

# *CRACKING THE CODE:*

## *Connecting cars to insurance*



*Michael Uchiyama: Senior Director, Product Development*  
*Ryan Lockwood: Director, Insurance Data Products*



Toyota  
Insurance

connected  
analytic  
services

*Mission:*

*To improve the Toyota ownership  
experience by improving the  
insurance experience*



**Buy a Toyota!**



**Opt-in to share data**



**Use Toyota Insurance agency services**



**Use your driving data at quote to save time and money**



**Rent the latest model Toyota**

# Empowering the Toyota Ecosystem Through Insurance



**Referral to Toyota Certified Collision Center**  
(Like-new repair with OEM parts)



**Use your driving data to streamline your claim.**



**Ongoing coaching (stay safe and save money!)**



**Roadside Assistance**

# CAS Data – At a Glance

**12,364,122**

*Active Connected Vehicles*

**5,262,875**

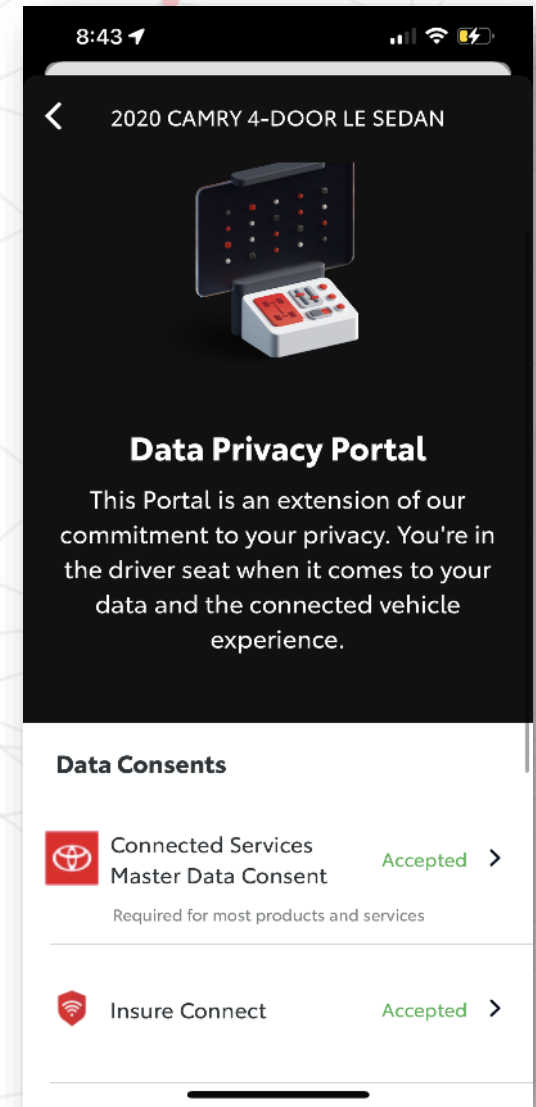
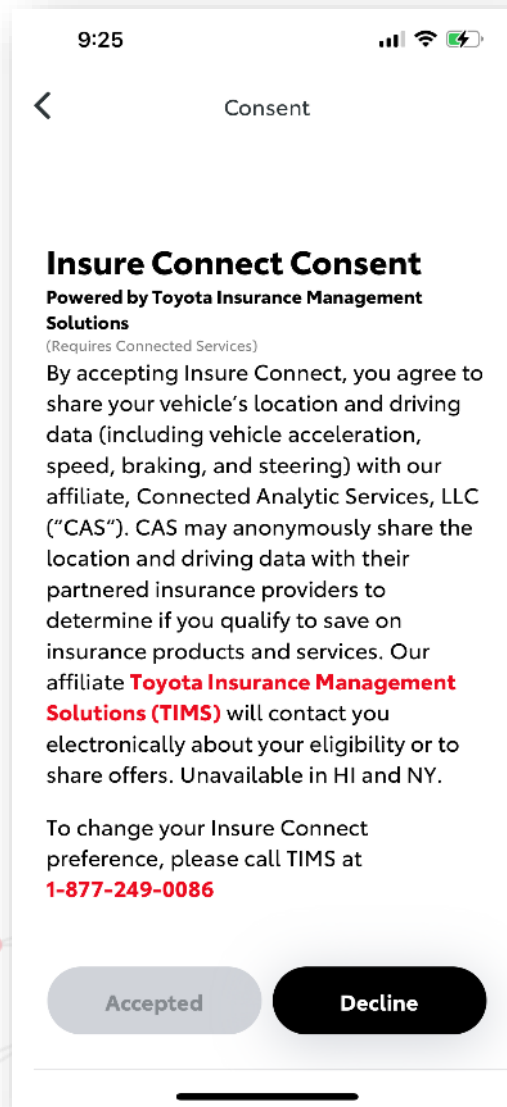
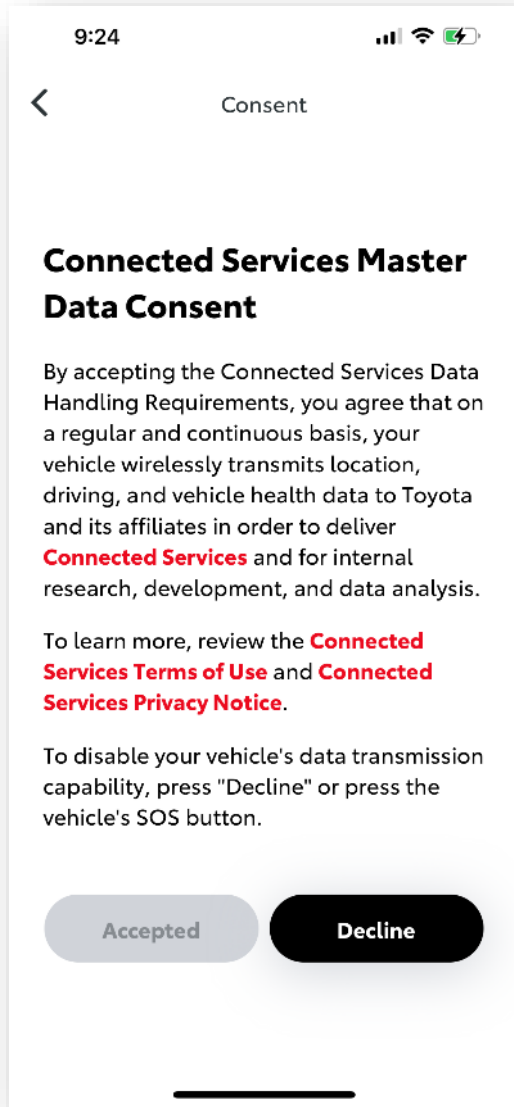
*Opted in to Insure Connect*

