

codaxy

comm8
Innovate Communicate Integrate

TURBO TRACK

DEVELOPMENT OF THE FLEET MANAGEMENT PLATFORM

case study



CxJS

the enterprise framework



Moving in the right direction

Shifting from a startup to a fully established business usually requires taking bold decisions. Sometimes to develop a second-generation application a replacement of every single layer of the software solution is needed and making such changes is no easy task. This is why finding the appropriate technology and a skilled team of developers, is the right move to make.



“After finishing our first project with CxJS, I cannot imagine using anything else for our next project. CxJS makes perfect sense.”—

Ray Barnes, Technical Director, Wireless Innovation

Project Highlights:



Challenge

Legacy technologies
Code inefficiencies
Real-time data
Critical performance



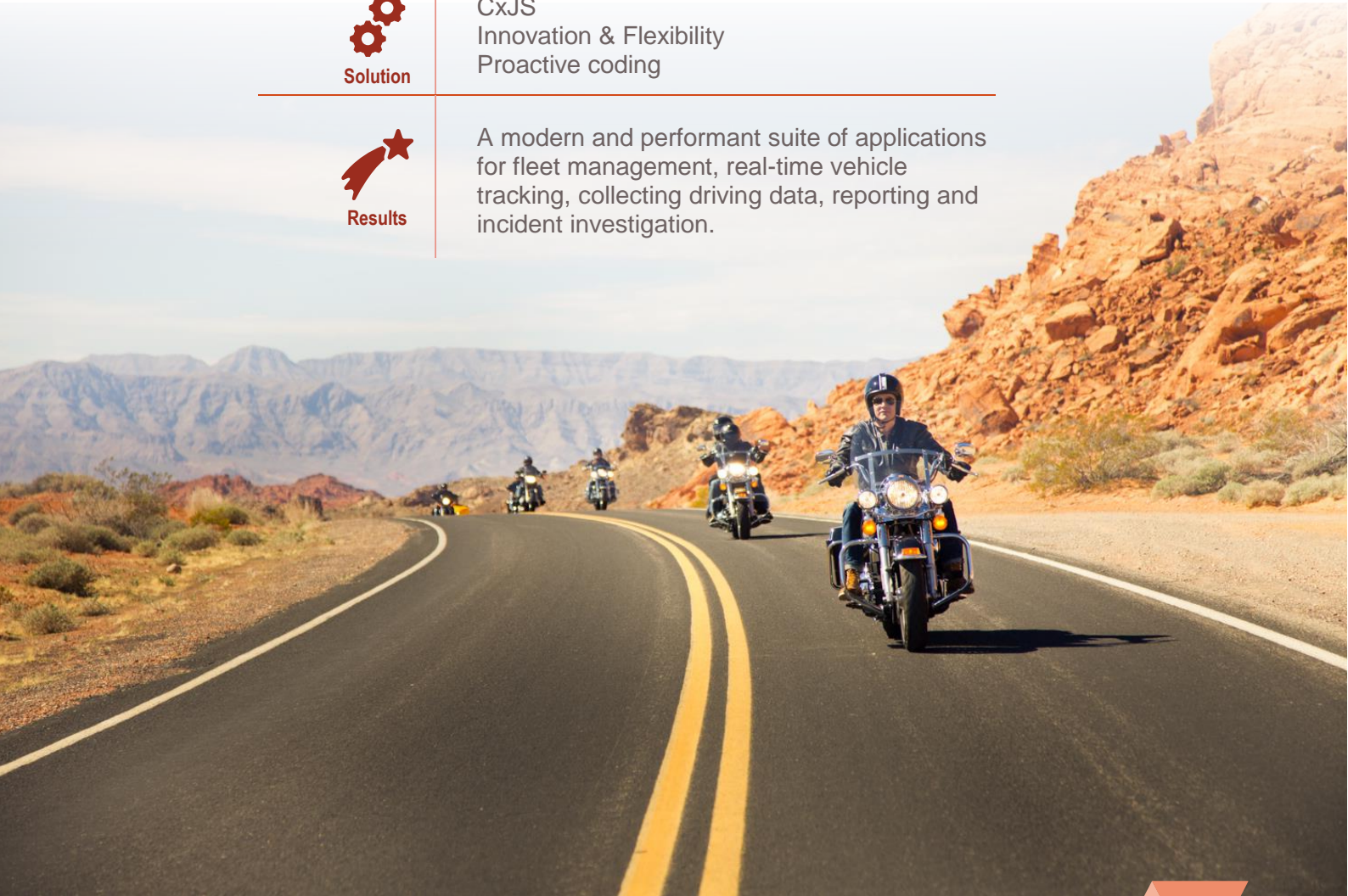
Solution

CxJS
Innovation & Flexibility
Proactive coding



Results

A modern and performant suite of applications for fleet management, real-time vehicle tracking, collecting driving data, reporting and incident investigation.





About the Client

Comm8, formerly known as Combined Communications Solutions, are considered specialists in the Radio Communications and GPS Tracking Industry.

They are a leading Australian supplier of the two – way radio networks and products. With many years of combined experience in sales, system design, installation, training, and maintenance offering turnkey solutions to customer expectations.

In March of 2017, Comm8 joined the CSE Global (Australia) group of companies (under CSE Crosscom Pty Ltd) through a business acquisition.

CSE have established themselves as one of the world's largest systems integrators specializing in automation, power, and telecommunications.

For more information please visit

<http://combinedcom.com.au>

Our opinion

Having Comm8 as a client is a privilege.

They are flexible, thinking outside the box, and striving for success.

We certainly look forward to working with them in the future.





