

DOUG VANDAGENS

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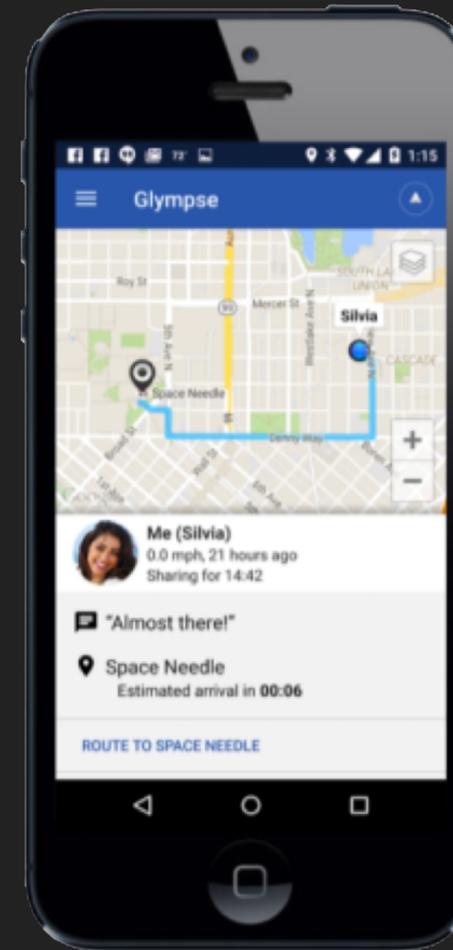
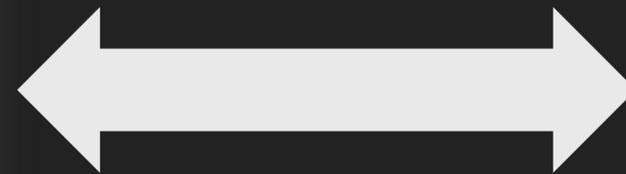
**SMARTDEVICELINK**

# SMARTDEVICELINK BASIC



Head Unit Contains SDL Core

(No Third Party App Code in Head Unit)



Not Connected



Connected to Applink

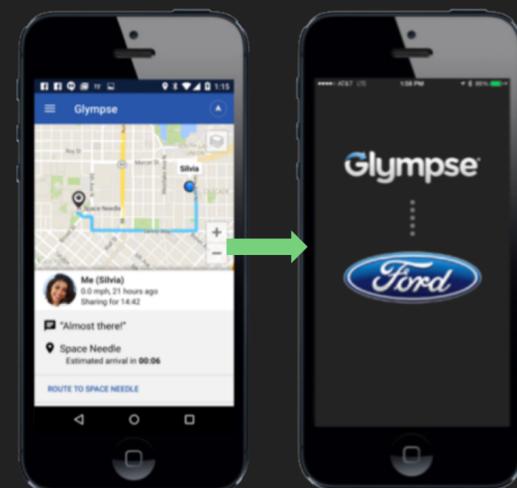
SDL Proxy in Application Communicates with Head Unit

# HOW IT WORKS



SDL allows driver's to keep their hands on the wheel and their eyes on the road by *locking* the screen of a mobile device and *transferring* controls to the vehicle interface (HMI).

