



India's Largest Emergency Response System

Uttar Pradesh Police

India

Uttar Pradesh Police is the largest police force in India and among the largest in the world, with 250,000 officers in 75 districts. The organization serves a mostly rural population of more than 220 million people spread across 243,000 square kilometers.

Previously, police response activities were organized at the district level. Districts had separate public safety answering points (PSAPs) and different control rooms for urban and rural areas. Computer-aided dispatch (CAD) systems only served four cities, forcing citizens to visit their local police station to report incidents.

“Each district had different levels of service because they were managed by different people, software, and processes,” said Additional Director General of Police Anil Agarwal. “Over a period of time, local cultures developed, which led to differentiation in the standards of service provided to citizens.”

Because there was no standardized, coordinated system in place to ensure timely response, Uttar Pradesh Police set out to revolutionize public safety through UP 100, a comprehensive response system that would serve the needs of the entire state.

Laying a Firm Foundation

Uttar Pradesh Police officials were clear from the beginning that UP 100 would only feature best-in-class technologies.

Central to the project would be a scalable and reliable incident management system – one that was already proven in the field by a large number of agencies and users.

“We looked at the best systems in the world when we were designing our system,” said Agarwal. “Our requirements were easily one of the most comprehensive.”

Three major systems integrators responded to the request for proposals, and each one included Hexagon's Safety & Infrastructure division as the vendor that would best meet the police force's needs. Uttar Pradesh Police ultimately selected Mahindra Defence Systems Limited, featuring Hexagon and its industry-leading CAD solution, for UP 100.

The police force established a centralized communications center in the capital, Lucknow, to receive all calls for service and dispatch responders directly from across the state. Police also set up a disaster recovery center in Bangalore and two mirrored operational centers at Noida and Allahabad, which operate at 15% capacity of the main facility.

In addition to core call-taking and dispatching capabilities, Hexagon deployed its powerful mobile application, which provides district supervisors and field officers with mobile dispatching functions on smartphones and tablets. Hexagon also developed other solutions, such

as patrol management and citizen mobile applications. Because of shortcomings in state digital mapping, the citizen app allows users to register important locations and contacts to aid responders.

“The CAD system allows you to see all the registered points of interest of the citizen who has registered with the police,” Agarwal said. “When the call lands at the communication officers’ desks, and if the person says, ‘There is a problem at my parents’ house,’ he doesn’t have to explain anything else. The communication officer simply picks the location that is already registered by the user, and then the help is provided. You are saving practically two minutes of time.”

Hexagon also configured CAD user interfaces in English and Hindi to aid system usability and acceptability.

“This hasn’t been done before,” said Agarwal. “This is probably the first time we have an entire CAD, end-to-end, being done in a bilingual manner. This has been an extremely important feature for us.”



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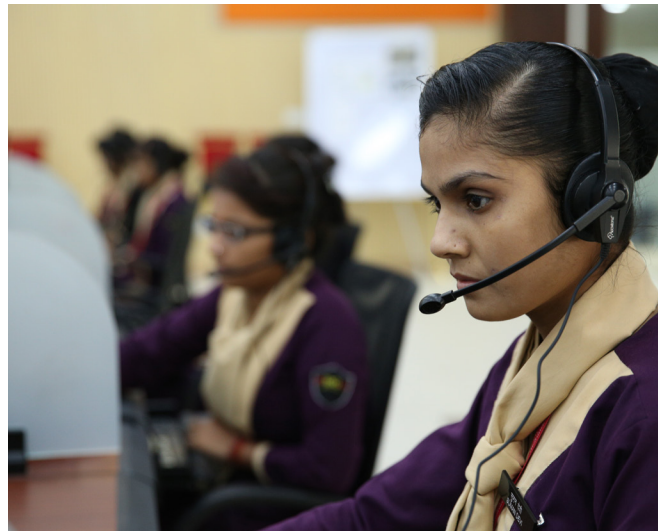
Anil Agarwal

Additional Director General of Police

Since only 3% of the state was mapped in a geographic information system, police also began a massive digital mapping exercise to support the response system. More than 11,500 police officers contributed, creating over 3 million points of reference.

