EVOLVING SOLUTIONS FOR THE NEXT GENERATION OF HEALTHCARE SERVICES

DOM ROBERTSON
ACCOUNT DIRECTOR

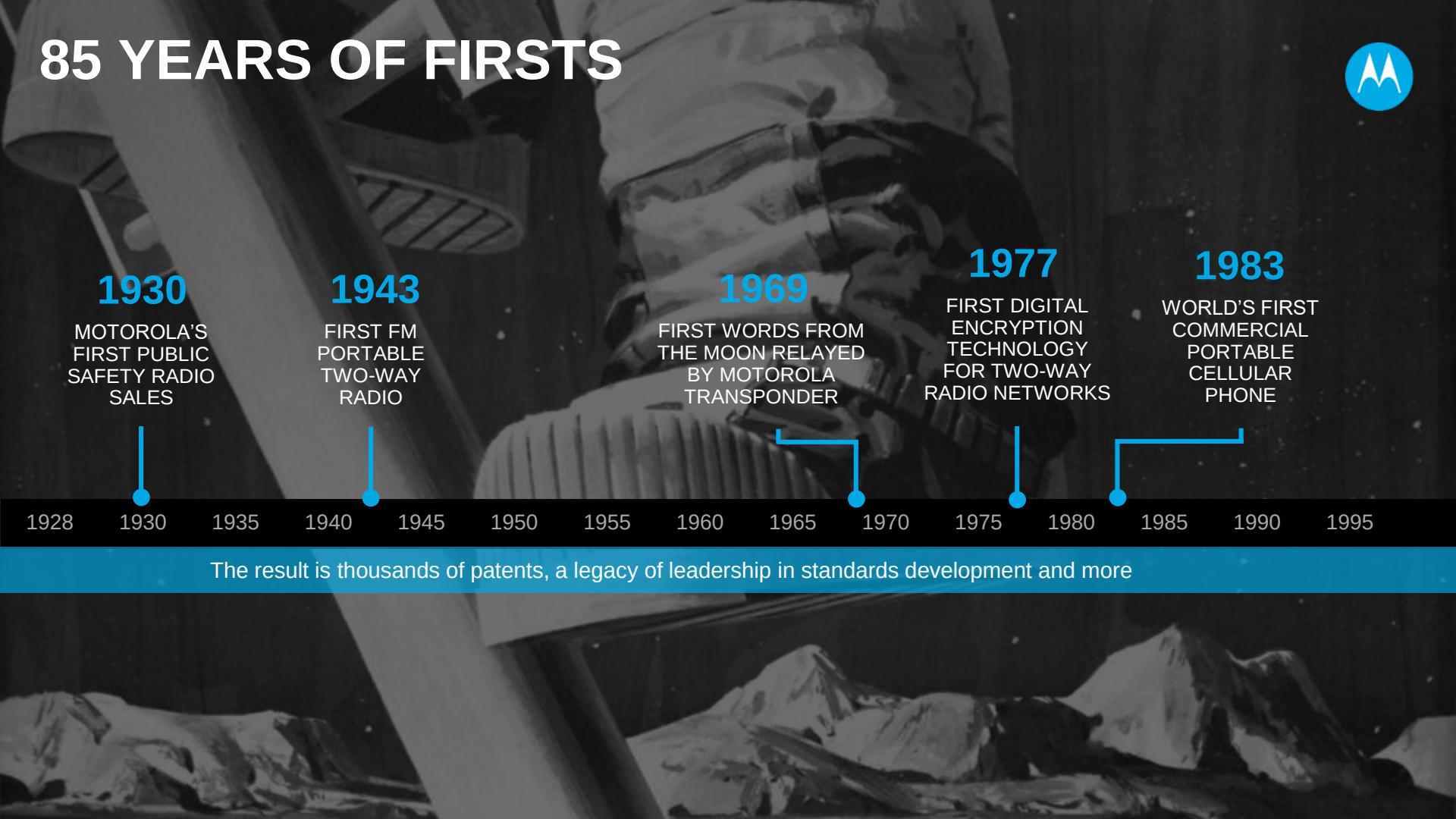
MOTOROLA SOLUTIONS

AIRWAVE

a Motorola Solutions Company

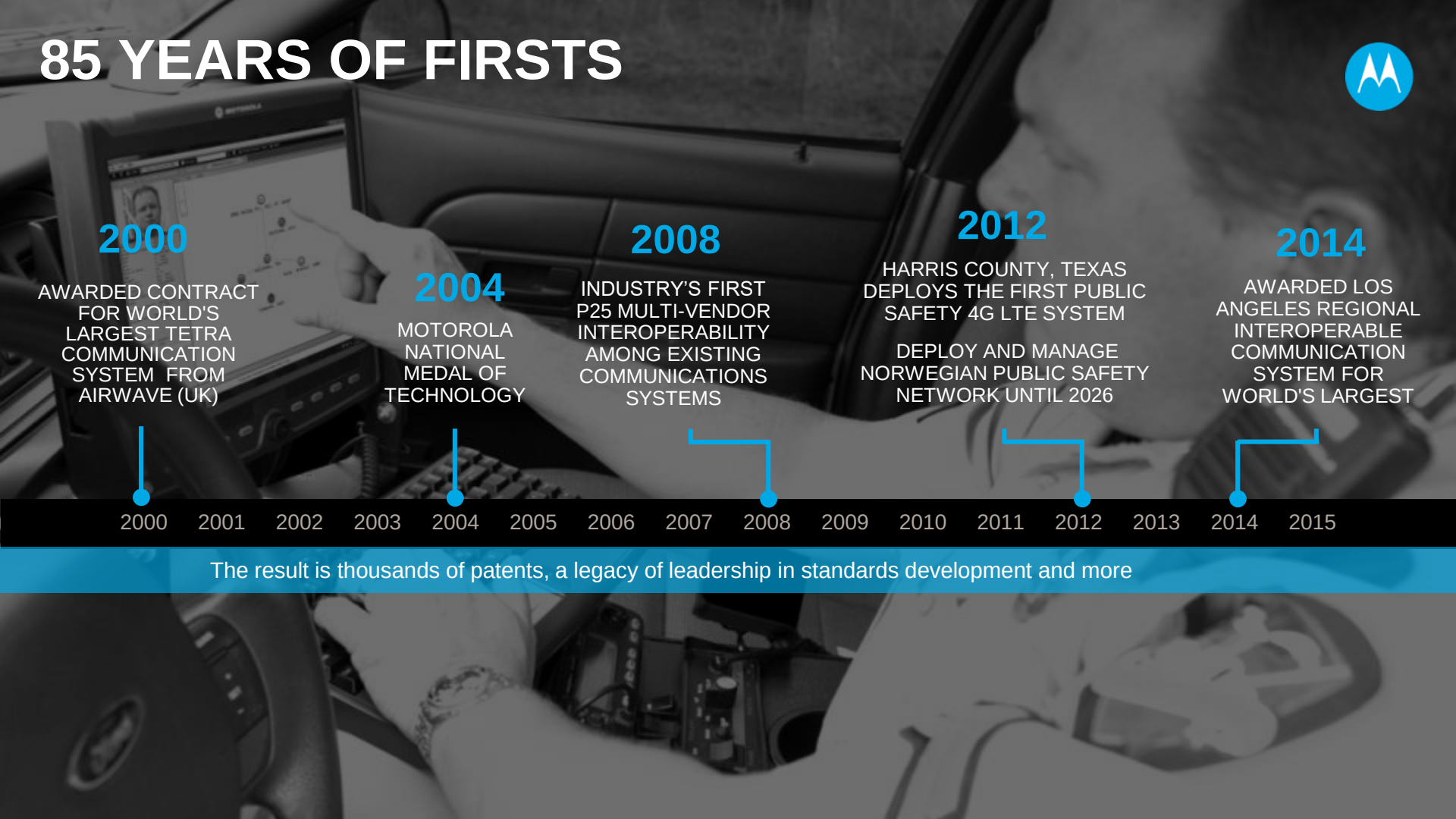
HISTORY OF HELPING SOCIETY DURING THE MOMENTS THAT MATTERED MOST

85 YEARS OF FIRSTS



The result is thousands of patents, a legacy of leadership in standards development and more

85 YEARS OF FIRSTS



2000

AWARDED CONTRACT FOR WORLD'S LARGEST TETRA COMMUNICATION SYSTEM FROM AIRWAVE (UK)

2004

MOTOROLA NATIONAL MEDAL OF TECHNOLOGY

2008

INDUSTRY'S FIRST P25 MULTI-VENDOR INTEROPERABILITY AMONG EXISTING COMMUNICATIONS SYSTEMS

2012

HARRIS COUNTY, TEXAS DEPLOYS THE FIRST PUBLIC SAFETY 4G LTE SYSTEM

DEPLOY AND MANAGE NORWEGIAN PUBLIC SAFETY NETWORK UNTIL 2026

2014

AWARDED LOS ANGELES REGIONAL INTEROPERABLE COMMUNICATION SYSTEM FOR WORLD'S LARGEST

2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015

The result is thousands of patents, a legacy of leadership in standards development and more

