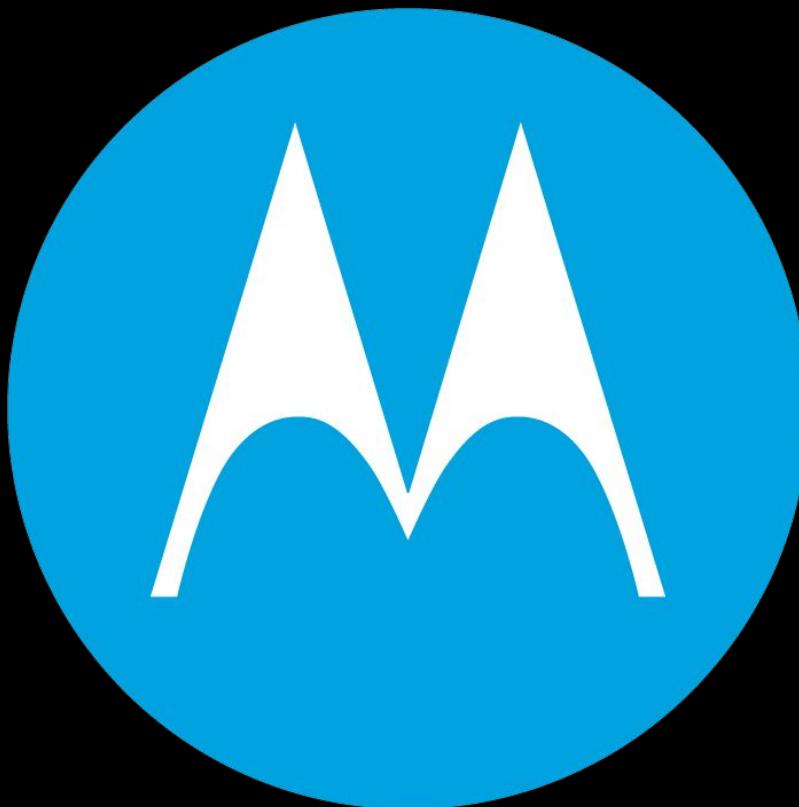


# ADVANCING THE LIFELINE WITH DEVOPS





# MISSION-CRITICAL ECOSYSTEM

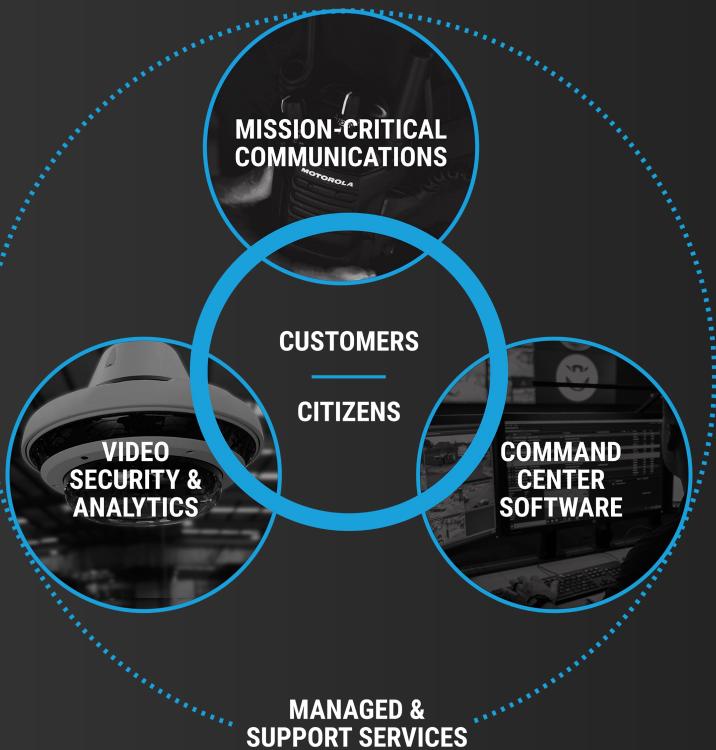
Flexible technology platforms to create a safer world.



Motorola Solutions has created the first and only **mission-critical ecosystem** built for Public Safety & Enterprise. Its four platforms create the lifeline your safety and mission depend on. Our mission is to never stop advancing that lifeline.

# WHAT WE DO

The mission critical ecosystem for public safety and enterprise.