Transforming Public Safety

Equipped with these innovations, 250 call-takers use Hexagon’s CAD system to collect information from landline and mobile calls, VoIP, SMS, email, social media, and the mobile application. Citizens can also upload pictures, text messages, and videos. Call-takers support all dialects of Hindi, other major Indian languages, English, and even some foreign languages, thanks to the use of language volunteers. Those with special needs can connect through video calls where sign language interpreters transcribe their concerns. The system records all voice calls for future reference and issues documents automatically to create a detailed, digital trail of activities.



UP 100 employs 250 call-takers who use Hexagon’s CAD system to collect information from landline and mobile calls, VoIP, SMS, email, social media, and the mobile application.

Call-takers create events in the system and transfer the information to 150 police dispatchers who dispatch the nearest police response vehicles and inform the local police station. The UP 100 center controls a police fleet that will ultimately include 3,200 cars and 1,600 motorcycles. Police have a targeted 15-minute response time in city areas and 20 minutes in rural areas.

The police response vehicles attend to victims, isolate crime scenes, and then hand over the scenes to local police stations for further action. About 500 detailed standard operating procedures (SOP) are available for different situations to help standardize services across geographical areas. This process eliminates local police resource constraints or discretion from consideration.

“This is a huge step in terms of our transparency and accountability to the citizens,” said Agarwal.

Improving Response

The UP 100 system is empowering in many ways. Most fundamentally, it is citizen-centric by ensuring residents get the help they need in an impartial manner.

The proof of its success is in the results. Before UP 100, police received around 3,500 calls per day across the entire state. Now call volume is about 100,000 per day, and police expect it to greatly expand as the system becomes more familiar to citizens. During a recent Holi celebration, police handled more than 25,000 incidents in a day and more than 50,000 calls over three days.



Uttar Pradesh Police will also integrate fire and ambulance services into the system, as well as traffic management.

“Before, we were not in a position to help those who were needing our services,” said Raghvendra Dwivedi, state radio officer, Uttar Pradesh Police. “Now, technology has helped us serve more people. Technology has made us accountable and transparent.”

Rural areas are benefitting the most, where response times have been cut in half. Citing 3-5 minute response times in urban areas to prevent attempted suicides and murders and 15-minute responses in rural areas, Agarwal said, “That is the kind of penetration and awareness we have been able to achieve. This is marvelous, tremendously satisfying.”

Because of these successes, the system has proven its worth internally among district supervisors, some of whom initially expressed reservations.

“Now, if I ask any district chief of police whether I should take away this system, he won’t accept this,” Agarwal said. “It has become an essential part of the police organization at the district level.”

Expanding Capabilities

Moving forward, Uttar Pradesh Police plans to leverage the wealth of data now available for crime and incident analysis to further improve operational efficiency and citizen safety. The organization will also integrate fire and ambulance services into the system, as well as traffic management.

“We’ll provide mobile data terminals (MDT) to fire stations, and we’ll define a SOP for fire-related events,” said Dwivedi. “Whenever a fire event comes to us, we’ll dispatch that event directly to the MDT, and we’ll ensure accountability and transparency for fire-related issues also.”

With the system generating such positive results for Uttar Pradesh, other state officials in India are looking to UP 100 as an example to follow.

“In terms of the complexity of the technology implementation, the scale, and the size, UP 100 is now already the role model,” said Agarwal. “We hope to replicate the same system across many states yet to migrate to a modern policing system. We believe what we have done here is worth a look for any police organization that wants to upgrade its own operations.”



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Hexagon is a global leader in sensor, software and autonomous solutions. We are putting data to work to boost efficiency, productivity and quality across industrial, manufacturing, infrastructure, safety and mobility applications. Our technologies are shaping urban and production ecosystems to become increasingly connected and autonomous — ensuring a scalable, sustainable future.

Hexagon’s Safety & Infrastructure division provides software for smart and safe cities, improving the performance, efficiency and resilience of vital services.

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