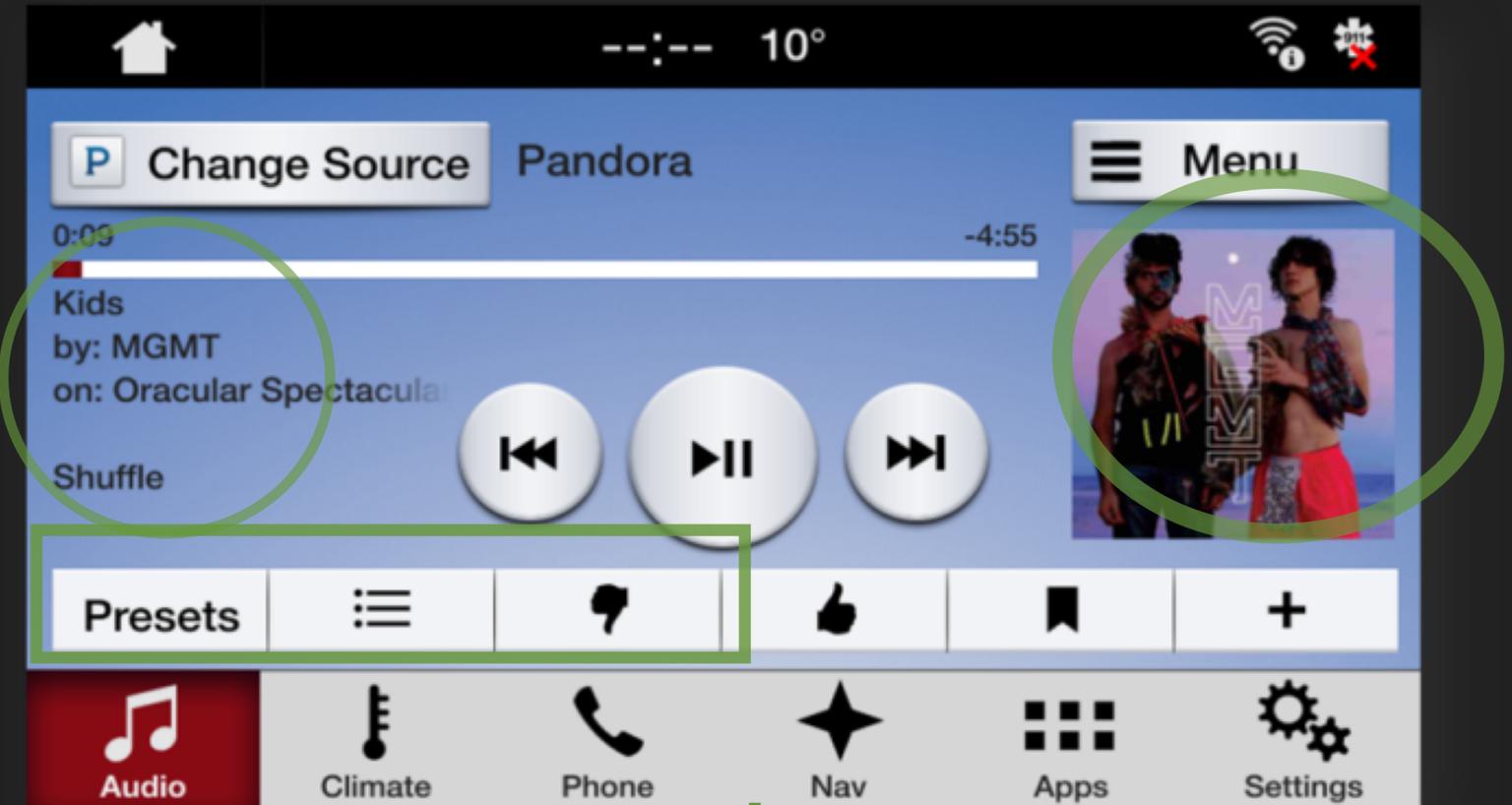
Drivers perform the app commands that they already know by using dash mounted buttons, knobs, touch screens, steering wheel buttons . . .and of course, voice command



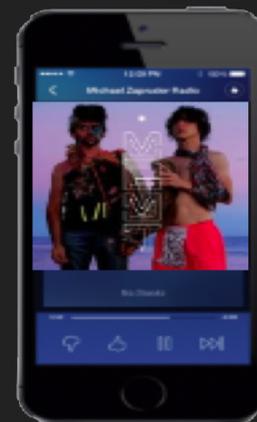
Not Connected

Connected to Applink

# PROJECTION AND TEMPLATE DRIVEN HMI



- No Third Party Code in Head Unit
- Apps Send Text and Images via Bluetooth
- Apps Subscribe to Buttons & Voice Command