**1,000,000+**

*Data Transactions in 2025*



# Opting-in Through Toyota/Lexus Mobile App



## Snapshot may lower your rate immediately!<sup>†</sup>

Get a personalized rate based on your driving habits.

[+ How it works](#)

### Use my existing driving data

2023 Toyota Rav4\*

Yes, please

No, thanks

**Continue**

<sup>†</sup>Your rate could increase based on your existing driving data, but only about 2 out of 10 drivers actually get an increase.

Terms & Conditions: [Plug-in device](#) | [Privacy Statement](#) | [Snapshot FAQs](#)



Emergency Braking

Precise GPS

Accelerometer

Cruise Control

Forward Camera

Headlight Sensor

Wiper Sensor

Turn Signal Sensor

Airbag Sensor

Door & Window Sensors

Fuel Sensor

Brake & Accel Pedals

Seat Belt Sensors

Auto  
Emergency  
Braking

Hood Sensor

Wheel & Tire Sensors

Driver Monitoring

Shift Position

ABS Sensor

Lane Keeping Assist

# *DEMO: Data-at-Quote*



# Customer Experience: Step 1 – Input Address

**ACME**  
INSURANCE

## Lets Get Started!

---

### Address

If you are moving, enter your future address

Address

Apt/Unit #

City

ZIP Code

Do you currently live here?

Yes  No

SAVE & CONTINUE

# Step 2 – Input Personal Information

ACME  
INSURANCE

## Tell Us About Yourself

First Name

Last Name

Date of Birth

Your date of birth is used to verify current insurance and consumer information

MM	▼	DD	YYYY
----	---	----	------

Email Address

To make things easier we'll use third-party information to answer some vehicle and driver questions for you along the way. [Opt out.](#)

By continuing, you acknowledge you've reviewed our [information disclosure](#).

