Next-Generation 9-1-1 Connected Public Safety Answering Point (PSAP) Roundtable

AutoTech Detroit June 4th, 2024

Sponsored by:







Hosted by:



Tim VanGoethem

CPO, Emergency Safety Solutions

Co-chair COVESA Connected Safety Group



Ravi Puvvala

General Manager, SBU,

Center for Automotive Research

Roadway injuries and fatalities continue to rise



U.S. traffic deaths jumped 10.5% in 2021 to 42,915, the highest number killed on American roads in a single year since 2005.

Source: Reuters, September 2023

COVESA Connected Safety Group, LSL and CAR Catalyzing Change

COVESA - Connected Safety
Group

Accelerate delivery of connected technologies to benefit everyone that shares, protects, and maintains our roadways. Examples:

- Protect and give aid to vulnerable vehicles and occupants stranded along roadways
- Reduce response time and secondary collision risk for motorists involved in a crash
- Provide 9-1-1 Public Safety organizations with critical information so they dispatch the right personnel and equipment to the scene
- Mitigate liability and lost productivity for commercial vehicles involved in roadway crashes

LSL – LiDAR Saving Lives Public Safety Coalition

Promote adoption and implementation of automotive vision-based technologies to enhance situational awareness and emergency response:

- Define comprehensive stakeholder-based value propositions & document any roadblocks
- Collaborate with COVESA and CAR on design, build and promotion of 'COVESA 9-1-1 Safety Car' at events like CES, NADA, APCO, NENA, EENA, NAEMT, IACP, IAFC, NSA, etc.
- Focus on adoption with PSAPs, Computer-Aided Dispatch (CAD) Suppliers, and First Responders
- Publish reports on key findings and recommendations

CAR – Center for Automotive Research

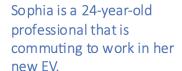
Bring 9-1-1 Public Safety Answering Points (PSAPs), automotive OEMs, telematics service providers and NHTSA to discussion forums:

- Define comprehensive stakeholder-based value propositions & document roadblocks
- Collaborate with COVESA and LSL to conduct quarterly roundtable/panels at events like CES, ITS America, AutoTech Detroit, Management Briefing Seminar (MBS), etc.
- Focus on adoption with Automotive OEMs, robotaxi companies, and commercial fleets (rental car, trucking, Government)
- Publish reports on key findings and recommendations

Connected Safety Journey Map (1 of 2)

Imagery

Cartoons, animated presentations, or demonstrations that bring storyline to life



Set-up

A tanker truck abruptly changes lanes, collides into Sophia's car, and forces the driver of a rental car to swerve into a nearby lake. The embedded vehicular emergency sensor triggers the submersion escape system in the rental car and instantaneous IP notification for emergency services in all vehicles. 1

Scene 1

•Automated submersion system enables rental car occupants to escape quickly.

•Instantaneous IP notification enables accurate and prompt implementation of rescue services and start of emergency response. Recognizing that a collision has occurred, all three vehicles automatically flash hazard and other vehicle lights at a faster rate so that other drivers have more time to react, and Emergency Responders can see them.

Scene 2

In parallel, on-coming drivers receive an alert in their indash system so that they have even more time to react to the upcoming crash scene.

Scene 3

The near by E911 center is notified and dispatches a police car, fire truck, and ambulance to the scene.

Scene 4

Storyline

Overall story that we're bring to life

Value Propositi<u>on</u>

The value that each company and technology brings to this story

•Conspicuous lighting protects scene, gives other motorists time to slow down and move over, and helps locate vehicles that has left the roadway.

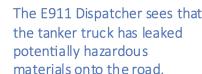
 Digital alerts work in tandem with lighting alerts to protect the scene and give motorists time to slow down and move over. •Timely notification of vulnerable vehicle location reduces response time and further collision risk.

Separate Journey Maps can be used to capture the stories for the tanker truck and rental car
occupants since they unlock different solutions and value propositions. The following scenes will
focus on Sophia.

Connected Safety Journey Map (2 of 2)

Imagery

Cartoons, animated presentations, or demonstrations that bring storyline to life



Scene 5

Fire responders are provided a VIN-specific extrication guide for Sophia's EV.

Scene 6

Sophia see a map indicating her location with icons for the responding vehicle location and their projected ETA.

Scene 7

In parallel, family/emergency contacts are notified and provided the same map.

Responders arrive on scene and safely remove Sophia from her vehicle.

Scene 8

Sophia seems OK but is taken to the hospital for further medical evaluation.

Scene 9

Vital health parameters are transmitted to the hospital while in transit.

Family/emergency contacts are updated.

Storyline

Overall story that we're bring to life

- LiDAR/radar/camera 3D point cloud let's E911 Dispatcher assess scene and better inform emergency & incident responders what to expect
- Point Cloud image protects privacy since no identifying information is visible.
- •Emergency Responders can safely extract victims without compromising the vehicle's power wiring or battery system that may lead to fire or hazardous materials being spilled into environment.
- •Piece of mind that so meone is on their way and when they will arrive.
- •Awareness that a loved one is in danger, but help is on the way.
- Reduced response time decreases risk of secondary collision.
- Proper on-scene care minimizes complications.
- •Sophia is safe and can focus on recovery.
- •Sophia's family knows that she's OK and where to meet her.

Value Proposition

The value that each company and technology brings to this story

Reinventing the Airbag as a Next-Generation 9-1-1 IoT Connected Device

9-1-1 Dispatcher Challenges

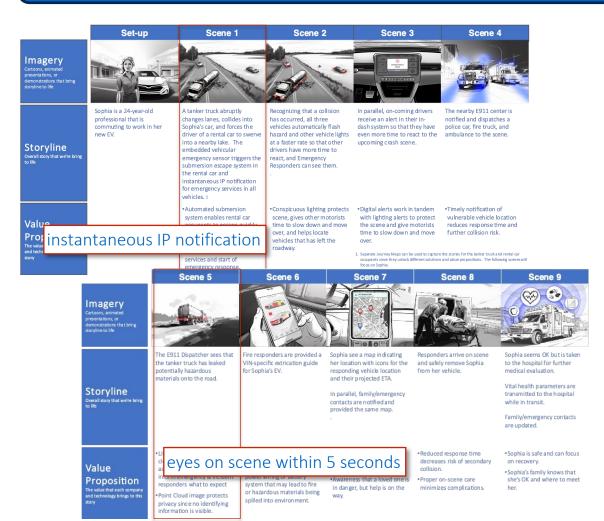


Currently, it takes 2-3 minutes for 9-1-1 Dispatchers to promptly and efficiently deploy post-crash care resources when airbags are deployed.

