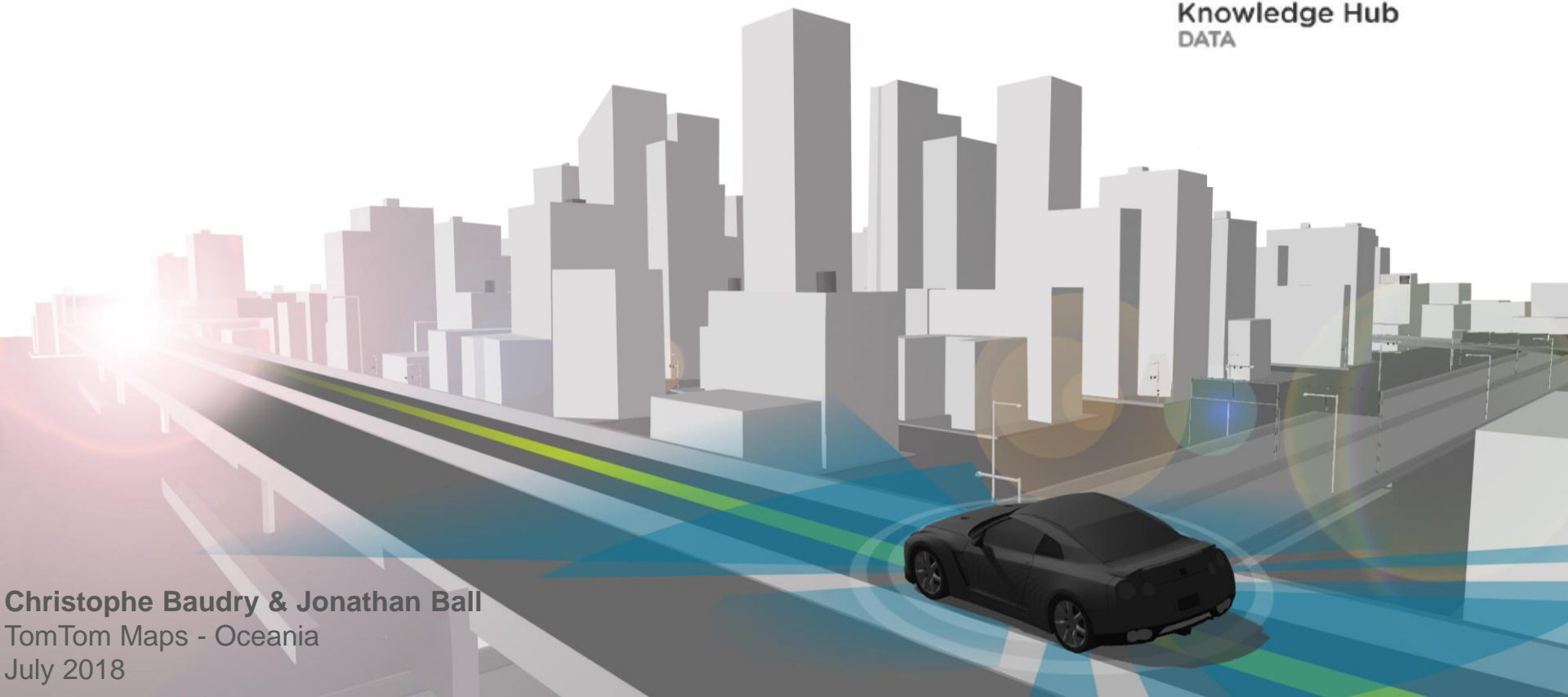
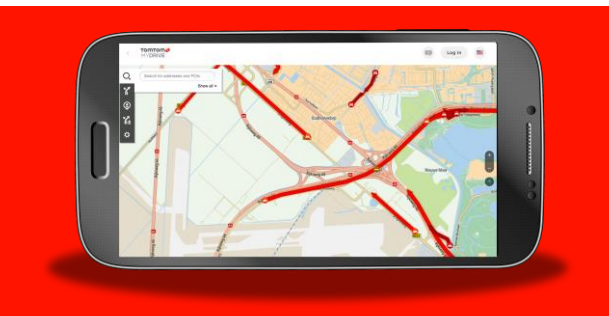