SAVE & CONTINUE

# Step 3 – List of vehicles housed at address returned

ACME  
INSURANCE

## Thanks (Name). **Next, Tell Us About Your Vehicle(s)**

To save you time, we have looked up the vehicles associated with the address you provided. [How did you find my vehicle\(s\)?](#)

### Choose the vehicles you would like to include in your quote

Any checked vehicles will be included

- 2020 TOYOTA CAMRY
- 2017 FORD EXPEDITION
- 2014 ACURA MDX
- 2008 TOYOTA CAMRY SOLA

### Would you like to add more vehicles?

Yes  No

SAVE & CONTINUE

# Step 4 – API Call #1 (CAS verifies VIN, Ownership and Data availability)

Demo Only

## Processing – VIN Validation API

(Backend process not shown to customer)

### Input

**First Name:** Ryan  
**Last Name:** Lockwood  
**Email:** lockwoodr@gmail.com  
**Phone:**  
**Zip:** 75087  
**VIN:** JTMY1RFV0LD042639

### Output

**casID:** f539160f-60b1-4d35-9acd-d75c87024638  
**isdcmEquip:** yes  
**isUBIOptIn:** yes  
**PII Match:** Yes  
**isTelDataAvailable:** yes  
**VIN:** JTMY1RFV0LD042639

CONTINUE

# Step 4 – API Call #1 (CAS verifies VIN, Ownership and Data availability)

Demo Only

## VIN Validation API

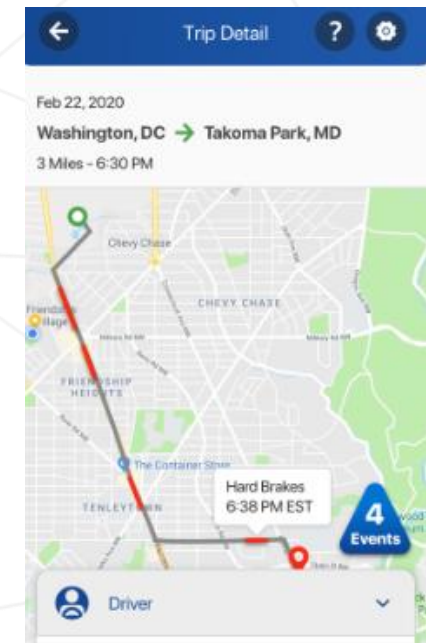
customer)

Output

**casID:** f539160f-60b1-4d35-9acd-d75c87024638  
**isdcmEquip:** yes  
**isUBIOptIn:** yes  
**PII Match:** Yes  
**isTelDataAvailable:** no  
**VIN:** JTMY1RFV0LD042639

**CONTINUE**

Potential to opt-in for ongoing monitoring



# Step 5 – Option to share driving data

## Good News!

The driving data from your connected vehicle may qualify you for a discount on auto insurance.

### Use my driving data:

2025 Toyota RAV4 LIMITED FWD SUV

Yes  No

*By clicking "CONTINUE" below, you authorize and direct Toyota (and its affiliates) to share your contact information, VIN, and certain vehicle driving data with [Insurance Carrier] in order to determine if you qualify for savings on insurance products and services. To find out more information regarding the sharing and how your information will be used, please review the [Authorization to Share Information](#).*

PREVIOUS

CONTINUE

## Authorization to Share

Connected Analytic Services, LLC (CAS), is a Toyota affiliated consumer reporting agency that works with auto insurance companies to make the insurance process easier for customers and to help customers secure better insurance offers.

You have been identified as a potential candidate for personalized auto insurance. With your authorization, your name, address, email address, Vehicle Identification Number (VIN) and a portion of your recent Driving Data (as described below) will be shared with (INSURANCE CARRIER) and its affiliates (INSURANCE CARRIER). (INSURANCE CARRIER) is not affiliated with Toyota or CAS, and (INSURANCE CARRIER) will use this information to offer you quotes for auto insurance. In calculating a quote, (INSURANCE CARRIER) may combine this with other information available to them, including credit information and your driving record.

The Driving Data will contain information for the most recent 120 days of your Toyota vehicle's driving history, such as the date, time and distance traveled for every distinct trip taken, as well as braking and acceleration events that exceed defined thresholds. Driving Data also includes vehicle speed and steering data.

