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www.ciscoexpo.ro

Physical Security – Modern Integrated Incident Response

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CISCO IT SECURITY SOLUTION

IP Cameras



Standard Definition and High Definition IP Cameras

- Box, dome, PTZ
- Wi-Fi
- Indoor and outdoor
- Onboard analytics
- Medianet

Video Surveillance



Video Surveillance Manager

- Forensic search
- Bulk camera UPG
- Health dashboard
- Open standards

Access Control



Physical Access Manager

- Biometrics
- Mapping
- Web services API
- High availability
- Integrated video

Notification and Response



IPICS

- Dispatch console
- Mobile client
- Rich media
- High availability
- PTT to IP phone

Open API

Open API

Open API

TelePresence

VTG-ORA

PMBU— Logical/
Physical Access

Cisco Integration

S+CC

Digital Media

VTG—Access Control via IP Phone

Media Trace

Auto Discovery

Medianet

Auto Configuration

Media Monitoring

Security Health Monitoring Quality of Service

IP Network

Auto Updates

Authentication

Agenda

IPICS Overview

IPICS LMR

IPICS RMS

IPICS Mobile Client

IPICS IDC

IPICS Server

IPICS Overview

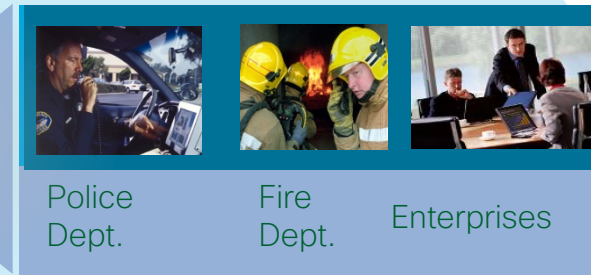
Devices/Networks



Locations



Organizations



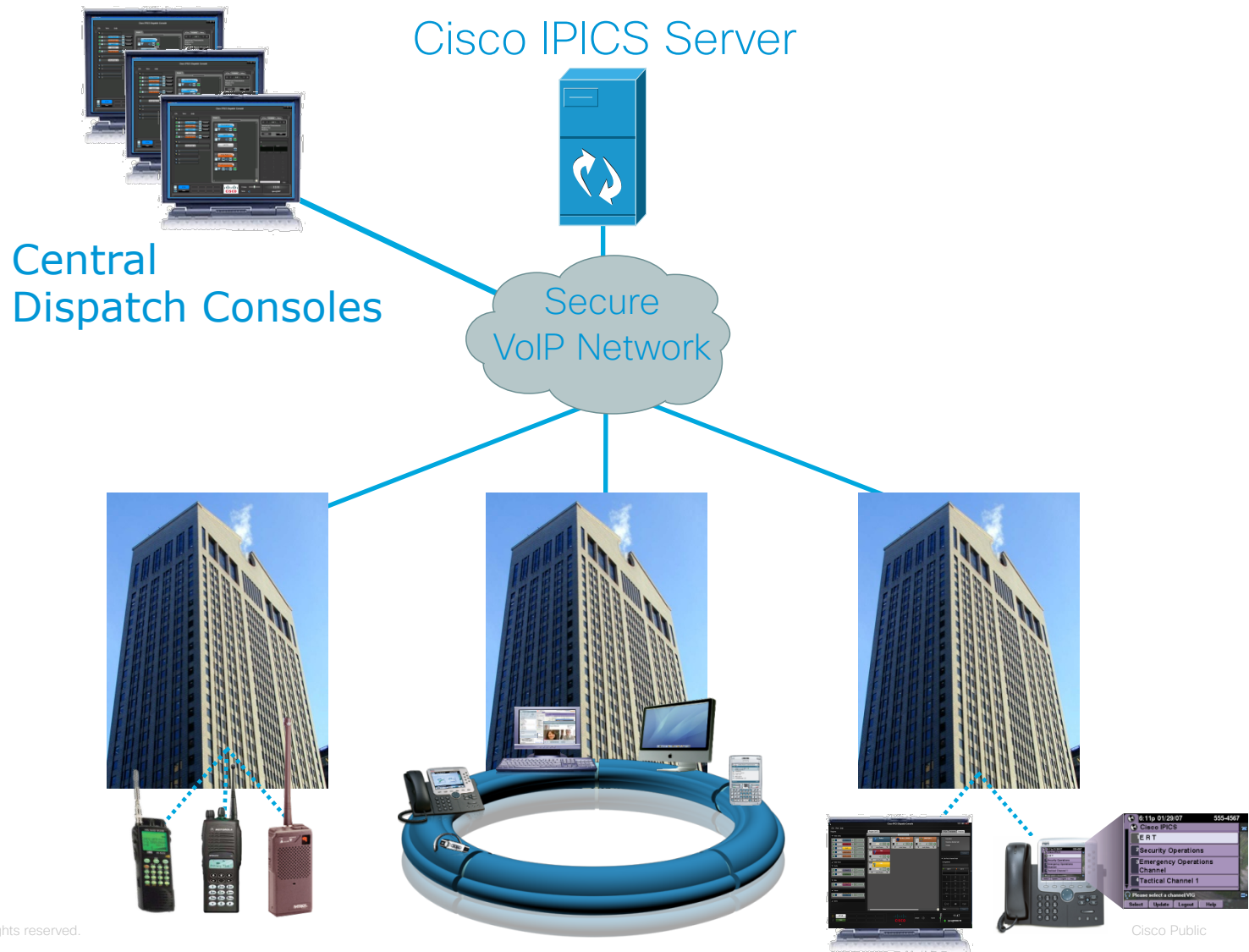
Cisco IPICS
Intelligent Platform—
Controls Media and
Information

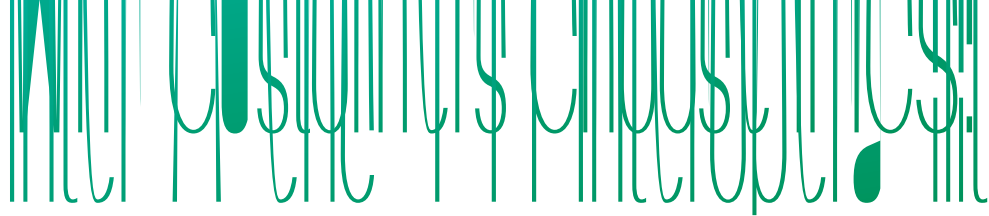
Unified Communications ISR Video Surveillance Access Point