## MISSION-CRITICAL COMMUNICATIONS

**13K**

private two-way radio networks

**100k**

customers around the world

## COMMAND CENTER SOFTWARE

**100m+**

incidents managed through our software

**70%**

of 911 call takers rely on our software

## VIDEO SECURITY AND ANALYTICS

**320k**

daily hot list alerts

**40%**

enforcement agencies using our video systems

## MANAGED AND SUPPORT SERVICES

**50M**

events proactively monitored each day

**50%**

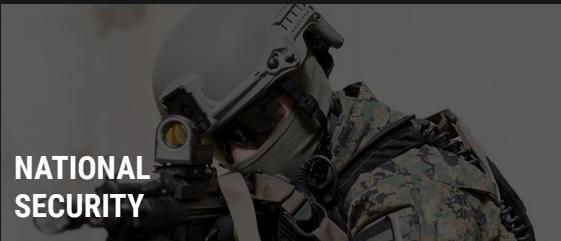
customer networks using our services

**OUR ECOSYSTEM IS PROVEN IN SUPPORTING OUR CUSTOMERS EVERY DAY**

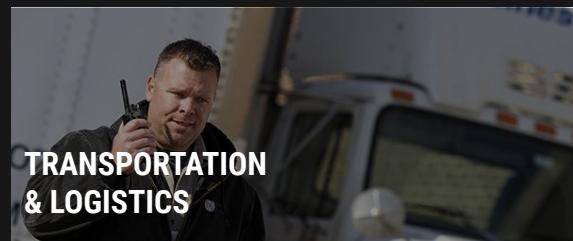
# WHO WE SERVE

We provide the mission critical technology lifeline that keeps you safe and effective.