## 3! Uses of Open Data in Turn by Turn Navigation



# TODAY **TOMTOM MAPS** POWER A WIDE RANGE OF NAVIGATION AND LOCATION BASED SERVICES



Mobile Usage



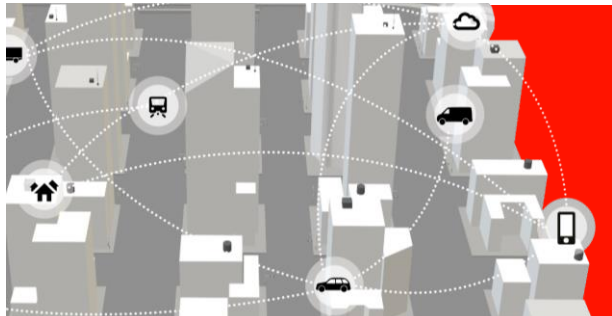
Navigation



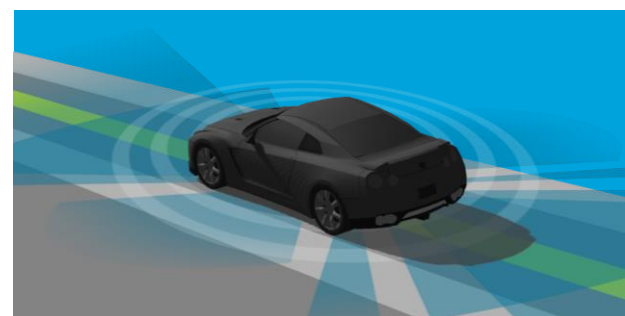
Ride Planning



EV Drive Range Calculation

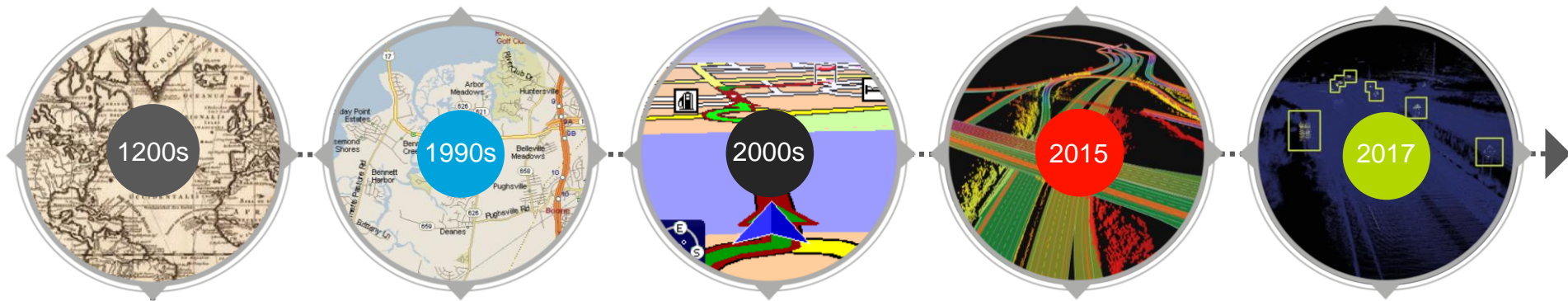


Internet of Things