The Challenge

Having technologies that are outdated along with code being written inefficiently usually means two things. First being that you will experience stressful and challenging maintenance issues and second that there will be very little room to introduce new features when meeting with prospective customers. Both of these are obstacles to the desired and effective business development.

One of the specifics of fleet management platform software to consider was that we would be working with large amounts of data. Furthermore, data collection and processing would be real-time, making the performance of each component crucial.

The next challenge that was brought to our attention was availability and scalability. The architecture of the software must scale well and proactively address its availability.

In addition to that, another important thing to consider are the end-users. They are entitled to a fast, intuitive interface for information access as well as a functional console for the administration of their accounts. Offering a simple webpage was not enough.

This was the situation our client found themselves in before they decided to initiate a significant change in a software solution that they were using at the time.

The Solution

Comm8, as well as some of their partner companies, had a previous collaboration with Codaxy. We have already established a relationship with them, and we were a proven software provider for our clients. Also, we took this opportunity to introduce the CxJS framework which turned out to be a perfect fit for the project.

“We chose Codaxy because they were already pioneering technology that addressed our specific challenge.”-

Ray Barnes, Technical Director, Wireless Innovation

CxJS is a premium tool for web application development featuring a broad set of UI elements such as forms, tables, and charts. CxJS enables developers to quickly build and easily maintain data-intensive, enterprise web applications for desktop and mobile devices.