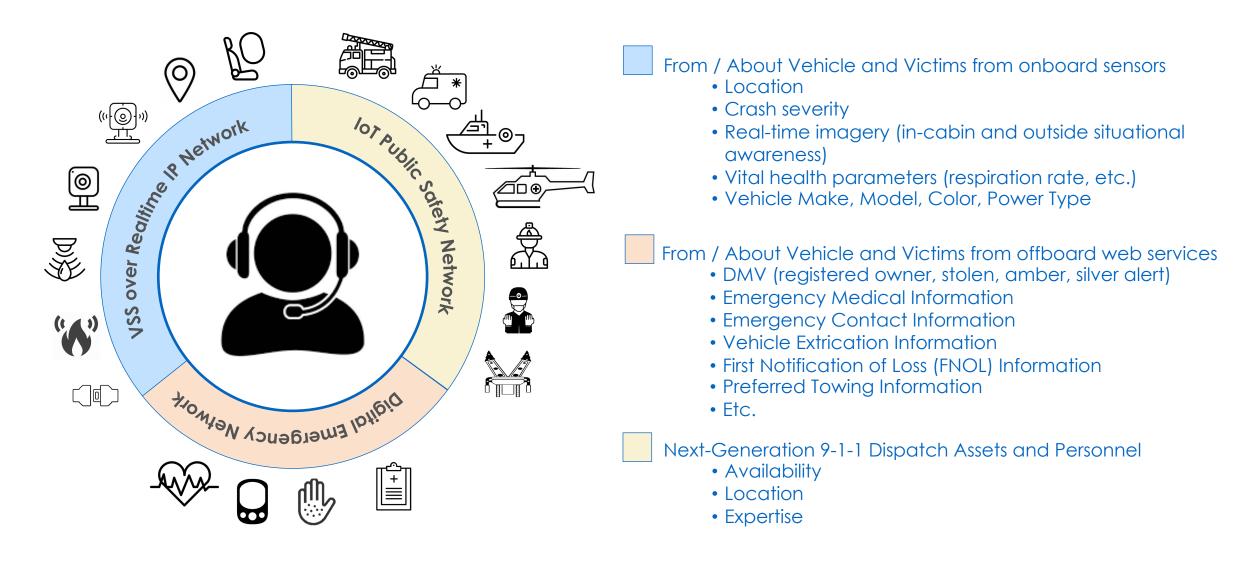


9-1-1 Dispatchers lack real-time IPbased visual insights to accurately identify, verify and deploy resources in response to airbag deployments.

Opportunity for Improvement



Next-Generation 9-1-1 Dispatcher Information 'Wants'



Let's hear from the experts....



PANELISTS



SCOTT CRAIG SBC ADVISORS



JON BOEING CONEKT.AI



STEVE COKER
SIRIUSXM
CONNECTED VEHICLE



MARTIN LUNDH
WIRELESS CAR



DAVE SEHNERT RAPIDSOS



BRIAN TEGTMEYER
NHTSA

NEXT GENERATION
CONNECTED PSAP
ROUNDTABLE

June 04, 2024 — 2:00 PM 5:00 PM













Who We Are & What We Do

- We are an advising and consulting firm that helps Mobility Startups "Drive Their Business." Our expertise is based on a deep understanding of the mobility industry and the challenges that startups face. The firm provides guidance on how to navigate the complex regulatory landscape, develop a sustainable business model, and create a compelling value proposition for their customers.
- We work closely with the public and private sector, governments, civic leaders, NGOs, and local universities to help our clients succeed and to collectively shape the future of mobility. Our purpose is to accelerate realizing the promise of the future of mobility by convening and activating this rapidly evolving mobility ecosystem.
- We offer a range of services including strategy development, business model innovation, customer experience design, and technology implementation.

Over 38 years in the Automotive Industry

Degrees in Physics, Electrical Engineering Working on Masters of Theology

Lead the Americas

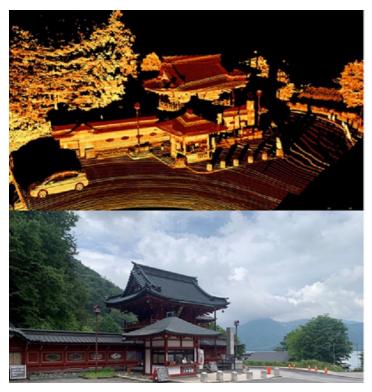


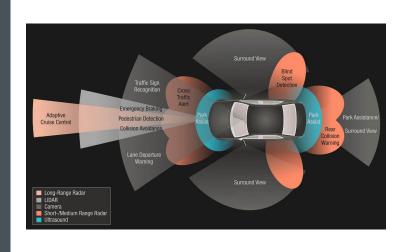
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Executive Leadership Roles 25 years in Semiconductors







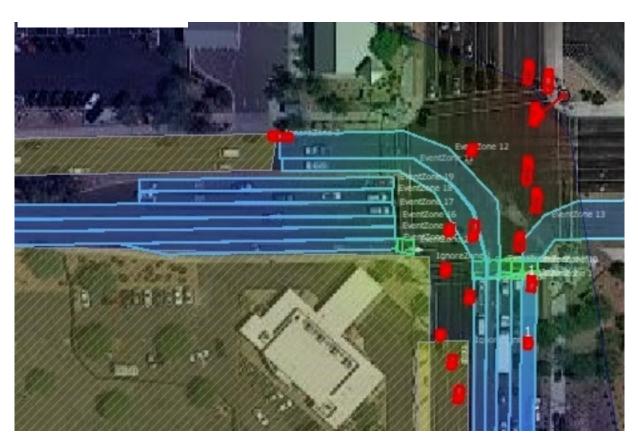


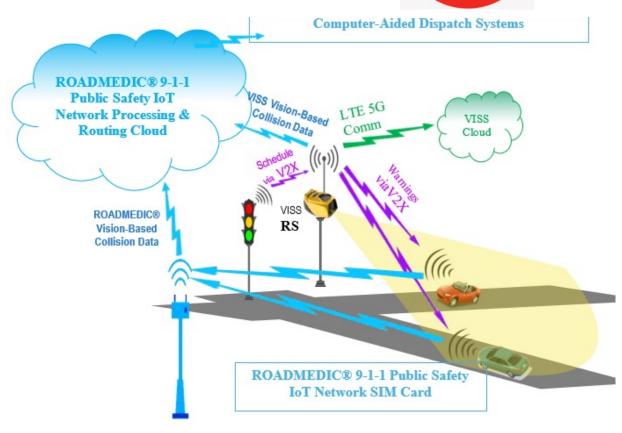


REAL-TIME IMAGERY (IN-CABIN AND OUTSIDE SITUATIONAL AWARENESS

VEHICLE IMPROVED SAFETY SYSTEM (VISS) High Level Architecture









Thank You

ESS DVN DRAFT.pptx



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JUNE 4th, 2024

PREPARED FOR:

911 CONNECTION PSAP ROUNDTABLE

Presented by:

Jon Boeing

OUR WORLD IS NOT ABOUT JUST CONNECTING THINGS,
IT'S ABOUT CONNECTING PEOPLE

Who Are We?

Conekt.ai Inc. ("Conekt") is on a mission to help the world be connected, anytime and anywhere. Based in San Diego, CA, our team is committed to help customers manage their global connectivity no matter what type of device they have, or which network they want to utilize.

- © Bring your own carrier and bring your own SIM provider model.
- © Primarily focused on monthly recurring revenue license model.
- © Eight direct Mobile Network Operator integrations for localization by end 1H 2024.
- © Global SIM/Device orchestration, management & analytics
- © Provides SIM/Device/Data Connectivity cost and usage reports
- © Global account management & hierarchy
- © Hosted in global cloud environments for costs and coverage control
- © First platform for multi-network management (Public, Private, Wi-Fi, SatCom)

Conekt is in high-growth stage and is focused on serving the public safety, telecom, automotive and IoT markets. With an expertise in hardware, networks, payments, and auto, we're ready to conekt!



A Crazy Connected World in PSAPs

Past in mind....



Present state...



...and a future often far away.