## HELPING GOVERNMENTS CREATE SAFER CITIES



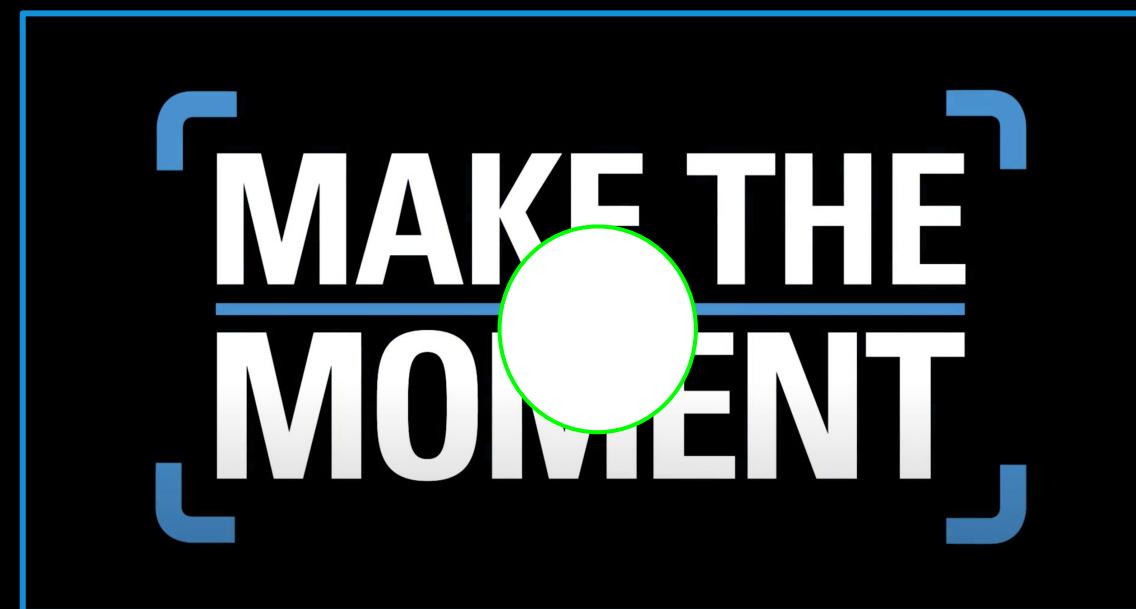
## AND ENTERPRISES BUILD STRONGER BUSINESSES



~75%

~25%

# MSI Overview



# DEVICE CLOUD ENGINEERING

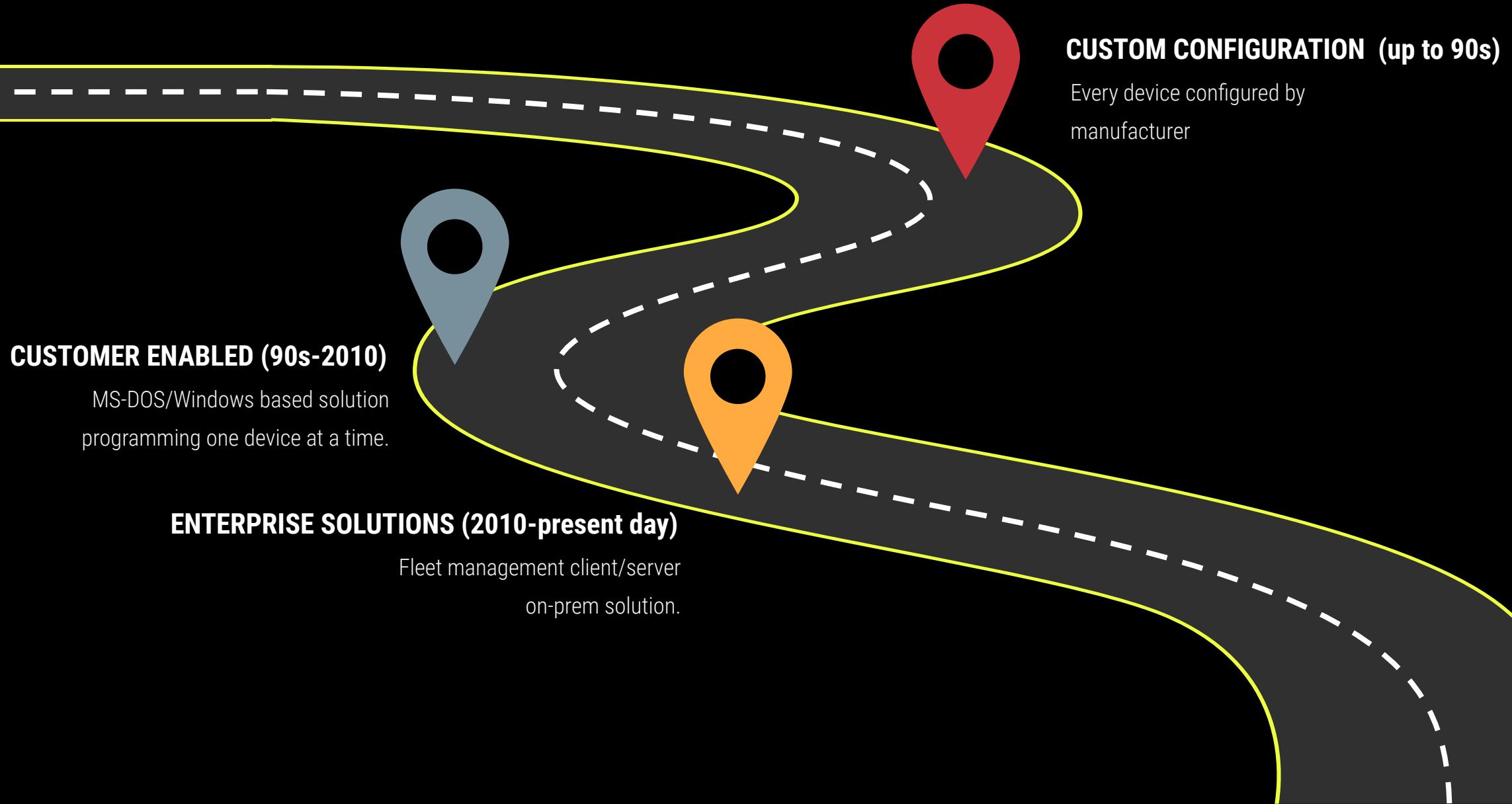
**PURPOSE:** Provide cloud services and capabilities that enable mission critical workgroup communication solutions.

- Device Management
- Device Analytics & Telemetry
- Feature & Service Offer Enablement



# PRODUCT EVOLUTION

---



# APX NEXT





# ZERO IN ON WHAT MATTERS MOST

APX NEXT brings new advancements to usability and performance. Interfaces are streamlined. Workflows are accelerated. Mission-critical reliability is ensured.