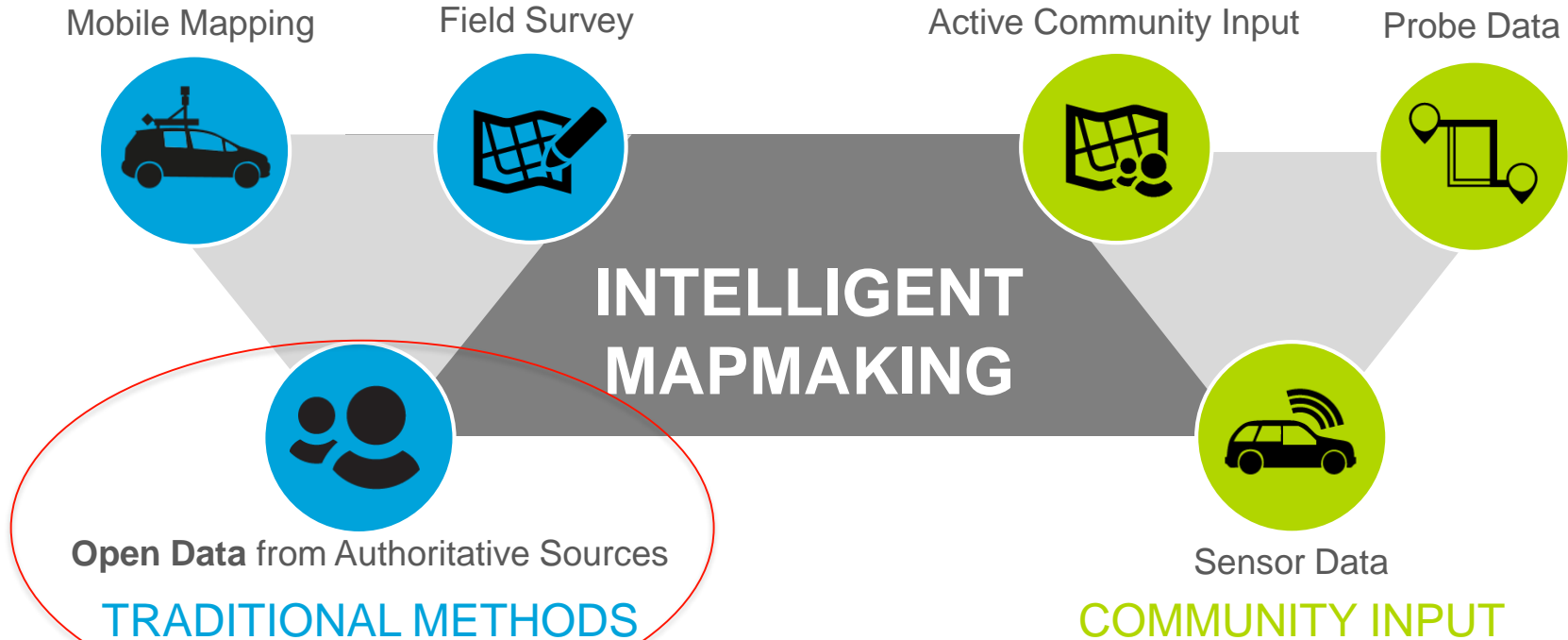
Autonomous Driving

# OUR CONNECTED WORLD MEANS GREATER RELIANCE ON MAPS AND OPEN DATA TO MAINTAIN THESE



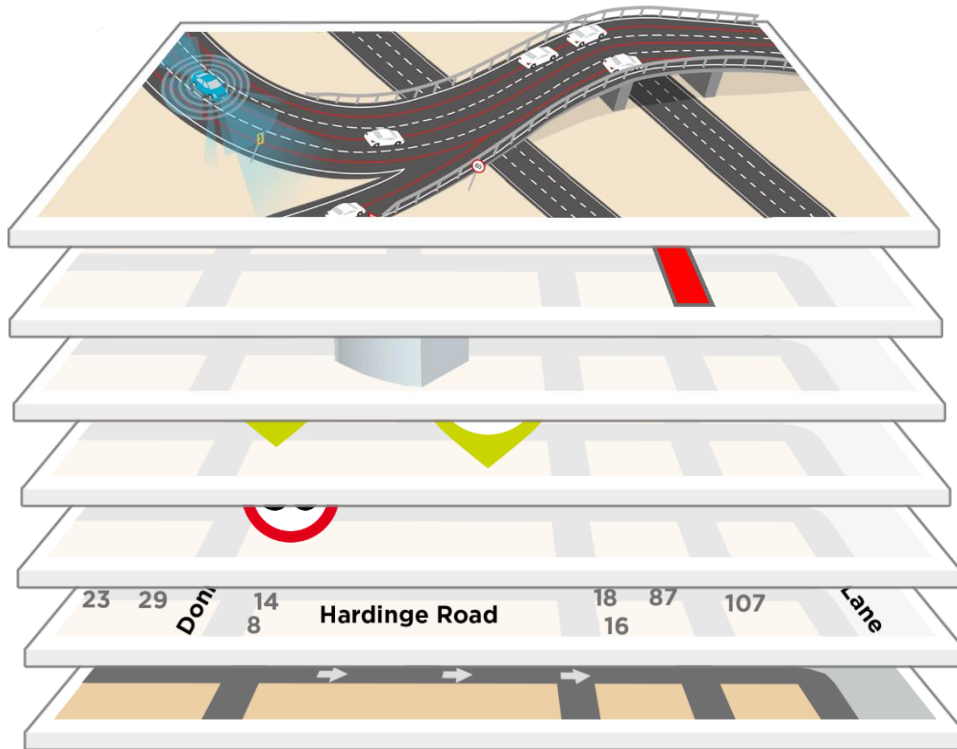
## THE EVOLUTION OF MAPS & LOCATION

# INTELLIGENT MAPMAKING ENABLES TOMTOM TO CONTINUALLY PUBLISH A HIGHLY ACCURATE MAP WITH **OPEN DATA** BEING A KEY INGREDIENT