With your authorization to share this information with (INSURANCE CARRIER), CAS will transmit the Driving Data to (INSURANCE CARRIER) on your behalf. At any time, you can revoke future sharing of your Driving Data for such purposes on the Toyota Owners website at [www.toyota.com/owners/](http://www.toyota.com/owners/).

Choosing not to share your Driving Data with (INSURANCE CARRIER) does not opt you out of other general marketing from Toyota or its affiliated entities.

By directing us to share your information with (INSURANCE CARRIER) as described in this Authorization to Share Information, you agree to these terms and CAS's [Privacy Policy](#), and you acknowledge that any such information received by (INSURANCE CARRIER) will be subject to their own privacy policies.

CLOSE

# Step 6: API #2 (CAS records consent and returns data)

## Processing - **Data Transfer API**

(Backend process not shown to customer)

### Input

**cas\_id:** 7651618b-709a-425c-9a06-bc2ff7e0c7f7  
**VIN:** JTMY1RFV0LD042639

### Output

**Acceleration #:** 1  
**Hard Break #:** 1  
**Total Trips:** 23  
**Total Miles:** 1100  
**CAS Score:** 85  
**cas\_id:** 7651618b-709a-425c-9a06-bc2ff7e0c7f7  
**event\_file:** [link](#)  
**trip\_file:** [link](#)  
**VIN:** JTMY1RFV0LD042639