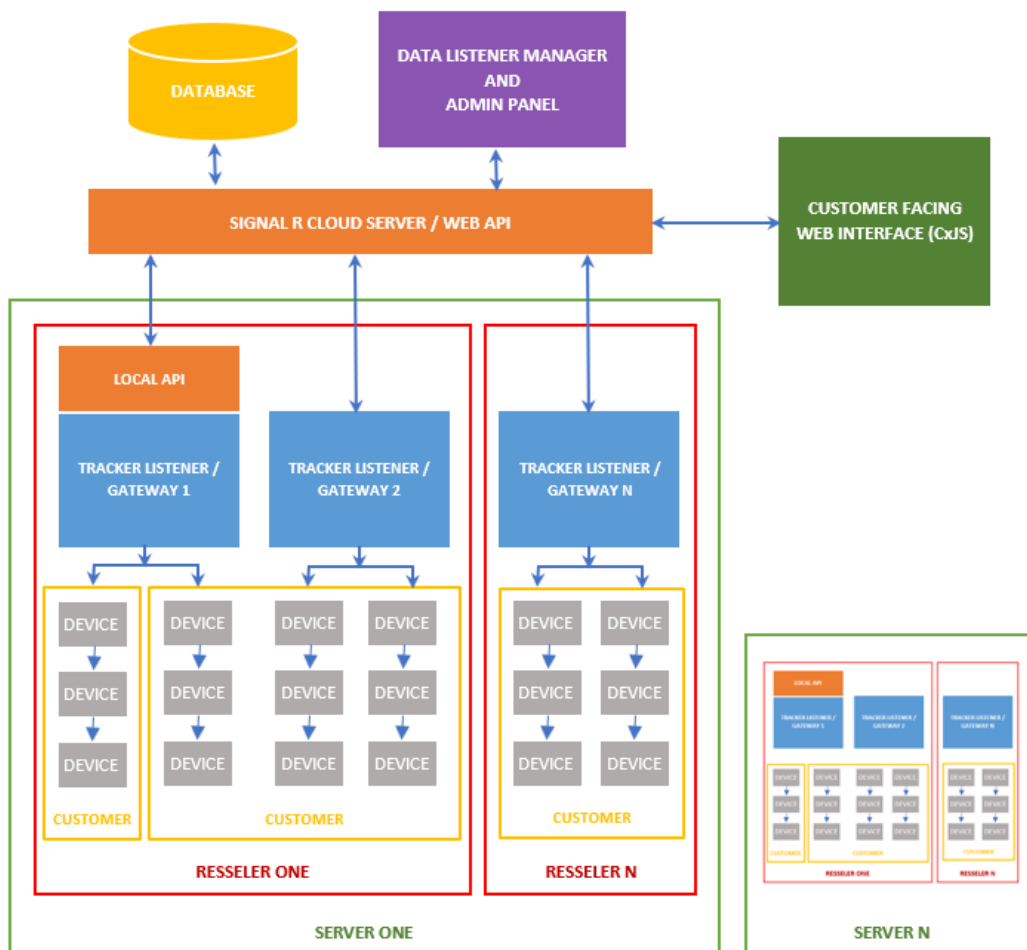
CxJS is designed for developers by developers. CxJS framework takes care of common development complications thus allowing programmers to stay focused and creative.



At the very beginning of our engagement, we realized that we needed to develop additional CxJS module to fulfill the obligations of this project – support for Google Maps integration. We quickly addressed this issue by developing a [Cx Google Maps](#) library which enabled Google Maps components to connect to CxJS stores and controllers.

Development of a fleet management software platform was a large and a very challenging project. It required outstanding organization, flexibility, and thinking ahead to be prepared for all the challenges on the project.

The software solution was in need of redevelopment, and in order to give it a new and improved architecture, we went to the drawing board and started from scratch. An architectural diagram for the solution is presented in the simplified diagram shown below.