A Crazier Connected World in Telecom & Auto

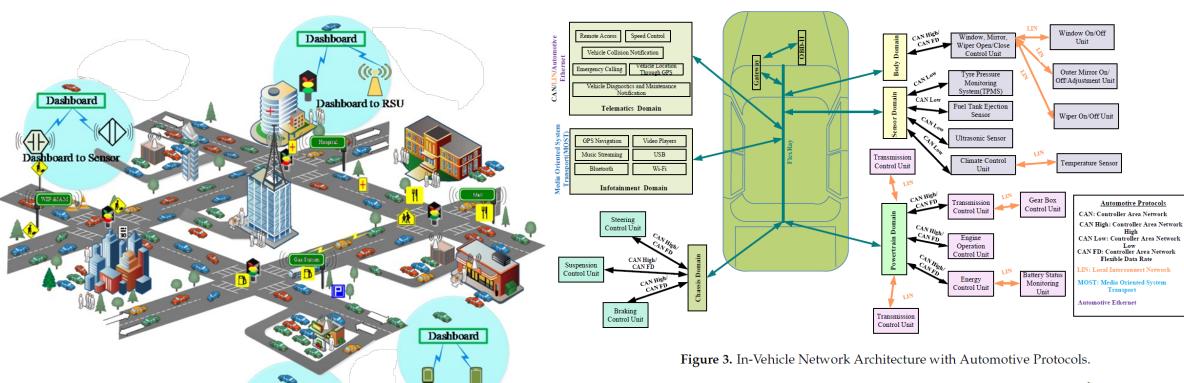


Figure 1. In-Vehicle security scenarios with possible threats.

Attacker



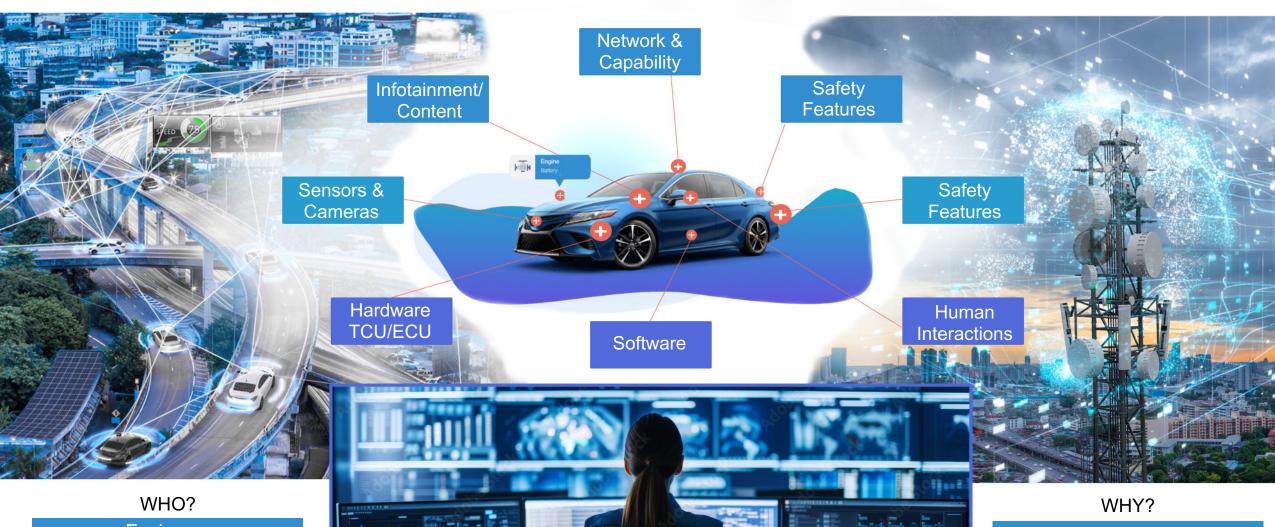
Dashboard

Dashboard to Personal Devices Dashboard to Smart

Phone

Key Factors in Value Chain





Engineers
Product & Product Managers
Tech Partners,
Leaders, Government

Safety Security Efficiency

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To progress we must ask ourselves....

Is 5G really faster? How fast is fast enough? 1 sec, 5 sec?

Are government networks (ie FirstNet) actually more reliable? Faster?

Are standards more important than our Why? (ie Apple, Starlink etc) Why must we wait?

Did you know we can sense an airbag deployment by a haptic feedback on a phone?!!

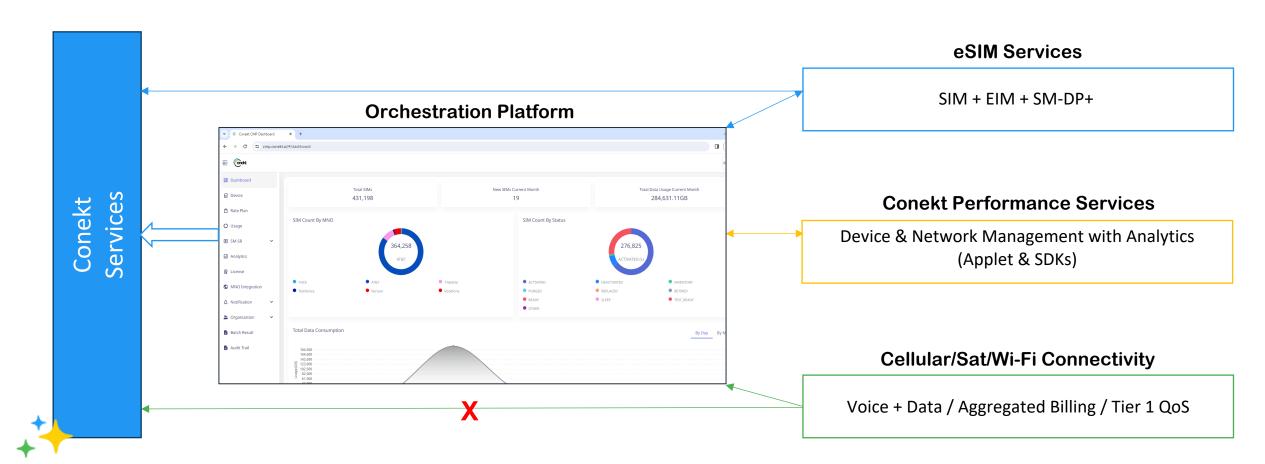
Why does it have to be one versus the other? Can't we support which ever tech and whomever is willing to pay to serve our 'why'?

Why aren't we helping each other more to complete the ecosystem for win-win-win (Tech Partners +Gov+ End User) models.

All the technology is available now, it's up to us!