# TODAY THE NEED FOR GREATER ACCESS TO **OPEN DATA** CONTINUES TO EVOLVE ALONG WITH THE MAP

.....  
HD & ROADDNA  
.....  
ADAS  
.....  
3D  
.....  
POI  
.....  
TRAFFIC SIGNS  
.....  
ADDRESSING  
.....  
ROAD NETWORK



.....  
AUTOMATED DRIVING  
.....  
DRIVER ASSISTANCE  
.....  
VISUALIZATION  
.....  
SEARCH  
.....  
NAVIGATION  
.....  
GEOCODING  
.....  
ROUTING

# OPEN DATA IS AN INTEGRAL PART OF THE MAP AND SUPPORTS MANY NAVIGATION USE CASES

## LOCATE



Destination Search  
Precise Geocoding

## PLAN



Accurate  
Customisable  
Routing

## EXECUTE



Professional TBT  
Navigation



# LINZ ADDRESS POINTS CCBY4.0 – MAP AND ADDRESS MAINTENANCE IN NEW SECTIONS

artopia

Map

My History

Repository

||

ton, North Island, NZ (Municipality)

Christophe Baudry

Information

ID 1890418

oce\_nzl\_linz Apt 1805 >> oce\_nzl\_linz Apt 1805

Clear

Feature Info

Connections

Images

objectid: 1890418

address\_id: 2115662

gd2000\_xcoord: 175.07047797999999

gd2000\_ycoord: -40.865557369999998

address\_type: Road

unit\_value:

address\_number: 47

address\_number\_suffix:

address\_number\_high:

suburb\_locality: Waikanae

town\_city: Waikanae

full\_address\_number: 47

full\_road\_name: Pohe Street

full\_address: 47 Pohe Street, Waikanae

© 2014 TomTom | MIG\_GLOB 2016.12

Lat -40.8679971 Lon 175.0689562 Zoom 17 Scale 1:3226

100 m

400 feet

# Enables

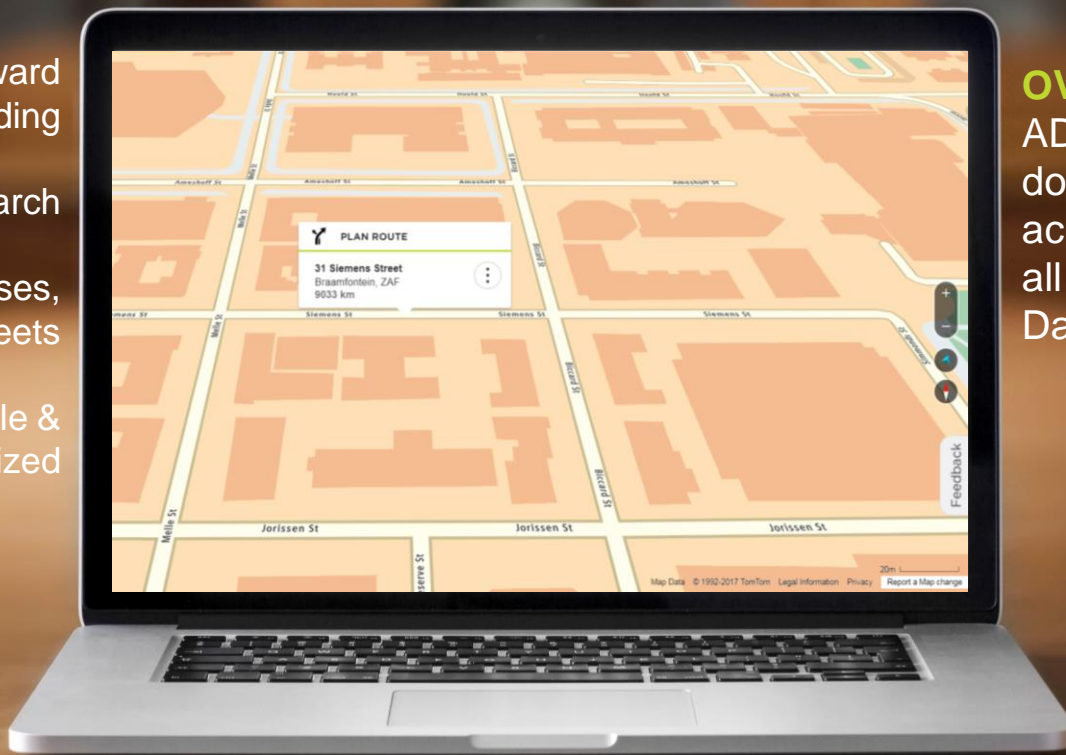
## Accurate geocoding

Reverse & forward  
geocoding

Natural search

Search for addresses,  
places & cross streets

Fully configurable &  
localized



**OVER 11 MILLION**  
ADDRESS POINTS  
down to subunit  
across NZL and AUS  
all sourced from Open  
Data.



# ACT PLANNING IMAGERY – LANE INFORMATION, TRAFFIC LIGHTS, PEDESTRIAN X, BUILDINGS, LAND COVER...

artopia Map My History Repository

Canberra, Australian Capital Territory, A X Christophe Baudry

Layers

All Layers Favorite Layers Viewsets

Search Reset Order

- ☐ Lanes Connectivity
- ☐ Lanes
- ☒ Road Elements
- ☐ Traffic Lights
- ☒ imagery2018mga
- ☒ imagery2017mga
- ☒ NDS Base Map

© 2014 TomTom | MIG\_GLOB 2016.12

Lat -35.2404287 Lon 149.1361857 Zoom 19 Scale 1:871

20 m 80 feet

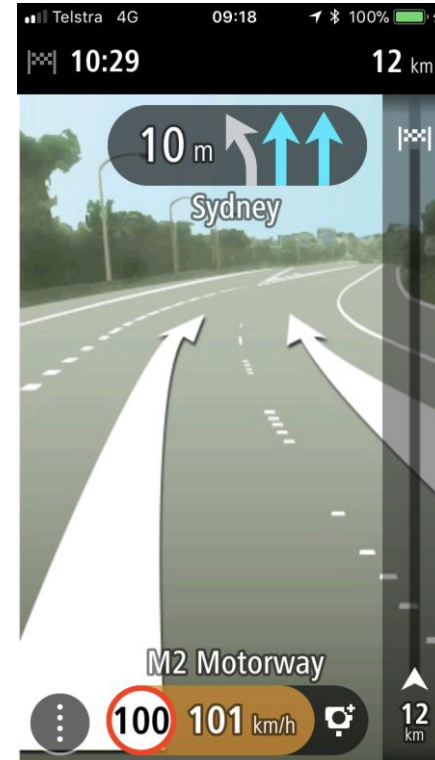
© 2018 TomTom. All rights reserved. Confidential information.