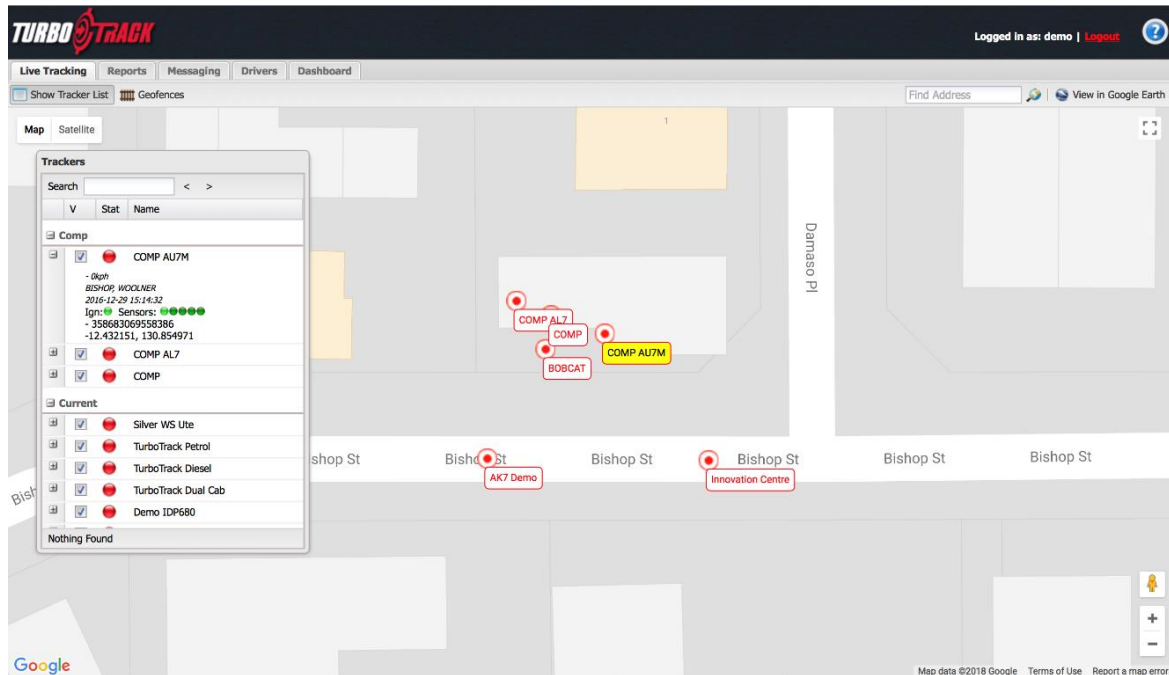
It is also noteworthy to mention that during the project, which lasted for almost two years, the project scope changed frequently. Additional work was done in the backend code for another solution's server and customer sides. These improvements were aimed at reducing repetitive development work and enabling further scalability.



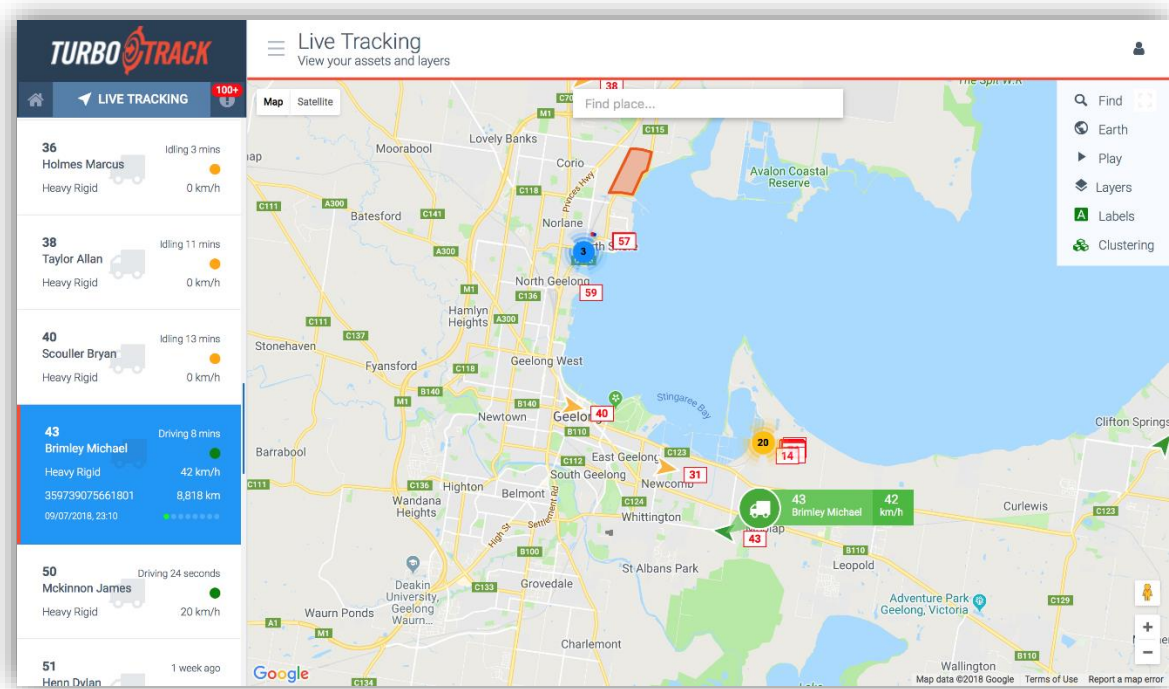
Screenshots

We have provided screenshots which illustrate the look and features of the final version of the product. Since the project involved reviewing the legacy system, we are also presenting a couple of “before and after” examples.