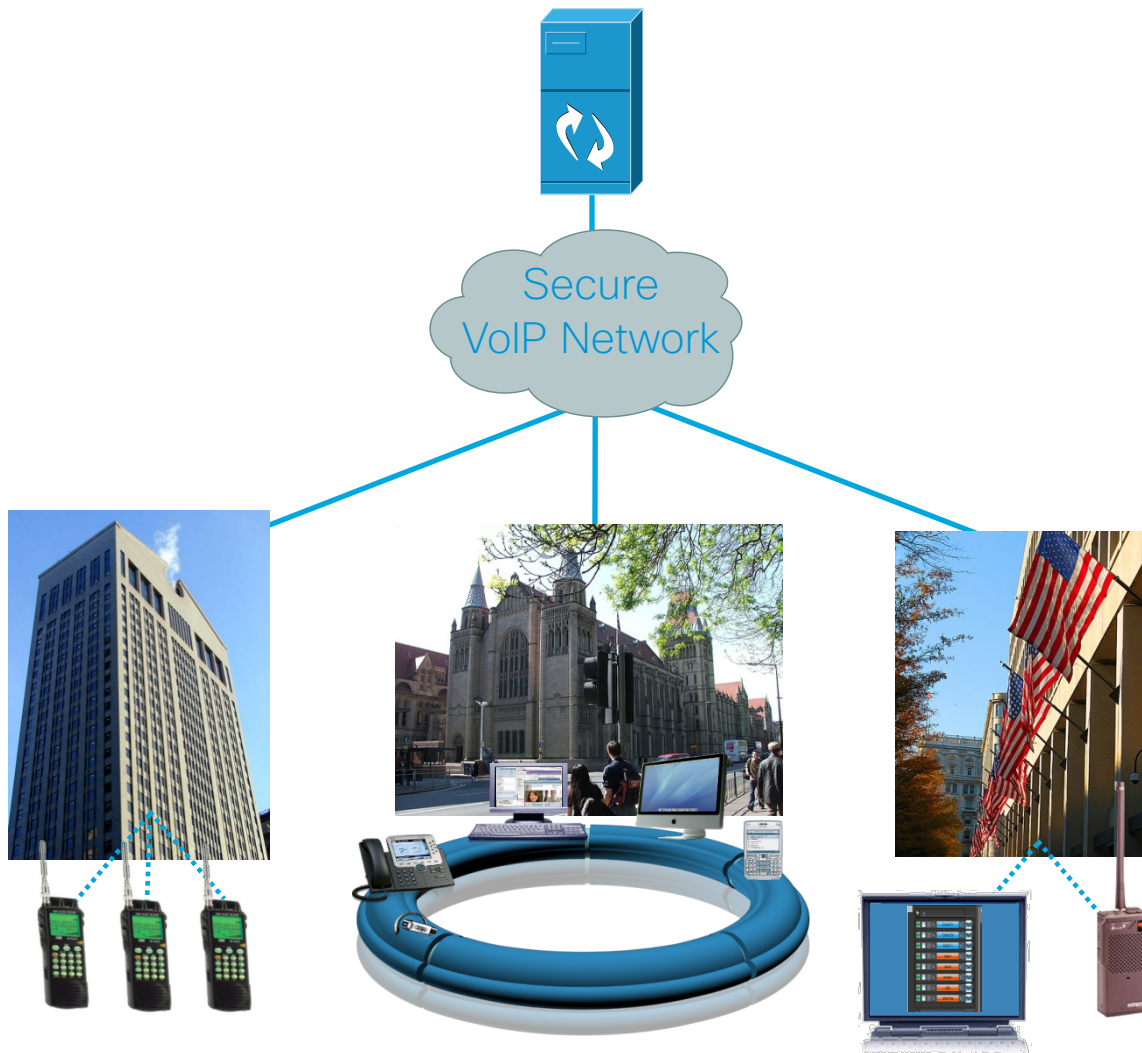
Applications

Multi-Site Network COPS: Roll Out



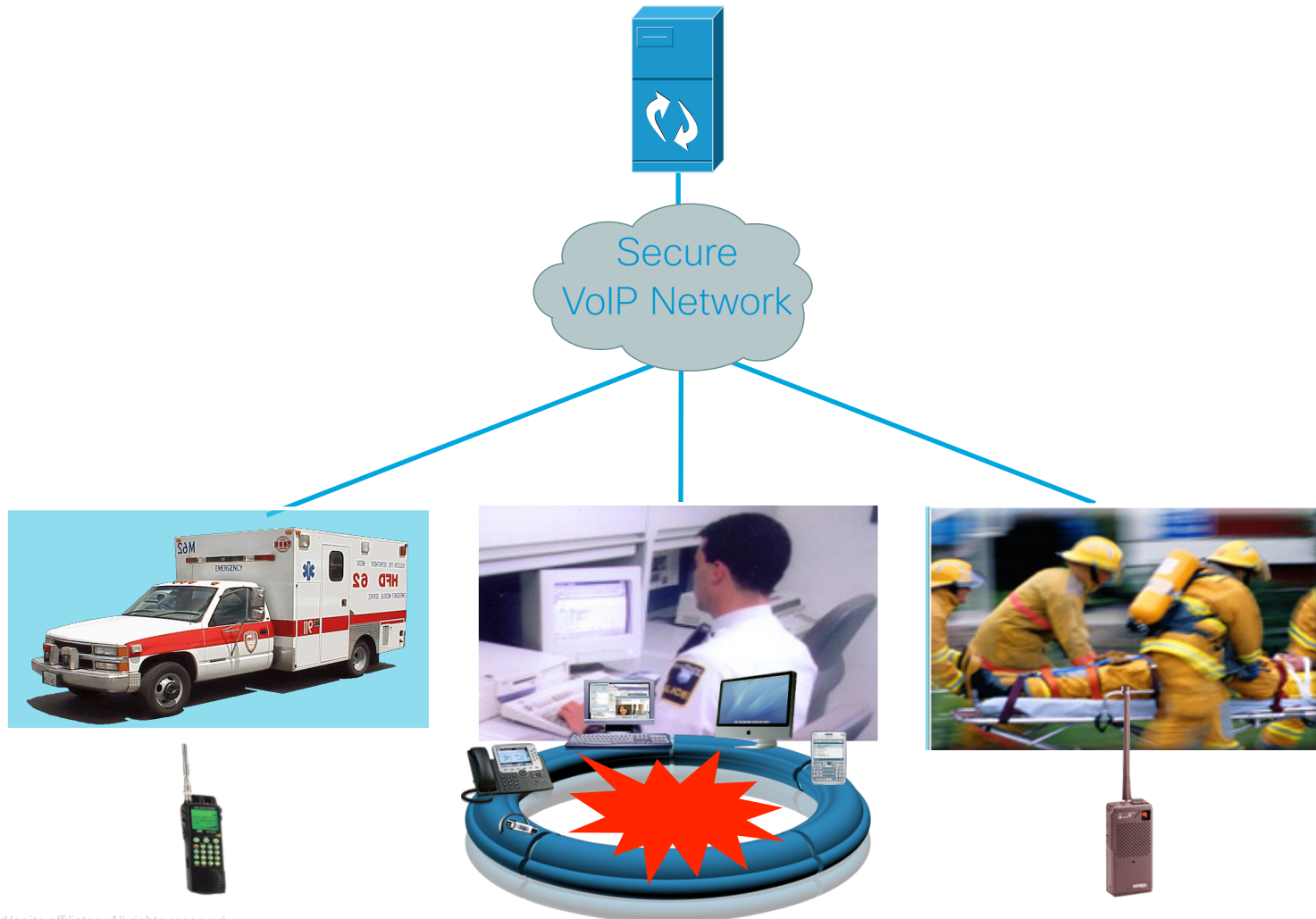


Cisco IPICS Server



Multi-Sector Emergency Response

Cisco IPICS Server



- Natural Disasters
- Criminal Acts
- Terrorism
- Biological Challenges
- Civil Unrest
- Medical Emergencies



Recent Natural Disasters

Australia - 12 January 2011



Recent Natural Disasters

New Zealand - 22 February 2011



Recent Natural Disasters

Japan - 11 March 2011



THE CISCO RV TRUCK

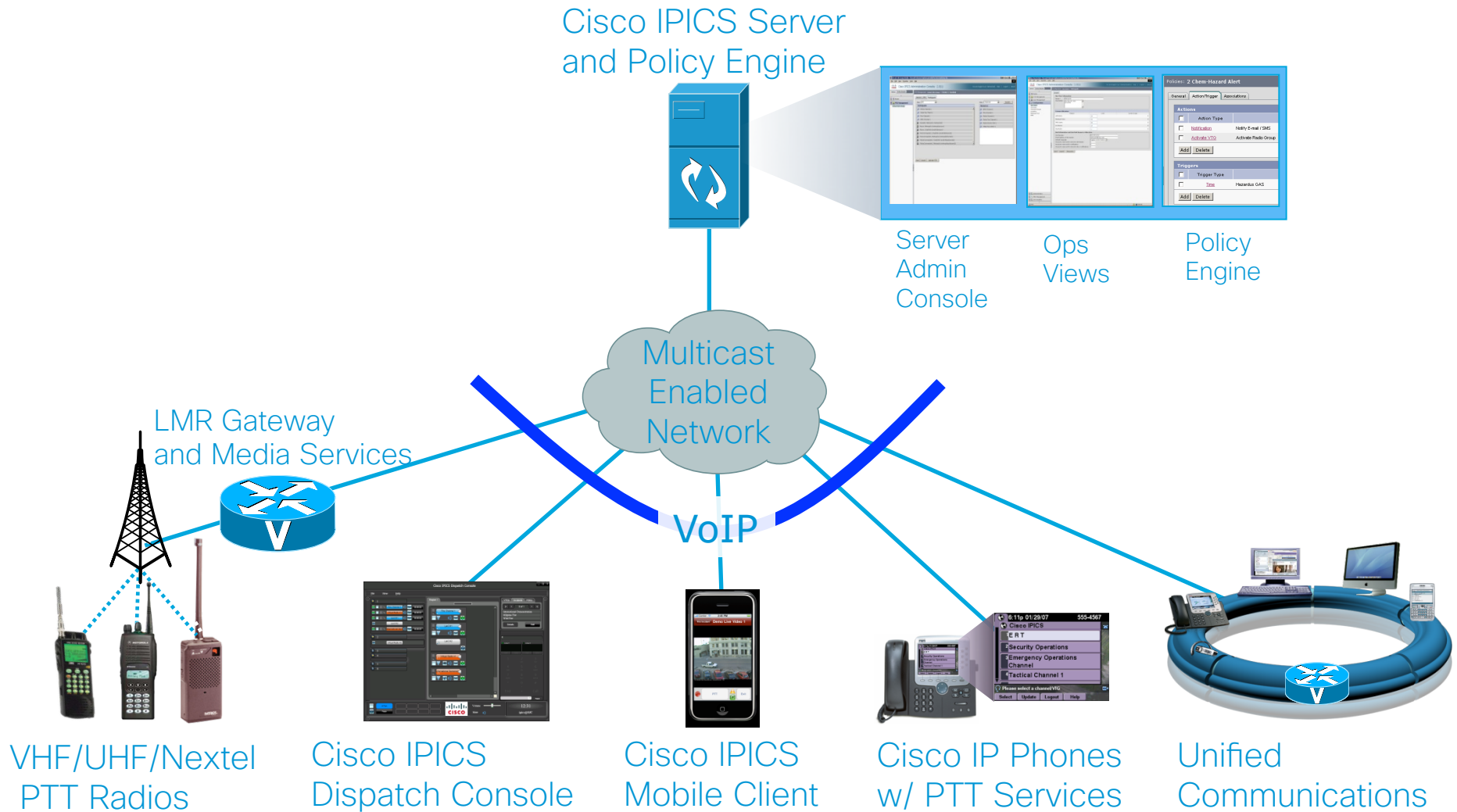
International Truck DuraStar 4300 Chassis

- own power, HVAC, and network connectivity.
- 1.8 meter satellite dish / 3 megabit uplink.

CUCM for Telephony
Telepresence
IPICS
Video Surveillance
Wireless Mesh
DMS



IPICS SOLUTION



IPICS LMR

INTERCOMMUNICATIONS



ANALOG TRUNKED RADIO SYSTEMS

- Conventional Radio Systems
 - 20-30 years old
 - Utilizes a pair of frequencies to communicate per channel
- Trunked Radio systems
 - Most commonly used today
 - A pool of frequencies used to provide access to Talkgroups/channels – more efficient

Typically utilize UHF/VHF frequencies
Also offer tone control

TETRA VS. DIGITAL

- Digitized voice carried over a conventional or trunked system
- APCO Project 25 (P.25) is the US “open standard”
- Elsewhere, TETRA and TETRAPOL are popular
- Various vendors have proprietary closed implementations



Digital systems are expensive but, in the U.S. agencies that want federal interoperability funds are mandated to buy P.25.

NEW MOTOROLA PORTABLES

- Here are a few of the more common portables...



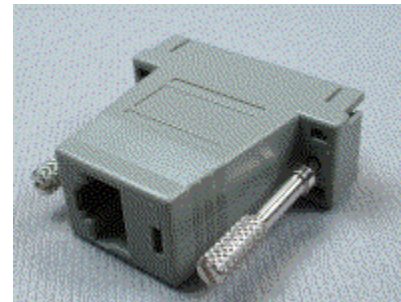
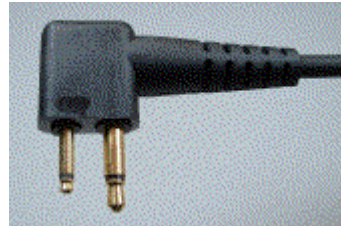
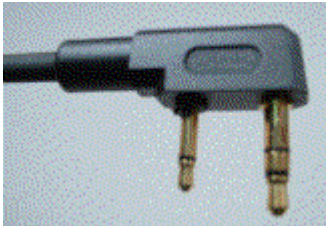
NEW MOTOROLA MOBILE RIGS

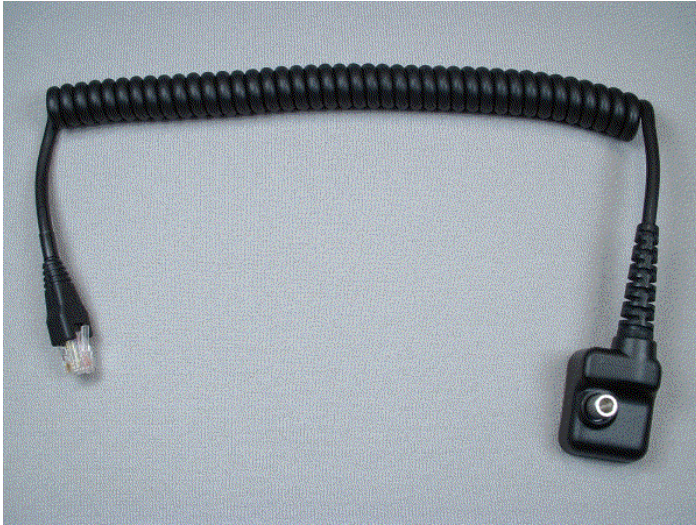
- Here are a few of the more common mobiles...