## DIAMOND LEVEL



## PLATINUM LEVEL



**mazda**



**SUBARU**

# GOLD LEVEL



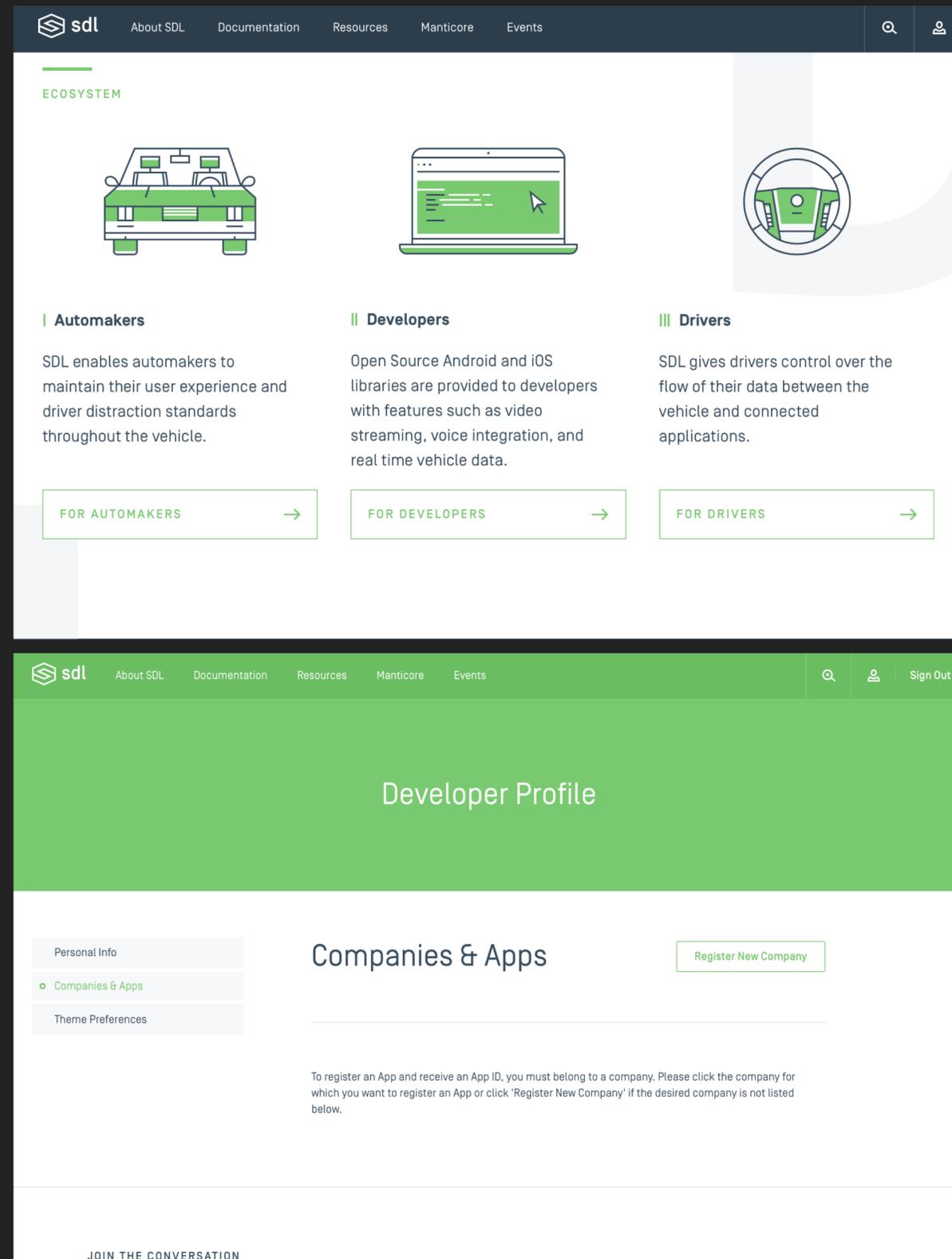
# SILVER LEVEL



# CENTRALIZED RESOURCES

- SDL Core Implementation Guidelines
- SDL Server Documentation
- Unique AppID Generation
- iOS & Android SDKs
- Developer Support

smartdevicelink.com



The image shows two screenshots of the SDL website. The top screenshot is the 'ECOSYSTEM' page, which features three columns: 'Automakers', 'Developers', and 'Drivers'. Each column has an icon, a title, a brief description, and a button with a right-pointing arrow. The 'Automakers' column describes how SDL helps maintain user experience and standards. The 'Developers' column mentions open-source libraries for Android and iOS. The 'Drivers' column highlights user control over data flow. The bottom screenshot shows the 'Developer Profile' page, which has a green header and a sidebar with 'Personal Info', 'Companies & Apps', and 'Theme Preferences'. The main content area is titled 'Companies & Apps' and includes a 'Register New Company' button and a paragraph explaining the registration process.

**ECOSYSTEM**

**I Automakers**  
SDL enables automakers to maintain their user experience and driver distraction standards throughout the vehicle.

**II Developers**  
Open Source Android and iOS libraries are provided to developers with features such as video streaming, voice integration, and real time vehicle data.

**III Drivers**  
SDL gives drivers control over the flow of their data between the vehicle and connected applications.

FOR AUTOMAKERS → FOR DEVELOPERS → FOR DRIVERS →

**Developer Profile**

Personal Info  
Companies & Apps  
Theme Preferences

Companies & Apps [Register New Company](#)

To register an App and receive an App ID, you must belong to a company. Please click the company for which you want to register an App or click 'Register New Company' if the desired company is not listed below.