Conekt Service Offerings



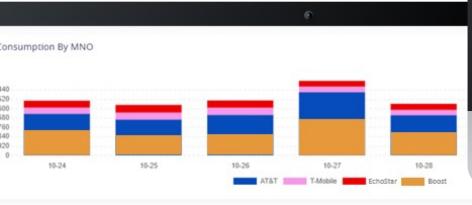


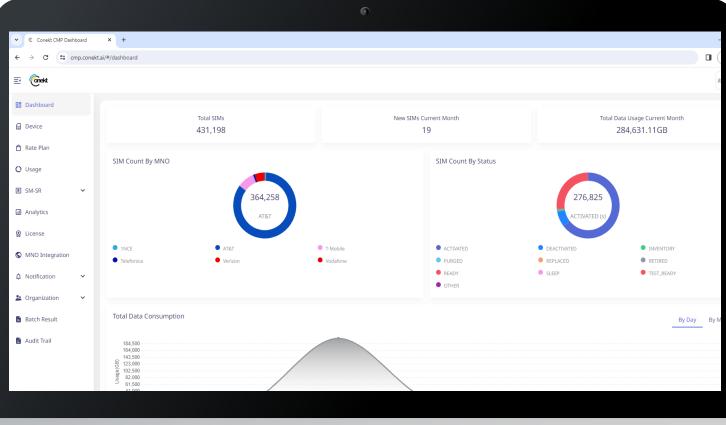
Your Connectivity Orchestration Dashboard



- Total Aggregated Data Usage
- Device + Network Allocation
- Sim Status Metrics
- Total Data Usage Daily/Monthly
- Key Location Metrics
- Strategic Migration Actions
- Enterprise Ready

's Device Distribution





CHALLENGES

Consumer Mobility

Enterprise / IoT

- Incorporate both legacy systems and new systems (ie M2M vs Consumer)
- Ability to benefit from coverage gaps with private network deployments
- Lack of company wide cost control
- Minimal automated tools for network switching leaving control to enterprise
- Visibility into usage and costs across all networks
- Allow unique billing options for customer direct & content partners

NETWORK









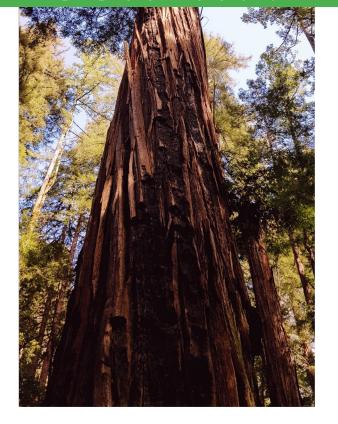


- Fragmented IoT billing systems
- No global ecosystem cohesion
- Need to have system in place to manage multiple technologies and partners
- Don't have tools to sell localized connectivity (roaming only)
- Need quick routes to market both M2M and Consumer eSIM standards to show flexibility to customers
- No aggregated approach to multinetwork and asset management





WHY CONEKT?



Control Your Own Conektivity

- End-to-end management from HW, SW AND NETWORK
- Take power to negotiate with carrier direct or leverage direct partners
- Plan for long-term growth
- Manage legacy sims and new device frameworks for orchestration

eSIM Strategy

- SGP .32 is ready, don't get behind!
- Execute eSIM/SM-SR deep integrations for network enablement (already complete with Thales, pending G+D)
- eSIM Profile Management (8): AT&T, Dish, TMO, US Cellular, Vodafone, Telefonica, Verizon, 1NCE

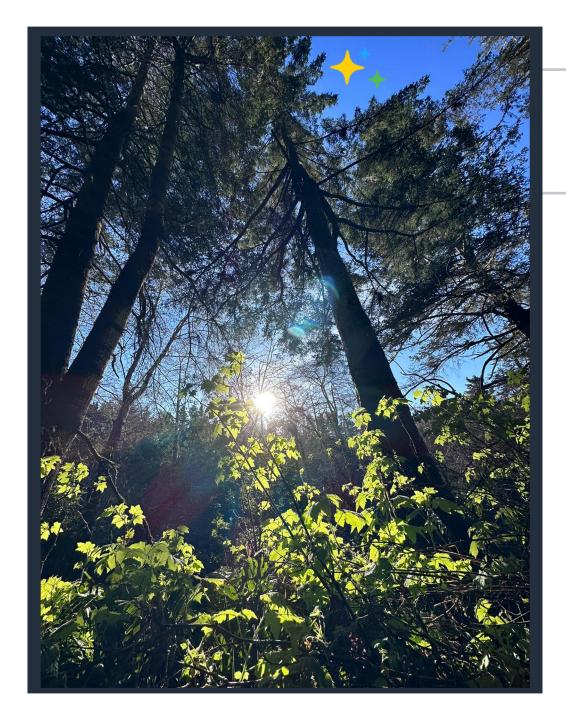
Tech is Here!

- Global scale is capable now
- Satellite is here with cost control!
- Don't have a network, build one
- Focus on direct tech partnerships vs out of control costs





Thank You





OBJECTIVE

Enable companies to develop, implement, and deploy a connectivity orchestration layer in Public Safety, Auto and IoT industries to manage public, private, government, and satellite networks.

- Orchestrate your ISPs to have internal metrics, cost control, and management across entire business.
- Integrate your SIM/Device management systems & analytics for connectivity optimization.
- Provide SIM/Device/Cost reports in all segments.
- Account management & hierarchy for all stakeholders.
- Hosted in global cloud environments for global scale.
- Promote first carrier to have multi-network management (Public, Private, SatCom)

CHALLENGES

Private Networks

- Most private network vendors don't have full ability for A-Z deployments
- Ability to provide end-to-end whitelabeled solution for multiple use cases
- Lack of multi-network orchestration
- Flexibility to leverage various spectrum assets.
- 4G, 5G, and IMS stack compatible.
- Experience in urban and rural areas to leverage mobile and satcom network deployments.

Satellite Communications

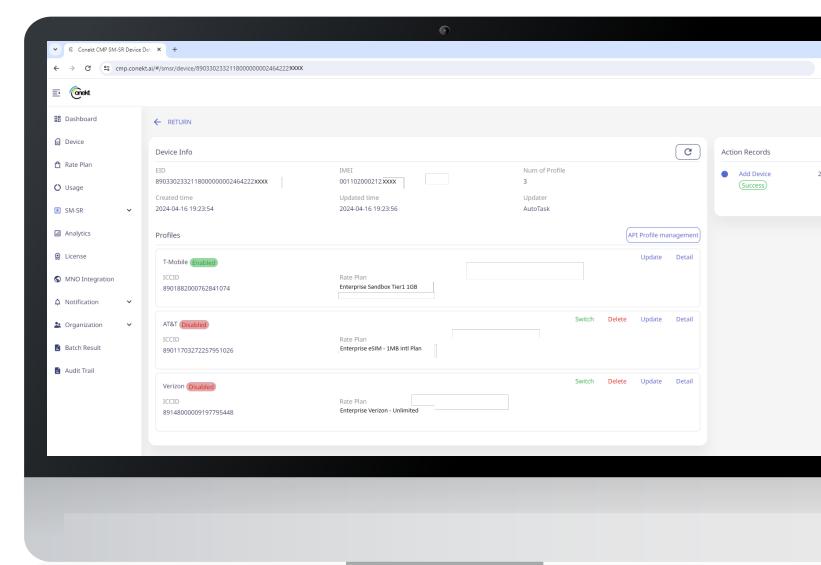
- NTN strategies are forming now
- No orchestration with cellular network to cater to large enterprise needs.
- Inability to leverage infrastructure with mobile networks and partners for all use cases (consumer and enterprise).
- Can't leverage mobile assets for bestin-class deployments.
- Lack of SatCom and or joint LTE hardware management projects.



