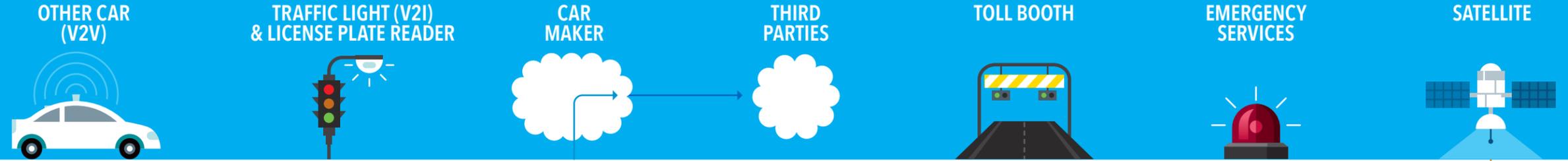# DATA and the CONNECTED CAR

Version 1.0

Today's connected technologies are making transportation safer and more convenient. Many new features are enabled by the collection and processing of data. Cars are becoming part of a trusted mobile ecosystem that ensures data flows between a network of carmakers, vendors and others to support individuals' safety, logistics, infotainment, and security needs. This visual represents devices that may be employed in today's connected cars; no single vehicle will have all of these features, but most new vehicles have some. Much connected car data is protected by technical controls, laws, self-regulatory commitments, privacy policies, and other emerging mechanisms or controls.
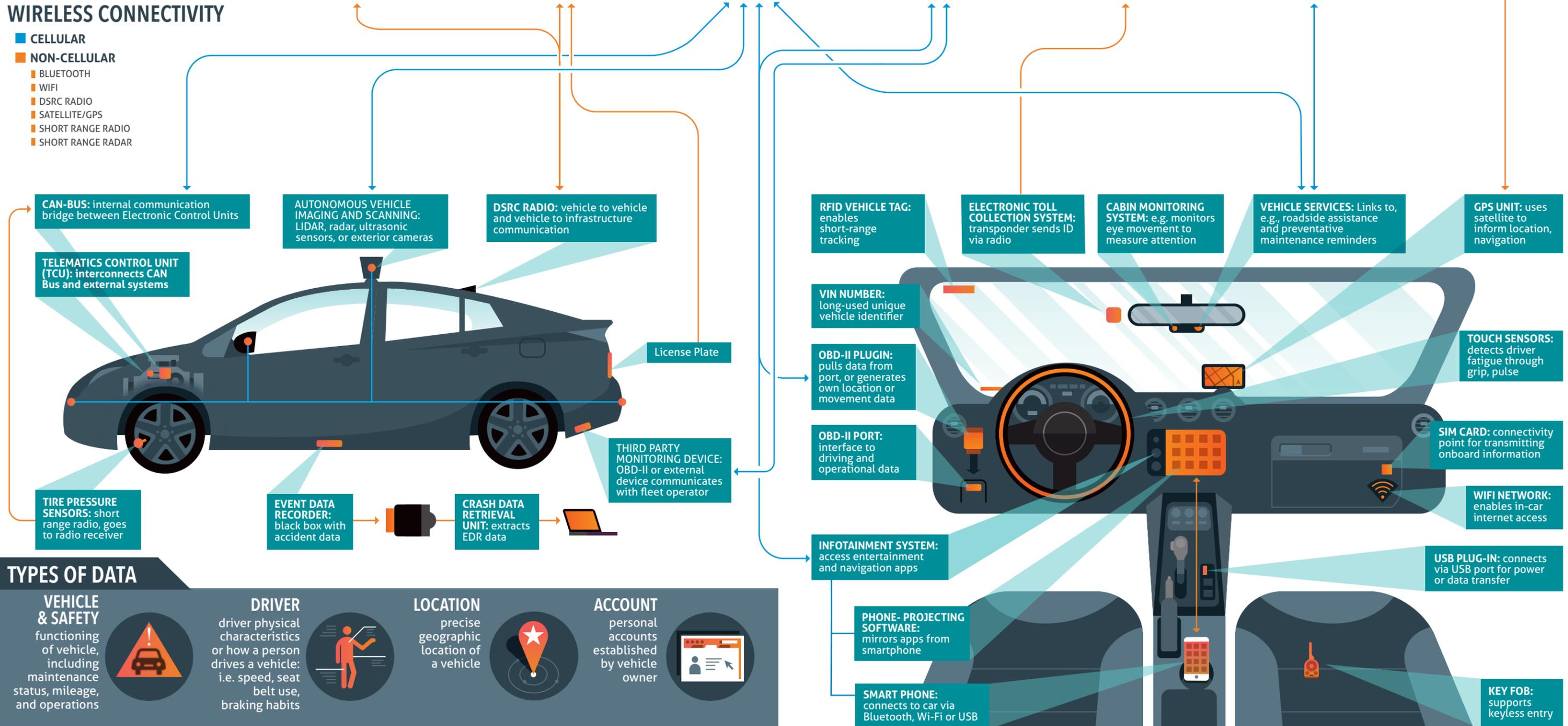
Produced by
FUTURE OF PRIVACY FORUM
FPF.ORG

