Problem Oriented Policing System (POPS) designed and developed by IONNINA, LLC., is a crime solving system for identifying, assessing, tracking, and reducing community crime and disorder problems. It's a proactive approach to solving crimes by addressing the root causes of problem disorder, and preventing crime before it occurs rather than reacting to it after it happens.

**Description:**

Problem Oriented Policing System (POPS) designed and developed by IONNINA, LLC., is a crime solving system for identifying, assessing, tracking, and reducing community crime and disorder problems. It's a proactive approach to solving crimes by addressing the root causes of problem disorder, and preventing crime before it occurs rather than reacting to it after it happens.

**Model:**

POPS is a web-based solution modeled and developed using Herman Goldstein's problem oriented policing framework, with modules extensions to adapt Community Oriented Problem Solving and also Intelligence-Led Policing.

The entire system is organized using SARA (Scan, Analyze, Respond and Assess) analytical model for easy understand and use.

```
<table>
<thead>
<tr>
<th>SCANNING</th>
<th>ANALYSIS</th>
<th>RESPONSE</th>
<th>ASSESSMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identifying and prioritizing problems by determination of its nature and seriousness.</td>
<td>Researching all the details and characteristics of the problem. Analysis is the heart of the Intelligence process.</td>
<td>Developing solutions to reduce or eliminate the problem.</td>
<td>Evaluating the success of the responses.</td>
</tr>
</tbody>
</table>
```
PROBLEM ORIENTED POLICING SYSTEM (POPS)

Benefits:

- Active involvement of communities and external agencies through Intranet and Internet communication capabilities.

- Capable of linking all regional offices at one operations center location for optimum sharing of information and solutions.

- Visually creative interface and graphics for rapid data collection, improved work flow and customizable reports for operators and responders.

- Enhanced data collection - supports most popular enterprise databases for integration with Geographic Information Systems (GIS) to visualize relationships, patterns and trends.

- Easy interface for community - smart phones, web-based access, voice activation with standard report terminology to minimize data entry and capture and prioritize data.

- Configurable by modules for essential and optional features to meet requirements while maintaining price reasonableness.

Future Capabilities:

- Quantitative Efficiency engine - to help ensure efficient workforce distribution of resources and increased productivity.

- Probabilistic engine - sophisticated mathematical engine that will predict specific events based on predefined or dynamic patterns.
PROBLEM ORIENTED POLICING SYSTEM (POPS)

Technologies used:

- Implementation of high performance ASP.NET Web application developed in .NET 3.5 with one of the most powerful, scalable and advanced n-tier, service-oriented enterprise design patterns and high performance WCF services.

- Interoperability between COPS services and commercial Java applications (J2EE) based on WCF and industry-standard Web Services, including WS-* Advanced Web Services with no code changes required.

- Implementation of multiple service bindings to support different network transports including TCP/IP for blazing fast speed and message encoding formats using WCF.

- To be consistent with national standards, the system and the database structure was modeled after global jxdm (Justice XML Data Model) schema for easy integration and data-sharing with other systems in order to bring data together in a timely fashion.

- The Global JXDM is intended to be a data reference model for the exchange of information within the justice and public safety communities and is sponsored by the U.S. Department of Justice (DoJ) Office of Justice Programs (OJP), with development supported by the Global Justice Information Sharing Initiative’s (Global) XML Structure Task Force (GXSTF).

- The system supports the most popular enterprise databases such as SQL Server 2005/2008, Oracle 11g, Sybase 12.5, etc.
PROBLEM ORIENTED POLICING SYSTEM (POPS)

Scanning

- The first phase of SARA model is Scanning and helps to identify and prioritize problems by determination of its nature and seriousness.

- The POPS system is designed to handle each problem as a cluster of reoccurring similar type of incidents and can accept information data from different intelligent sources.

- A problem could be identified from a variety of sources such as: crime statistics, 911 calls, letters from the elected officials, the local authority, community survey, other agencies and businesses, etc.

- The system provides a search engine that will allow you to greatly reduce the time spent searching for a particular type of information that is relevant to a particular problem.

- Also it allows the user to associate problem elements such as people, organizations, locations, etc. from external data sources with the current problem.

The modules included in this phase helps to identify and select a problem, redefine the problem, and identify the stakeholders. The system allows you to describe in detail all the incidents, crime types, and recurrence that makes up a problem.