Live Tracking – old application



Live Tracking – new application





Reporting – old application

TURBO TRACK Logged in as: demo | Logout ?

Live Tracking Reports Messaging Drivers Dashboard

Report Options

Report: Detailed From Date: 09/07/2016 To Date: 09/07/2016
 Tracker: TurboTrack Diesel From Time: 06:00 To Time: 18:00

Send

Export to the selected format Export

Detailed Report

DETAILED DATA FOR UNIT TurboTrack Diesel FROM 9/07/2016 6:00:00 AM TO 9/07/2016 6:00:00 PM
 Printed For: CCS Printed By: demo Printed On: 10/07/2018 7:23:10 AM

DATE	SPEED	LOCATION	IGNITION	DRIVER	GPS QUALITY	EVENT	DISTANCE	ODOMETER
9/07/2016 7:57:13 AM	0	LANYON, MOIL	True		0.8	IgnitionOn	0	21793.1
9/07/2016 7:57:40 AM	0	LANYON, MOIL	True		0.8	SeatBeltOn	0.01	21793.1
9/07/2016 7:58:13 AM	30	LANYON, MOIL	True		0.8	Normal	0.09	21793.2
9/07/2016 7:59:13 AM	54	ROTHDALE, MOIL	True		0.8	Normal	0.62	21793.9
9/07/2016 8:00:13 AM	58	HENRY WRIGLEY,	True		1	Normal	1.56	21794.8
9/07/2016 8:01:13 AM	0	HENRY WRIGLEY, EATON	True		1	Normal	2.1	21795.5
9/07/2016 8:01:42 AM	3	HENRY WRIGLEY, EATON	True		0.9	SeatBeltOff	2.12	21795.5
9/07/2016 8:02:13 AM	0	HENRY WRIGLEY, EATON	True		0.9	Normal	2.12	21795.5
9/07/2016 8:02:25 AM	0	HENRY WRIGLEY, EATON	False		0.9	IgnitionOff	2.12	21795.5
9/07/2016 8:09:26 AM	0	HENRY WRIGLEY, EATON	True		0.8	IgnitionOn	2.13	21795.5
9/07/2016 8:09:53 AM	17	HENRY WRIGLEY, EATON	True		0.9	SeatBeltOn	2.16	21795.5
9/07/2016 8:10:25 AM	22	SIR NORMAN BREARLEY, EATON	True		0.8	Normal	2.26	21795.7
9/07/2016 8:11:25 AM	57	HENRY WRIGLEY,	True		0.8	Normal	3.13	21796.6

Reporting – new application (replay/time machine reports, driver ratings, etc.)

TURBO TRACK Reporting View, run and schedule reports

REPORTING

Report type: Replay report

From: 09 Jul 2018 00:00 To: 09 Jul 2018 23:45

Time zone: Australia/Darwin

Vehicle: Jade

Simulations excluded (off) Polled states included (on)

RUN NOW SCHEDULE PDF EXCEL

Time	Location	Spd	Reason	Report ID
09/07/2018, 09:22	-12.46031300, 130.84691600	54	Track	2
09/07/2018, 09:23	-12.45973500, 130.84431800	41	Track	2
09/07/2018, 09:24	-12.45559100, 130.83981400	9	Track	2
09/07/2018, 09:24	-12.45569000, 130.83990000	0	Stopped	102
09/07/2018, 09:24	-12.45569000, 130.83990000	0	Engine off	102
09/07/2018, 10:45	-12.45568100, 130.83994800	0	Engine on	101
09/07/2018, 10:46	-12.45596800, 130.83984000	2	Track	102
09/07/2018, 10:46	-12.45601300, 130.83981600	1	Engine on	101
09/07/2018, 10:46	-12.45601300, 130.83981600	1	Driving	101
09/07/2018, 10:46	-12.45603800, 130.83981100	0	Stopped	102

