

# INNOVATION @ MOTOROLA SOLUTIONS



MIKE PELLON | VICE PRESIDENT, CHIEF TECHNOLOGY OFFICE  
DECEMBER 1, 2011



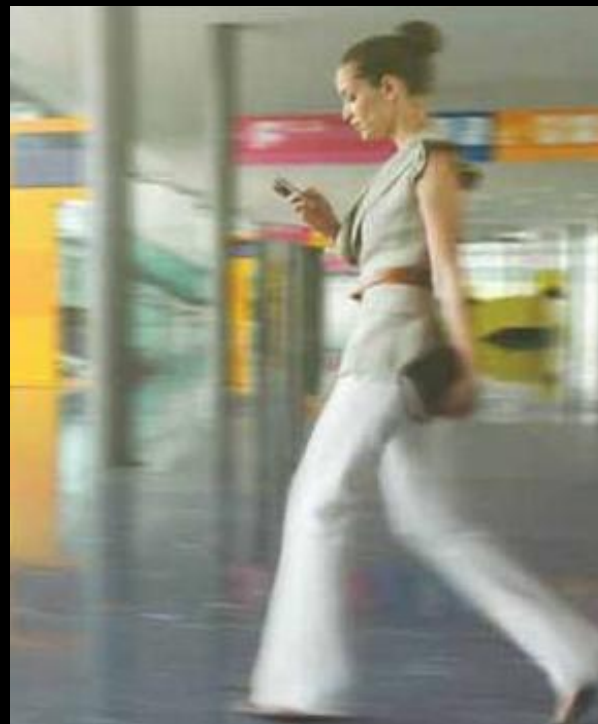
# SEPARATION



On Jan. 4, 2011, Motorola, Inc. spun off its Mobile Devices and Home businesses, which became Motorola Mobility Holdings, Inc., and changed its name to Motorola Solutions, Inc.



**MOTOROLA SOLUTIONS**  
GOVERNMENT & ENTERPRISE FOCUS  
NYSE: MSI



**MOTOROLA MOBILITY**  
CONSUMER FOCUS  
NYSE: MMI



**GOVERNMENT**



**ENTERPRISE**

# WHO WE ARE TODAY

- **\$8 BILLION, FORTUNE 250 COMPANY**
- **80+ YEARS INDUSTRY LEADERSHIP**
- **GLOBAL PRESENCE**
  - Sales in 100+ countries
  - Employees in 65 countries
- **\$1 BILLION ANNUAL R&D INVESTMENT**
- **LEADER IN ALL MAJOR MARKETS WE SERVE**
  - Public safety solutions
  - Commercial two-way radios
  - Enterprise mobile computing
  - Bar-code scanning







# OUR VISION

**TO BE THE LEADING GLOBAL PROVIDER  
OF MISSION CRITICAL COMMUNICATIONS  
FOR GOVERNMENT & ENTERPRISE  
CUSTOMERS**



# KEY TRENDS

Shaping Next Generation  
Communications Systems





# KEY TRENDS

Shaping Next Generation  
Communications Systems



**SMART DEVICES**

**MEDIA**



**SOCIAL  
NETWORKING**

**PRODUCT  
COMPLEXITY**



# SMART DEVICES



**SMARTPHONES  
SURPASSED  
PERSONAL  
COMPUTERS IN  
UNITS SHIPPED  
FOR THE FIRST  
TIME IN Q4 2010.**

International Data Corporation  
(IDC) report, Feb. 2011



The trend continued in Q1 2011: **82m PCs, 100m Smartphones.**



# MEDIA



EVERY MINUTE  
>48 HOURS OF  
CONTENT IS  
UPLOADED ON  
YOUTUBE. THAT'S  
8 YEARS OF  
CONTENT  
UPLOADED  
EVERY DAY.

Source: YouTube 2011



>3 Billion videos are viewed  
a day



More video uploaded in one  
month than 3 major US TV  
networks created in 60 years

YouTube localized in 25  
countries across 43  
languages

On YouTube, nearly **17 million people** are connected and auto-sharing to at least one social network.



# SOCIAL NETWORKING



FACEBOOK  
HAS  
>800M  
ACTIVE USERS

Sources: Facebook, 2011



>350M users are accessing Facebook through their mobile devices.