Note: Only the screens that are relevant to understand the Scanning phase are included.
Figure 1: POPS Problem Information Page
PROBLEM ORIENTED POLICING SYSTEM (POPS)

Figure 1: POPS Problem Information Page
PROBLEM ORIENTED POLICING SYSTEM (POPS)

Figure 1: POPS Crime Type Page
PROBLEM ORIENTED POLICING SYSTEM (POPS)

Figure 1: POPS Initiated By Page
PROBLEM ORIENTED POLICING SYSTEM (POPS)

Figure 1: POPS Problem Recurrence Page
Analysis

- Herman Goldstein defines analysis as in-depth knowledge of all the characteristics of a problem and all the factors involved to the problem. "Analysis requires the acquisition of detailed information about offenders, victims, and others who may be involved in a problem, the time of occurrence, locations, details about the physical environment, the motivations, gains and losses of all involvement parties, and the results of current responses."

- The system has a very complex implementation of Analysis phase and contains the following modules: Agencies, Locations, Organizations, People, Interviews, Surveys, Problem Analysis Triangle (PAT), Crime Prevention Triangle (CPT), Crime Prevention Through Environmental Design (CPTED), and Similar Crimes.


- Similar Crimes module was designed to help you find crimes of the same nature and learn what others have found about the causes of the problem, how they implemented the responses and how effective was their responses.

- The Analysis modules will help you to understand:
  1. the victims
  2. the location
  3. the characteristics of the offenders
  4. the factors, conditions and causes that contributed to the problem

Overall you understand the root causes of problem disorder, why the problem exists and why is occurring.

Note: Only the screens that are relevant to understand the Analysis phase are included.
The system has implemented a list of locations associated with the current problem or the user can create a new location from a GIS system to interactively add to the current problem.

Understanding the location can more accurately anticipate the likelihood of displacement or diffusion.
The system has a list of organizations associated with the current problem or the user can create a new organization to associate it with the current problem. Similar functionality is available for agencies.
PROBLEM ORIENTED POLICING SYSTEM (POPS)

Figure 1: POPS Person Name Page
Figure 1: POPS Person Physical Details Page
Problem Analysis Triangle contains three elements of crime: victims, offenders, and locations. Each of the three elements is used to generate analysis questions such: who, what, where, why, when, and how, that helps finding details about the problem.
Figure 1: POPS Crime Prevention Triangle Page
Crime Prevention Through Environmental Design (CPTE) module help you understand the relationship between crime and environmental opportunities that offer opportunity for committing criminal activities.

In the Response module we have implemented different strategies that help to reduce or eliminate crime opportunities by changing the physical environment of problem locations.
Response

- The modules in the Response phase will help you to develop solutions to eliminate, reduce or better address the problem.

Note: Only the screens that are relevant to understand the Response phase are included.
PROBLEM ORIENTED POLICING SYSTEM (POPS)

Figure 1: POPS Objective List Page

Long-term objective list.
The user can easily add/remove the long-term objectives from a predefined list.
The system has a list of tactics associated with the current problem. The user can add as many tactics as needed in order to address the problem.
Each of the objectives that is associated with the current problem can be selectable for a particular tactic. By associating an objective to a tactic, the user is implying that this tactic is undertaken as a measure to help satisfy the specified long-term objective. Any number of long-term objectives can be selected for the current tactic.
The system has a list of tasks associated with the current problem. The user can add as many tasks as needed in order to address the problem.
Figure 1: POPS Task Page
PROBLEM ORIENTED POLICING SYSTEM (POPS)

Figure 1: POPS Resources Page
Assessment

- The Assessment phase is for evaluating the response success and effectiveness.

Note: Only the screens that are relevant to understand the Assessment phase are included.
PROBLEM ORIENTED POLICING SYSTEM (POPS)

Figure 1: POPS Assessment Page
Figure 1: POPS Assessment Page
Statistics

- Statistics information are real-time data based on crime type, location, dates, and other variables.
PROBLEM ORIENTED POLICING SYSTEM (POPS)

Figure 1: POPS Assessment Page
Figure 1: POPS Assessment Page
Reports

- The Problem Summary report contains a detail view of the entire problem as recorded within POPS system.
Alpha Scull Police Department
Community Oriented Problem Solving Report

Case Name: String of Armed Robberies
Case Number: 08033000-1001-RGB
Start Date: 01-01-2009
End Date: 15-05-2010

Case Description
On July 31, 2008, Charlotte City Council issued a letter to Charlotte Police Chief Mr. D. S. explaining his concern related to high volume of robberies recorded in Charlotte, particularly in South East Boulevard.