CONTINUE

# *DEMO: Claims*







Wiper Status

Pre-Collision System Activation

Airbag Deployment

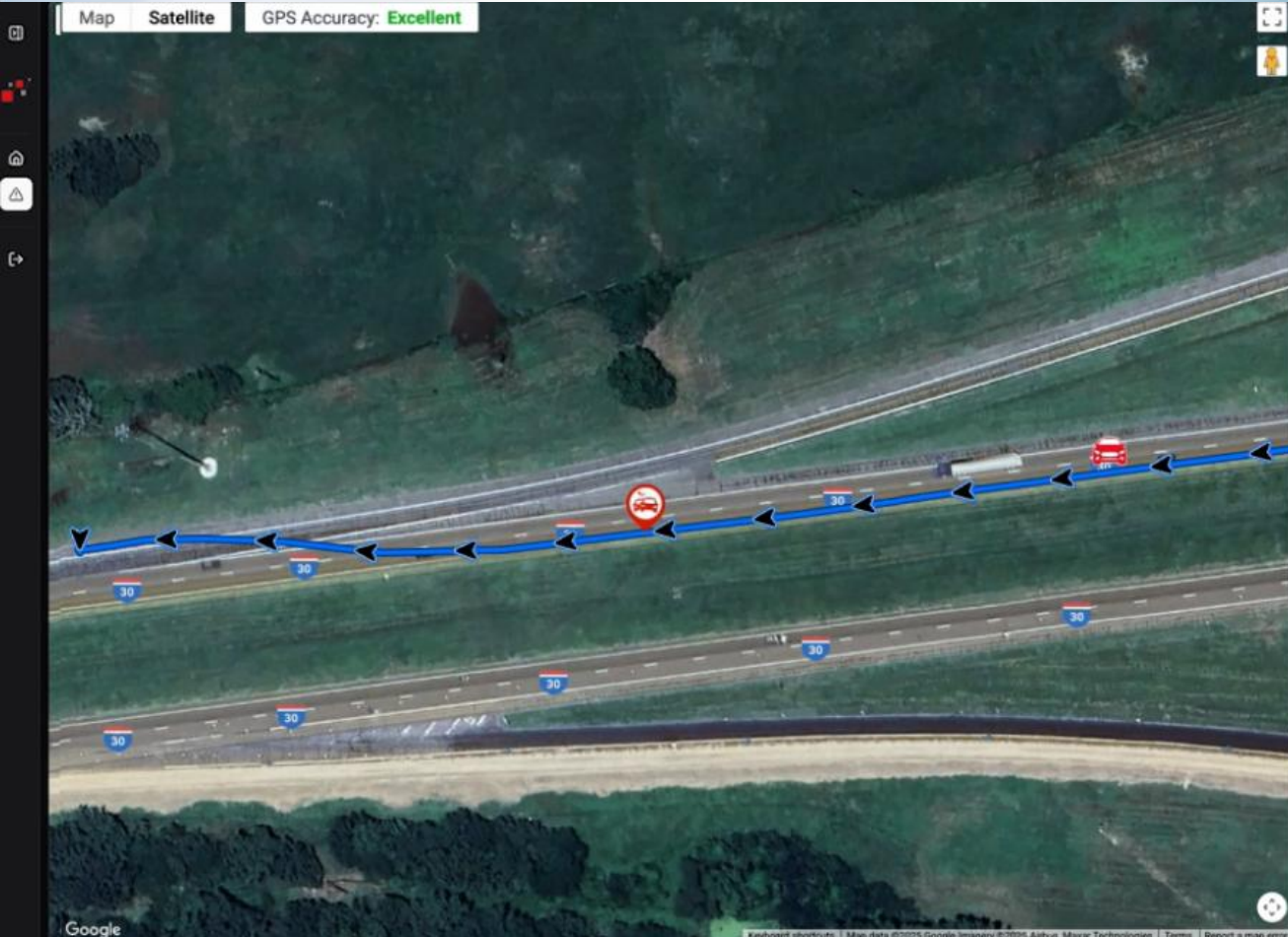
Turn Signal Status

Lane Departure Warning

ADAS System Activation

Seatbelt Status

Door Open/Close Status



P  
R  
N  
D  
B

0% Brake

86.2 mph

-1.5°

16% Acceleration

This dashboard displays real-time vehicle data. On the left, a gear selector shows 'D' (Drive) is selected. A brake indicator shows 0% brake. The speedometer shows 86.2 mph. The steering wheel icon indicates a steering angle of -1.5 degrees. An acceleration indicator shows 16% acceleration. Various vehicle status icons like ABS, ESP, and battery level are also visible.



# 3 Days

Average Reduction in  
Claims Cycle Time  
– Across Connected Vehicle Claims

# Next Day

Point of Impact. Severity.  
Occupancy. Pre-Collision Data.  
Delivered Automatically.

# Every Claim

Connected Vehicle Data  
Economically Viable at Scale –  
Not Just High-Severity Events



## Accelerated Subrogation

Objective data establishes third-party liability faster, driving earlier recovery.



## Early Severity Triage

Impact severity and occupancy data help identify high-exposure claims within hours, not weeks



## Litigation Defense

Accident reconstruction from the perspective of the vehicle to strengthen litigation posture.



## A Fraction of the Cost

Connected vehicle data delivered remotely and within minutes – at a fraction of the traditional black box retrieval expense, with more data and zero coordination overhead.



**Connected Intelligence. At the Moment of Truth.**

# 2018 TOYOTA CAMRY

- GPS
- Speed
- DOP
- Timezone
- Odometer (ODO)
- ABS
- TRC
- VSC
- Accelerometer



**16** Data Attributes @ **1 Hz**

# 2026 TOYOTA RAV4

- GPS
- Speed
- DOP
- Timezone
- Odometer (ODO)
- ABS
- TRC
- Accelerometer
- Wheel Speed
- Seat Occupancy
- Seatbelt Status
- Automatic Emergency Braking
- Lane Keep Assist
- Turise Sentrl
- Heuse Control
- Wipers Wesor
- Hood
- Door & Window Sensors



**64** Data Attributes @ up to **10 Hz**

2018  
2026



**4x**  
MORE  
DATA  
ATTRIBUTES

UP TO  
**10x**  
HIGHER  
FREQUENCY

# Hardware Comparison: Smartphone vs Connected Car



## Smartphone GPS

Compact, Space-Constrained Design

- ✓ **Very Compact, Integrated Hardware**
- ✓ **Small Internal Antenna**  
Optimized for Size & Power
- ✓ **More Sensitive to Conditions**  
Placement, Obstruction, & Heat
- ✓ **Good for Everyday Navigation**  
Consistency Can Vary in Driving

**Small Internal Antenna**  
Limited Size & More Affected by Placement



GPS/  
GNSS  
Chip



**Heat Impact**  
High Temperatures  
Can Affect  
Performance



## Connected Car GPS

Purpose-Built for Performance & Reliability

- ✓ **Larger, Purpose-Built Hardware**
- ✓ **Dedicated External Antenna**  
Better Sky View, Stronger Signal
- ✓ **Sensor-Assisted Positioning**  
GPS + Vehicle Sensors for Stability
- ✓ **Automotive-Grade Design**  
Built for Harsh Conditions & High Temperatures