**MISSION-CRITICAL  
DEVICE**

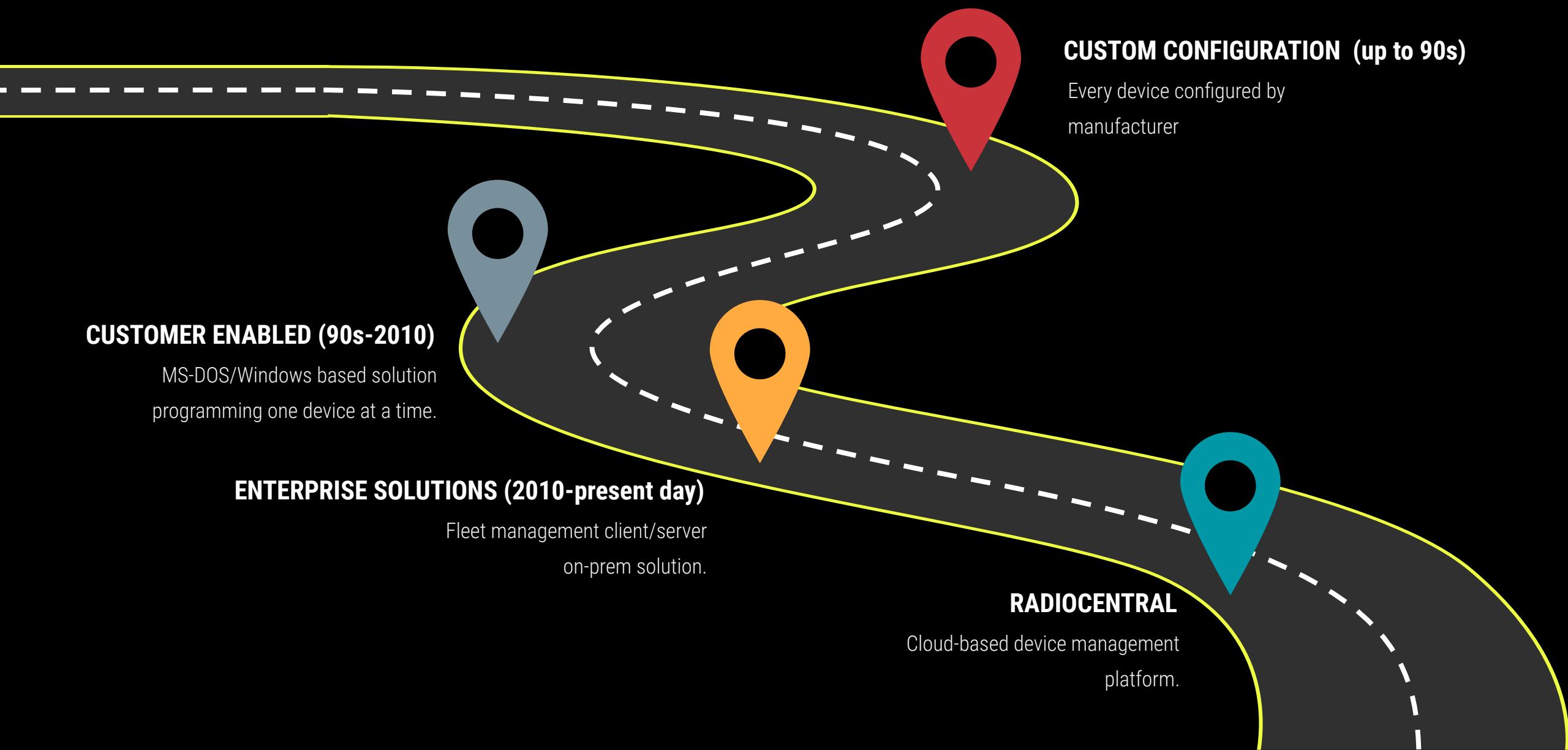
**MOBILE ACCESS  
TO INTELLIGENCE**

**NATURAL USER  
INTERFACE**

**STREAMLINED  
OWNERSHIP EXPERIENCE**



# PRODUCT EVOLUTION



The diagram features a dark grey winding road with a yellow dashed line on the left and a white dashed line on the right. Four location pins are placed along the road: a red pin at the top right, an orange pin in the middle right, a blue pin in the middle left, and a grey pin near the bottom left. The road starts at the bottom right and curves upwards and to the left, ending at the top left.

## CUSTOM CONFIGURATION (up to 90s)

Every device configured by manufacturer

## CUSTOMER ENABLED (90s-2010)

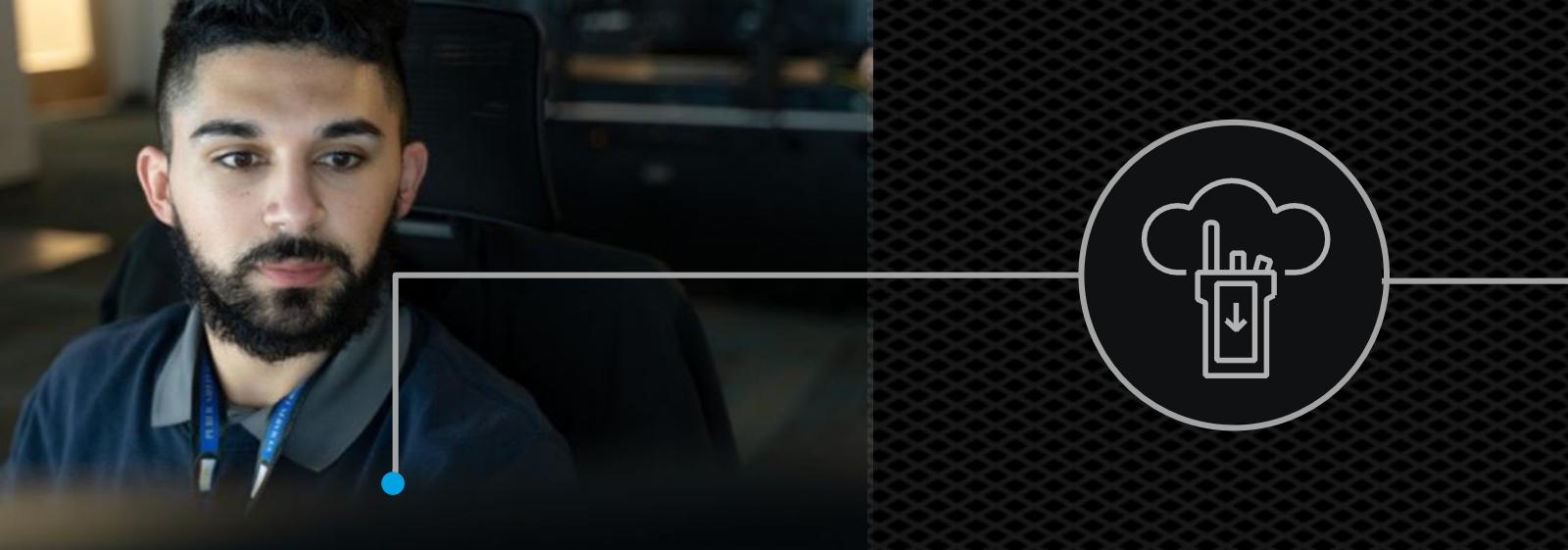
MS-DOS/Windows based solution  
programming one device at a time.

## ENTERPRISE SOLUTIONS (2010-present day)

Fleet management client/server  
on-prem solution.

## RADIOCENTRAL

Cloud-based device management  
platform.



## RADIOCENTRAL

RadioCentral is a cloud-based radio management solution that gives you flexible, efficient control.

## SMARTPROGRAMMING

SmartProgramming delivers rapid radio updates over broadband LTE to officer radios in the field.