CONNECT THIS TO THAT

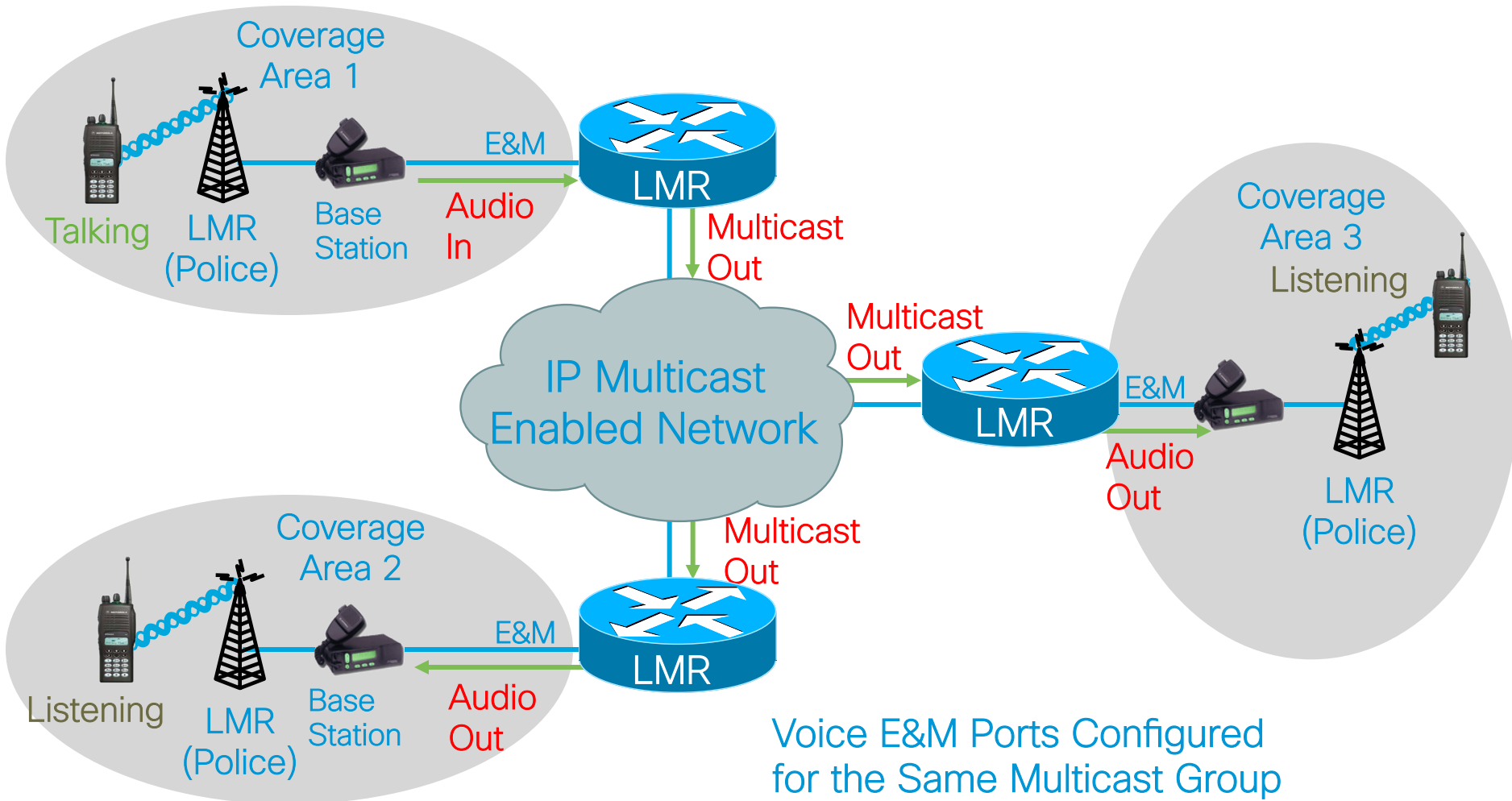
- And a collection of obscure connectors...





www.networkedradio.com

MULTIRIO



Support COVS

- G711
- G729a
- G711 @ 20ms sample rate = 80kbps or 65kbps if compressed *
- G729a @ 20ms sample rate = 24kbps or 9.6kbps if compressed *

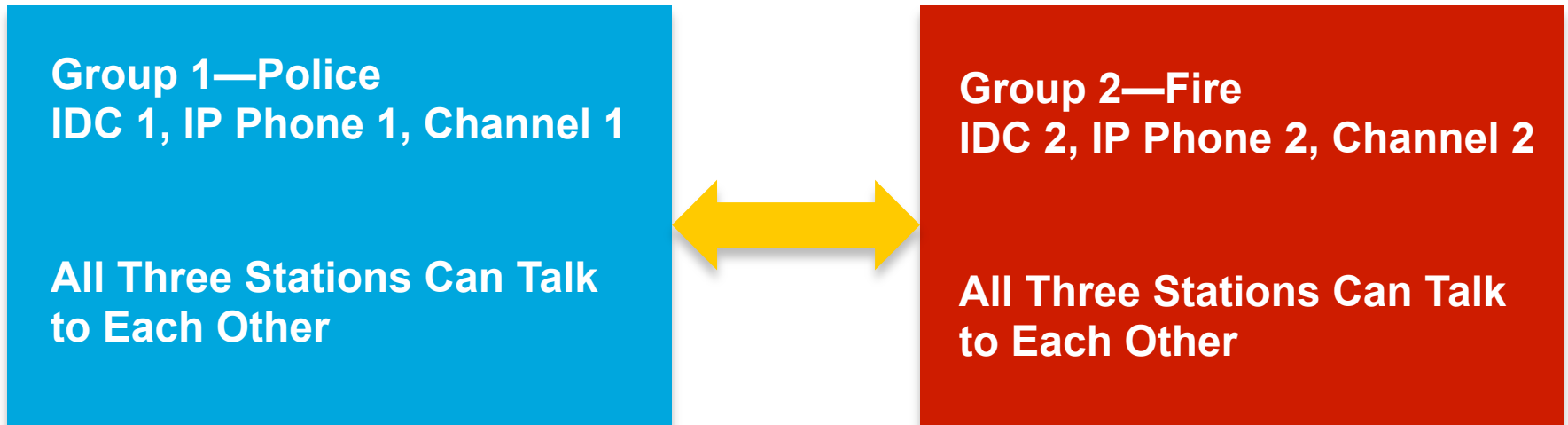
* excludes layer 2 headers



- Multicast VoIP used by IPICS – unlike traditional VoIP through unicast
- IP Recorders need to support Multicast VoIP
 - Cistara LMRRecord
 - Higherground
- Other vendors may record on the E&M port
 - Nice
 - Verint



IPICS RMS



Q: What do we need to do to combine the police and fire groups so they can communicate?

A: We need to mix the channels

Q: OK, How?

A: Using Router Media Services (RMS)

RMS (ROUTING & SWITCHING)

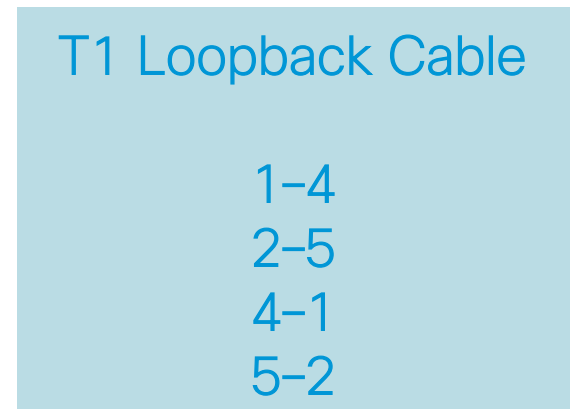
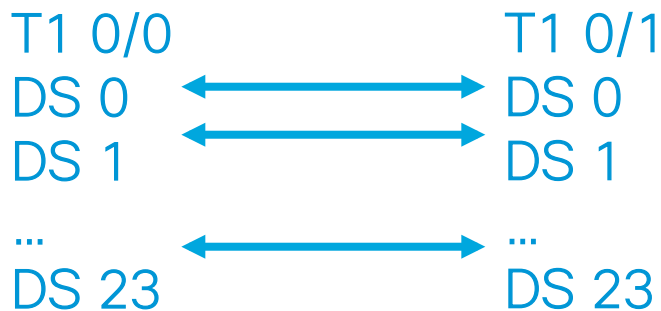
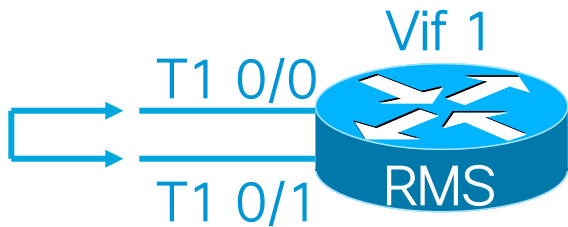
Required when

- Establish connectivity between unicast and multicast end points
- Dial-in user connection to a channel
- Establish connectivity between endpoints on different channels
- Remote IDC connected to a VTG or channel





- RMS routers have multiple digital T1/E1 ports that can be used to mix multicast and unicast channels
- T1/E1 ports are used in pairs and are connected back-to-back



