The Solution: A Cloud-based Interactive Constable On Patrol System

Technology has fundamentally changed the face of society, and the effects that technological advances have had on the form and function of policing is no exception. Harnessing new forms of technology would become a constant theme in the efforts of international police cooperation, with new initiatives and meetings calling for the advancement of the means for police agencies of different nations to exchange information on criminals, suspects, and new means of policing.

The cloud-based interactive constable on patrol system (ICOPS) has a mobile application (see Figures 1 and 2) seeking to deliver a policing organization’s capabilities to the frontline officer. Examples of capabilities are Information, Communications, workflow and a Knowledge navigator which can argument a police officer’s knowledge and experience whilst performing his duties. It provides critical information at the time of an incident, improving the police officers option-taking and decision-making.

Figure 1: An example of eight capabilities being presented and other capabilities can include CCTV feeds (from participating organizations)

Figure 2: An example of a database search.

The purpose of the framework is to make police officers, particularly front-line officers, more effective and efficient when carrying out their duties. For example, typically at the end of a shift a police officer is required to return to a station to enter data into systems, and complete and fax hardcopy documentation to a centralized area for retyping into the database. Around 50 per cent of a police
officer’s time on each shift is spent in the station, with a significant proportion attributed to administrative tasks associated with information capture and reporting. Increasingly police find that their paperwork burden requires them to commence shifts early and finish late in order to complete documentation. Delays in processing information and making it available for operational members present difficulties for police in responding to service delivery calls and increase safety risks to both police and the public. By providing smart forms linked to automated workflows as in Figure 3, police can complete an incident at the scene. Reducing delays in processing information, and making it available for operational members. Resulting in police officer’s time spent at the station reduced significantly.

ICOPS can also be adopted by a law enforcement agency to surface its own capabilities. The law enforcement agency could provide its own framework, as represented in Figure 1 or a capability embracing sub capabilities (represented as a square in Figure 1) that would sit within another organization’s framework.

The intent is to connect and pull/push information and intelligence from a wide range of public and private databases (e.g. city’s CCTV systems), employing data-mining and other big data analytical technologies, and communicating with existing law enforcement communications systems (e.g.,

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computer-aided dispatch, GPS-guided locator systems, mobile data computers) to create a powerful and efficient information management system. A police officer using such a tool in the field could accomplish many tasks simultaneously by simply conversing with the device and issuing verbal commands.

Communications

One of the key aspects of effective workforce management is the clear, unambiguous communication of instructions, responses, and information. A key benefit of ICOPS will be the reduced demand on traditional Police radio communications as information traditionally sought via radio through the Communications Centres can now be obtained via the mobile device using ICOPS.

Push-to-talk (PTT) communications offer instant connectivity with the press of a button (see Figure 4). This feature becomes crucial in an emergency or hazardous environments where instructions and information must be relayed quickly—such as between the command center and frontline officers in the field.

Figure 4: An example of push-to-talk.  
Figure 5: Group communication

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Custody Management

In general, all detained persons must be placed into custody when:
- detained as part of an investigative procedure, or
- detained as not subject to an investigative procedure, or
- as a suspect not under arrest for the purposes of obtaining a forensic sample.

When a detained person is placed into custody, the police officer will be required to manage all aspects of that custody and complete records. As the detaining of a person in most cases will occur in the field, ICOPS was designed to assist the police officer in that task. ICOPS would create a numbered custody record for each detained person. These records would have a unique Custody Reference Number (CRN). The custody would be created independently of charge information and could be enquired on by all officers.

![Image](image.jpg)

Figure 6: An example of managing the custody of an arrested person.

Once a record is created, the officer entering the information will be deemed to be the custody manager and be able to add actions to that person’s record. Resulting in improvements such as reducing the time

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officers spend filling out forms and enabling investigative time to be monitored accurately. Custody management in ICOPS will allow the custody managers:

- Automatic calculation of investigative time remaining, taking into account timeouts and alerting the officer to requesting an extension of time if required.
- Alerts to the officer, prompting him to request an extension of time prior to the investigative time finishing.
- All actions displayed on the same screen.
- A Custody Management Record output by the system listing all actions that took place during the person's time in custody.
- A list of all people currently in custody.

**Situational Awareness**

Situational awareness typically refers to a person being aware of what is going on around him or her. Law enforcement is an inherently dangerous occupation. At no time are officers more vulnerable than when they approach an unknown individual, whether during a traffic stop, criminal investigation, domestic violence call, or a possible mentally disturbed or impaired person. Often, the best protection officers have is access to information about the person with whom they are dealing, the address to which they are dispatched, the vehicle and the driver they have stopped, and other information regarding activities in their jurisdictions. This information provides officers with situational awareness that could significantly increase officer and public safety.

When initiating a traffic stop, standard operating procedure is for an officer to run the vehicle license plate through a national database to acquire as much knowledge as possible about the vehicle owner (usually the driver) before approaching. A query to determine if there are any outstanding warrants on the registered owner of the vehicle, for example, could prompt the officer to request backup before approaching the vehicle. Once contact with the individual is initiated, the availability of additional information—specifically, identification of any other person in the vehicle—will further increase situational awareness.

Law enforcement officers need tools to provide accurate, timely, complete information in the field. In addition, law enforcement agencies need access to a broad variety of technologies, such as geographic information systems (GIS) in order to build comprehensive situational awareness. Building enterprise-wide information sharing capabilities will enable agencies to improve situational awareness.

Officers can also increase situational awareness through the use of social media or available online services. First responders to a disturbance at a large public event, for example, may acquire critical location and tactical information from public “tweets” or posted photos or video from cell phones. Images from Google Earth and other sources could inform officers responding to a crime in progress of potential escape routes or exposure to possible threats from suspects in or around a building. Real-time access to surveillance systems or traffic cameras via a handheld device could help officers target their response. However, the accuracy and reliability of information must be considered when utilizing public sources, especially in quickly developing situations. Policies governing the use of unsecure public information must be developed, and officers must be trained in the effective use of such tools.

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Conclusion

In summary, the proposed cloud-based interactive constable on patrol system (ICOPS) seeks to address the following gaps:

- What policing organizations currently lack is a technology infrastructure that can collaborate with internal and external data sources, extracting, transforming and loading data into a resource that each function within the organization can interrogate and then surface into a knowledge hub that will easily cause the collaboration process to occur both internally and externally.

- Achieving the above alone will still not successfully contribute to the police officer’s effectiveness and efficiency, if the information contained cannot reach the police officer to provide him the situational awareness that is required for him at the frontline. An organization’s information can only be beneficial when it is directed and used by the appropriate responder.