# RadioCentral & SmartProgramming APX Next

**APX NEXT GIVES YOU BACK TIME**  
Go from months to minutes

**RADIOCENTRAL™**  
Manage your radios over the cloud

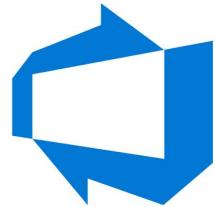
**SMARTPROGRAMMING**  
Anywhere, anytime over LTE broadband



# DevOps Journey

	2018	→	2020
<b>RELEASE CADENCE</b>	3+ Month Offramp	→	End of Sprint promotions to production OR auto-promoted to production
<b>TESTING</b>	Mix of manual & automated	→	100% Automated
<b>KEY METRICS</b>	Defect backlog, team velocity, successful nightly build	→	DevOps Key Metrics
<b>ONBOARDING</b>	Not a focus	→	Commit to production within first week
<b>OWNERSHIP</b>	Shared ownership	→	Component ownership
<b>TECH DEBT</b>	Ad-hoc	→	Each sprint team takes a piece of tech debt for each sprint
<b>TEAM INITIATIVE</b>	Limited	→	DevOps Team Portal, Self Service Portal, Chatbots, etc...
<b>INCIDENT RESPONSE</b>	None	→	Fully integrated with Runscope & Pagerduty