Why was this problem selected?
As Police Chief for Charlotte, I regularly review crime reports and statistics. 911 calls and recent analysis of crime figures shows an increase in the level of reported robberies with the majority committed in city and town centers of the South East Boulevard area.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Problem Initiator</th>
<th>Crime Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>911 Call</td>
<td>Assault</td>
</tr>
<tr>
<td>1</td>
<td>Request letter</td>
<td>Child abuse</td>
</tr>
<tr>
<td>1</td>
<td>Crime reports and statistics</td>
<td>Elder abuse</td>
</tr>
</tbody>
</table>

Problem Recurrence
These events are opportunistics and occur predominantly earlier in the morning or late in the evening.

Objectives(s)
- Problem eliminated
- Problem calls significantly reduced

Figure 1: POPS Report Page
**Problem Statement (CONFIDENTIAL)**

- An assailant held up a woman working in a local children’s store at knifepoint in front of her four-year-old child.
- An assailant robbed and beat a woman near her car with her three young children watching and another woman was assaulted and robbed on a Sunday morning near her church.
- Two residents were robbed at gunpoint last week and another had her car stolen even though it was locked and parked under a street lamp in front of her home.
- Another armed robbery was reported Sunday night, leaving law enforcement agencies wondering if they are looking for a serial assailant or multiple suspects.
- The latest robbery occurred shortly before 11 p.m. Thursday, when a masked gunman entered the Dairy Queen and robbed three restaurant employees.

The assailant was described by Dairy Queen employees as a slender male with blue eyes and glasses in his early 20s.

He was approximately 5 feet 8 inches tall, wore a black cotton ski mask, black gloves, gray sweatshirt, blue jeans and white hiker shoes.

He pointed a gun at a female employee at the cash register, demanding all the money. He also pointed the gun at two other female employees in the restaurant.

- Two persons were driving in a blue Ford Taurus on July 18, 2009 morning. They drove up to the student and attempted to rob her as she walked to her bus stop.

The student described the offender as a male with blue eyes and glasses in his early 20s also.

Sunday, July 19, 2009 at around 7:30 p.m., a blue Ford Taurus sedan was involved in a hit and run resulting in property damage in Mint Hill, NC.

In three separate incidents, a similarly-described lone gunman pointed a gun at store employees -- wielding the weapon at bystanders as well -- before fleeing on foot.

A witness followed the car to a home on Martin Lake Road and called 911.

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Figure 1: POPS Assessment Page
Figure 1: POPS Assessment Page
## Problem Oriented Policing System (POPS)

### Alpha Scuti Police Department

#### Community Oriented Problem Solving Report

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance (street lights)</td>
<td>05-06-2029</td>
<td>05-08-2029</td>
</tr>
<tr>
<td>Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fix lighting in the area.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Notes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contact Duke Power management to schedule service.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance (repair fence)</td>
<td>05-06-2029</td>
<td>05-08-2029</td>
</tr>
<tr>
<td>Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fix holes in chain-link fence, as required.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Notes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contact fencing company to repair.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance (landscaping)</td>
<td>05-06-2029</td>
<td>05-08-2029</td>
</tr>
<tr>
<td>Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trim hedge to 4' height.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Notes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Met with Grounds maintenance supervisor to identify requirements and schedule work.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**Figure 1: POPS Assessment Page**

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PROBLEM ORIENTED POLICING SYSTEM (POPS)

Figure 1: POPS Assessment Page
Description:

We here at Ionnina have developed an automated system using Herman Goldstein’s SARA model that follow it accurately and easily for the user. We understand that many people are still naive and resistant to change but hopefully by using and understanding our software many will begin to embrace the change. We started by trying to win the award but realized a way to help out many more communities and spread our software to a wide range of people. Given your approval we would like to launch our software as a reward for the winners of the Goldstein Award. We would be glad to award the winner of the award our software at a 100% discount. Second and third place will receive our software at a 75% and 50% discount. We strongly feel that in the end this will not only help out the communities but that this is a great way to reward our local agencies that are striving to be on the cutting edge of technology.

Our system will not only automate and guide the user through the SARA model but will also greatly reduce the time spent on paperwork and maximize time spent in the field. With our system the time that is required to be spent on paperwork now will ensure maximum efficiency and give the end user a better understanding of not only the problem, but the factors that allowed that problem to take place in the first place and the necessary means to prevent them.

Thank you once again for giving us the opportunity to give back to the community. We are very anxious to see you all in Arlington, Texas and look forward to doing and learning more through each other.

Ion Sirbu
Chief Officer
Ionnina, LLC.