DATA RECEIVERS

A growing number of entities receive and transmit data through the connected vehicle ecosystem

- OTHER CAR (V2V)
- TRAFFIC LIGHT (V2I) & LICENSE PLATE READER
- CAR MAKER
- THIRD PARTIES
- TOLL BOOTH
- EMERGENCY SERVICES
- SATELLITE

WIRELESS CONNECTIVITY

- **CELLULAR**
- **NON-CELLULAR**
  - BLUETOOTH
  - WIFI
  - DSRC RADIO
  - SATELLITE/GPS
  - SHORT RANGE RADIO
  - SHORT RANGE RADAR

CAN-BUS: internal communication bridge between Electronic Control Units

TELEMATICS CONTROL UNIT (TCU): interconnects CAN Bus and external systems

AUTONOMOUS VEHICLE IMAGING AND SCANNING: LIDAR, radar, ultrasonic sensors, or exterior cameras

DSRC RADIO: vehicle to vehicle and vehicle to infrastructure communication

License Plate

TIRE PRESSURE SENSORS: short range radio, goes to radio receiver

EVENT DATA RECORDER: black box with accident data

CRASH DATA RETRIEVAL UNIT: extracts EDR data

THIRD PARTY MONITORING DEVICE: OBD-II or external device communicates with fleet operator

RFID VEHICLE TAG: enables short-range tracking

ELECTRONIC TOLL COLLECTION SYSTEM: transponder sends ID via radio

CABIN MONITORING SYSTEM: e.g. monitors eye movement to measure attention

VEHICLE SERVICES: Links to, e.g., roadside assistance and preventative maintenance reminders

GPS UNIT: uses satellite to inform location, navigation

VIN NUMBER: long-used unique vehicle identifier

OBD-II PLUGIN: pulls data from port, or generates own location or movement data

OBD-II PORT: interface to driving and operational data

TOUCH SENSORS: detects driver fatigue through grip, pulse

SIM CARD: connectivity point for transmitting onboard information

WIFI NETWORK: enables in-car internet access

USB PLUG-IN: connects via USB port for power or data transfer

INFOTAINMENT SYSTEM: access entertainment and navigation apps

PHONE-PROJECTING SOFTWARE: mirrors apps from smartphone

SMART PHONE: connects to car via Bluetooth, Wi-Fi or USB

KEY FOB: supports keyless entry

TYPES OF DATA

VEHICLE & SAFETY
functioning of vehicle, including maintenance status, mileage, and operations

DRIVER
driver physical characteristics or how a person drives a vehicle: i.e. speed, seat belt use, braking habits

LOCATION
precise geographic location of a vehicle

ACCOUNT
personal accounts established by vehicle owner