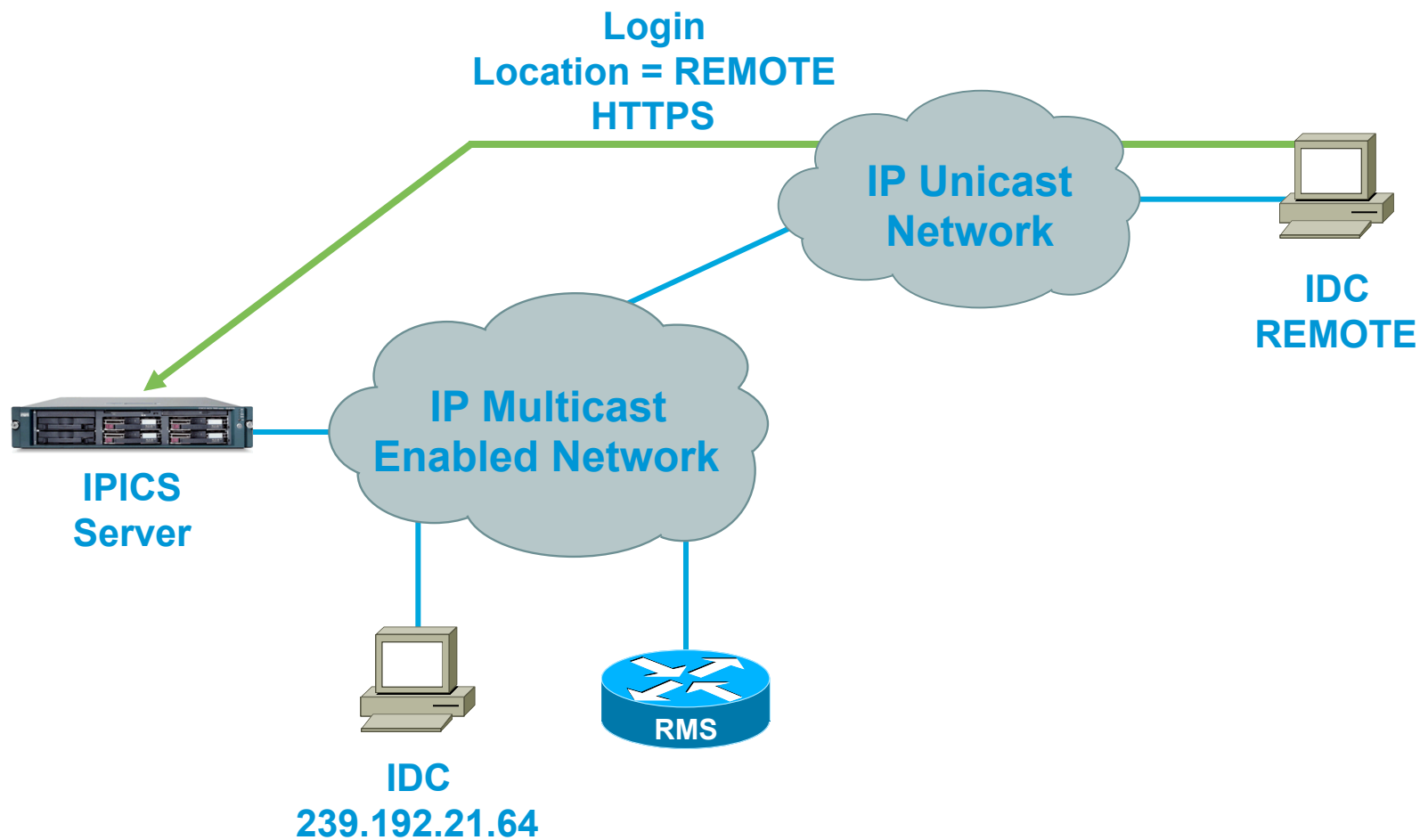


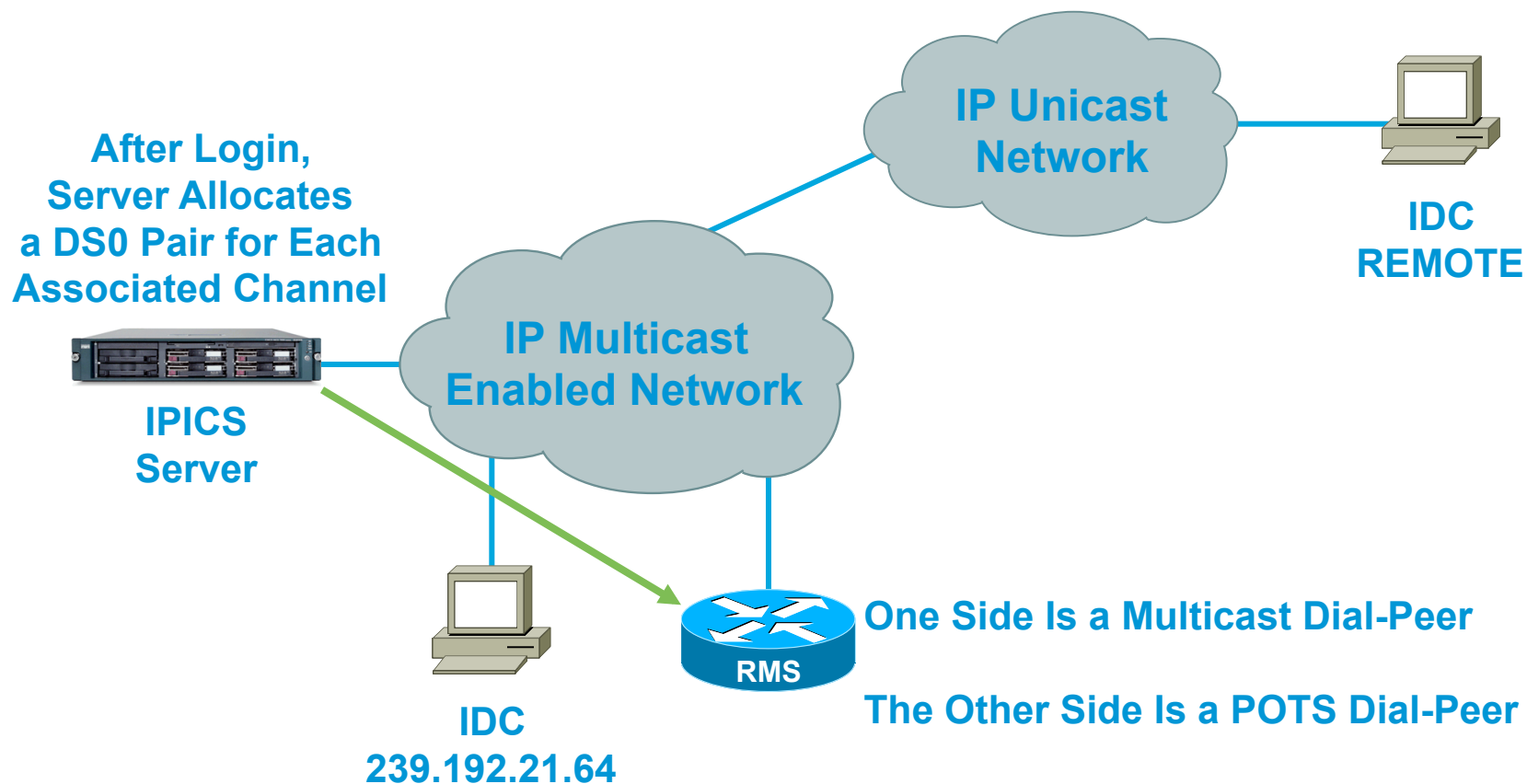
VTG Combined
239.192.21.74

San Jose Police
239.192.21.64

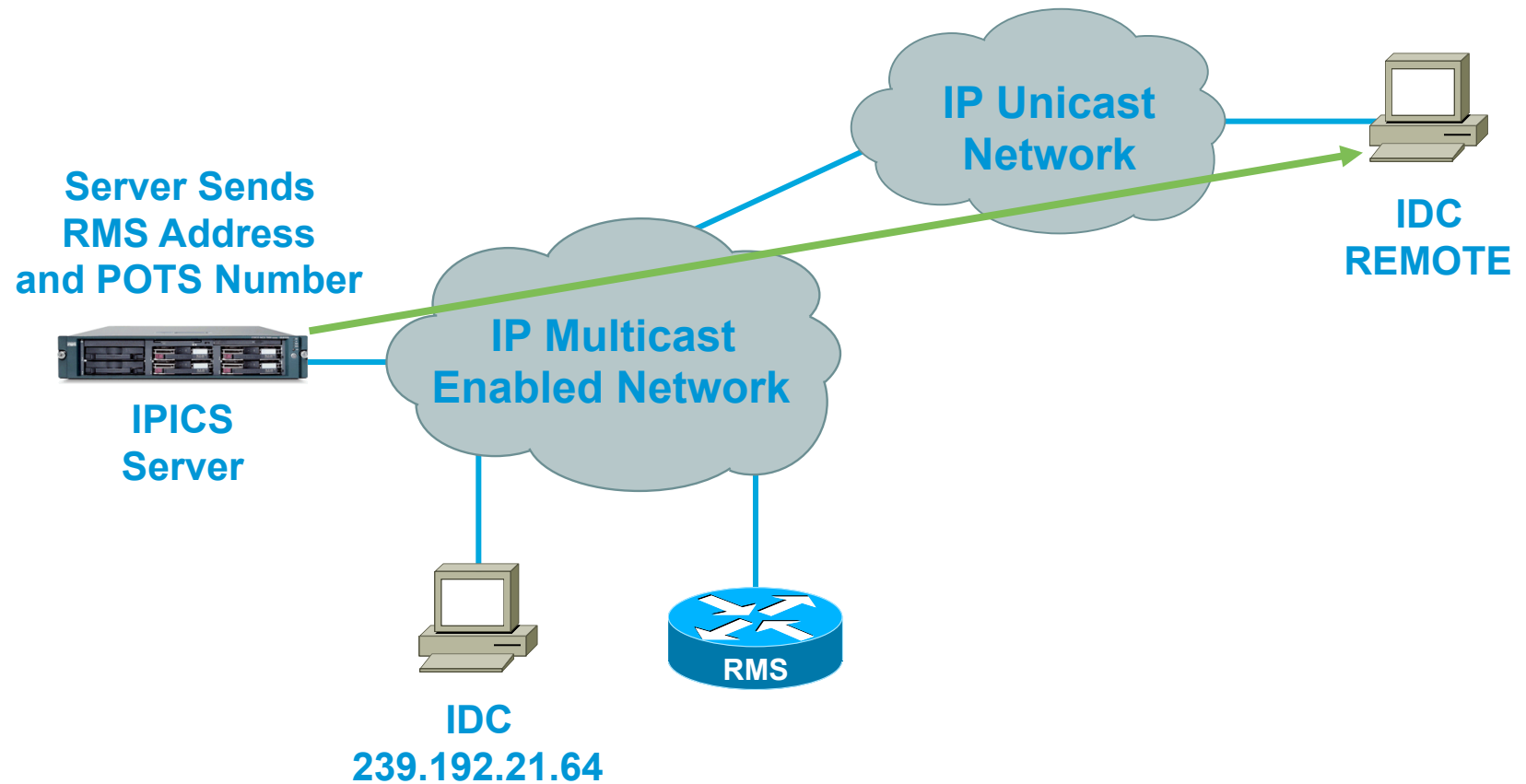
San Jose Fire
239.192.21.65

IP Remote Access

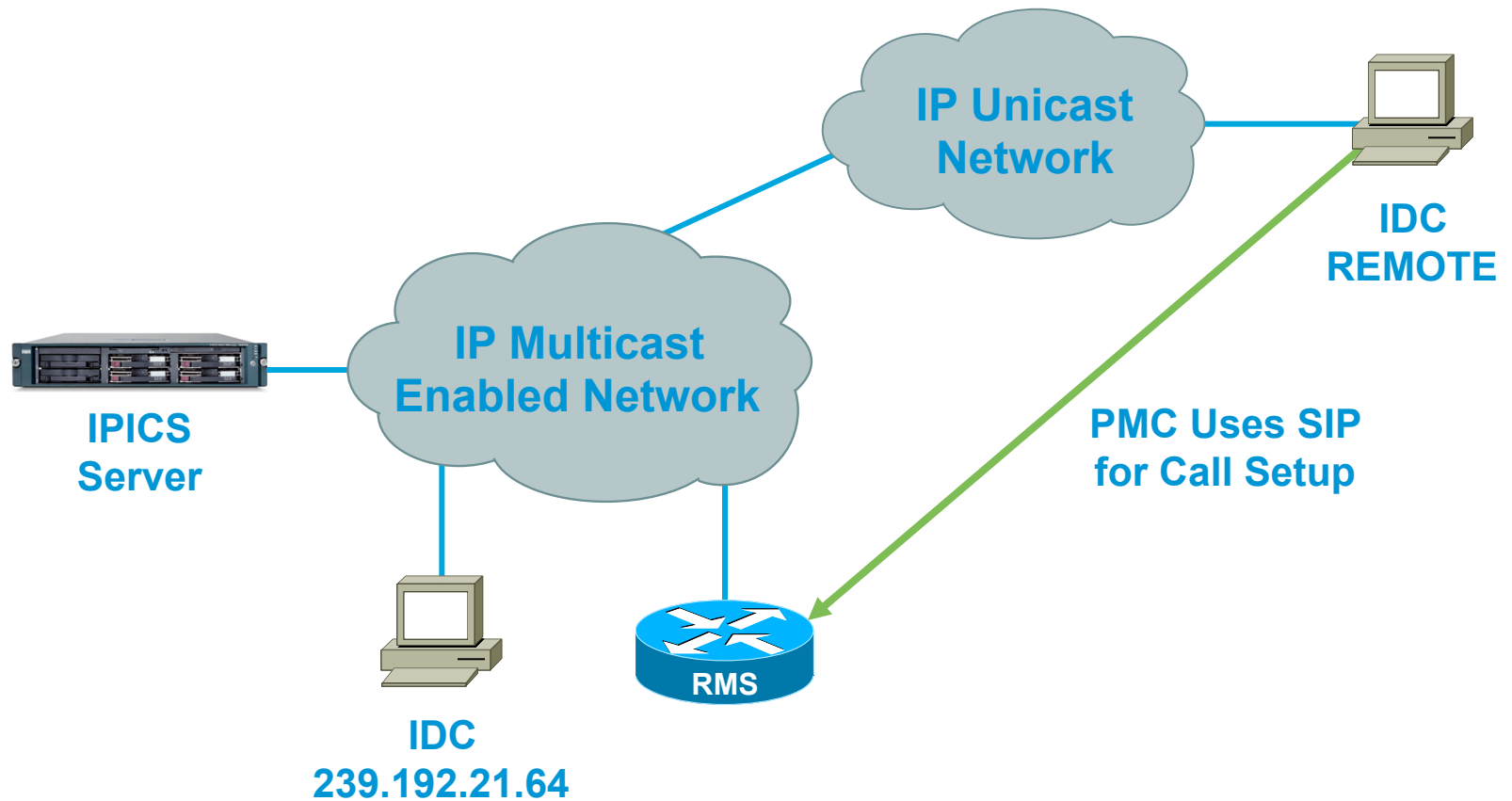




IPIC

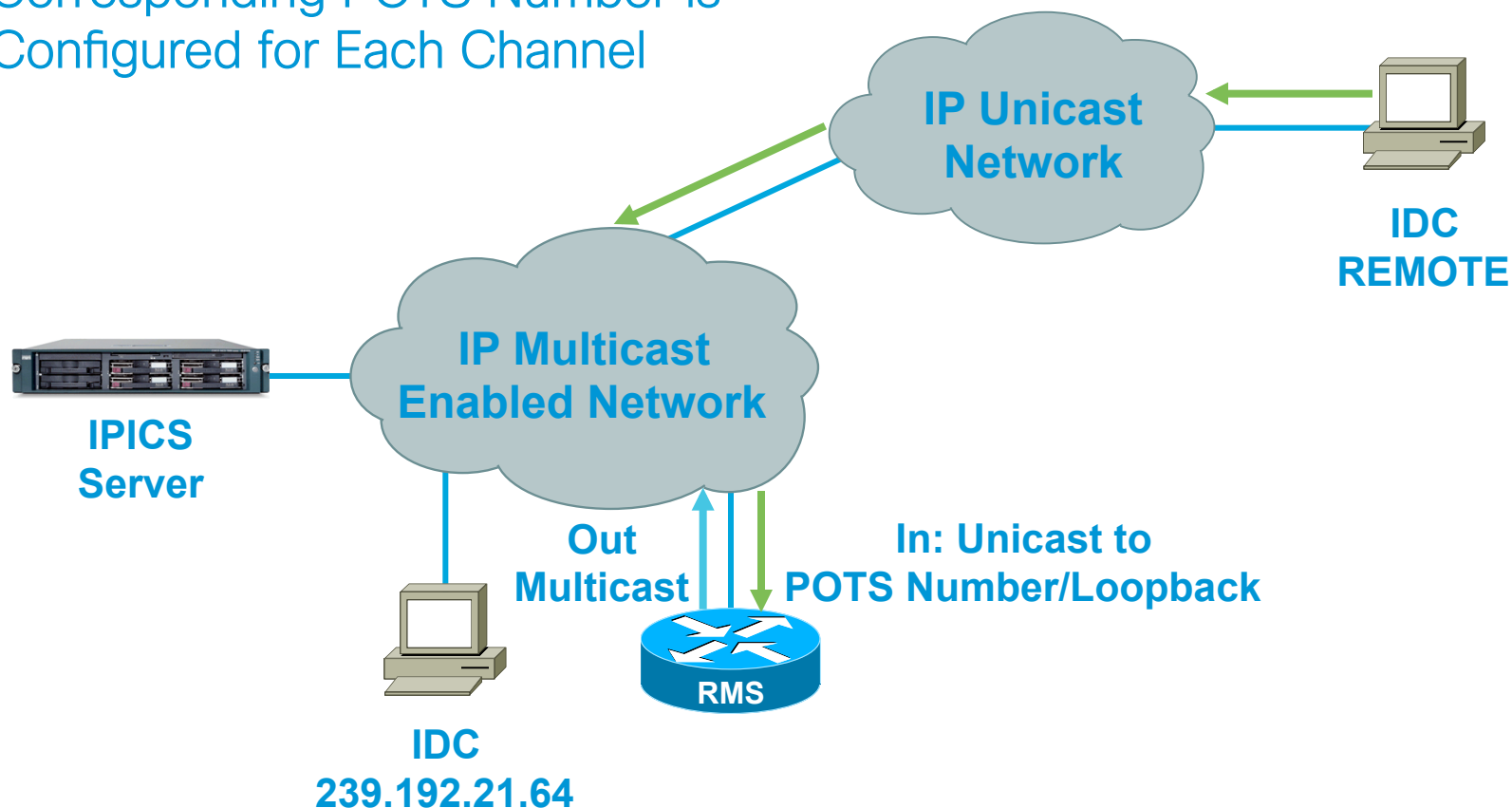


TERMINAL CALL SETUP