Your Platform, Your MNO Control



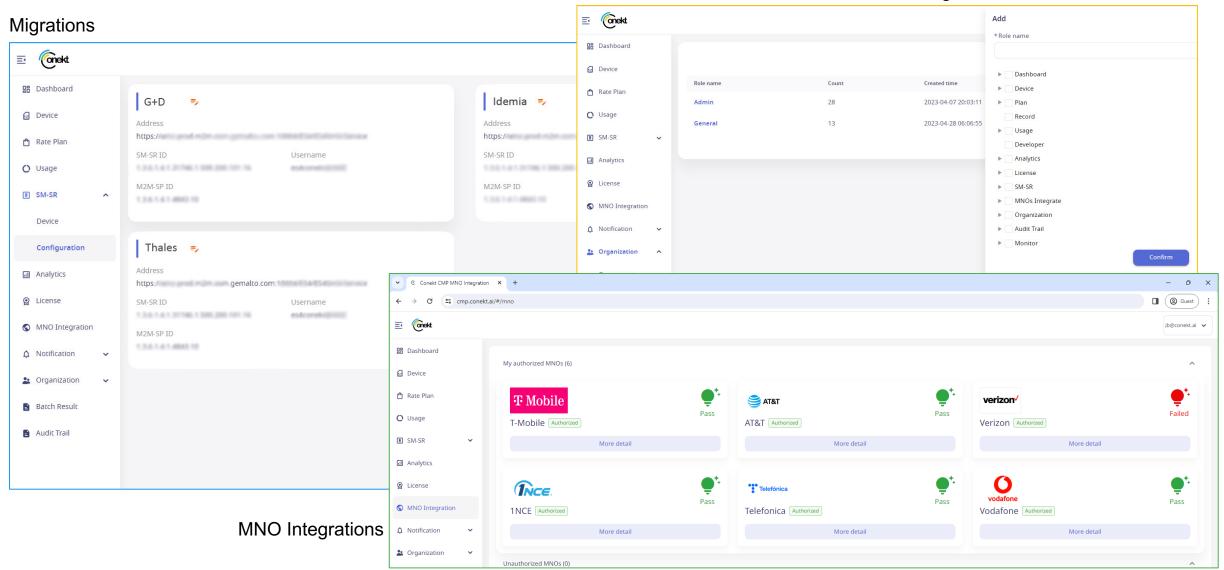
- Manage your MNO profiles
- Switch when you want
- Remove and download on-demand
- View device ICCIDs
- Batch profile migrations
- Control & optimize your costs
- Improve coverage



Your Business Actions



Multi-User Management



USE CASE

Marquee Customer



- One of worlds largest device manufacturers.
- Multiple business units with use cases that cover most IoT sectors and products.
- Global device deployments including automotive
- · Quick entry into large tech partnerships.
- Leverage internal use case for direct external partnerships via AWS Partner Network.
- Joint GTM commercials with ecosystem
- 3-month ROI to Procurement and Business Units
- First large enterprise to manage multiple MNO profiles in one dashboard.





Transportation





Drones





Fixed Wireless

(security & monitoring)





Consumer Products





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Assumptions relating to Forward-Looking Statements involve judgments with respect to, among other things, future economic, competitive and market conditions and future business decisions, all of which are difficult or impossible to predict accurately and many of which are beyond the Company's control. When used in this presentation, the words "estimate", "believe", "project", "intend", "expect", "may", "will", "should", "anticipate", "plan", "predict", "potential" and other similar expressions are intended to identify Forward-Looking Statements. Although the Company believes that assumptions underlying the Forward-Looking Statements are reasonable, any of the assumptions could prove to be inaccurate and, therefore, there can be no assurance that the results contemplated in the Forward-Looking Statements will be realized.

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Driving the future of vehicle connectivity

30 YEARS

OF TELEMATIC INNOVATION

CONNECTED **VEHICLE SERVICES**



13 MILLION **ACTIVE SUBSCRIBERS**

15+ ACTIVE

OEM PROGRAMS

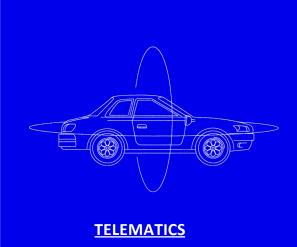
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The modular, end-to-end connected vehicle solution for customized integration at speed

HOLISTIC

EASY INTEGRATION

MODULAR

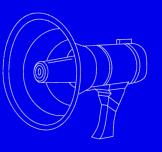








BILLING + SUBSCRIPTION
MANAGEMENT

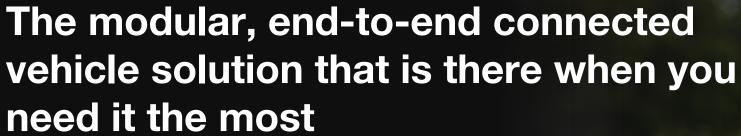


DEDICATED MARKETING
SERVICE

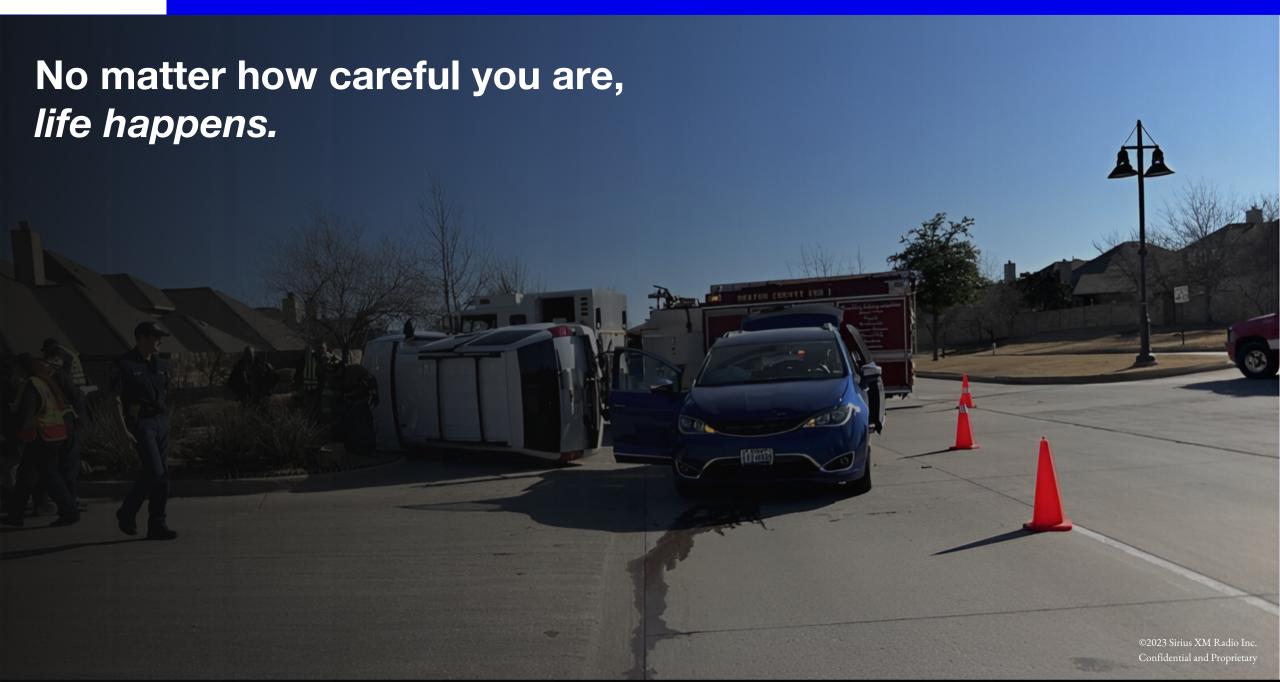
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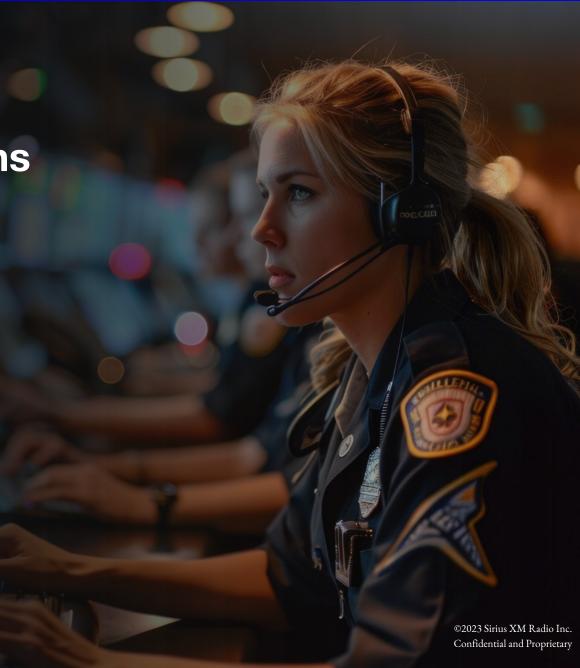
Years of expertise lay the foundation for strong connections that enable life-saving interventions