Map Satellite

09/07/2018, 09:24 0 km/h Stopped

09/07/2018, 19:35 77 km/h Track

Map data ©2018 Google Terms of Use Report a map error



Old dashboard

TURBO TRACK Logged in as: demo | Logout ?

Live Tracking | Reports | Messaging | Drivers | **Dashboard**

Unit Management | Edit | Export to Excel

Group	Name	Driver	Registration	Make	Model	Odometer	Locatio	Last R	UnitId	Firmware	E
Comp	COMP	000015BAC793				2564	BIS...	29...	352648062022793	Rev.5.08	06-0
Comp	COMP AL7					0	BIS...	29...	358683066850083	Rev.1.01 Build.1...	06-0
Comp	COMP AU7M					0	BIS...	29...	358683069558386	Rev.5.08	06-0
Current	Demo IDP680			Ford	Ranger	0	GIR...	21...	010243095KY6846	Rev.0.58	21-0
Current	TurboTrack Dual...	0000184E72F2	XNG-144	Toyota	Hilux	324	TR...	19...	352648061988812	Rev.5.08	30-1
Current	TurboTrack Diesel	000017D43149	CA-29-TH	Toyota	Hilux	52745	FLY...	19...	352648065911539	Rev.5.08	30-1
Current	CFMOTO			CF	U800	164	,	03...	352648068613330	Rev.2.00 Build.1...	28-0
Current	TurboTrack Petrol	Sales People	985-312	Toyota	Hilux	9680	MA...	09...	356265021164800	Rev.1.21 Build.01	29-1
Current	Innovation Centre	0000168CBA60	Office	Innovation Centre	Innovation Centre	51488	BIS...	19...	356265021286181	Rev.1.20	29-1
Current	Silver WS Ute	000018052639	985-310	Toyota	Hilux	8733	REI...	19...	356265022049976	Rev.1.21 Build.01	29-1
Current	Jade		CB-63-TV	Ford	Ranger	13837	GIR...	03...	358683068909440	Rev.5.08	13-0
Sales	AX9		AX9			10	50 ...	07...	358683069017524	Rev.1.00 Build.1...	14-0
TEST	AK7 Demo					0	BIS...	11...	352648068611318	Rev.1.08 Build.1...	15-0
Testing	BOBCAT		BOBCAT	BOBCAT	S150	0	BIS...	13...	352648068615368	Rev.2.00 Build.1...	24-1
Testing	BIKE		A1967	HONDA	CBR600RR	1306	MIT...	01...	358683062823233	Rev.1.00 Build.1...	05-1
Workshop	CSE Navara		CA-15-VZ	Nissan	Navara	81135	WO...	02...	352648064534852	Rev.5.07	07-1

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New dashboard (15 widgets showing the overall state of the fleet)

TURBO TRACK Dashboard STATISTICS & OVERVIEW

DASHBOARD CONFIG

- Dashboard
- Live Tracking
- Reporting
- Geofences
- POIs
- Overlays
- Messages
- Drivers
- Vehicles
- Alerts
- My Account
- Sign Out

28 ACTIVE DEVICES

13 Moving
12 Stationary
3 Off

0 EMERGENCIES

DANGEROUS EVENTS

- 0 Harsh Accel.
- 0 Harsh Brakes
- 1 Missed Stops
- 0 Seatbelt Viol.

