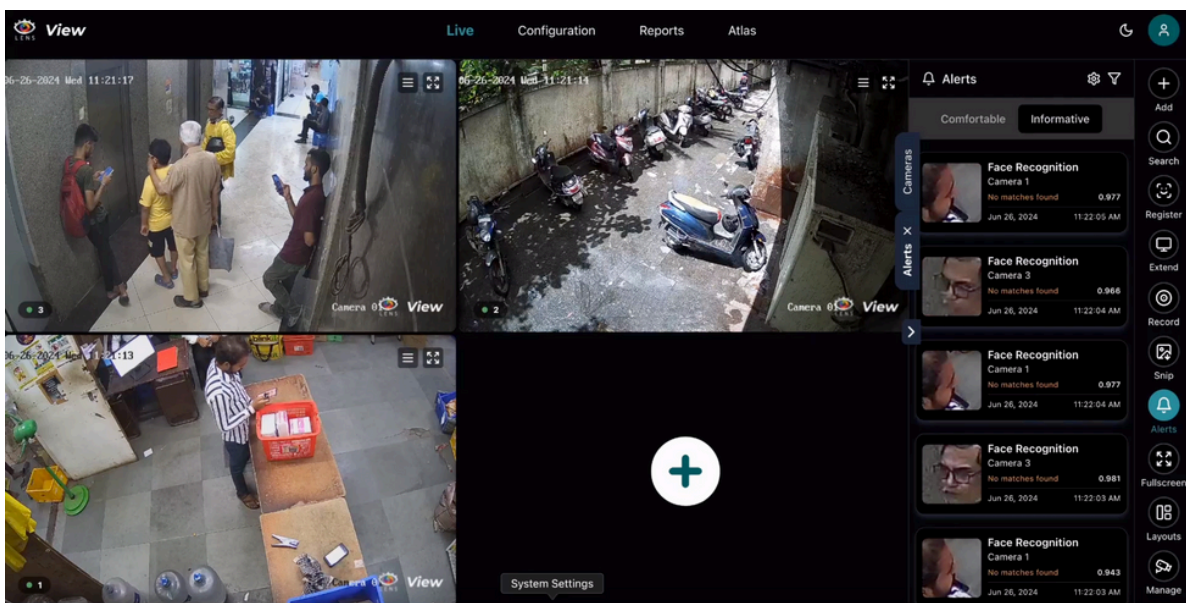
Purpose of The Document

The purpose of this document is to provide a comprehensive overview of the technical specifications and features of the Facial Recognition System (FRS). It serves as a reference for customers, partners, and internal teams, covering key functionalities such as facial recognition accuracy, watchlist management, security features, and deployment configurations for surveillance and monitoring applications.

Feature Overview

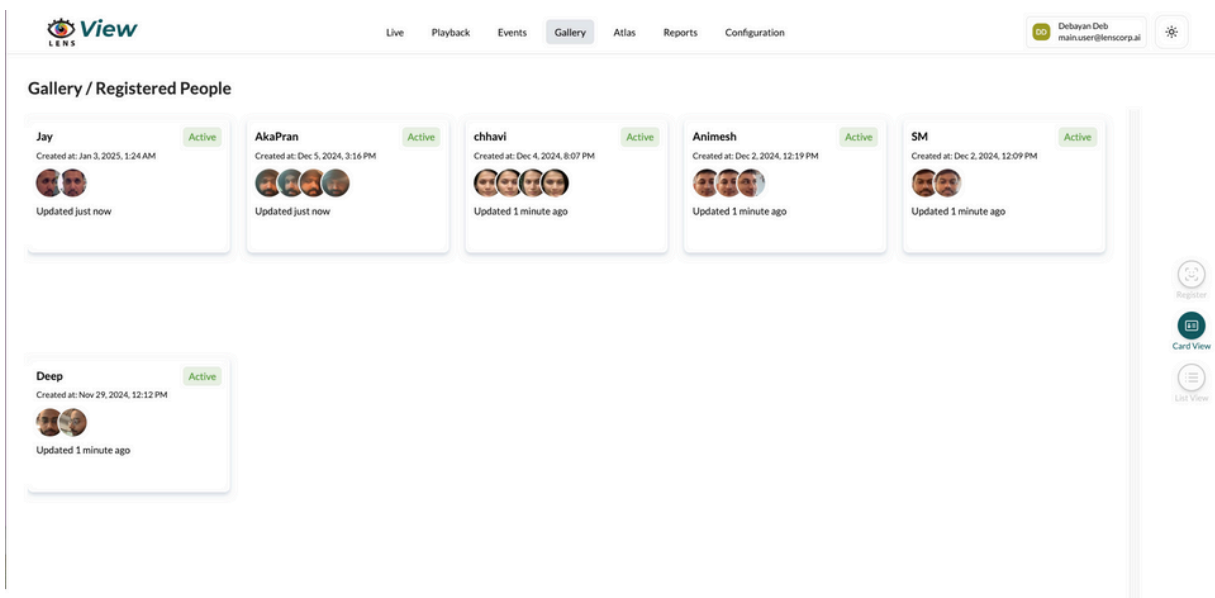
Facial Recognition Capabilities

- Automatically detects faces within the camera's field of view and matches them against a watchlist database, generating alerts for matches above a set threshold.
- Achieves over 90% accuracy in face matching from the watchlist.
- Supports non-frontal face recognition with a yaw angle of -40° to $+40^{\circ}$, a pitch angle of -30° to $+30^{\circ}$, and a roll angle of -30° to $+30^{\circ}$ or better.
- Recognizes individuals with partially covered faces.
- Matches faces even with closed eyes.
- Recognizes adult individuals with a 30-year age difference.
- Detects multiple faces in a single frame and generates alerts from the watchlist database.
- Ensures accurate recognition by automatically optimizing facial images, even under poor-quality conditions
- Enhances facial images by adjusting contrast, brightness, sharpness, and resolution for improved recognition.