SiriusXM Connect with RapidSOS provides industry-leading emergency response by sharing critical data with 911 call centers digitally, minimizing the amount of information that must be verbally communicated to first responders.

TIME SAVED, SAVES LIVES.

FOR VEHICLES IN THE FUTURE OR ON THE ROAD TODAY.

> 98% OF POPULATION COVERED IN THE U.S.





Regulatory Framework

Consent in Real Time

Privacy





We are WirelessCar

Enabling safe, smart and sustainable mobility

- A global company with headquartered in Sweden, 760+ colleagues and presence in North America Europe and Asia.
- For 25 years we have turned vehicle data into new insights and innovative services
- A trusted tech partner offering our unique expertise through products and digital services
- 12+ million vehicles served in more than 105 countries





CJ&XM/J









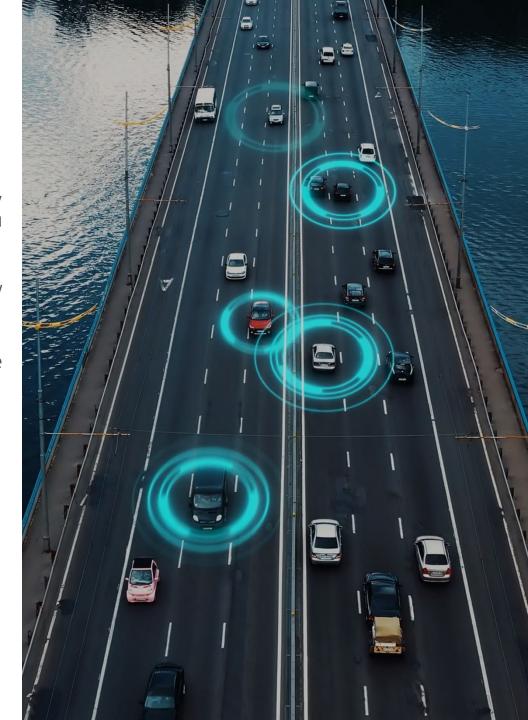




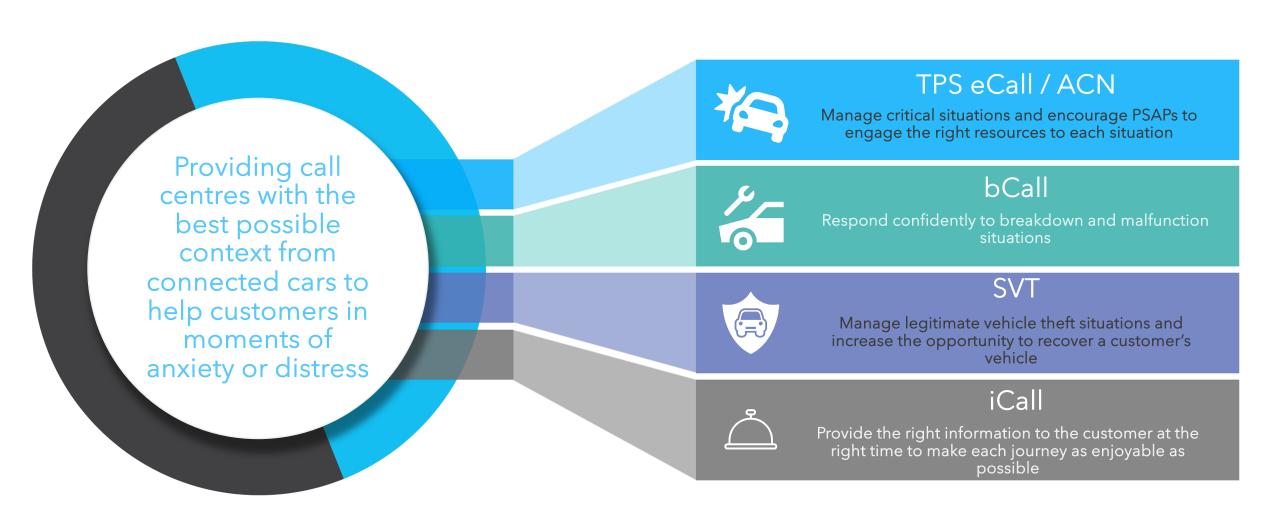








Call Center Services - WirelessCar Mission





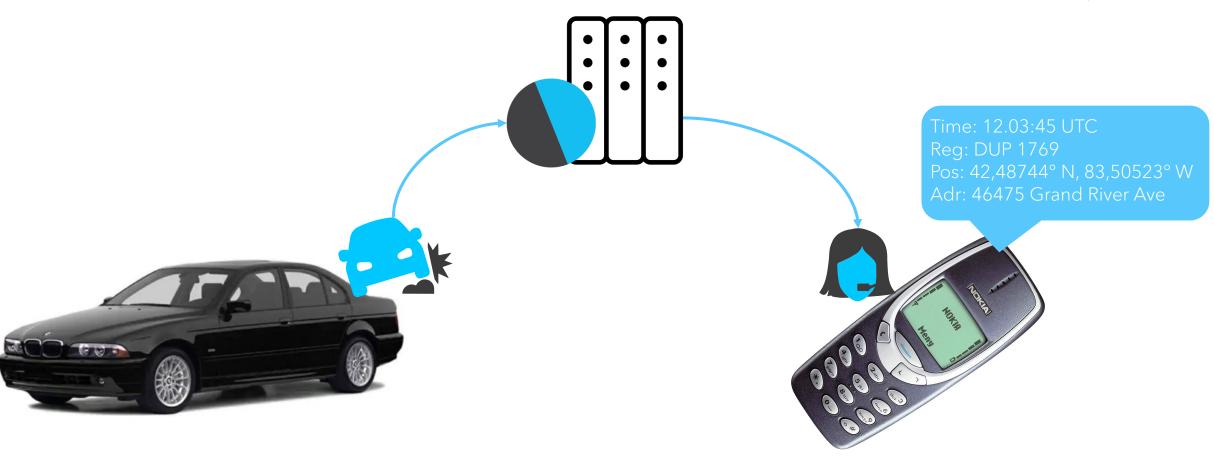
The Mission

Provide the right help, to the correct location, with the right equipment, as quickly as possible.



How Our Journey Started







Improve the Context

The core objective is to save more lives, followed by helping people cope with moments of anxiety and distress.