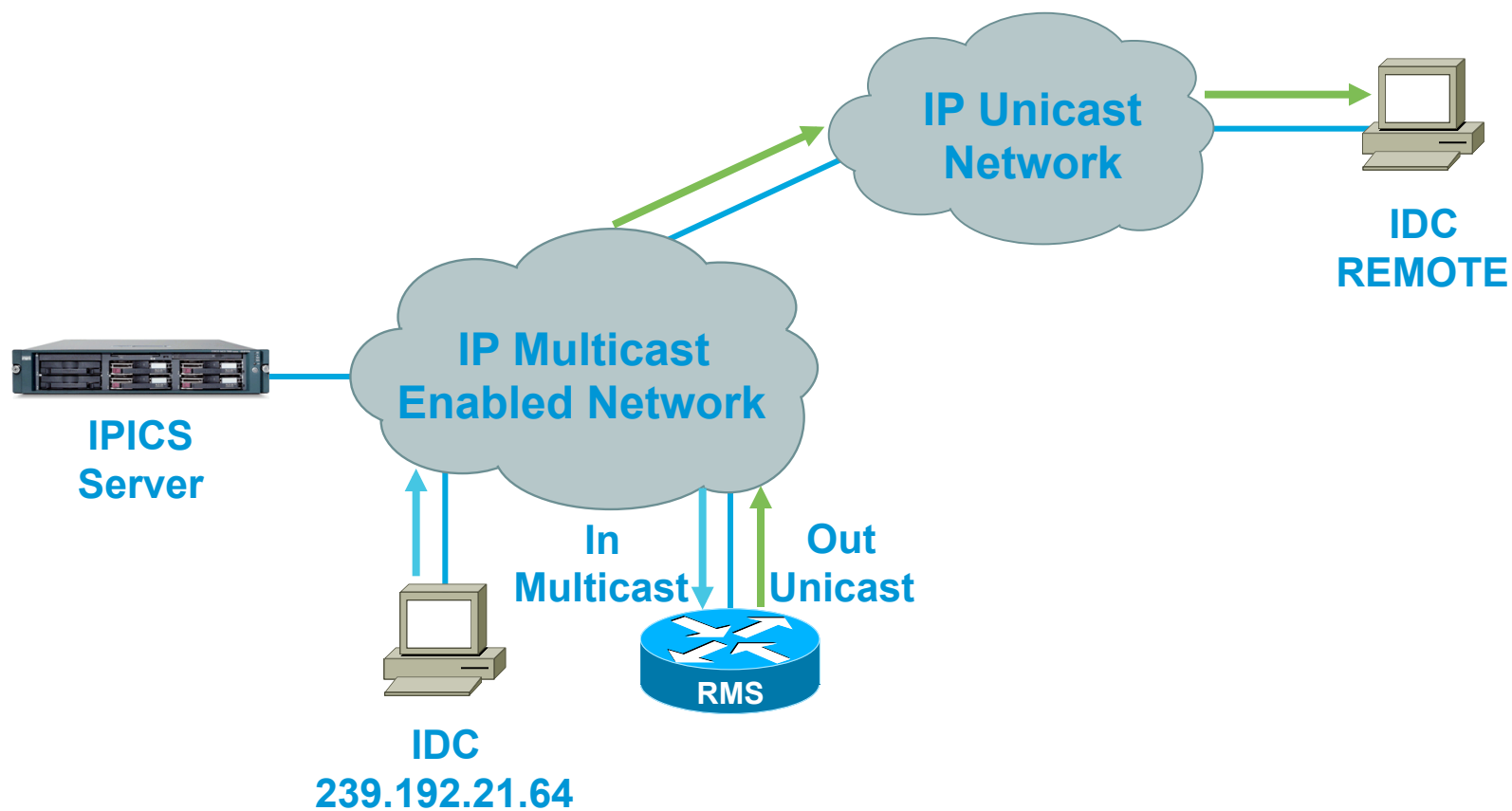


TERMINAL SUMMIT

If a Remote PMC Has Multiple Channels, a DS0 Pair with a Corresponding POTS Number Is Configured for Each Channel



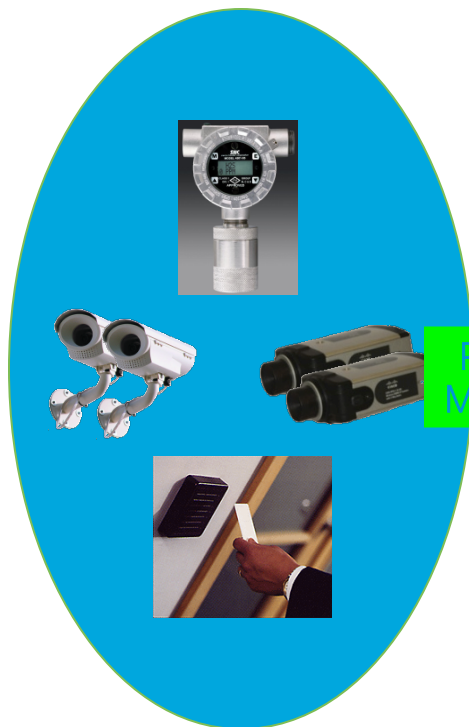
IP Multicast



IPICS IDC

CISCO ICS ISPERIMENT COUSUR OPERATOR

Threat Detection



- Cameras
- Access Control Gwys
- Sensors, etc.