8 Car DRIVERS BY LICENSE CLASS

0 Light Rigid
0 Medium Rigid

20 Heavy Rigid
13 Heavy Comb
4 Multi Comb

38 DRIVERS TOTAL

13 Free
25 Driving

SPEEDING EVENTS

- 0 Past Hour
- 0 Past Day
- 0 Past Week
- 0 Past Month

35 DEVICES TOTAL

0 Lost
25 Online
10 Offline

0 DRIVERS DUE LICENSE

38 OK
0 Overdue

71% FLEET UTILIZATION

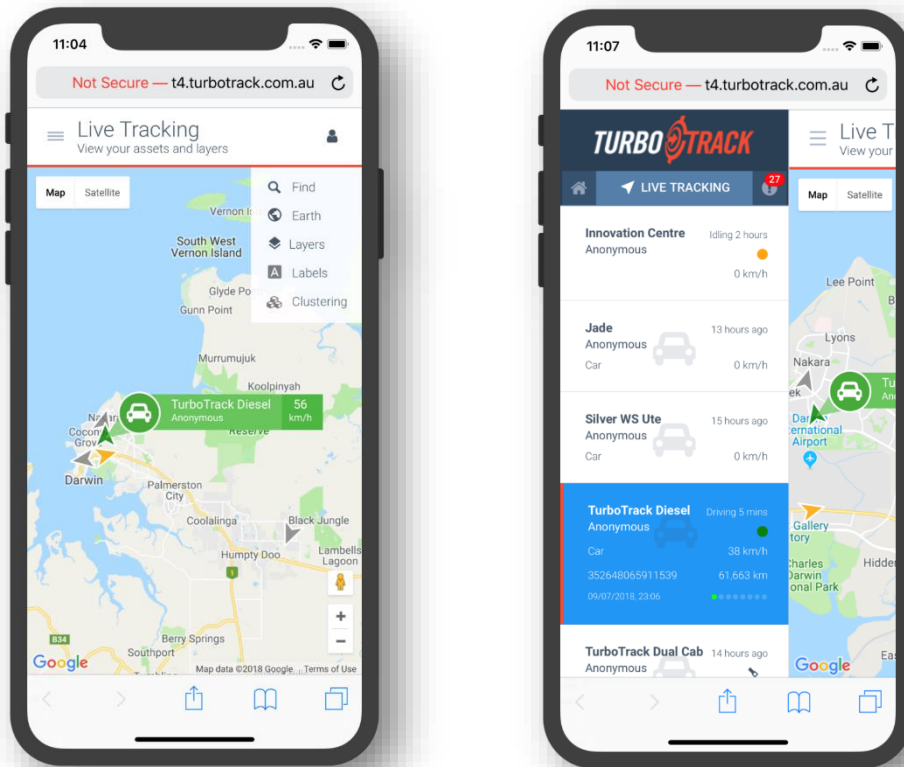
25 Utilized
35 Total

Recent Events speeding, geofences and alerts

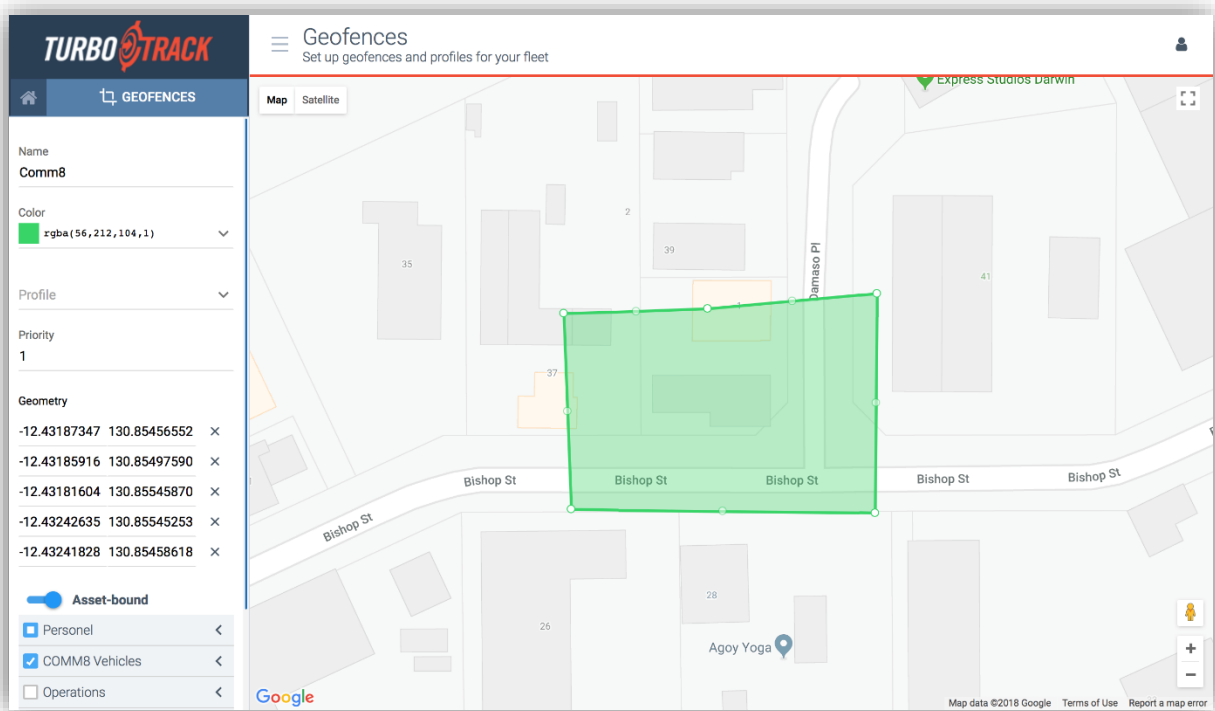
- 36 Exited Moolap Yard 59 seconds ago
- 11 Exited Moolap Yard 4 mins ago



Mobile/responsive support



Geofences (The system tracks vehicles when they enter or leave specific areas, allowing certain rules to be enforced on them while in that area, e.g., maximum permitted speed)





Final Words

Codaxy development team has successfully delivered the Fleet Management Platform to the market quickly and more importantly in a cost-effective manner. Given that it took three years to create the first version of this software, completing this project in less than two years is an outstanding accomplishment.

The CxJS and mandated development protocols made the whole process efficient by significantly decreasing turnaround time. Also, proactive coding benefited with collaboration and quality of work.

What matters the most is that the application suite we developed for Comm8 was the one that overcame all of the challenges that the Client was faced with while using the legacy software solution.

“The team coded a very elegant solution. As a programmer, I was in awe. They made it look easy.”-

Ray Barnes, Technical Director, Wireless Innovation