# PRODUCT COMPLEXITY



## **BOEING 787 DREAMLINER**

**8 million lines of software**  
code operating its avionics and  
onboard support systems



## **CHEVY VOLT** **10 million lines of** **software**

code controlling 100 electronic  
components



## **APX 7000 RADIO** **2 million lines of software**

code driving the next-gen  
mission critical two-way radio



# Next Generation Public Safety Communications

Technology &  
Customer Requirements





# APX 7000 RADIO: SOFTWARE DEFINED NEXT GEN TECHNOLOGY



- **MISSION CRITICAL,  
RUGGED, INTUITIVE DESIGN**
- **MULTI-BAND  
INTEROPERABILITY**
- **SMALLEST DEVICE OF ITS  
KIND**
- **BEST-IN-CLASS AUDIO**
- **FUTURE EXPANDABILITY**
- **PERFORMS ACROSS  
MULTIPLE DIGITAL AND  
ANALOG NETWORKS**
- **BACKWARD AND  
FORWARD COMPATIBLE**



# **TOMORROW'S CHALLENGES**

## **SOFTWARE DEFINED NEXT GEN TECHNOLOGY**



**BEYOND VOICE: MORE & MORE  
DATA AT HIGHER SPEEDS**

**EXTREME PERFORMANCE  
NEEDED ALONG WITH  
SOFTWARE FLEXIBILITY**

**POWER EFFICIENCY**

**ANTENNA DESIGN: SMALLER  
IS BETTER**

**UI/UX: DRIVING TECHNOLOGY  
THAT'S SECOND NATURE**



# RESEARCH FOCUS

Understanding officers' use cases



Driving immersive  
observational research



Identifying issues, work-  
arounds, improvisations  
and new opportunities



Gaining insights  
from onsite visits



# Enabling Future Public Safety Communications

Radio Spectrum &  
Technology Development



# WHY SPECTRUM?

## APPLICATIONS DRIVING MOBILE BB DEPLOYMENTS

“Business Critical”



“Mission Critical”

### Tier 1 (< 20kb/s)

- Messaging
  - Dispatch
  - Text messaging
- Query Databases
  - Driver's License
  - License Plates
  - Warrants
- AVL (Limited)
- Meter Reading
- OTAP

Short Text

### Tier 2 (<100kb/s)

- Mobile AFIS (Tx)
- Mug Shots (Tx/Rx)
- Reports (Tx)
- AVL (rapid update)

Long Text / Image

### Tier 3 (<1Mb/s)

- Intranet Access
- Internet Access
- Office Apps
- Images (Tx/Rx)
- Single Session Hi-Res Video (Rx)
- Multi-session low resolution video streaming (Tx/Rx)

Browser/ Video

### Tier 4 (>1Mb/s)

- Multiple Session High Res Video streaming
- HD Video streaming
- Rich Web Multimedia
- Multimedia CAD
- Real-time 3D Graphics
- Video Archiving

Rich Multimedia

# WITH

## PUBLIC SAFETY GRADE LTE PRIORITY



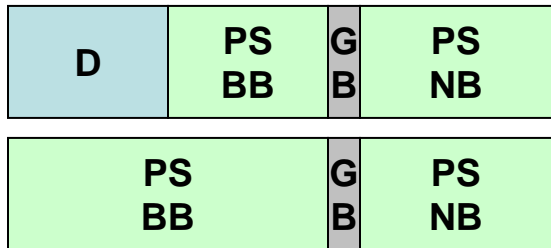
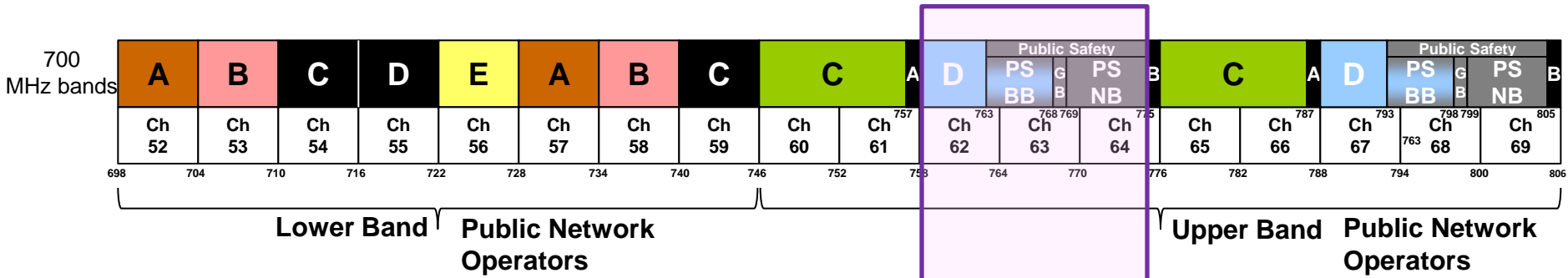
# WITHOUT