Azure DevOps



PagerDuty



ATLASSIAN



ANGULAR



TRICENTIS  
Tosca



LaunchDarkly



WhiteSource



POSTMAN

# Introducing the DevOps Team Portal

One stop shop for automated DevOps metrics

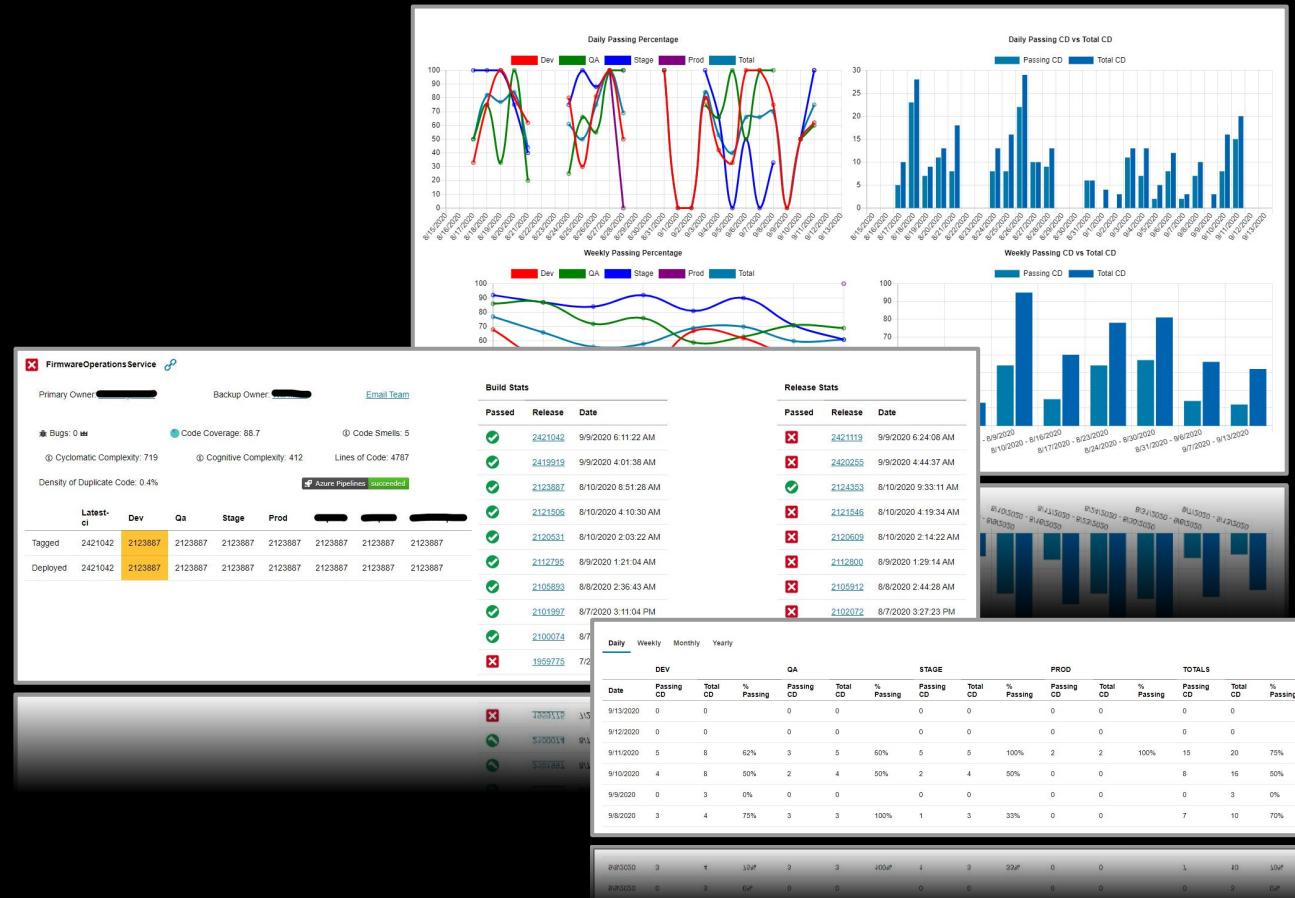
Track production cost over time

Deployment Health

Component Ownership

Delivery Performance Metrics

CI / CD Pipeline Health



# RadioCentral Delivery Performance

Aspect of Software Delivery Performance*	2020 Goal			
	Elite	High	Medium	Low
<b>Deployment frequency</b> For the primary application or service you work on, how often does your organization deploy code to production or release it to end users?	On-demand (multiple deploys per day)	Between once per day and once per week	Between once per week and once per month	Between once per month and once every six months
<b>Lead time for changes</b> For the primary application or service you work on, what is your lead time for changes (i.e., how long does it take to go from code committed to code successfully running in production)?	Less than one day	Between one day and one week	Between one week and one month	Between one month and six months
<b>Time to restore service</b> For the primary application or service you work on, how long does it generally take to restore service when a service incident or a defect that impacts users occurs (e.g., unplanned outage or service impairment)?	Less than one hour	Less than one day <sup>a</sup>	Less than one day <sup>a</sup>	Between one week and one month
<b>Change failure rate</b> For the primary application or service you work on, what percentage of changes to production or released to users result in degraded service (e.g., lead to service impairment or service outage) and subsequently require remediation (e.g., require a hotfix, rollback, fix forward, patch)?	0-15% <sup>b,c</sup>	0-15% <sup>b,d</sup>	0-15% <sup>c,d</sup>	46-60%

Reference: [The 2019 Accelerate State of DevOps: Elite performance, productivity, and scaling](#)

# RadioCentral 2020 Elite Initiative

DEPLOYMENT FREQUENCY

LEAD TIME

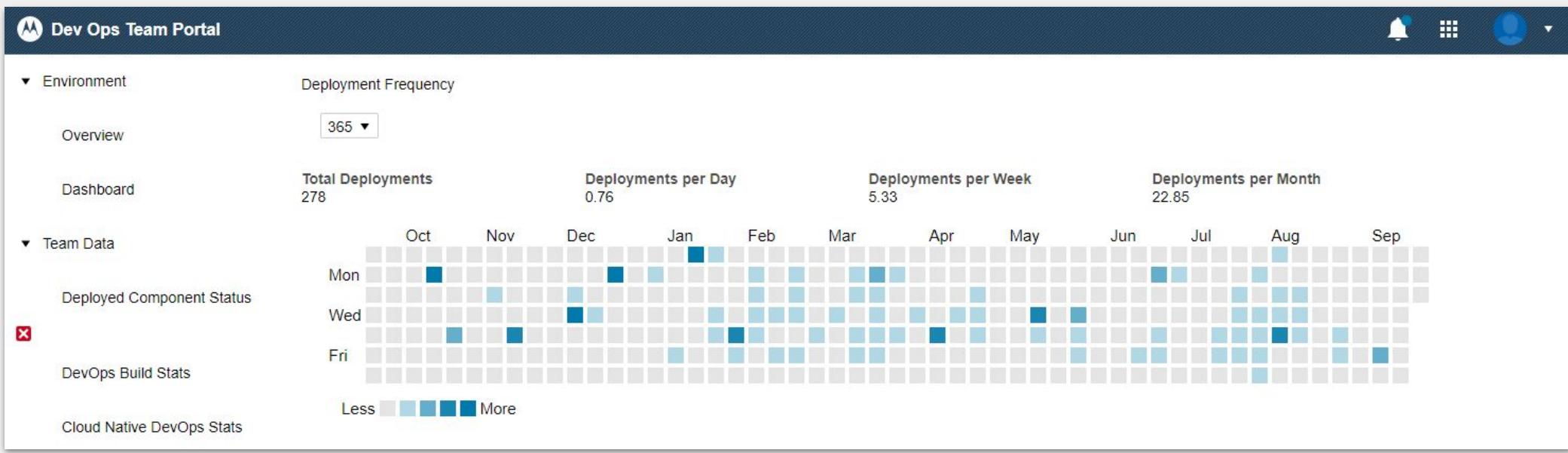
TIME TO RESTORE

CHANGE FAILURE RATE

Hosted in our custom DevOps Team Portal

## Promotion Evolution

- Started with manual promotions to all environments
- Enabled auto-promotion through Staging environment
- New services are auto-promoted to production from the start