Here is a list of Turbo Track platform’s key features, describing what has been accomplished during the project:

- ◆ Real-time tracking of vehicles and event detection
- ◆ Reporting and incident investigation
- ◆ Real-time dashboard
- ◆ Customizable alerting module

- ◆ Geo-fencing (custom-bounded areas of interest)
- ◆ Map overlays (layers)
- ◆ Point of interest (POI) management
- ◆ Routing and sending vehicles to arbitrary locations

- ◆ In-application simulator
- ◆ Google Maps and Google Earth exporting and live tracking features
- ◆ Messaging to and from devices
- ◆ Driver and vehicle management

Turbo Track now offers a cutting-edge Fleet Management platform with optimal performance and guaranteed uptime as high as 99.95%. Improved user interface and better administration boosted satisfaction of growing number of resellers and end-users.



Moving from the old to the new platform, increased Turbo Track overall revenue by improving quality and enhanced product features, lowering maintenance cost, and streamlining organization service effectiveness.

“Thanks to the improved application, Turbo Track revenue grew by 30% in the four months after launch.” –

Ray Barnes, Technical Director, Wireless Innovation

We were excited and very pleased after receiving positive feedback from our clients. Completing the project of this caliber made us proud and ready for the next challenges.



Start using CxJS today and set your developers'
wheels in motion!

We would love to hear from you, so feel free to contact us regarding any question about CxJS you may have: office@codaxy.com. For more information about Codaxy and the CxJS framework please visit the official webpage: <https://cxjs.io>