Threat Monitoring



- Video Surveillance
- Access Control
- Intrusion Detection, etc.

Threat Response

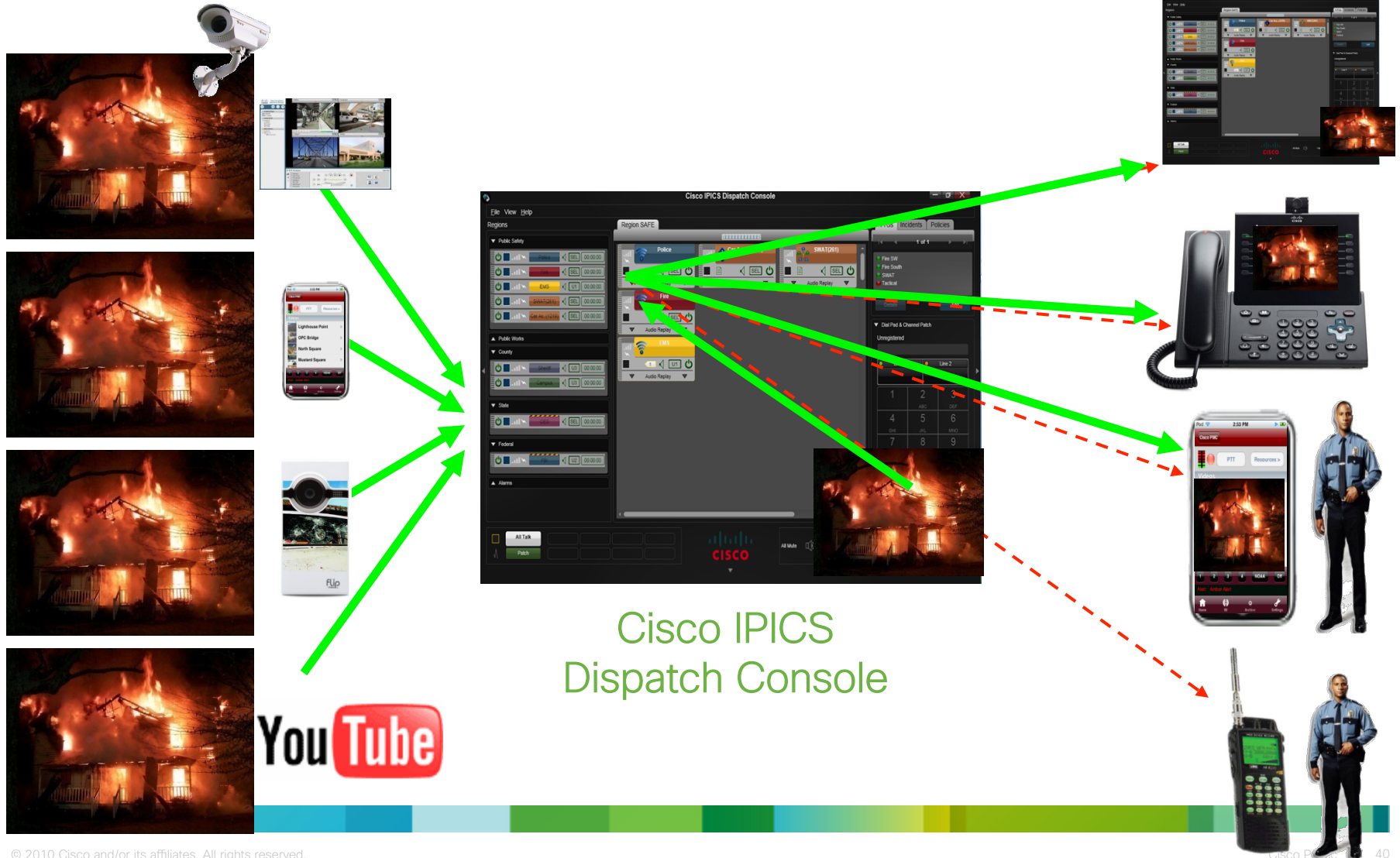


- Dispatch Console
- Notification
- Collaboration

The Situation Awareness Process

Detection and Monitoring

Response



CISCO IPCS DISPATCH CONSOLE



CISCO ICS IPICS DISPATCH CONSOLE (V.1)

Dispatch Console for PC users

- Allows PC users to perform radio dispatch enabling PTT communication from office or remote locations
- Integrates IP-Phone for incoming/outgoing calls
- Provides simple patch capabilities
- Extends dispatcher ability to share live/stored video, pictures and text with field



IPICS Dispatch Console

Extends to PC users radio dispatch capabilities previously reserved for hardwired dispatch consoles



- Quick access to various channel types

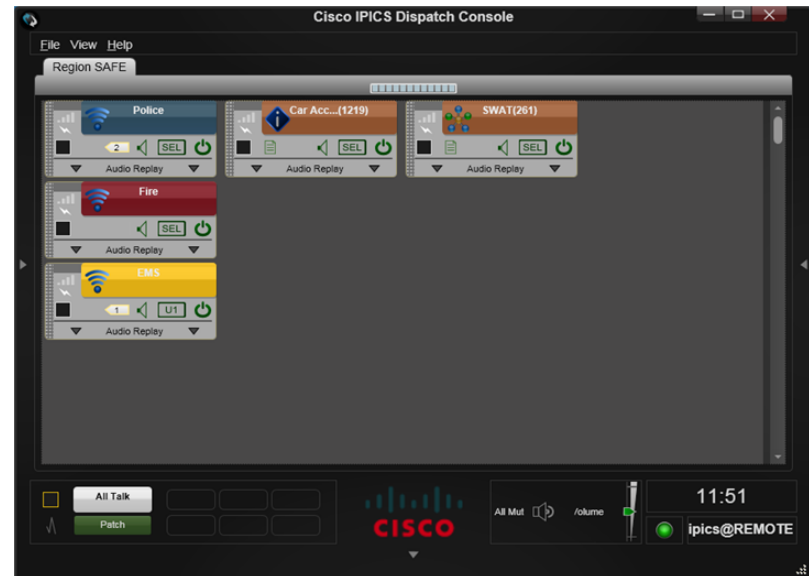
PTT radio channels

Virtual talk groups made up of multiple channels

Incident talk groups made up of multiple channels, users, VTGs

Tone and Serial Controlled Radios

Listen only (broadcast) channels



FEATURES (CONT)

- **Feature rich** supporting major dispatch functions

100s of configured channels, 50 active channels

Channels select and unselect

Programmable alert tones

Channel and telephony patch with loop prevention

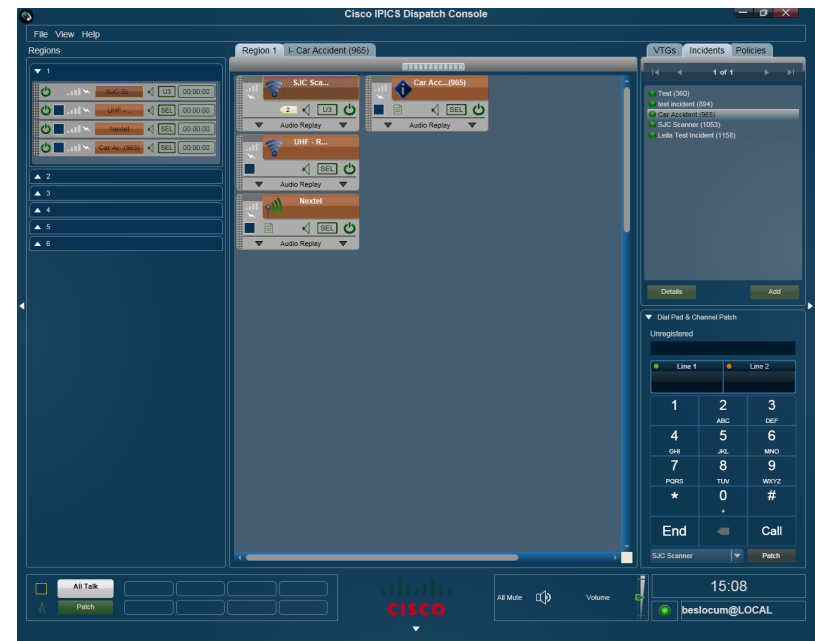
Voice replay for playback of buffered audio with audio save option

Emergency acknowledge and clear

Multi-select and All Talk

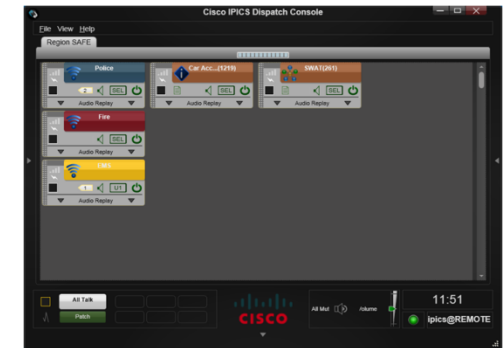
Integrated IP-Phone and VTG mgmt

Integrated policy execution



FEATURES (CONT)

- Multiple user interfaces for user flexibility
 - Light and dark options
 - Always on top option
 - Multiple configurations from basic to full featured
- Multiple user options to customize console operations
 - Per console and per channel volume control
 - Per console and per channel mute
 - Four configurable audio choices
 - Multi-select
 - All talk



ETWMS (COMP)