MOTOROLA SOLUTIONS

$5.7b
revenues in 2015

14,000+
employees

100,000+
customers
over 100 countries

$620m
invested in R&D in 2015

OUR SOLUTIONS

- **Radio Networks & Devices**
- **System Integration**
- **Site Development**
- **Multi-network Interoperability**
- **Managed & Support Services**
- **Public Safety LTE Networks & Devices**
- **Smart Public Safety**
- **Intelligent Applications**
- **Cybersecurity**
- **Industrial Internet of Things**

OVER 12K MISSION CRITICAL NETWORKS

LTE DEPLOYMENTS

Los Angeles RICS

Somewhere hot

Somewhere hotter!

UK ESN

TETRA DEPLOYMENTS

UK Airwave

Sweden RAKEL

Germany BOSNET

Norway NODNETT

ESN CONSIDERATIONS

PREPARING

- DEVICE AND APPLICATION SELECTION / PROCUREMENT
- ROLE – BASED BUSINESS / OPERATIONAL REQUIREMENTS
- FLEET MAPPING STRATEGY
- TRAINING NEEDS ANALYSIS AND TRAINING DELIVERY
- SECURITY REVIEW
- MIGRATION READINESS

MIGRATING

- ONBOARDING
- SERVICE AND DEVICE ACCEPTANCE / VERIFICATION
- VEHICLE INSTALLATION
- SUPPORT SERVICE (OUT-OF-SCOPE INCIDENTS /PROBLEMS)
- MAJOR INCIDENTS AND EVENT PLANNING
- APPLICATION VALIDATION AND PORTING

OPERATING

- SERVICE MANAGEMENT
- DEVICE MANAGEMENT
- OPERATION OF SERVICE ASSESSMENT AND ADVICE
- CONTINUOUS SERVICE IMPROVEMENT
- MAJOR INCIDENTS AND EVENT PLANNING
- COVERAGE VERIFICATION

