

# EXECUTIVE SUMMARY

Technological Innovation for  
Security in Latin America  
Phase 1: Diagnosis in Latin America



**UdeSantiago**  
de Chile

With the support of:



MOTOROLA SOLUTIONS  
FOUNDATION

# I. Introduction <sup>1</sup>

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Technology is a key element to increase the effectiveness of public safety initiatives and disaster risk management. In this context, the study "Technological Innovation for Security in Latin America", conducted by the University of Santiago de Chile, with the support of Motorola Solutions Foundation, has emphasized the identification of practices developed in Latin America.

The first product, primarily addresses the issue of Public Safety and Technology, accounting for a description of the security in Latin America. The approach to the subject covers, in a broad way, the most striking Innovative Safety Projects in the region, an overview of the role of technology in high-profile events and requirements in terms of safety, such as the 2014 FIFA World Cup Brazil, and an approach to the phenomenon of natural disasters as a national security affair. The final study will delve deeper into these issues and related information will be added to the risk management of natural phenomena, focusing mainly on the experiences of Mexico, Panama, Colombia, Ecuador, Brazil, Argentina, Peru and Chile.

A later stage of this study will include documents produced by key actors in security and disasters, namely: Lorena Donoso (Chilean Institute of Law and Technology); Sálvano Briceño (Former Director of the Secretariat of the International Strategy for Disaster Reduction UN/ISDR); Michel De L'Herbe (Consultant in Emergency Management & Business Continuity); Diana Ariztizabal (Coordinator of the Gender and Disaster Network for Latin America and the Caribbean), among others.

Starting from a thorough analysis of good practices and innovations implemented in the region, with effective results in issues of public safety and disaster management, this report mainly contributes to the progress and advancement in the field of public safety in Latin America. The study also seeks to establish itself as a support to agencies and institutions responsible for guaranteeing security to the population, since it is the result of reliable sources and updated information about experiences, effective tools and future challenges.

# I. Security in Latin America

Latin America is a region that has experienced intense political and economic changes over the last twenty years, such as the development of a more prosperous and integrated regional economy, as well as the existence of more strengthened democracies. However, these transformations have had to deal with issues such as the spread of violence, crime, and insecurity. With 2012 figures, it is known that 40% of the population in the region lives below the poverty line there is an increasing rise in crime rates and a 12% growth in the rate of homicides during the first decade of the 21st century. The diagnosis is not homogeneous and each country displays different realities and complexities. Thus, nowadays in Mexico, Brazil and Central America, organized crime is a priority on security, while in the Andean countries, the largest number of offenses respond to everyday crime, whereas that in the Southern Cone, there are low rates of homicide but high levels of property crime.

Beyond national differences, the situation is consistent with low perception of security in the region. Nowadays, the perception rates of deteriorating regional security, range from 21.6% (Nicaragua) to 64.8% (Dominican Republic), while levels of victimization vary between 6.9% (Panama) and 28.1% (Peru and Ecuador). Likewise, the variation for the perception of crime/public safety as the most important problem, swings from 21% (El Salvador) and 47% (Venezuela). Undoubtedly, this situation poses many challenges -for all governments- when designing security policies. Thus, it is necessary to question the available tools to deal with this phenomenon, as well as the speed of change, both in crime and its response.



# I. Security in Latin America

## I.1. Innovative projects in security

The emergence and advancement of new technologies has created both, new delinquent and preventive dynamics, challenging the traditional response models. For this reason, most governments in Latin America have implemented substantial police reforms and made investments to improve their technological capabilities at levels such as institutional management; protection of personnel; deterrence; crime prevention; monitoring and research, and; identification of new criminal types.

### Security focused on technology<sup>2</sup>:

#### Delictual Tactical Analysis System (DTAS, Chile)

Based on the Zero Tolerance program of the New York Police Department, this system was implemented in Chile in 2011, through the Interior and Public Security Ministry and Carabineros de Chile.

Starting from Territorial Analysis System Information (SAIT for its Spanish name), the Integrated Control and "Plan Cuadrante"<sup>3</sup>, STAD is the review of crime patterns. All this information represent the where and why of crimes, in order to deploy effective strategies and tactics in confronting crime locations and accurate times. Thus, optimizing resources and police processes.



#### Mexico Platform

The "Mexico Platform" program was created by order of the National Council of Public Security in 2007. It seeks to prevent and combat crime, ensuring the protection of citizens. Its strategic focus is the update of technological infrastructure, the strengthening of the National Network of Telecommunications and the National Information System, in which the Single Criminal Information System highlights.

The foundation of this program, is the importance of information in public security to implement prevention, investigation and intelligence tasks. The connectivity of telecommunications networks enables to share audio, video, text and biometric records, among others. The Single Criminal Information System integrates biometric databases, driver's licenses, and recovered and stolen vehicles, motorized public record, criminal record, record of the prison population, citizen complaints, weapons' registration and ammunition assigned to public safety institutions. This information is available for authorized officers, depending on their profile and hierarchy.



<sup>2</sup> Here are presented only some innovations, not all that the report includes.

<sup>3</sup> Program that aims to reduce crime and increase the feeling of security among the inhabitants of urban areas of Chile.

# I. Security in Latin America

## School of Telematics and Electronics (ESTEL) of the National Police of Colombia

The National Police of Colombia has been making efforts since 2006 to incorporate technology innovations for the optimization of police service, initiative that was established through the institutional system of science and technology, during the same year through resolution No. 3504.

Starting from the identification of needs in different services, ESTEL conducts research projects to meet those needs through technological innovations, built on the adaptation of existing technologies, such as: lightbar emergency structure and electrical and electronic devices for motor vehicle's safety and emergency; Photovoltaic portable briefcase; Portable solar lighting cone for road signs.; Electromechanical prototype for coca plant extraction; Mobile classroom with electronic shooting simulator, among others.