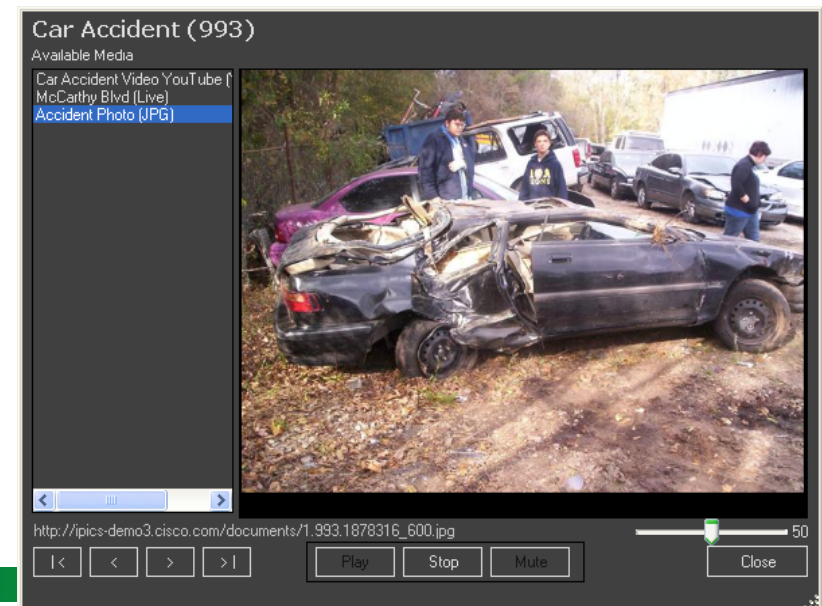
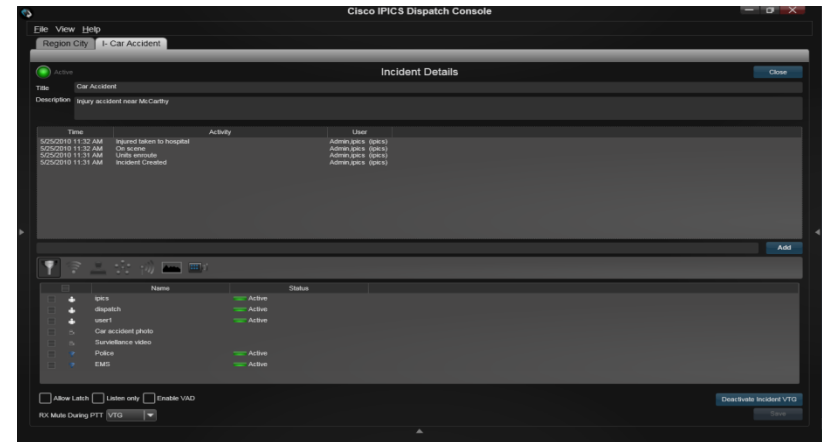
- Integrated Incident Management for rich media collaboration

Create secure collaborative session between dispatch and responders in the field

common PTT talkgroup between radios, phones, PCs and cell phones

share live/stored videos, pictures, maps, documents and status

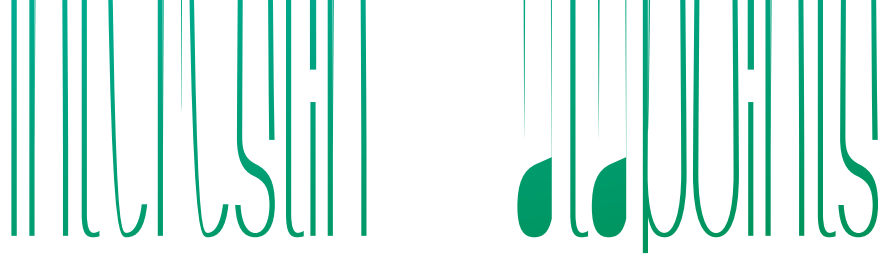
Archive incident information for later case management



THE UNITS (UNIT)

- **Simplifies Process:** Brings together multiple dispatch controls into single platform (phone, radio, video, text)
- **Dispatch Mobility:** IDC moves with the user versus old world dispatch console stays where it is installed
- **Radio Interoperability and Beyond:** IDC built on IPICS technology and supports multi-agency patches versus old world dispatch console locked to fixed radio channels/talkgroups
- **Differentiation:**
 - Incident with live/stored video, pictures, journal, etc
 - Incident recording
 - Integrated Policy Engine
- **Incident Application Programming Interface (API)** for CAD and PSIM integration

IPICS Mobile Client



- **12/22/2009 - iPhone App Helps Australian Tasmania Police Catch Illegal Drivers and Criminals:** Tasmanian-designed iPhone App, made to check license and registration much faster than traditional methods, is a success. Within 8 minutes of turning on the Apple iPhone based system, Tasmania police caught a criminal that resulted in a drug bust.
- **12/2/2009 - Providence Police issued blackberry:** Supervisors now can e-mail as well as talk. And they are able to view police reports, wanted-persons bulletins, active warrants with mug shots, crime-activity analyses, sex-offender registrations and news media advisories, among other information.
- **10/18/2009 - BlackBerry smartphones now a standard issue with the UK police:** over 1,100 frontline police officers in Bedfordshire, UK will be issued some kind of BlackBerry to increase visibility in the community and improve operational efficiency.
- **9/2/2009 - Pocket Cops, Every Baltimore patrol officer to get a BlackBerry:** Baltimore's police department will become one of the first agencies in the nation to issue every patrol officer a BlackBerry that allows for instant warrant checks, city officials said Wednesday.

Smartphones are being put into the hands of responders and
IPICS Mobile Client complements existing applications

Mobile phone application for responders in the field

View:

- incidents
- status journal
- media (video, pictures, etc.)

Add:

- status updates
- media (video, pictures, etc.)

PTT w/radio interoperability

Secure access to media

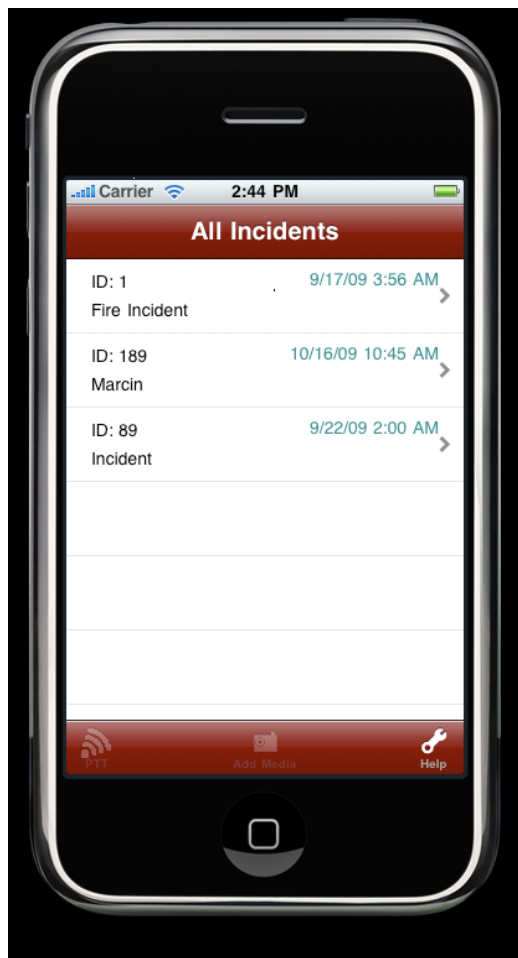
3G and WiFi support



IPICS Mobile Client

Puts mobile rich media incident collaboration into the hands of the responder in the field

Cisco IPICS Mobile Client (cont.)



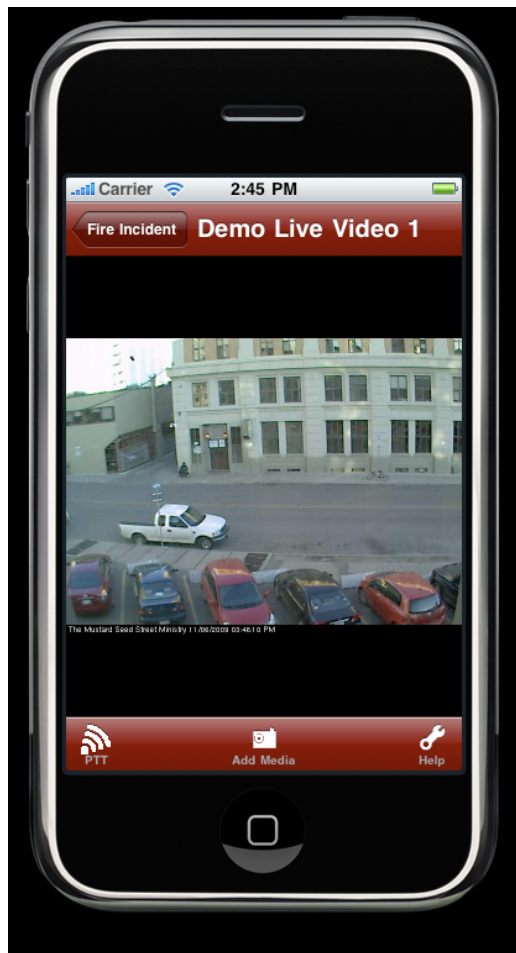
View assigned incidents



View available media choices within an incident



Cisco IPICS Mobile Client (cont.)