# RadioCentral 2020 Elite Initiative

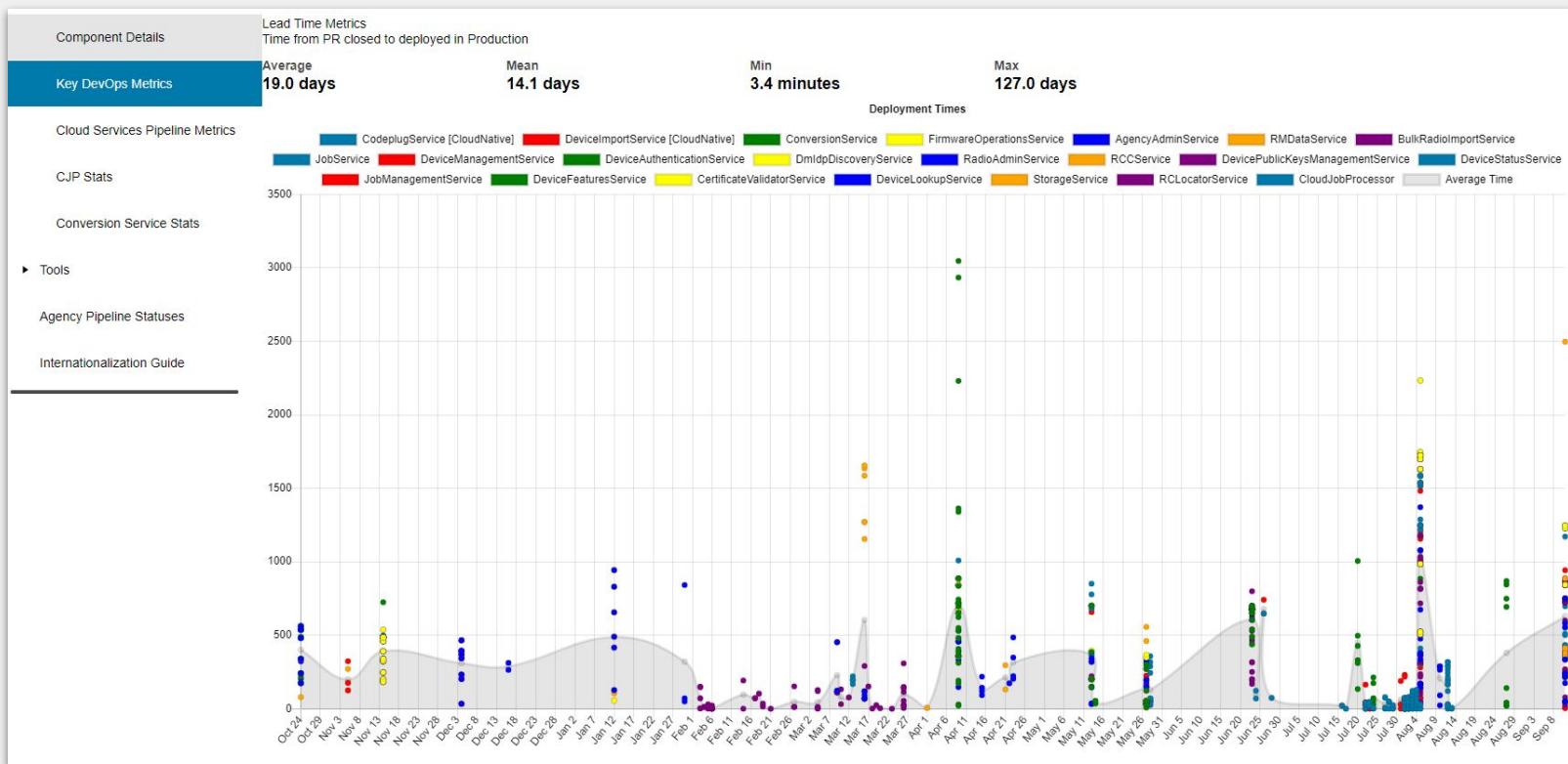
DEPLOYMENT FREQUENCY

LEAD TIME

TIME TO RESTORE

CHANGE FAILURE RATE

Hosted in our custom DevOps Team Portal



# RadioCentral 2020 Elite Initiative

DEPLOYMENT FREQUENCY

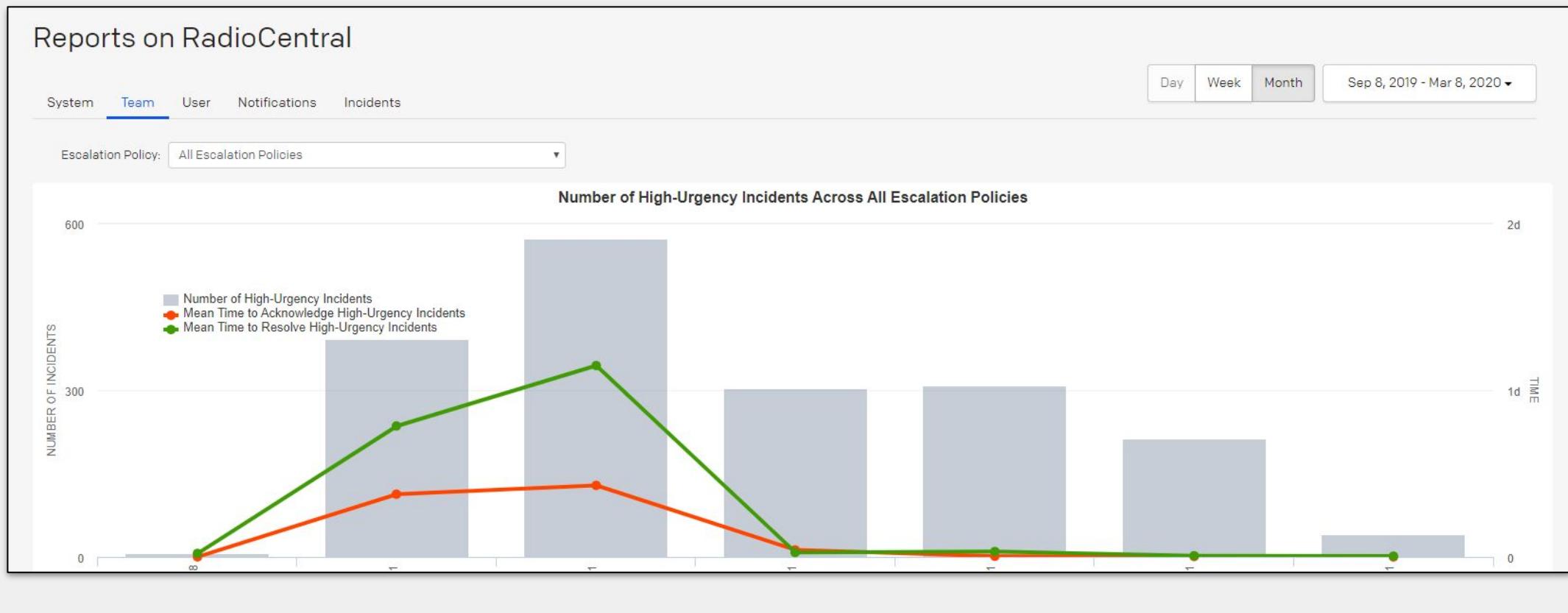
LEAD TIME

TIME TO RESTORE

CHANGE FAILURE RATE

Hosted in PagerDuty and reviewed weekly

- On-Call process change due to escalation metrics



# RadioCentral 2020 Elite Initiative

DEPLOYMENT FREQUENCY

LEAD TIME

TIME TO RESTORE

CHANGE FAILURE RATE

Hosted in our custom DevOps Team Portal

Work in progress



# Embracing DevOps

## Component Ownership

- Deployment Status
- Code Coverage
- Code Smells
- Complexity

**FirmwareOperationsService** [🔗](#)

Primary Owner: [REDACTED] Backup Owner: [REDACTED] [Email Team](#)

Bugs: 0 Code Coverage: 88.7 Code Smells: 5

Cyclomatic Complexity: 719 Cognitive Complexity: 412 Lines of Code: 4787

Density of Duplicate Code: 0.4% Azure Pipelines

	Latest-ci	Dev	Qa	Stage	Prod	[REDACTED]	[REDACTED]	[REDACTED]
Tagged	2421042	2123887	2123887	2123887	2123887	2123887	2123887	2123887
Deployed	2421042	2123887	2123887	2123887	2123887	2123887	2123887	2123887

**Build Stats**

Passed	Release	Date
	<a href="#">2421042</a>	9/9/2020 6:11:22 AM
	<a href="#">2419919</a>	9/9/2020 4:01:38 AM
	<a href="#">2123887</a>	8/10/2020 8:51:28 AM
	<a href="#">2121506</a>	8/10/2020 4:10:30 AM
	<a href="#">2120531</a>	8/10/2020 2:03:22 AM
	<a href="#">2112795</a>	8/9/2020 1:21:04 AM
	<a href="#">2105893</a>	8/8/2020 2:36:43 AM