## II. Safety During the World Cup

Certainly, the organization of a sporting event like the 2014 FIFA World Cup Brazil, represents a major challenge in terms of safety, both for its massiveness and the integrity of the participants. At the same time, these kind of events are an ideal opportunity to upgrade security systems and make use of technology. For this reason, the Brazilian government created the Special Secretariat for Large Events Security, which main innovation was the technological integration of all police and security agencies, enabling an exclusive network of high-capacity communication, allowing connection of headquarters, stadiums, customs, patrols and Interpol. Also, the expansion of 4G networks, which began in April 2013, continued at the main Brazilian cities. This expansion reached an investment of USD 111 million.

At the same time, it was developed a wide range of new communication applications, which allowed the data transfer rate to reach broadband speed. Parallel to 4G, it was also operating radio frequency (RF) communication, which priority use took place within the arenas and to the exclusive use of staff in charge of the stadiums: guards, security agents, cameramen, etc., who could connect to the network without having to access the 4G network wirelessly.

Alongside these advances in communications, the 2014 FIFA World Cup featured numerous safety innovations and technological tools: drones, identification systems and control areas. It is worth noting, that this information corresponds to the planning of technological tools in security. The outcomes will be discussed later.



### III. Natural Phenomena as Security Issues

In Latin America, natural disasters have had a major impact on population, especially on the more socially vulnerable. Solely in the year 2010, 2024 disaster related deaths were registered; 18.7 million people were affected; 222,000 houses were destroyed; and 1 million homes were damaged by natural disasters.

The management of the heavy consequences of natural phenomena has become an issue of national security. In 2003, the Organization of American States (OAS) included natural disasters as one of the new "unconventional" threats, leading to an understanding of security as a holistic concept, not only related to crime or accident.

Understanding and visualizing natural disasters as a national security issue, has forced governments to plan their response in public policies, identify the risks, seek their reduction and handle disaster through Risk Management Disaster and Emergency Management, targeting responses to medium and long term and immediate response. Undoubtedly, innovations in technology have been a constant ally at the tactical and administrative levels in this task. It is for this reason that, depending on their ability, each country has different technological tools for prevention, monitoring and immediate response. To this open digital platforms- developed by international institutions to provide technical assistance to other countries in the region- are added others, such as CAPRA, helping to promote international collaboration.

The screenshot shows the CAPRA website interface. At the top left is the CAPRA logo with the tagline 'Probabilistic Risk Assessment Platform'. To the right is a navigation menu with links for 'Inicio', 'Español', 'NOI / KNOWLEDGE / PROYECTOS ASISTENCIA TÉCNICA', 'FORMACIÓN', 'BIBLIOTECA', and 'CONTACTO'. Below the navigation is a main banner area with two images: one showing a software interface for 'ERN-Vulnerabilidad' and another showing a scene of destruction with debris and damaged structures. Below the banner is a 'SOBRE CAPRA' section with a paragraph describing the platform as an open-source software for risk assessment. At the bottom, there are three columns: 'Plataforma de Software' (describing the modular software), 'Proyectos Asistencia Técnica' (describing technical assistance projects), and 'Documentación / Librería' (describing the documentation and library).

## IV. Conclusions

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Currently, the region shows high crime rates, together with an even higher perception of insecurity. This represents a double challenge: confronting crime and restrain the citizen's sense of fear and insecurity.

The massification of technology has impacted different areas of civic duty and security aspects have been no strangers to them. It is for this reason, that Latin America has introduced innovative proposals, that have allowed the work around public safety, in the field of prevention and confrontation, to update.

The agencies responsible for public safety face multiple challenges in exercising their role. These challenges are not only related to the incorporation of technologies, but also with the institutional and organizational culture, and with the information management and its applicability. Thus, they could not only make use of technological tools internally, but they could also be used to involve citizens in crime prevention.

The gathering of a large number of people around an event, such as the World Cup, presents challenges in terms of security, the use of technology and the organization, which should not interfere with the normal course of events. At the same time, it must ensure security and provide its feeling to citizens and attendees. Certainly, the experience obtained by the use of technology of the recent World Cup, will enable planning for future mass events (2015 America Cup Chile) and the visibility of the technological innovations' applicability in security.

Nowadays, it is impossible to design a response to natural disasters without the use of technological tools. Undoubtedly, they contribute to the government and business' continuity, considering its utility in the prevention and response amplification, providing welfare and security to citizens.

# Methodology

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## Type of Research:

The nature of this study is qualitative descriptive, as it aims to make a characterization of public security in Latin America, collecting information on this phenomenon from different sources. It consists of three phases:

- a) Latin American diagnosis.
- b) Natural Disasters.
- c) Innovation in Public Safety Policy in Latin America.

## Research Design:

It is a Theme Narrative Design, describing and identifying emerging issues from the collected data, focusing on the phenomenon of security in Latin America.

## Data Collection Technique:

Review of official documents, gathered from government sites and international recognized institutions, and semistructured interviews.

## Type of Sample:

The sample corresponds to expert interviewed. The interviewed are specialists in different fields of public safety in Latin America, namely: Sálvano Briceño Scientific Committee, Integrated Research on Disaster Risk - IRDR (ICSU / ISSC / UNISDR); Pedro Berrios, CEO National Emergency Network Corporation; Michel De L'Herbe, Consultant in Emergency Management & Business Continuity; Victor Orellana, Deputy National Director of National Emergency Office of the Chilean Ministry of Interior and Public Security, Former Project Coordinator at Japan International Cooperation Agency (JICA); Eduardo Vergara, Coordinator Safe Stadium Plan.

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