View live video within incident



Participate in PTT session with radios



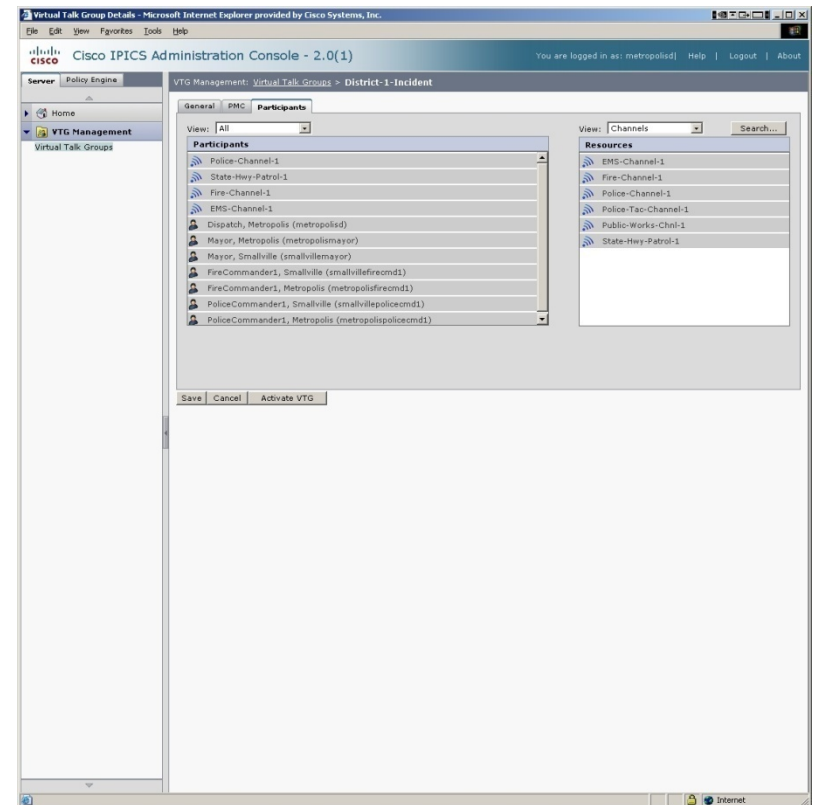
Add media to incident

IPICS Server

CISCO IPICS SERVER

Cornerstone of the complete Cisco IPICS system

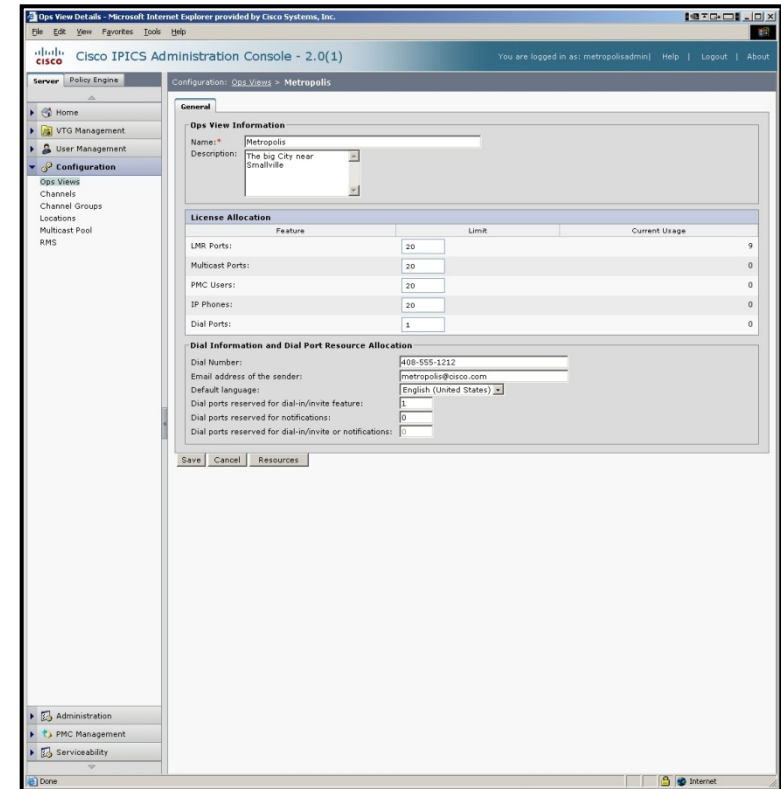
- Web-based Server providing an Incident Management Console
- Coordination of all IPICS resources:
 - Endpoints
 - Dispatch Console
 - Mobile Client
 - IP Phone Client
 - Gateways
 - Land Mobile Radio Gateway
 - VoIP Gateways
 - Channels, Virtual Talk Groups, Users
 - Other IPICS Components
 - Operations Views
 - Policy Engine
 - Media Resources
- High Availability
- Web Services API



Intelligent resource management application that orchestrates resources, media and information

CISCO IICS OPERATIONAL VIEWS

- Splits a single IPICS Server into multiple logical secure servers
- Logical and secure IPICS segmentation for visibility, access and management of resources based on ownership boundaries
- Facilitate the authorized sharing of resources across ownership boundaries
- Sharing based upon a Virtual Talk Group



Only available from Cisco, only with Cisco IPICS

CISCO ICS TALK

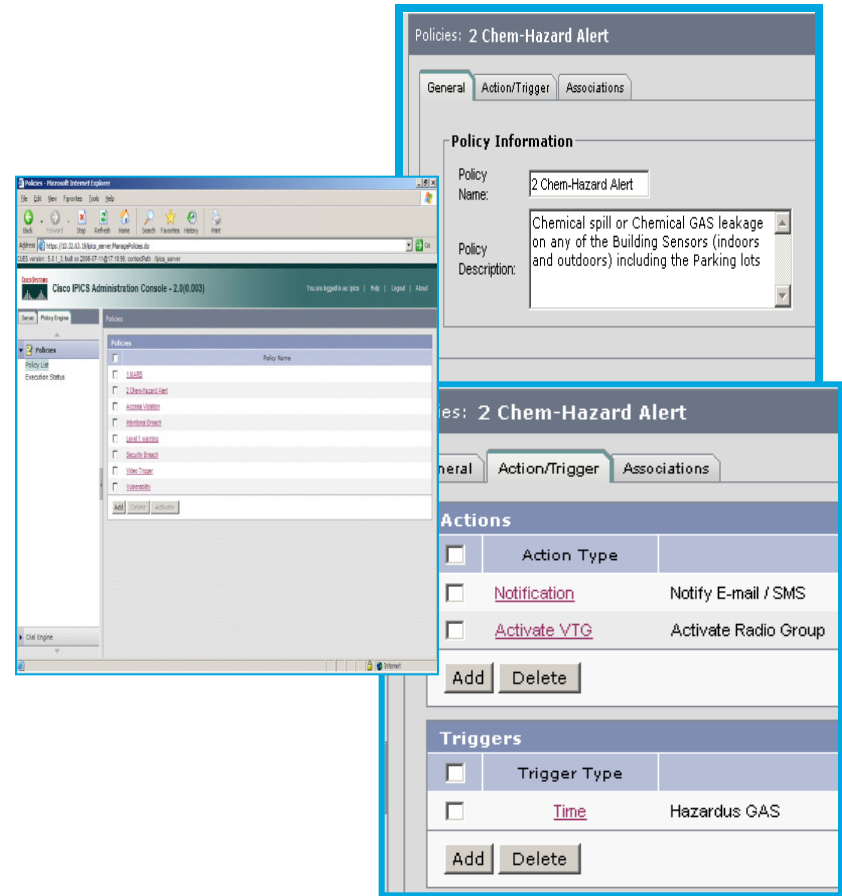
Enhanced policy-based application platform to streamline operations

- Create, edit, and manage interoperability and notification policies

Allows ad hoc or time-based policy triggers

Policies activate a series of actions for example to notify first responders and join them into a push-to-talk conference

- Enables dial-in and dial-out into PTT radio channels (PSTN and cell integration)
- Enables direct-dial feature for the Cisco IPICS IDC
- Integrates text messaging and two-way voice notification
- Customizable by CA Advanced Services or select partners

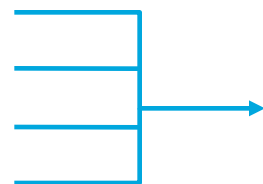


Flexible policy-based applications to automate the most demanding public safety SOPs

STRUCTURE OF THE IPICS POLICY ENGINE SERVICES

Triggers

CAP Message
Dial-In
Time Based
Direct HTTP



Actions

Create VTG
VTG Notification
Dial-Out, Email, SMS Notification
IP Phone Text Notification
Mass Notification
Multicast Notification

Advanced Application Examples

- Trigger: Accident w/injuries
 - Action: Activate VTG, add channels and send notification of emergency
- Trigger: Security event at a University
 - Action: Priority notification to first responders via phone and radio
 - Action: Notification to second responders via phone, page, text and IM

REAL TO SPEECH (RTS)

- Nuance Vocalizer 5.0
- Support for over 40 languages

Romanian is one of them

Cisco IPICS XML IP-Phone Client

Push-to-Talk service for Cisco Unified IP Phones

- Secure access to radio PTT talkgroups and channels from anywhere in the UC network
- Available on a wide range of IP-phones including wireline and Wi-Fi IP-phones
- Intuitive user interface with smooth transition between telephony and radio communications



Phone users can now respond to incidents or emergencies, boosting responsiveness and operational effectiveness

MSP-1RU



- **1RU Rack Mount Chassis – 17.2" x 19.8"**
- **Intel Xeon Processor**
- **On-board Hardware Diagnostics**
- **300W Power Supply**
- **4 Hot-swap 3.5" SATA Drive Bays**
- **2 x 1TB SATA Drives (RAID0/1)**

MSP-2RU



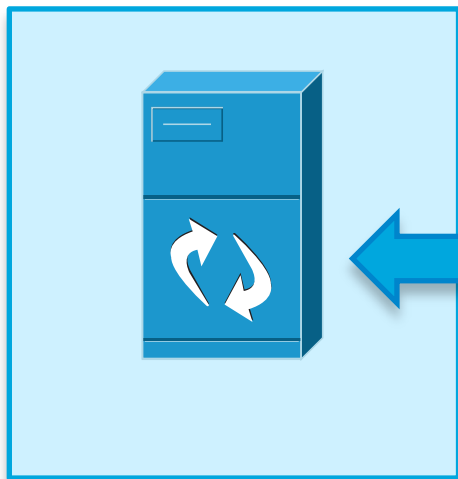
- **2RU Rack Mount Chassis – 17.2" x 25.6"**
- **Intel/AMD Based Quad-Core Processor Support**
- **Motherboard can support two Dual Xeon Processors (2nd processor may be a future option)**
- **On-board Hardware Diagnostics**
- **Supports up to two 900W Modular Optional Redundant Power Supplies**
- **12 Hot-swap 3.5" SATA Drive Bays**
- **6 x 1TB SATA Drives (RAID 0/1/5)**
- **(3) Hot-swappable Fans**
- **100% Cooling Redundancy**

MSP Service Performance

Features	MSP 1-RU	MSP 2-RU
Maximum logged in IDC's or/and IP Phones	1,000	1,500
Max logged in remote IDC's	15 with 8 channels each 30 with 4 channels each	25 with 8 channels each 50 with 4 channels each
Max configured users	50,000	50,000
Max policy engine dial ports	100	120
Max LMR channels	1,500	1,500
Max configured VTG's	150	150
Max active VTG's	40	60

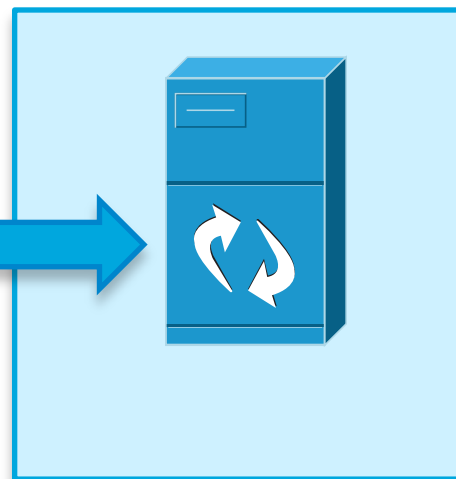
IPICS Support Utilities

Active IPICS Server

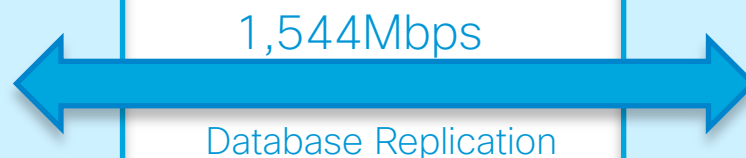


Location A

Standby IPICS Server



Location B



Data files such as log files are synchronized every 15 mins

Failure detected within 30 seconds / automatic switchover complete within 5 minutes

During switchover all IDC, channels, radios and talkgroups remain active

Dial-in / dial-out users are dropped and must dial back into IPICS

Once the failed server is restored, switchback is manually initiated.

NEW FEATURES RELEASED

Loop Prevention

IPICS 4.0

Channels can be in multiple virtual talk groups

IPICS Server will resolve any audio loops

Tone and Serial Radio Pooling

IPICS 4.0

Dispatchers may continue to control donor radios using tone remote and serial radio control

Administrators may create pools of tone remote and serial radio control radios. Dispatcher then selects channel and IPICS Server will select available radio from pool and perform radio control w/o Dispatcher knowledge.

Unified Communications

- Unified Command & Control
- Common Operating Picture
- Mobility and Rich Media
- Situational Awareness
- Collaboration
 - Any Device
 - Any Network
 - Any Organization
 - Any Media