	<a href="#">2101997</a>	8/7/2020 3:11:04 PM
	<a href="#">2100074</a>	8/7/2020 10:56:17 AM
	<a href="#">1959775</a>	7/22/2020 8:43:23 AM

**Release Stats**

Passed	Release	Date
	<a href="#">2421119</a>	9/9/2020 6:24:08 AM
	<a href="#">2420255</a>	9/9/2020 4:44:37 AM
	<a href="#">2124353</a>	8/10/2020 9:33:11 AM
	<a href="#">2121546</a>	8/10/2020 4:19:34 AM
	<a href="#">2120609</a>	8/10/2020 2:14:22 AM
	<a href="#">2112800</a>	8/9/2020 1:29:14 AM
	<a href="#">2105912</a>	8/8/2020 2:44:28 AM
	<a href="#">2102072</a>	8/7/2020 3:27:23 PM
	<a href="#">2100220</a>	8/7/2020 11:11:10 AM
	<a href="#">1919518</a>	7/17/2020 5:15:30 AM



# What our customers are saying...

## RADIOCENTRAL

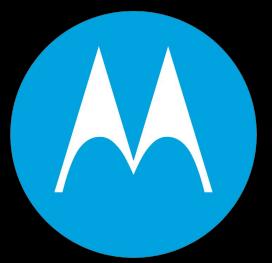
“Radios are now a smart device. Seeing the radio able to update just like the way a smartphone would, simplifies things. You're unifying the sort of technology that everyday people are used to seeing. You look at your smartphone and you see an update is available – I can do it now, I can do it later, or I can ignore it. Having that same flexibility is very beneficial to us and the officers.”

-Kevin Aswinanun  
*Management Information Systems Coordinator*  
*Prince William County Police Department*

“It's an arduous process when you have thousands of subscribers and you have to touch every radio, every time to make those changes. So when you can push those updates out over the air, it's so much quicker.”

-Michael Zollars  
*Lieutenant*  
*Spokane Valley Police Department*





# ADVANCING THE LIFELINE WITH DEVOPS