GLOBAL PUBLIC SAFETY TRENDS

FINANCE

INCREASED SCRUTINY

PREDICTIVE AND PREVENTITIVE

TRANSPARENCY

OPERATIONAL PRESSURES

RESPONDING TO GLOBAL TRENDS

LMR & LTE

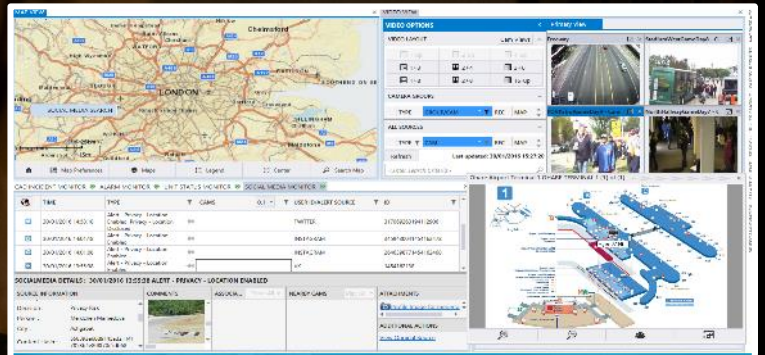
MANAGED & SUPPORT SERVICES

SOFTWARE

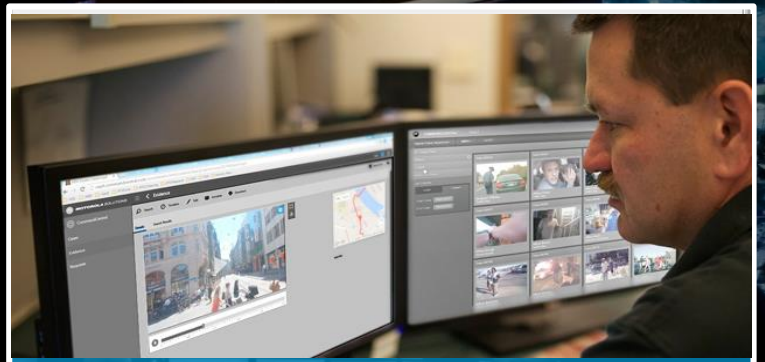
ACQUISITION STRATEGY

DATA DRIVEN

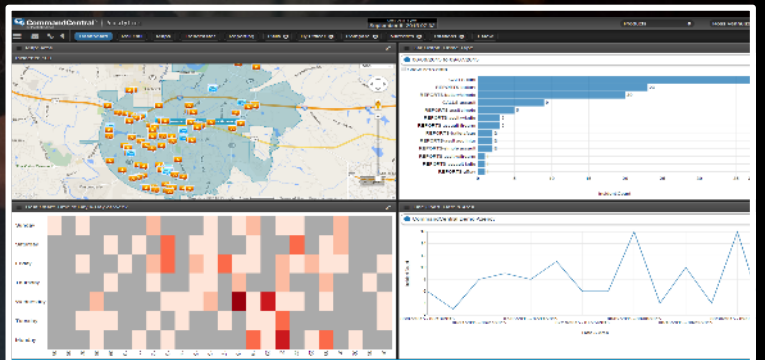
COMMANDCENTRAL PLATFORM



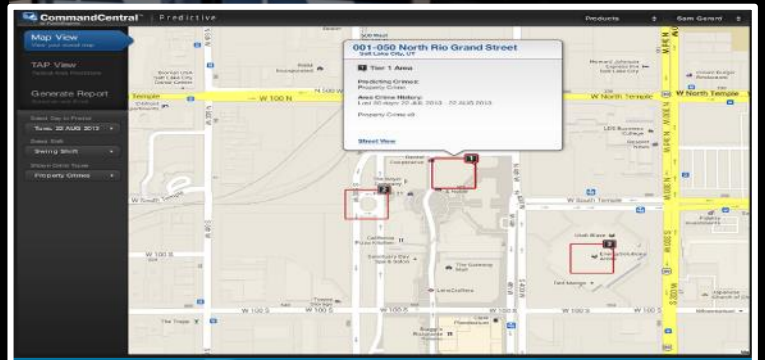
AWARE



VAULT



ANALYTICS



PREDICTIVE

RESPONDING TO GLOBAL TRENDS

BUSINESS PROCESS AND APPLICATION MODULES

These business processes, already deployed in a variety of Forces, are available to reflect local priorities 'off the shelf' requirements with local customisation where required.

ROADS
Vehicle seizure (s59/165)
Endorsable / NON Endorsable FPN
OSCO / TORS
HORT1
Parking ticket
Vehicle Defect VDRS
Collision Recording / CRASH
Road Check
CLE26/27/28
Road Defect notification

SCIENTIFIC SUPPORT
Crime Scene Analysis / SOCRATES
Drawings

COMMUNITY
Stop & Search
Direction to Leave (S27/30)
Licensed premises
Cannabis warning
Youth disorder
Social work report
School visit
Adult / Child Concern
DASH
Missing / Found Person
Sudden Death
Activity Report
Victim Support