Watchlist & Database Management

- Supports watchlist image database of up to 500,000 records for 1:N matching in live surveillance and investigation-based searches.
- Allows bulk face enrollment with demographic information (gender, age, scars, tattoos, etc.).
- Prevents duplicate records while ensuring multiple image variations of a person are considered.
- Stores gender, age, scars, and tattoos for enhanced search refinement.
- Enables categorization of watchlists with configurable matching thresholds, color codes, and alarms.
- Supports N:N image search for investigative purposes.
- Prevents duplicate records by checking for existing faces during enrollment.
- Allows addition of images obtained from law enforcement agencies to the watchlist.
- Automatically detects and tags gender during face enrollment.
- Provides automatic watchlist synchronization across multiple locations.



The screenshot displays the 'View LENS' interface for 'Gallery / Registered People'. The navigation bar includes 'Live', 'Playback', 'Events', 'Gallery', 'Atlas', 'Reports', and 'Configuration'. A user profile 'Debyan Deb' is shown in the top right. The main content area shows a grid of person cards, each with a name, creation date, and update status. The cards are: Jay (Created at: Jan 3, 2025, 1:24 AM, Updated just now), AkaPran (Created at: Dec 5, 2024, 3:16 PM, Updated just now), chhavi (Created at: Dec 4, 2024, 8:07 PM, Updated 1 minute ago), Animesh (Created at: Dec 2, 2024, 12:19 PM, Updated 1 minute ago), SM (Created at: Dec 2, 2024, 12:09 PM, Updated 1 minute ago), and Deep (Created at: Nov 29, 2024, 12:12 PM, Updated 1 minute ago). A sidebar on the right contains icons for 'Register', 'Card View', and 'List View'.

Feature Overview

Video & Camera Integration

- Processes live feed from any Full HD or Ultra HD CCTV camera via RTSP streams.
- Supports video processing from any IP or network-based video camera.
- Provides an internal dashboard displaying camera health and server status.
- Allows real-time addition or removal of cameras.
- Supports load balancing to transfer camera processing to different servers in case of failure.
- As a web-based application, VIEW works seamlessly across Windows and Linux environments.
- Provides the ability to match suspect faces from pre-recorded video feeds.
- Features a map layer timeline to track individuals across multiple locations.
- Enables real-time sequential alerts with a top-5 ranked match display.

Security, Privacy & Compliance

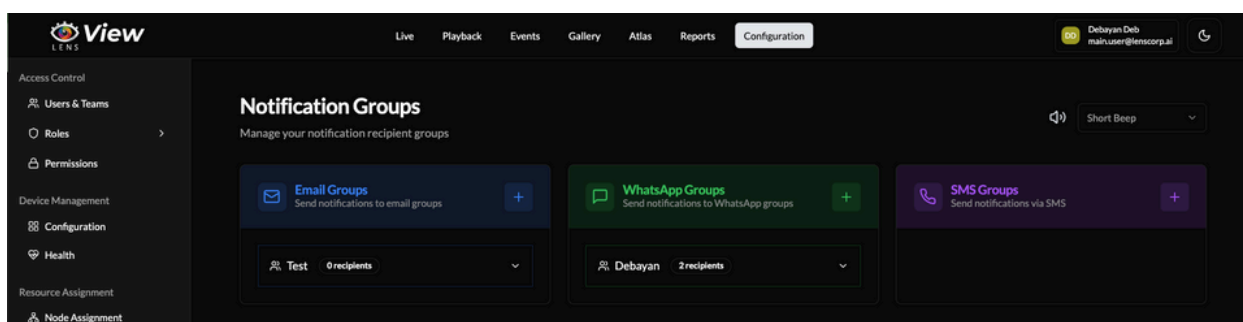
- Automatically blurs non-matched faces in live video streams to ensure privacy.
- Generates detailed reports and maintains audit trails for all system activities.
- Can blur the entire video feed, displaying only matched faces.
- Provides audit trail logs to track all system activities and user modifications.
- Supports LDAP/Active Directory integration for login authentication.
- Allows configuration of automatic data retention policies (e.g., automatic deletion of images after 90 days).
- Enables customized user management with multiple access levels.
- Provides APIs for integration with VMS/ICCC applications.
- Web-based application accessible from anywhere within the network.

Performance & Scalability

- Performs 1:N face searches in under 5 seconds for a database of up to 500,000 faces.
- Employs MS SQL, Oracle, PostgreSQL, or other database systems with N:1 redundancy support.
- Provides multi-location deployment with auto-synchronized watchlists.
- Offers a web-based dashboard customizable by users for alert monitoring.
- Supports a mobile application for Android, iOS, and Windows, allowing field agents to capture and send suspect images for matching with real-time results.
- Processes standard surveillance image formats like JPEG, PNG, and BMP for seamless watchlist integration.
- Processes and refines images dynamically, ensuring high-quality face detection even under challenging conditions.

Alerts & Notifications

- Generates alarms based on camera location, multiple zones, watchlist category, or individual suspects.
- Allows configurable threshold settings for alerts at system-wide, watchlist, camera group, or individual face levels.
- Sends alerts via email or mobile notifications.
- Operators can verify matches using a side-by-side comparison, confidence scores, and visual overlays before confirming alerts.





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(+91) 99907 36796



solutions@lenscorp.ai



www.lenscorp.ai