Evolving solutions for the next generation of healthcare services

Dom Robertson
Account Director

Motorola Solutions
HISTORY OF HELPING SOCIETY DURING THE MOMENTS THAT MATTERED MOST
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

2014
AWARDED LOS ANGELES REGIONAL INTEROPERABLE COMMUNICATION SYSTEM FOR WORLD'S LARGEST

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
COMMANDCENTRAL PLATFORM

AWARE

VAULT

ANALYTICS

PREDICTIVE
RESPONDING TO GLOBAL TRENDS

LMR & LTE

SOFTWARE

MANAGED & SUPPORT SERVICES

ACQUISITION STRATEGY

DATA DRIVEN
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

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

SCIENTIFIC SUPPORT
- Crime Scene Analysis / SOCRATES
- Drawings

BACK OFFICE MANAGEMENT
- Central Ticket office
- Road Collisions
- Sudden Death
RESPONDING TO GLOBAL TRENDS

- LMR & LTE
- MANAGED & SUPPORT SERVICES
- SOFTWARE
- ACQUISITION STRATEGY
- DATA DRIVEN
ACQUISITION STRATEGY

ICCS SOFTWARE

SMART APPS

ARTIFICIAL INTELLIGENCE

CAD & RECORDS MANAGEMENT
RESPONDING TO GLOBAL TRENDS

LMR & LTE

SOFTWARE

MANAGED & SUPPORT SERVICES

ACQUISITION STRATEGY

DATA DRIVEN
AMBULANCE TRENDS

- Contribution from privates
- Staff retention
- Turnaround time
- Finance does not match demand
- Performance decreasing
- Complex health system
- Demand increasing
<table>
<thead>
<tr>
<th>SERVICE CAPABILITIES</th>
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<tr>
<td><strong>DEVICES AS A SERVICE – LESS DEVICES, MORE INTEGRATION</strong></td>
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<tr>
<td>• Lower total cost of ownership in managing and monitoring devices</td>
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<tr>
<td>• Devices operating at peak performance at a lower cost</td>
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<tr>
<td>• Access the latest technology without organisational complexity of procuring and managing devices</td>
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<tr>
<td><strong>MOBILE DATA AS A SERVICE – MAKE YOUR VEHICLE A MOBILE OFFICE</strong></td>
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<tr>
<td>• Access real time intelligence and support on the road</td>
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<td>• Increase productivity and better decision making in the field</td>
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<td>• Enabled EPR with live stream video for remote consultations with experts</td>
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<td>• Query wider health databases during incidents</td>
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<tr>
<td><strong>COMMAND &amp; CONTROL SOLUTIONS AS A SERVICE – PREDICT AND DEPLOY</strong></td>
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<tr>
<td>• Data Centre and Hosting capabilities</td>
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<tr>
<td>• Integration as a service: Free up space in your control room</td>
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<tr>
<td>• Virtualize command and control capability</td>
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<td>• Geographic redundant service</td>
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<tr>
<td><strong>ICCS AS A SERVICE</strong></td>
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<tr>
<td>• Fully hosted ICCS</td>
</tr>
<tr>
<td>• Browser access</td>
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<tr>
<td>• Feature parity</td>
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<td>• Single point of contact</td>
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WHERE DO WE TAKE THE FUTURE?

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

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
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
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.

Challenges due to stress:
- Fine Motor Skills
- Tunnel Vision
- Impaired hearing
- Speech
- Distorted sense of time

EFFECTS OF HORMONAL INDUCED HEART RATE INCREASE

**Heart Rate** | **Description**
--- | ---
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
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...

~3000 staff hours  90+ ride alongs  55+ user groups
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.