**External Antenna**  
Unobstructed View  
for Stronger Signal

**Thermal Design**  
Automotive-Grade  
Components for  
Heat Reliability

**GNSS Module**  
Built for Wide Temp Range,  
Vibration & Longevity



**iPhone GPS Antenna**



**Connected Car GPS Antenna**

# CONNECTED CAR DATA

PRECISE • STABLE • CENTER-LANE ACCURATE

GPS PLOT POINTS  
PERFECT LANE  
CENTERING



# MOBILE DEVICE DATA

BOUNCING • INCONSISTENT • APPARENT "TELEPORTS"

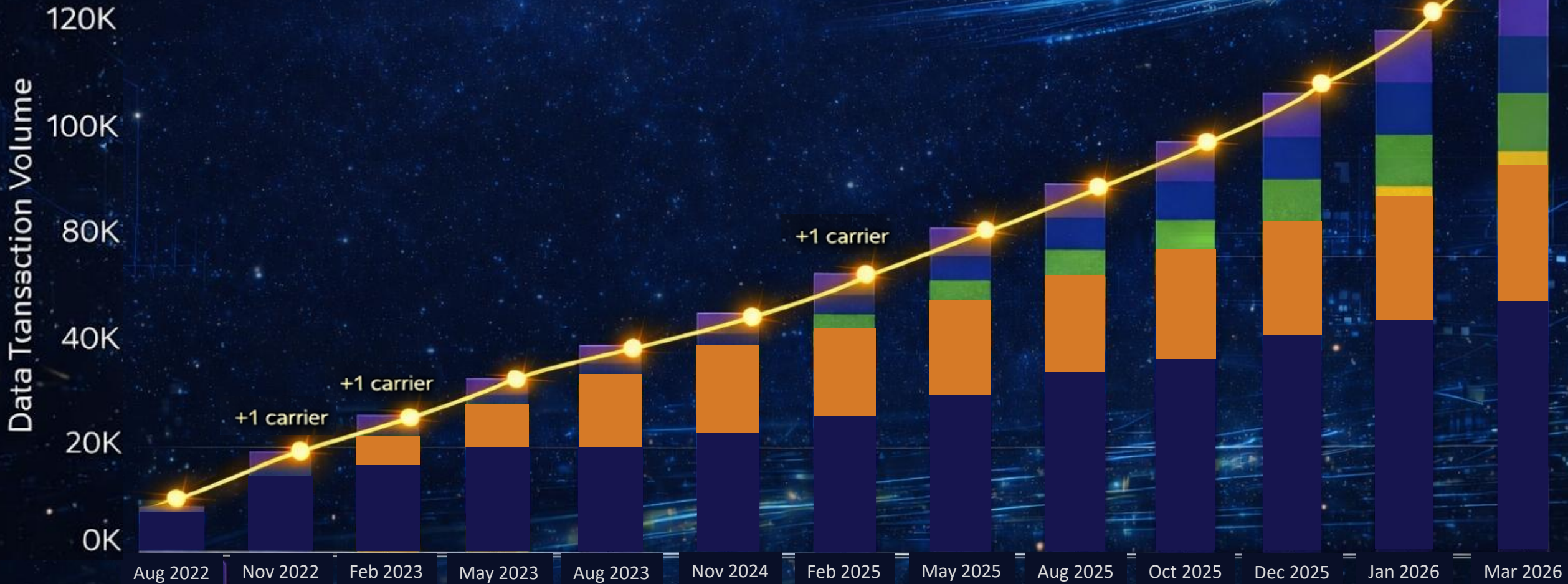


CAN APPEAR AS 100+ MPH JUMPS  
(FALSE SPEED SPIKES)

POINTS ON  
SIDE STREET  
APPARENT  
"TELEPORTS"

# Transaction Volume is Surging as Carrier Adoption Accelerates

Monthly volume increase of 12X from Aug '22 to Mar '26 while active carrier count grew from 2 to 6 of the Top 10.





Toyota  
Insurance

**Thank You.  
Let's Go Places!**

