

Cisco Smart+Connected City Operations Center: Unified Management for City Infrastructure



Introduction

As cities strive to become more responsive to citizen needs, they turn to the flexibility of IP networks to deliver converged voice, video, and data services. Cities are seeing a shift in market demands from a reactive management approach to a proactive monitoring and management solution. Operations Centers typically gather data and video feeds from across the globe and these multiple data sources traditionally result in a number of monitoring areas and display screens.

As such, there is a growing requirement to provide a customized and integrated, single-pane-of-glass view for these multiple data sources. The Cisco® Smart+Connected™ City Operations Center enables the monitoring and control of dynamic activities involving high-resolution image processing, real-time video feeds, data integration, and various data and alert signals. The solution provides integrated data processing of sensor, map, and video data on a single layout. This overcomes issues with conventional operations management systems, thereby eliminating:

- The need for numerous workstations to manage multiple data sources
- Hardware reconfigurations when connecting with third party independent systems (avoiding additional costs for hardware integration and programming as the system grows)
- Independent hardware integration costs due to the individual construction plan
- Bandwidth performance issues, specifically when there is an increase in the number of cameras (even with additional hardware investment, it is difficult to bridge the performance gap)

Value Proposition

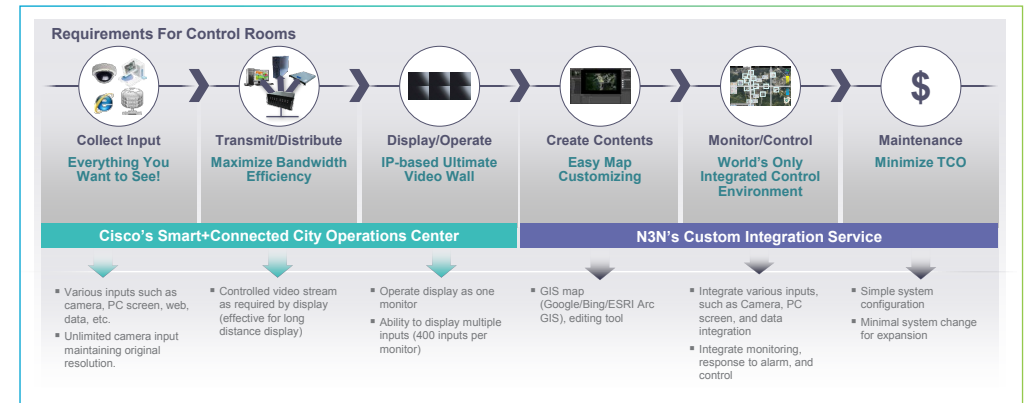
The Cisco platform offers a unified management experience for city infrastructure, simplifying control room operation and system integration, minimizing total cost of ownership, and increasing operational efficiency critical to rapid decision-making.

The Cisco® Smart+Connected™ City Operations Center end-to-end integrated platform and software:

- Maximizes real-time monitoring and control efficiency from one workstation through the synchronized control of high resolution blueprints, images, streaming camera data, and system alerts which allows for interaction between all relevant data
- Provides a solution that enables a drastic cut in the total cost of ownership by enabling CCTV system installation, expansion, and operation with no added hardware
- Allows simple and accessible integration with other independent control systems through a single integration point

- Enables bandwidth reduction through its intelligent Pixel-on-Demand technology used to efficiently manage system resources and process camera images in at full frame rate and with highest image resolutions

Figure 1 Cisco® Smart+Connected™ City Operations Center addresses the limitations with traditional control room operations.



Key Capabilities

Key features enabled by the solution include:

Integrated Control

- Map, camera videos, PC screen, and other data sources can be integrated into one display for convenient monitoring and navigation
- A true command and control environment by providing functions such as PTZ control, remote PC control, external device control, and alarm response from one monitoring station

Screen Layout Formation

- A screen layout editing tool for Cisco® Smart+Connected™ City Operations Center software allows map, blueprint, camera videos, data, and alarm scenario integration to create contents to meet operator's needs through a drag-and-drop layout tool and without the hassle of programming
- GIS tool allows easy map editing for wide area monitoring (Google map, Bing map, ESRI Arc GIS map)



- Allows integration of camera feeds, high resolution images, sensor and system alert inputs, and actuator outputs in one screen

Input Collection

- The Cisco® Smart+Connected™ City Operations Center software allows different inputs beyond cameras, such as, PC screen, web page, and other external devices for rich screen layout
- Collects major information in XML format (traffic, weather, device status, etc)

Transmission/Distribution

- Cisco® Smart+Connected™ City Operations Center software uses dynamic channel coverage and video stream function for efficient bandwidth usage
- Only transmits video stream required to display on monitor to maximize bandwidth efficiency