# Currently supports navigation apps with:

## Precise Exit Instruction

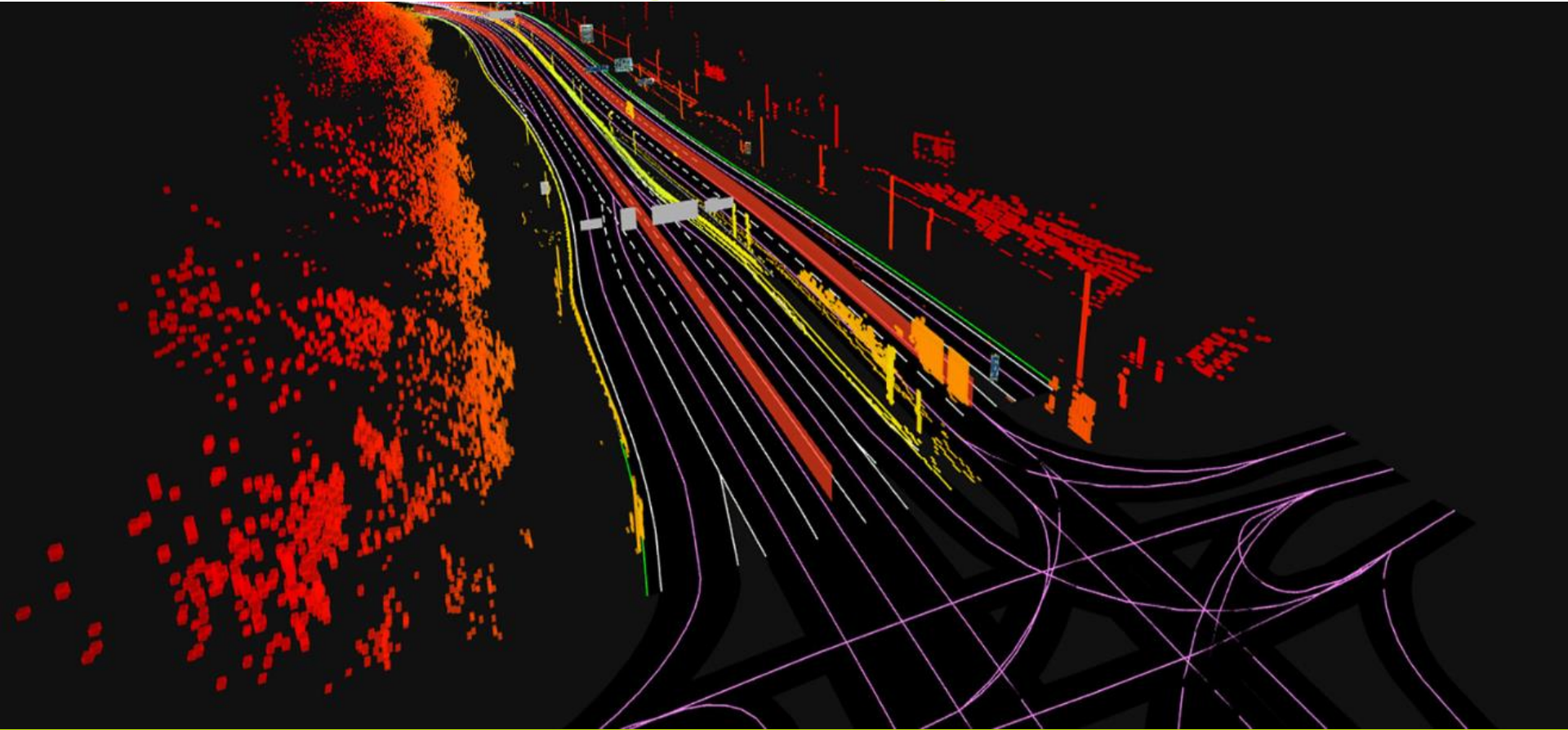


## Lane Level Routing Instructions





# Part of the sourcing mix for High Definition Maps



# HV Routing is critical for Telematics applications

So we give them routes that:

- Avoid complex manoeuvres
- Avoid difficult roads (unpaved, bridges)

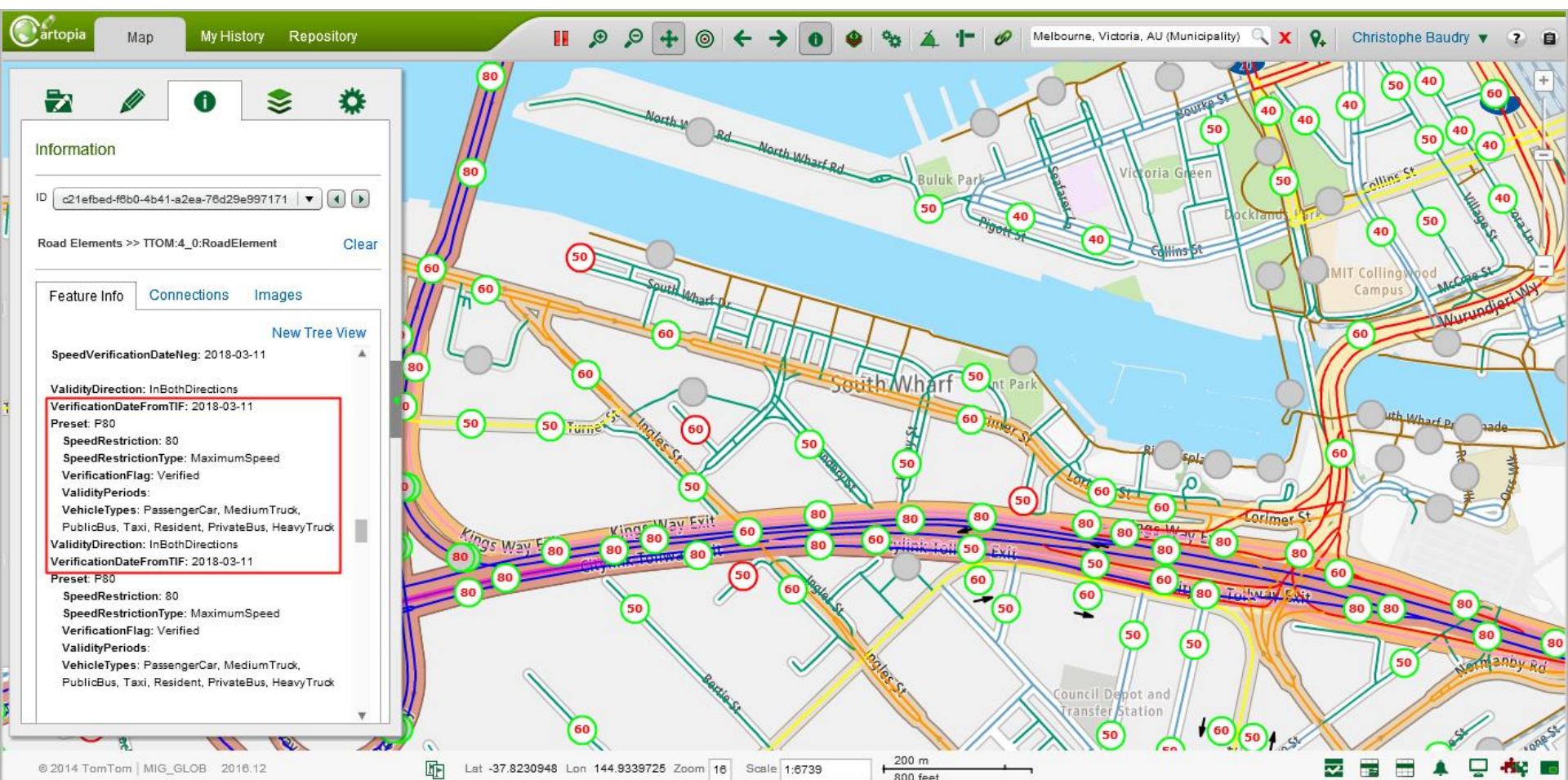
And take into account:

- Local legislation & restrictions
- Vehicle dimensions & cargo type
- Bridge heights, road curvature, slope, etc.
- Truck specific speed limits
- Recommended B-double Routes\*





# VICROADS DATA API – MAXIMUM DIMENSION AND BRIDGE HEIGHT ATTRIBUTES, SPEED RESTRICTIONS



# LOGISTICS ATTRIBUTION PARTLY DERIVED FROM OPEN DATA

## MAJOR ATTRIBUTES (non exhaustive)

### PHYSICAL

- Height
- Weight
- Length
- Width
- Weight by Axle

### GENERAL

- Truck restricted
- Truck preferred
- Immediate access

### OPERATING RESTRICTIONS

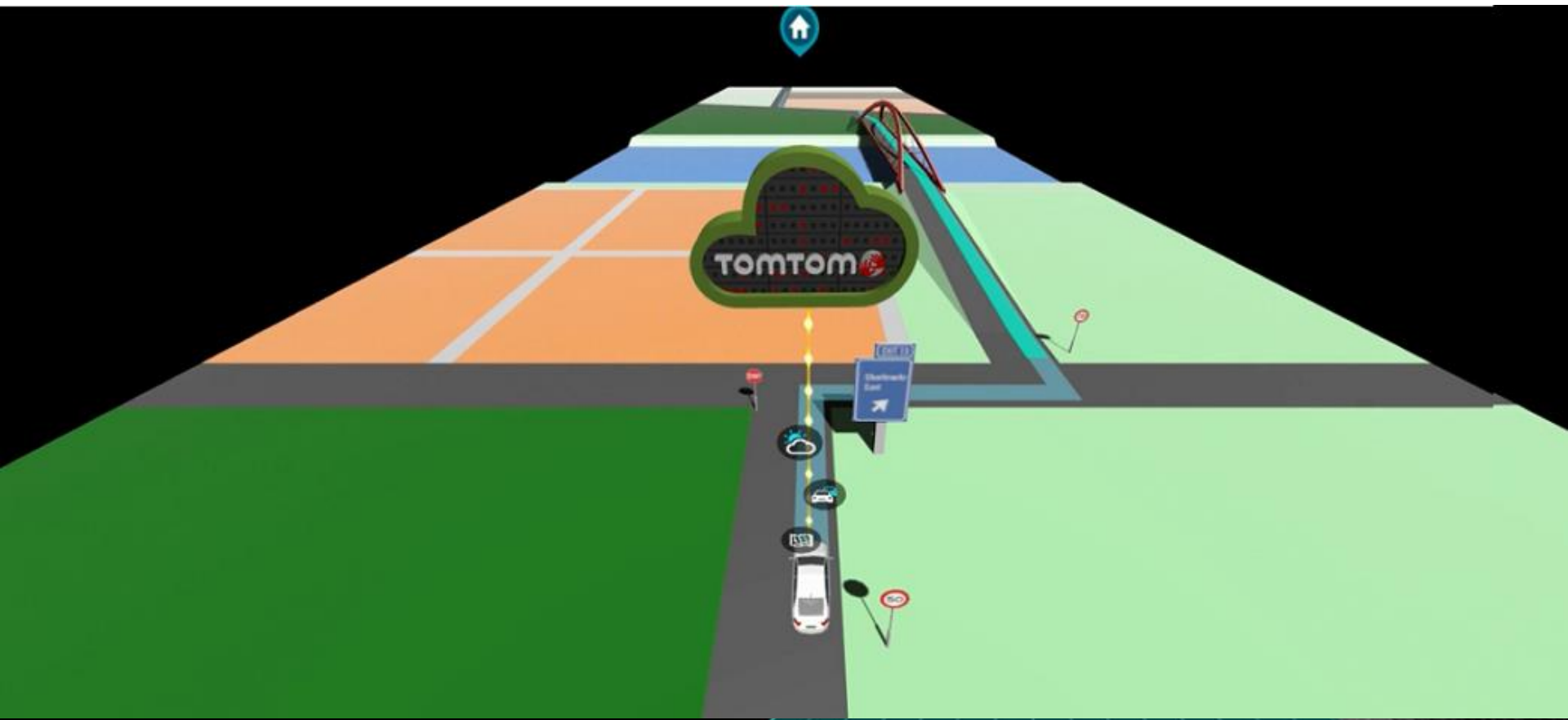
- Hazmat and other loads
- Truck speed limits
- Truck-specific maneuvers
- Idling and compression braking