Information commonly available today:



Precise location of the event



Number of occupants



Are occupants belted



Speed of the collision



Which SRS components were deployed



Vehicle Details



Information sometimes available today:



Language of driver



Which collision system was triggered



Likelihood of injuries



What is not fully achieved today:



Clear executive summary of the collision

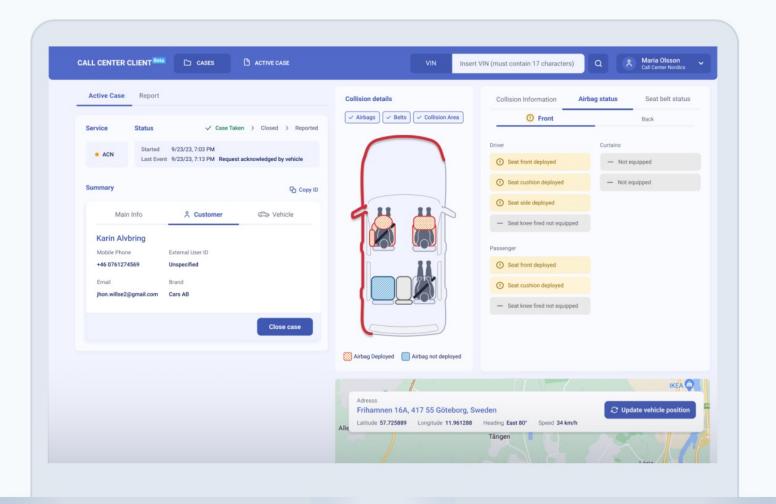


Make the data and context easily sharable



Evidence of the credibility of the data





The content of this image has been simulated. No real data was used.



The Value Chain











PSAP







Give information that matters for PSAPs to provide better help, to the correct location, with the right equipment, faster than today.







RapidSOS Overview

Intelligent Safety for Connected Vehicles





Your unique end-to-end solution

Delivering critical data at every stage of the emergency response process

540M+

Devices connected

RapidSOS works with industry leaders to deliver critical data in emergencies.

99%

Population coverage

RapidSOS is the trusted data provider for over 5,700 ECCs nationwide.

21,000+

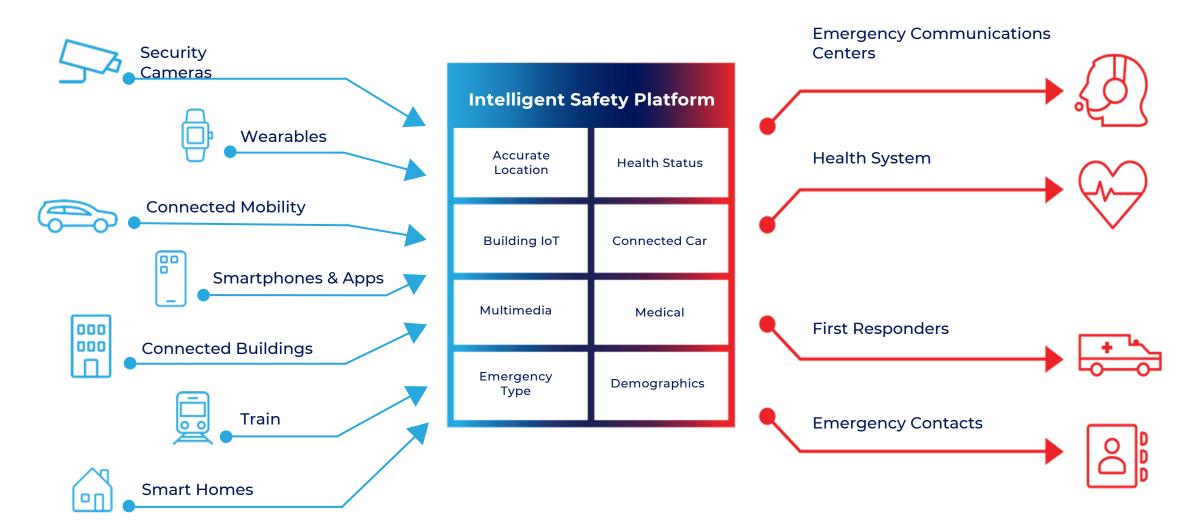
First Responder agencies

RapidSOS puts data directly into the hands of 1M+ field responders. 171M+

Emergencies annually

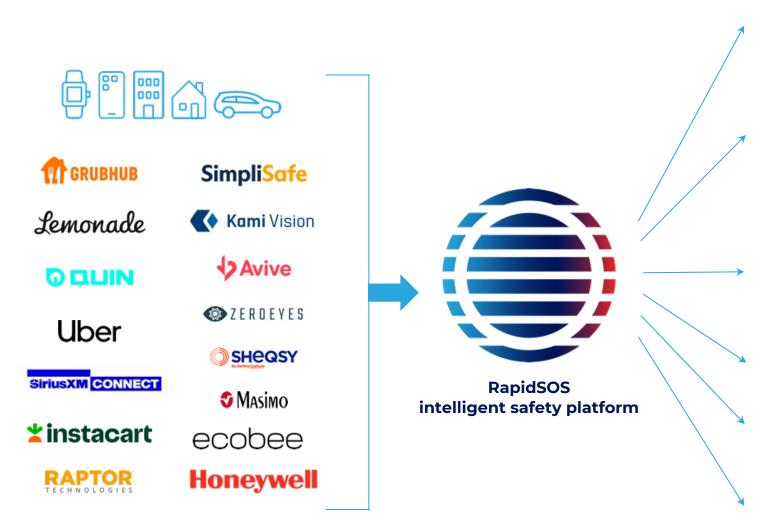
RapidSOS supports critical emergency operations in millions of times each year.

RapidSOS: Integrated 911 Data into a Unified Platform for First Responders



Public Safety's Most Connected Platform

Delivering data to 911's existing workflows





How Data Delivery works with RapidSOS



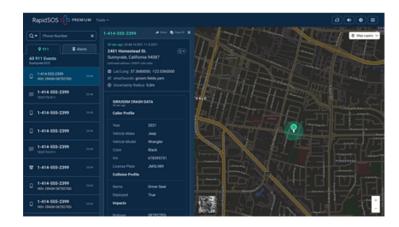
1. An accident is detected by an ACN+ enabled vehicle



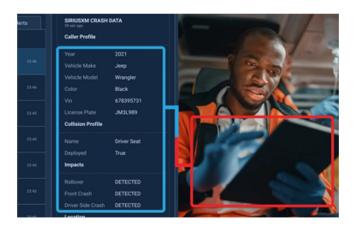
2. SiriusXM receives crash notification and incident data from ACN+



3. SiriusXM Emergency Response Specialist escalates to 911 digitally through RapidSOS



4. The data is immediately shared with the Emergency Communications Center through RapidSOS



5. First responders have more incident intelligence and can arrive on scene better informed

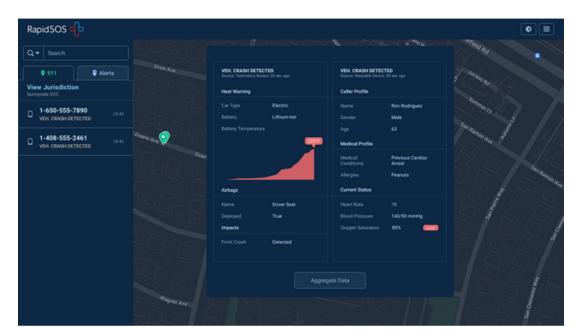
Curated supplemental data = faster and better informed response