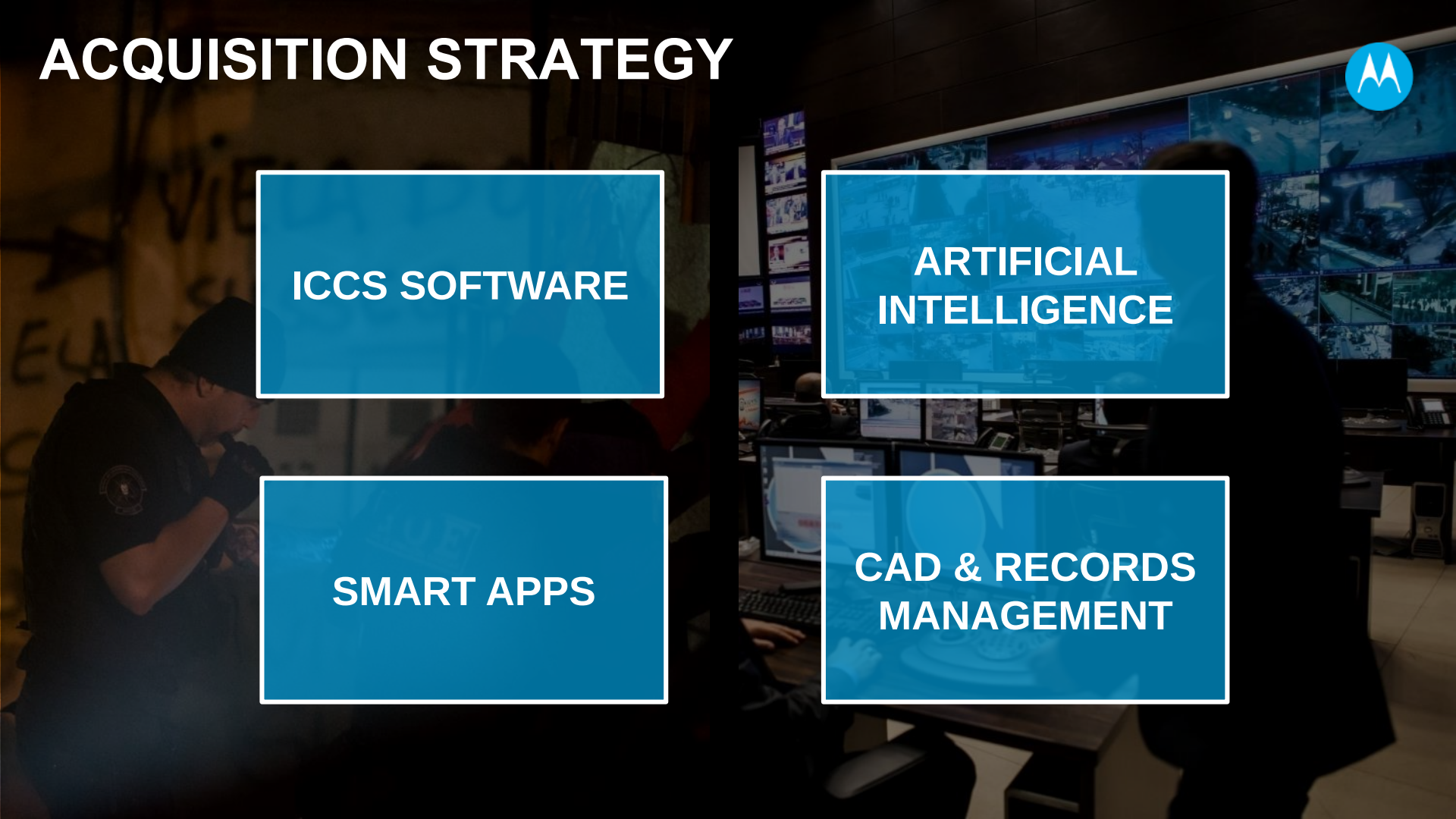
CRIMINAL JUSTICE
Electronic Witness Statements
MG forms as required
Standard prosecution report
PND for Disorder
Instant/declined RJ
Street Bail (mapped for Derbyshire)
Fingerprint consent
Warrant
Property/other theft
Unsolicited consent
Officer Statement
Medical consent form
Drink Drive forms

CRIMINAL INVESTIGATION
Crime Recording
Intelligence Submission
NIM Tasking / Briefing
Crime Contracts
Hate incident forms
Police Information Notice
Detention
Interview
Caution and Charge