### VEHICLE TYPE

- Number of axles
- Number of trailers
- No commercial vehicles



# FUTURE OPPORTUNITIES - OPEN DATA STREAMING



# THANKS TO ALL OPEN DATA CUSTODIANS LETS KEEP THE MOMENTUM AND INCREASE THE DATA EXCHANGE IN BOTH DIRECTIONS.

Dear LDS Customer

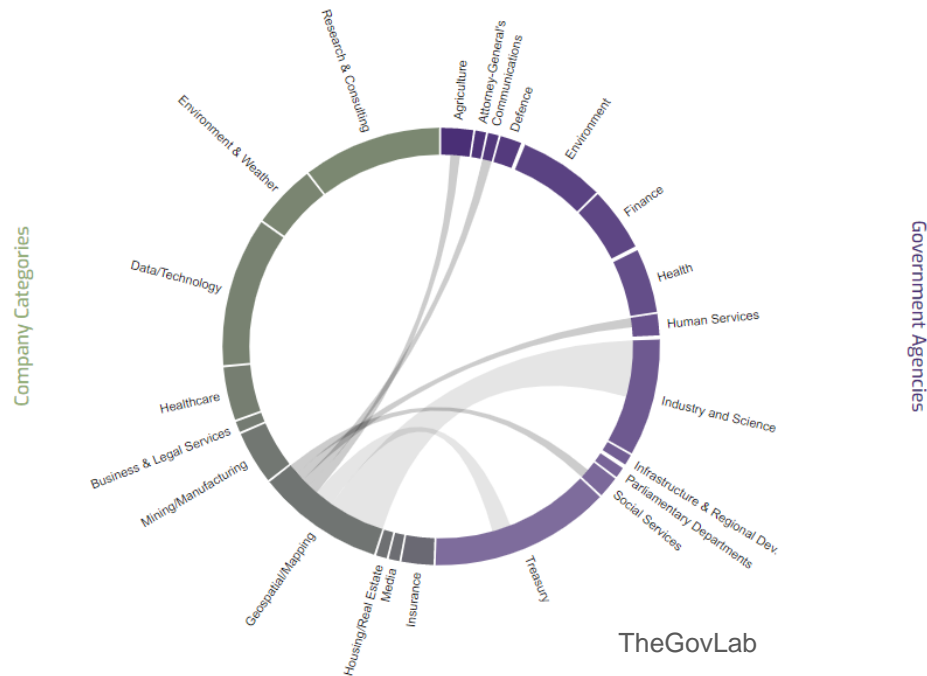
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## Nature of the licence change

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- [Attribution 4.0 International \(CC BY 4.0\)](#) licence detail
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LEADING THE WAY  
TO A FUTURE OF

**SMARTER  
MOBILITY &  
AUTONOMOUS  
DRIVING**