Data source	Data type	Importance
Vehicle	VIN, Make, Model, OEM, Year, Color	First Responders can quickly ID the vehicle
Location	Latitude, Longitude, Timestamp, Uncertainty, Bearing	Faster response with accurate location and vehicle direction (i.e which side of the interstate)
Seat & airbags	Seats (Row, Side, Occupancy, Belt) Airbags (Name/location, Deployed)	Help determine the amount of possible ambulances based on vehicles occupancy
Impact type	Rollover, Front Crash, Driver Side Crash, Passenger Side Crash, Rear Crash, Side Crash, Any Impact, Severity	Where on the vehicle the crash was detected and determine what equipment is needed to triage the emergency (i/e jaws of life for a rollover)
Speed	Speed Value, Speed Unit, Delta V	Better to understand the potential impact and severity of a crash
Contact	Owner Name, Phone Number	ID the potential person in the vehicle based on owner

Introducing our AI: RapidSOS HARMONY

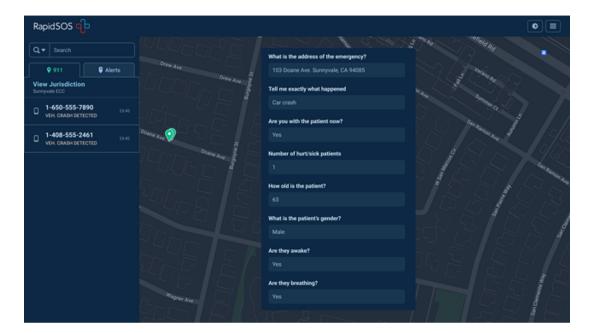
HARMONY is RapidSOS' underlying AI that simplifies the processing of emergency data for busy public-safety teams by making complex emergency data actionable.

Synthesizing Data with HARMONY



A car crash has trigger two signals – one from a telematics sensor and one from a wearable device.

Each has a piece of the puzzle to understand what happened.



HARMONY is able to decipher those data points in real-time while your team speaks to the driver, escalating both fire and EMS response.

RapidSOS difference: the end-to-end safety operating system

540M+ device, apps, sensors













ecobee

















Honeywell





SKYBELL













24/7 **RapidSOS Safety Agents**



RapidSOS Safety Portal





5.700+ 911 centers



UNITE





Integrations

1,000,000+ first responders

















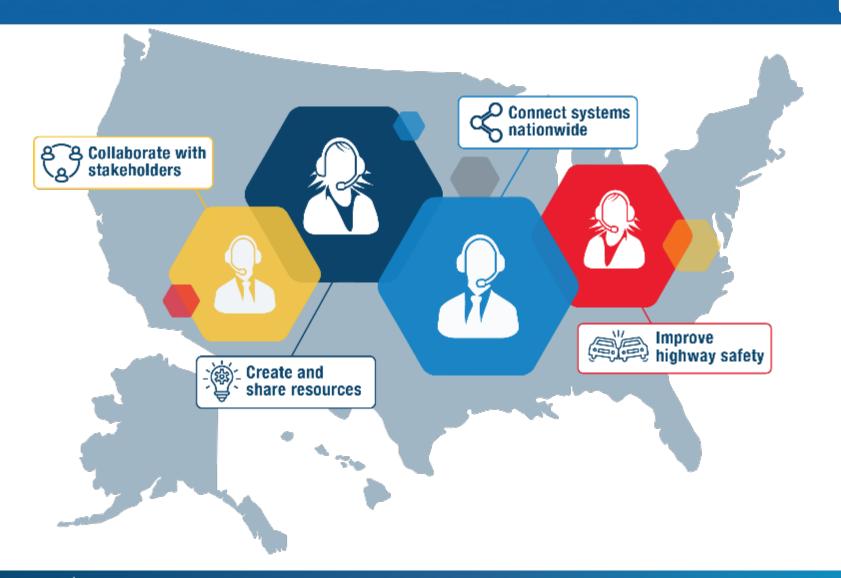
Thank you





ADVANCING 911 ACROSS THE NATION

911.gov





DRIVING I-95 – MAINE TO FLORIDA

911.gov



The country's longest northsouth interstate: 1924 miles



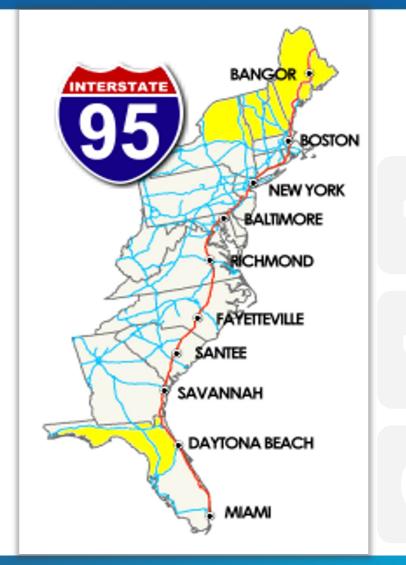
15 states & Washington, DC



199 (approx.) 911 jurisdictions



Fatalities in 2020: 379 (or 19.7 fatalities per 100 miles)



NATIONAL ROADWAY SAFETY STRATEGY: The Safe System Approach

911.gov

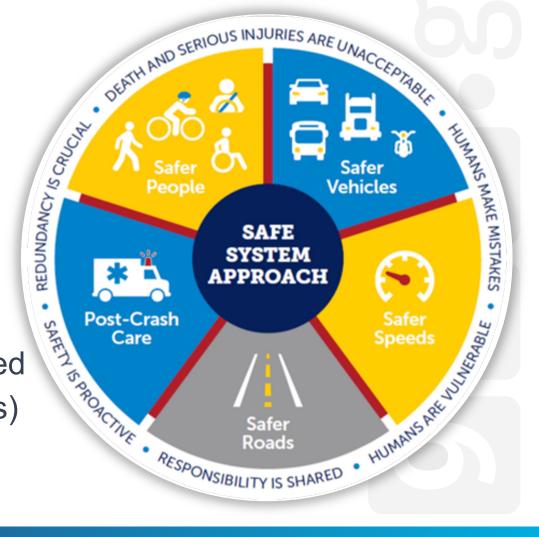
911's Role in All Five Elements

Safer People

Risky behavior reported to 911 (DUI, reckless/distracted driving)

Safer Roads

Unsafe conditions are reported to 911 (debris, lights, hazards)



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Safer Speeds

Safer Vehicles

Post-Crash Care

911 Center's are an integral part of the enforcement of speed and traffic laws by dispatching and recording law enforcement actions

Advanced Automatic Crash Notifications (AACN) systems connect 911 center's and transmit critical data through telemetry

Post-crash care begins with a call to 911.

Telecommunicators must work with the caller to identify the location, nature and severity of the crash and dispatch help



Roundtable discussion

MODERATORS

PANELISTS



RAVI PUVVALA

CENTER FOR
AUTOMOTIVE RESEARCH



TIM VANGOETHEM
EMERGENCY SAFETY SOLUTIONS
COVESA



SCOTT CRAIG
SBC ADVISORS



JON BOEING CONEKT.AI



STEVE COKER SXM CONNECTED VEHICLE



MARTIN LUNDH WIRELESS CAR



DAVE SEHNERTRAPIDSOS



BRIAN TEGTMEYER
NHTSA