BACK OFFICE MANAGEMENT
Central Ticket office
Road Collisions
Sudden Death

RESPONDING TO GLOBAL TRENDS

ACQUISITION STRATEGY



ICCS SOFTWARE

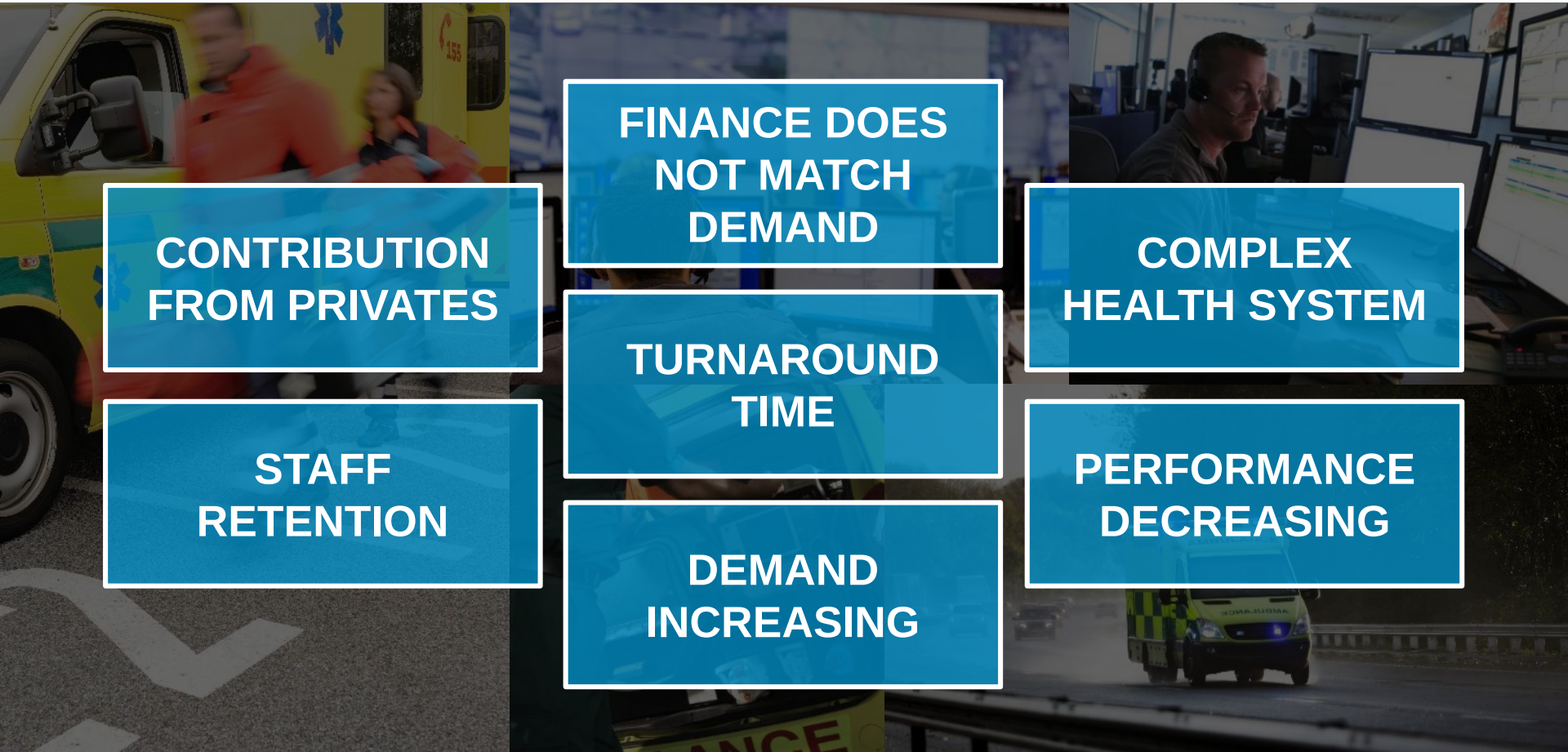
ARTIFICIAL INTELLIGENCE

SMART APPS

CAD & RECORDS MANAGEMENT

RESPONDING TO GLOBAL TRENDS

AMBULANCE TRENDS



FINANCE DOES NOT MATCH DEMAND

CONTRIBUTION FROM PRIVATES

COMPLEX HEALTH SYSTEM

TURNAROUND TIME

STAFF RETENTION

PERFORMANCE DECREASING

DEMAND INCREASING

SERVICE CAPABILITIES

DEVICES AS A SERVICE – LESS DEVICES, MORE INTEGRATION

- Lower total cost of ownership in managing and monitoring devices
- Devices operating at peak performance at a lower cost
- Access the latest technology without organisational complexity of procuring and managing devices

MOBILE DATA AS A SERVICE – MAKE YOUR VEHICLE A MOBILE OFFICE

- Access real time intelligence and support on the road
- Increase productivity and better decision making in the field
- Enabled EPR with live stream video for remote consultations with experts
- Query wider health databases during incidents

COMMAND & CONTROL SOLUTIONS AS A SERVICE – PREDICT AND DEPLOY

- Data Centre and Hosting capabilities
- Integration as a service: Free up space in your control room
- Virtualize command and control capability
- Geographic redundant service

ICCS AS A SERVICE

- Fully hosted ICCS
- Browser access
- Feature parity
- Single point of contact

WHERE DO WE TAKE THE FUTURE?

