W H I T E P A P E R

E-100

PERSISTENT

Emergency Communication & Response in India (E-100)

Overview

Timely and efficient emergency response is key to public safety. Swift emergency response provided during the 'golden hour' can save precious life and property. The advent of mobile telephony has brought an array of opportunities for using technology to aid emergency response. India has almost 950 million phone connections, approx. 97% of which are mobile phones. There is an enormous opportunity to leverage the Indian mobile revolution to aid public safety.

Persistent Systems, with its extensive experience in delivering solutions for US FCC E911 compliance, has developed the E-100 Emergency Location Gateway (ELG) to be optimized for Indian mobile operators seeking to provide geo-location information for mobile calls to Indian police/ambulance/fire Control Rooms. In addition, Persistent has leveraged its deep expertise in Mobility, Cloud SaaS, IT Disaster Recovery and IoT to deliver a state of the art Control Room solution that greatly reduces ICT costs and increases system uptime.
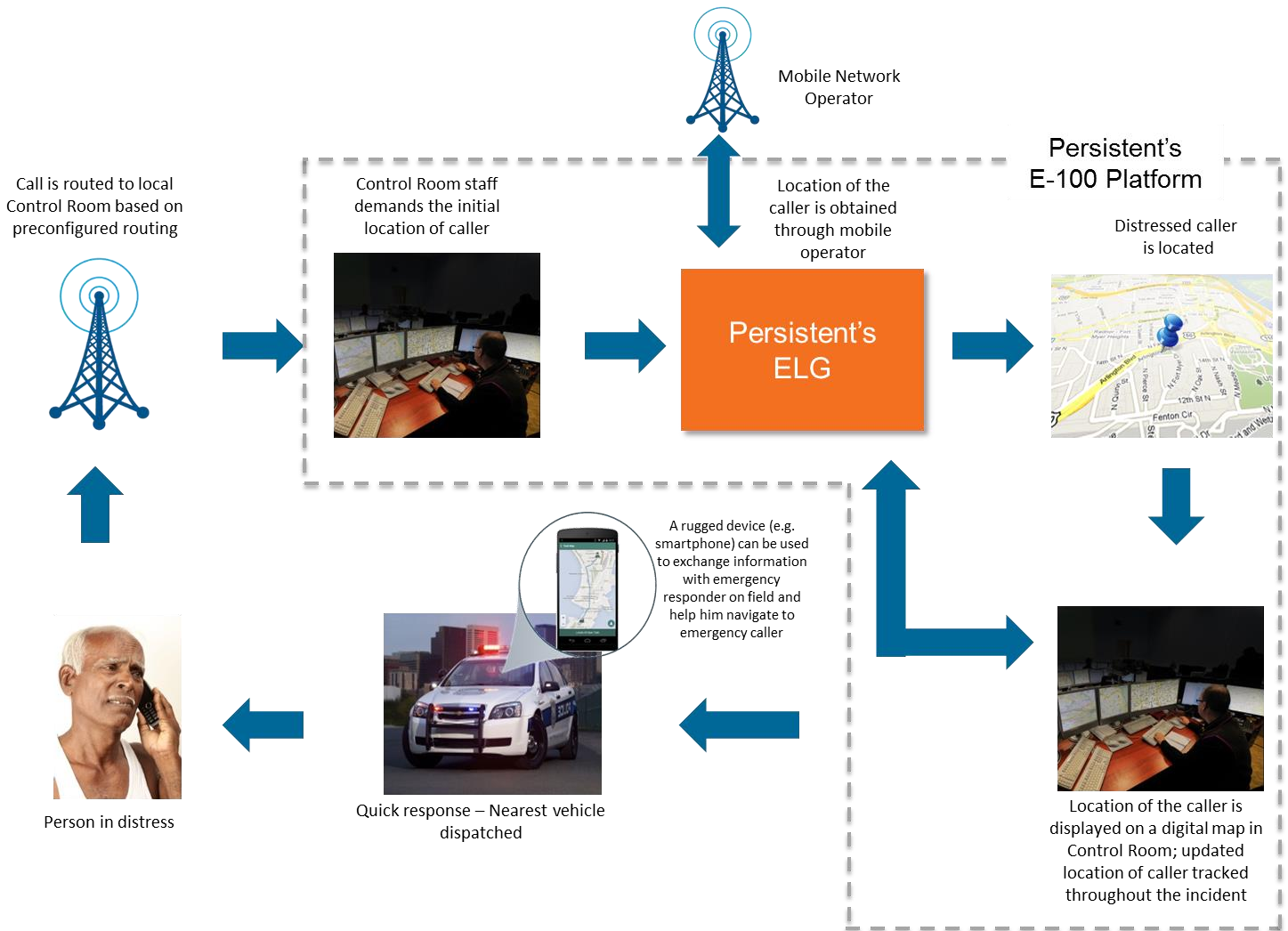
Inside:

www.persistent.com

How Does it Work?

A person in distress dials a designated emergency number (e.g. 100, 108) from a mobile phone. The call is routed by mobile operator to landline operator switch based on the location of the tower serving the call. Landline operator provides last-mile connectivity to the local Control Room. In the Control Room, the call is automatically routed to a "free" Control Room staff with the help of integrated IP-PBX. Control Room staff demands initial and updated location of the caller. Caller location is made available to the Control Room over a digital map.

The Control Room also has access to the current location of patrol vehicles/ambulances via tracking devices installed in vehicles. Using this information, the closest available emergency vehicle can be dispatched to reduce total response time. Caller location and other relevant details can be communicated to emergency responder on field on a rugged device (e.g. smartphone). This helps emergency responder navigate to caller location and provide updates to Control Room. All location-specific personal and confidential information is securely stored in India-based data center(s). This data is archived and can be made available for future reference as needed.

Mobile Network Operator

Persistent's E-100 Platform

Call is routed to local Control Room based on preconfigured routing

Control Room staff demands the initial location of caller

Location of the caller is obtained through mobile operator

Distressed caller is located

Persistent's ELG

A rugged device (e.g. smartphone) can be used to exchange information with emergency responder on field and help him navigate to emergency caller

Person in distress

Quick response – Nearest vehicle dispatched

Location of the caller is displayed on a digital map in Control Room; updated location of caller tracked throughout the incident

www.persistent.com

Emergency Location Gateway (ELG)

Persistent's ELG Platform frees Control Room stakeholders from the complexities of having to deal with each mobile operator individually. The ELG supplies both operator selection logic and Control Room system facing protocol interfaces as well as a full location server stack (i.e. GMLC/SMLC) for those operators that desire it. Operators have a choice to use the cloud-hosted ELG Platform's integrated GMLC/SMLC or their own legacy in-network location infrastructure to determine mobile caller location for these emergency services. This provides Telecom Operators a rapid, worry free route to complying with potential future government mandates requiring the supply of emergency mobile caller geo-location to police/ambulance/fire agencies. Here are some of the capabilities of Persistent's ELG Platform:

- Enables geo-location capabilities for emergency services to locate the mobile caller and provide timely response to emergency callers
- Provides location information of all mobile phones, even basic phones without GPS or data connectivity, to requesting Control Room systems
- First-of-its-kind Location Gateway that can communicate with multiple Telecom Operators simultaneously. This acts as a single point of integration for all geo-location queries for all type of Emergency Control Room applications
- Easy integration with MNP providers
- Centrally hosted infrastructure that can be reused across multiple Control Rooms, thereby lowering the Control Room setup costs significantly
- Robust privacy management features to ensure that only location requests from Government authorized Emergency Control Rooms are processed
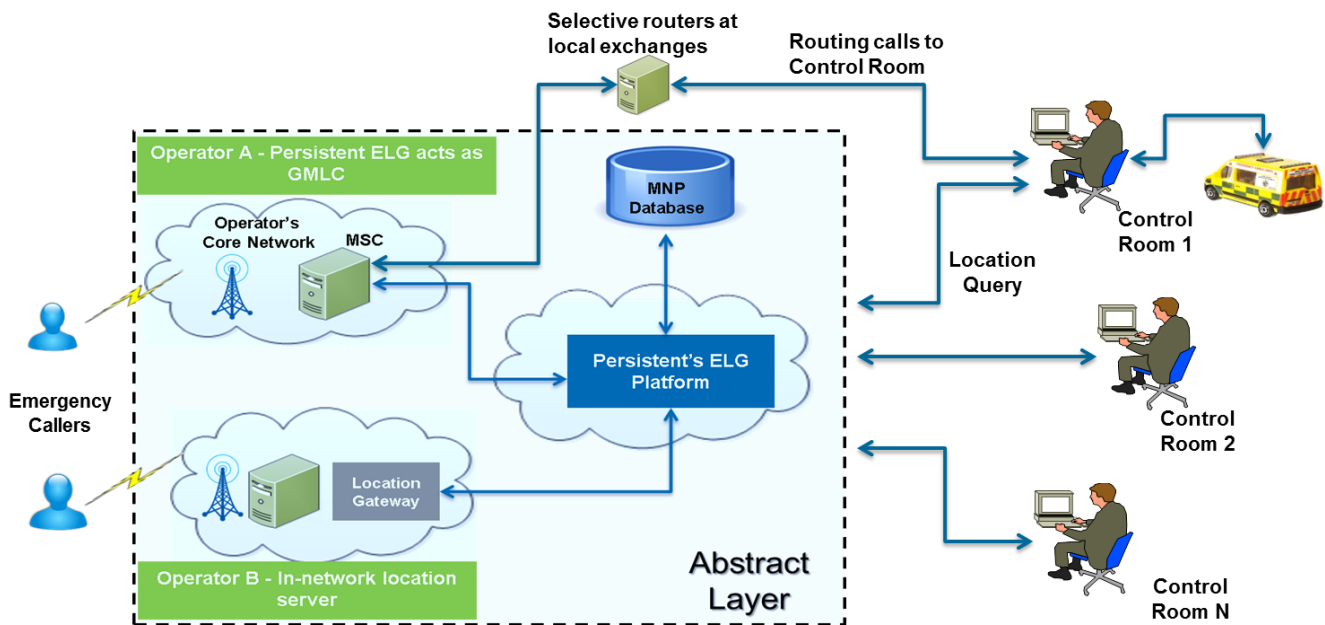
Control Room Solutions: CAD/AVLS

In addition to the ELG, Persistent offers a full Control Room solution for Indian police/ambulance/fire agencies. Persistent's Computer Aided Dispatch and Automatic Vehicle Location Service (i.e. CAD/AVLS) is designed to be deployed in the Cloud on behalf of local police/ambulance/fire agencies. It offers complete "situational awareness" (i.e. which patrol vehicle/ambulance is closest to caller) to Emergency Dispatchers and works on any internet connected PC with a browser.

Here are the key capabilities of Persistent's CAD/AVLS:

- Ready integration with Persistent's ELG Platform to obtain caller geo-location for 100% of mobile and landline calls
- Secure backup of incident forms and audio logs on remote datacenter
- Reduced ICT expenses with multi-tenant, State datacenter delivered SaaS ready architecture
- Geo-redundant cloud setup to address any failures of a specific site
- IoT expertise and AVLS client app that enables to cover wide range of devices (e.g. IoT GPS modules, TETRA subscriber units, smartphones)
- Efficient coordination with emergency responders on field using the rugged devices (e.g. smartphones)
- Integration with legacy PBX via Computer Telephony Integration (CTI) interfaces (e.g. JTAPI)

About Persistent Systems

Persistent Systems (BSE & NSE: PERSISTENT) builds software that drives the business of our customers; enterprises and software product companies with software at the core of their digital transformation. For more information, please visit: www.persistent.com

India
Persistent Systems Limited
Bhageerath, 402,
Senapati Bapat Road
Pune 411016.
Tel: +91 (20) 2570 2000
Fax: +91 (20) 2567 8901

USA
Persistent Systems, Inc.
2055 Laurelwood Road, Suite 210
Santa Clara, CA 95054
Tel: +1 (408) 216 7010
Fax: +1 (408) 451 9177
Email: info@persistent.com

www.persistent.com

DISCLAIMER: "The trademarks or trade names mentioned in this paper are property of their respective owners and are included for reference only and do not imply a connection or relationship between Persistent Systems and these companies."