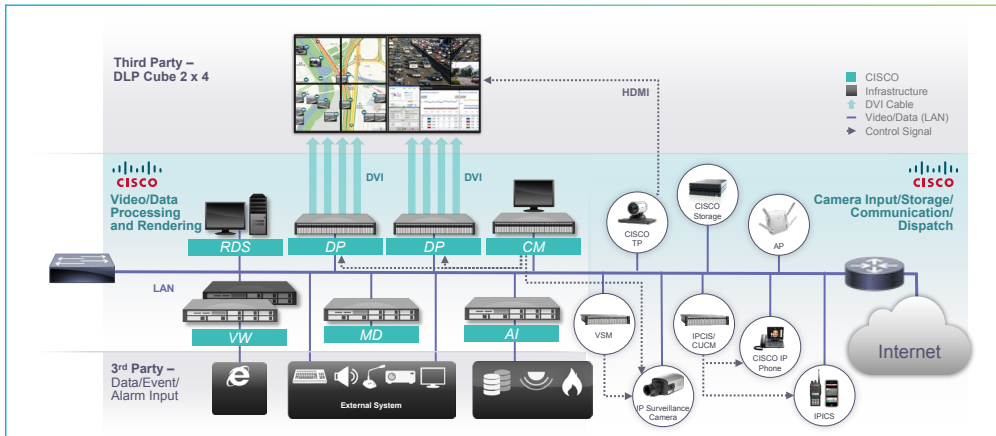
Multi-Display Operation

- Cisco® Smart+Connected™ City Operations Center software can control multi-displays as one and zoom-in/out/pan the screen as desired
- Cisco® Smart+Connected™ City Operations Center software demonstrates superb performance by displaying full frame camera feeds up to 100 in one display

How it Works

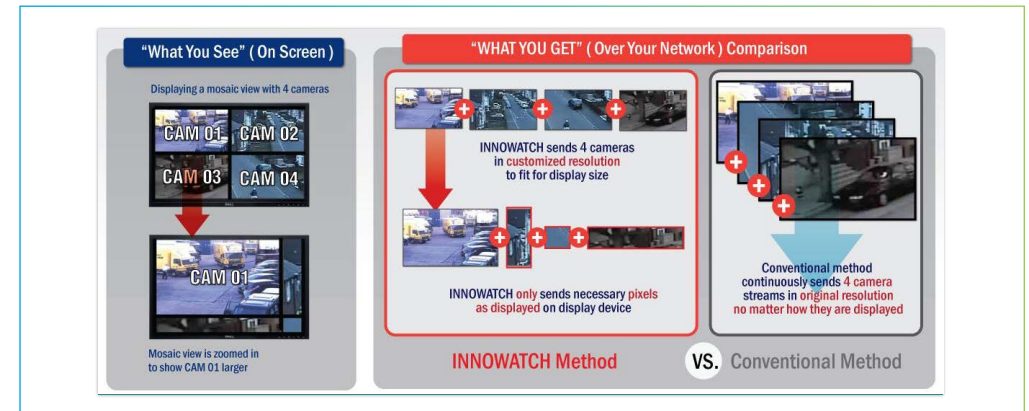
Figures 2 and 3 show how the solution is deployed in cities and how the various components interact.

Figure 2 Product and Solution Overview



Pixel on Demand: Proprietary technology to transmit only the necessary video images at any given time and enables smooth fast-responding zoom in and out with hundreds of camera feeds.

Figure 3 Pixel on Demand



Technical Components

A typical City Operations Center solution includes:

Cisco® Smart+Connected™ City Operations Center

- Video Processing Server (MD)
- Display Server (DP)
- Main Operator Console Server (CM)
- Advanced Interface Server (AI)
- Remote Control Software (RD)
- Individual Operation Server (Optional) (VW)

Cisco

- Cisco Unified Computer System™ (Cisco UCS®)
- Intelligent IP cameras, video encoders and Cisco Video Surveillance Manager
- Core network and end-to-end Internet of Things (IoT) architecture
- Unified data center infrastructure

Services

The solution is supported by a full suite of professional services provided by N3N, including consulting, design, integration, and implementation services, as well as training, support, and maintenance.



Benefits

Cities	Law Enforcement	Citizens
<ul style="list-style-type: none"> Provides a single-pane-of-glass view for operations centers Horizontal offering for key city verticals e.g. traffic and safety & security Reduced bandwidth and simplified integration of third party systems 	<ul style="list-style-type: none"> Higher rate of incident detection Automated incident detection and quicker response Increased situational awareness More effective operations Optimized budget 	<ul style="list-style-type: none"> Safer streets and neighborhoods Ability to report city safety incidents Improved communications about incidents

Why N3N and Cisco?

N3N is a patented software-based technology solution provider for Fortune 500 companies and governments, and highly applicable to IoT and the Internet of Everything (IoE) where control rooms are the “brain” or “engine” enabling real-time analysis and operations.

N3N and Cisco, one of the worldwide leaders in IT, together deliver a preintegrated, validated Cisco city operation center solution supported by professional services to help cities become more responsive to citizen needs.

Important innovations, such as data fusion to reduce false alarms and the integration of multiple applications into a comprehensive solution, make it the solution of choice for today’s demanding law enforcement departments and city planners.

For More Information

For more information, contact your Cisco sales representative, or visit:

www.cisco.com/go/smartconnectedcommunities

www.cisco.com/go/iot