TREATING MORE PATIENTS USING NEW MODELS AVOIDED POTENTIAL COSTS TO AMBULANCE TRUSTS OF AROUND £74 MILLION

ESN WILL ALLOW HIGH SPEED DATA TRANSFER, HOW WILL THIS CHANGE YOUR SERVICE MODEL? TELE-MEDICINE, VIDEO CONSULTATION, REMOTE DIAGNOSTIC EQUIPMENT

REAL TIME DATA EMPOWERS PARAMEDICS IMPROVING PATIENT OUTCOMES AND INCREASES RESPONDER SAFETY

AMBULANCE SERVICES ARE A VITAL PART OF THE HEALTH SERVICE BUT MUCH OF THEIR ABILITY TO WORK BETTER GREATLY DEPENDS ON OTHER PARTS OF THE HEALTH SYSTEM

INNOVATION DRIVEN BY CUSTOMER INTIMACY

IT STARTS WITH A PHILOSOPHY OF USER-CENTERED DESIGN THAT RELIES ON REAL-WORLD INSIGHTS FROM THE PEOPLE WHO USE OUR PRODUCTS EVERY DAY

HIGH VELOCITY HUMAN FACTORS (HVHF)

Applying Human Factors principles for mission critical domains

Human Factors of “non-equilibrium events” - when the situation is perceived as being volatile, uncertain, complex and ambiguous *

This is usually accompanied by stress caused by time pressure and emotional reactions.

* Rahman, M. (2007a). High Velocity Human Factors: Human factors in mission critical domains in Non-equilibrium. *In Proceedings of the Human factors and Ergonomics 51st Annual Meeting*. (pp. 273–7) Santa Monica CA: Human Factors and Ergonomics Society

EFFECTS OF HORMONAL INDUCED HEART RATE INCREASE

Heart Rate

175 — Cognitive skills, peripheral vision, depth perception and auditory processing deteriorate. Gross motor skills optimized.

155 — Complex motor skills deteriorate

145 — Optimal survival/combat level for complex motor skills, visual/cognitive reaction time

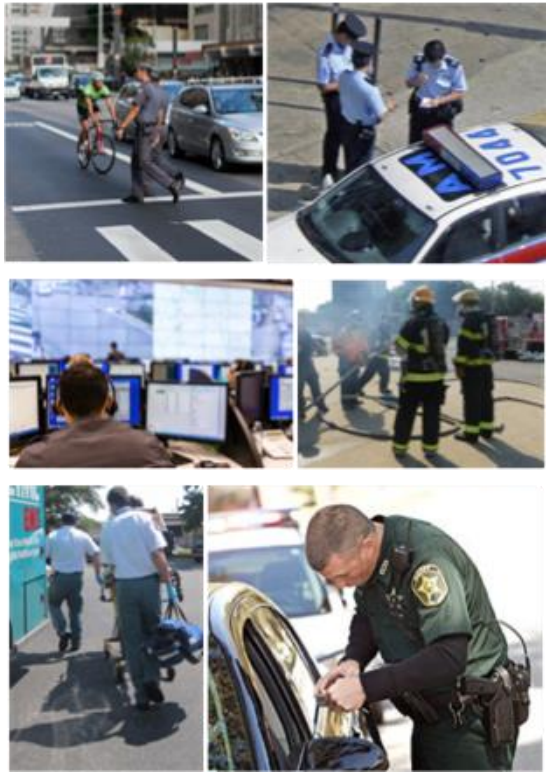
115 — Fine motor skills deteriorate

60-80 — Normal resting heart rate

Challenges due to stress:

- **Fine Motor Skills**
- **Tunnel Vision**
- **Impaired hearing**
- **Speech**
- **Distorted sense of time**

CTO RESEARCH



What we do:

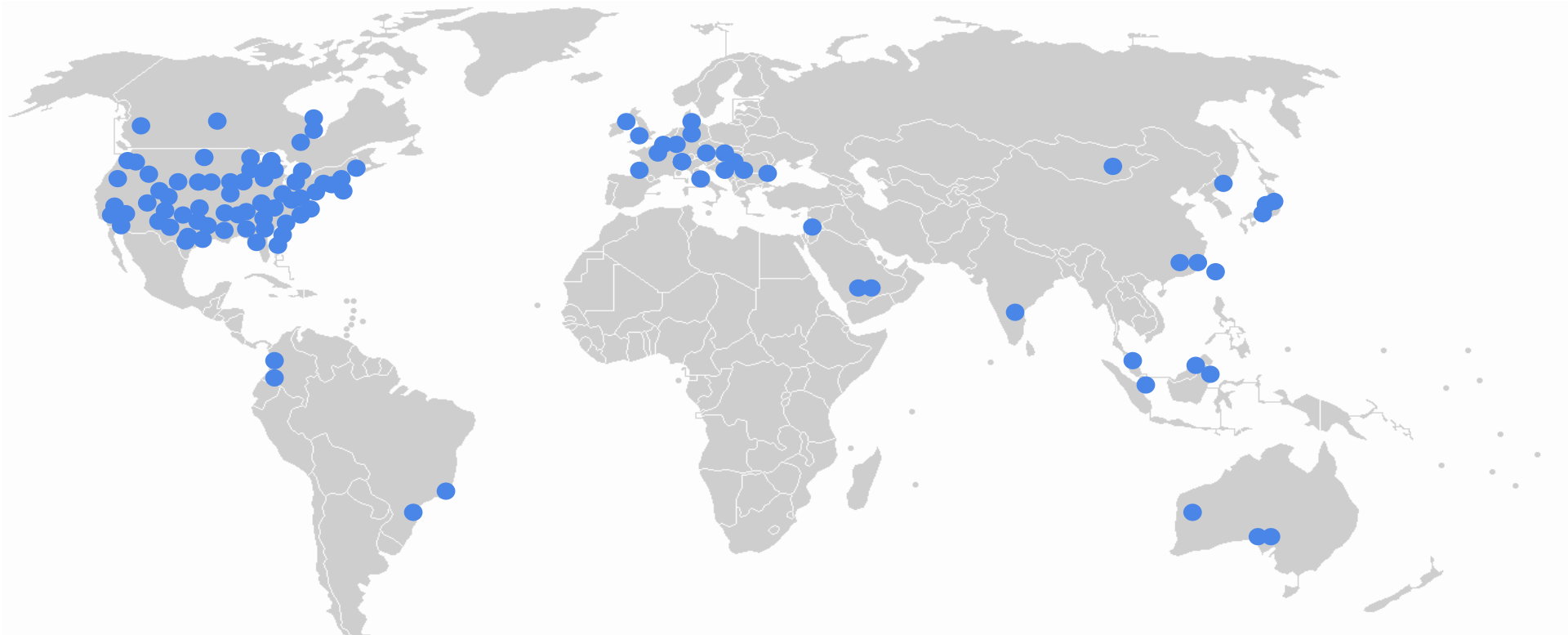
We immerse ourselves in our end users' worlds to understand the environments, workflows, goals, pain points, concerns, and opportunities.

Because our end users can't always articulate to us what they really need through focus groups, but our end users are able to ***show us.***

We **focus innovation around the user** (and not around products)

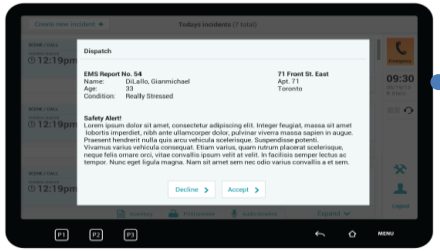
Over the last 3 years..

26 countries 280 customers 320 touchpoints

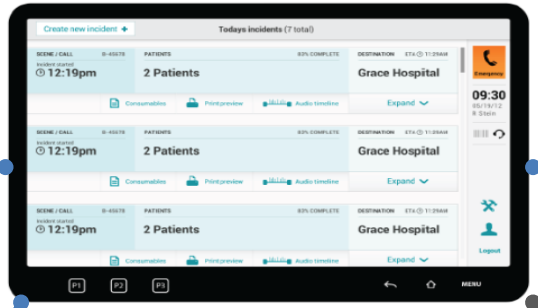


OVER THE LAST 3 YEARS…

POC SOLUTION: INTERACTIVE DASHBOARD



CONNECTIVITY WITH CAD

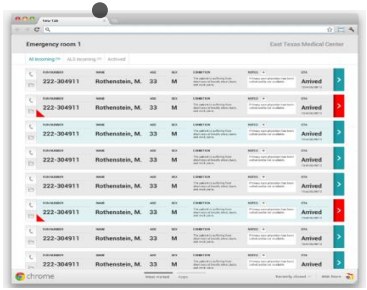


EMS INTERACTIVE DASHBOARD

ELECTRONIC PATIENT CARE REPORTING

INVENTORY MANAGEMENT & ASSET TRACKING

CONNECTIVITY WITH VITALS MONITORS



ED WEB PORTAL

REAL TIME CONNECTIVITY WITH HOSPITAL

SUMMARY

Capabilities and **knowledge** been **strengthened**

Global experience in wide range of Public Safety customers.

Been with you for the last **10 years**, and will be around for **years to come**

We know and **understand** your **unique environment**

Want to work with you to **develop** for the **challenges** that lie ahead

MOTOROLA

SOLUTIONS