## PUBLIC SAFETY GRADE LTE PRIORITY





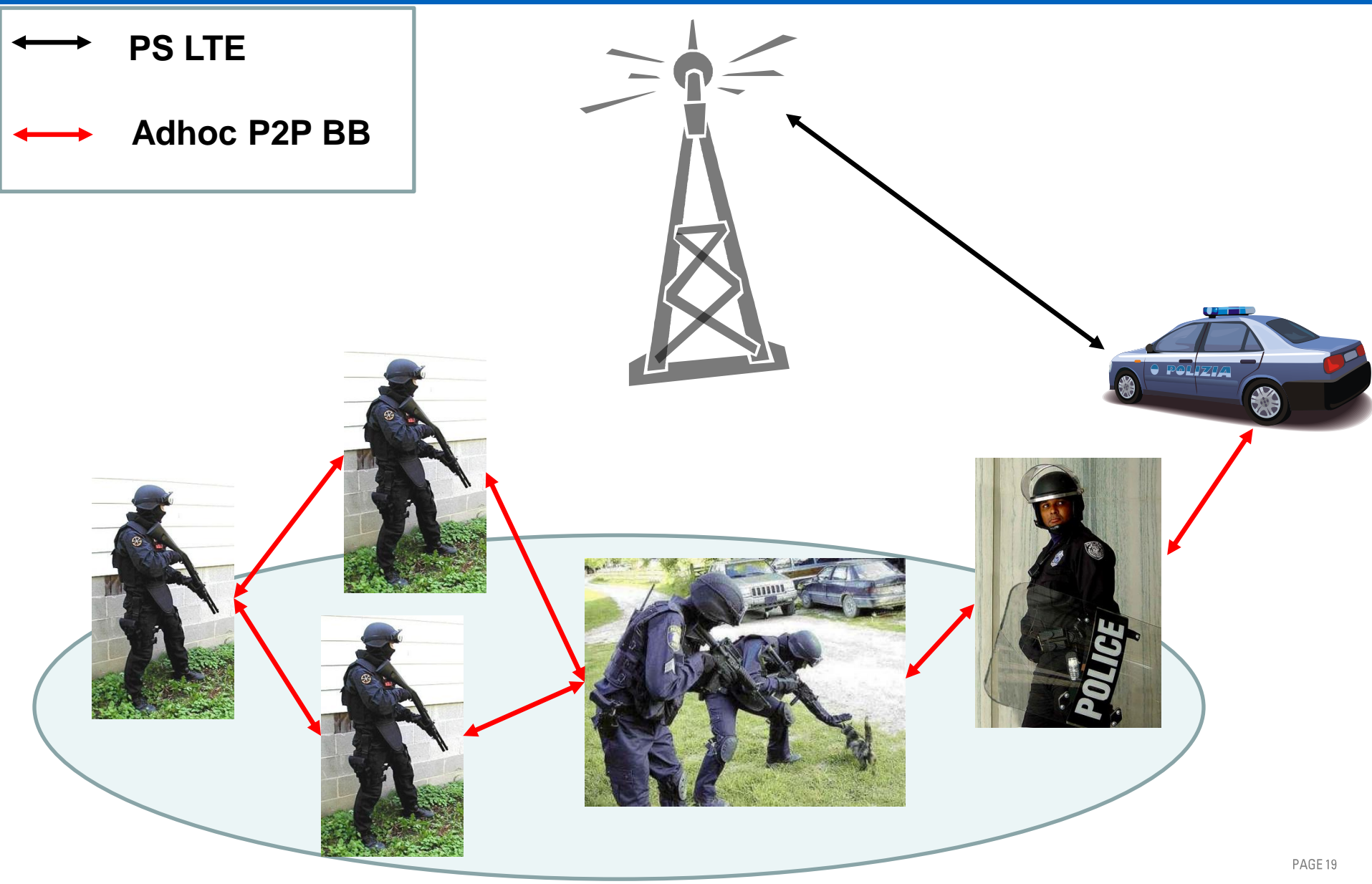
# US SPECTRUM ALLOCATION FOR BROADBAND (D-BLOCK)



Auction D-Block: Current Situation

Allocate D-Block: Preferred Situation

# NEXT GEN PUBLIC SAFETY: TOMORROW'S SOLUTION – AD-HOC NETWORKS



# SUMMARY



**MOTOROLA SOLUTIONS**



➤ **MSI VISION: TO BE THE LEADING GLOBAL PROVIDER OF MISSION CRITICAL COMMUNICATIONS FOR GOVERNMENT & ENTERPRISE CUSTOMERS**

➤ **KEY TRENDS SHAPING NEXT GENERATION COMMUNICATIONS BRING NEW OPPORTUNITIES, CHALLENGES**

➤ **MSI PRIORITY: INVESTING IN INNOVATION, NEXT GENERATION PUBLIC SAFETY**



RIGHT NOW



WE ARE  HELPING



PEOPLE BE



THEIR  BEST IN



THE  MOMENTS



THAT MATTER



**MOTOROLA** SOLUTIONS