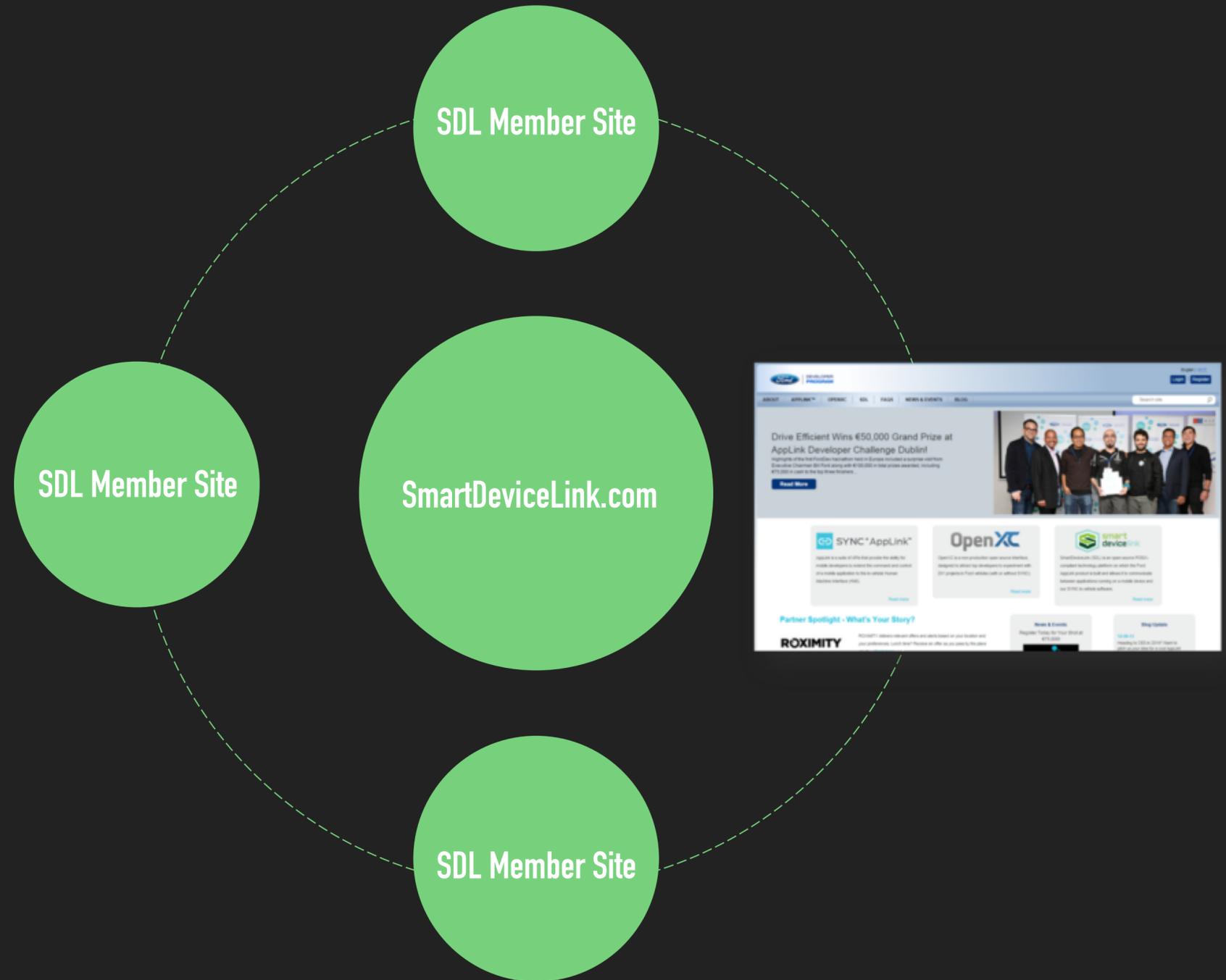
JOIN THE CONVERSATION

# CENTRALIZED RESOURCES

**SDL Site Acts as Central Hub for All Activities**

**Members Can Create Branded Sites to Provide Support for Unique Components Such as:**

- **Vehicle Data Access**
- **Policies Administration**
- **HMI**
- **App Approval Criteria**



# PRODUCT HIGHLIGHTS

- **Continuous maintenance and development on [smartdevicelink.com](https://smartdevicelink.com)**
- **7 Proxy Releases**
- **3 Android Releases , 4 iOS Releases**
- **2 Core Releases**
- **3 Policy Server Releases**
- **iAP over Bluetooth**
- **Wifi connectivity projection**
- **Remote Control**
- **Extension to Embedded**

## BEAMED-IN & BUILT-IN

- **Beamed In:** Scale/cost advantages when content is broadcast one to many.
- **Built-In/Embedded Modems:** Leveraged for highly secure, OEM proprietary functions such as vehicle wake up, vehicle controls, over-the-air updates, V2X, A/V functions, etc.

## THE CASE FOR BROUGHT-IN

- Complement built-in and beamed-in products & services
- Leverages latest phone and wireless carrier technology
- Provides familiar/powerful UX, accessible outside of the vehicle
- Fast to market, low engineering effort and avoids TCU HW cost
- Killer interface for many use cases including music apps, integration to embedded navigation, video streaming, etc.

# THIRD PARTY SOLUTIONS



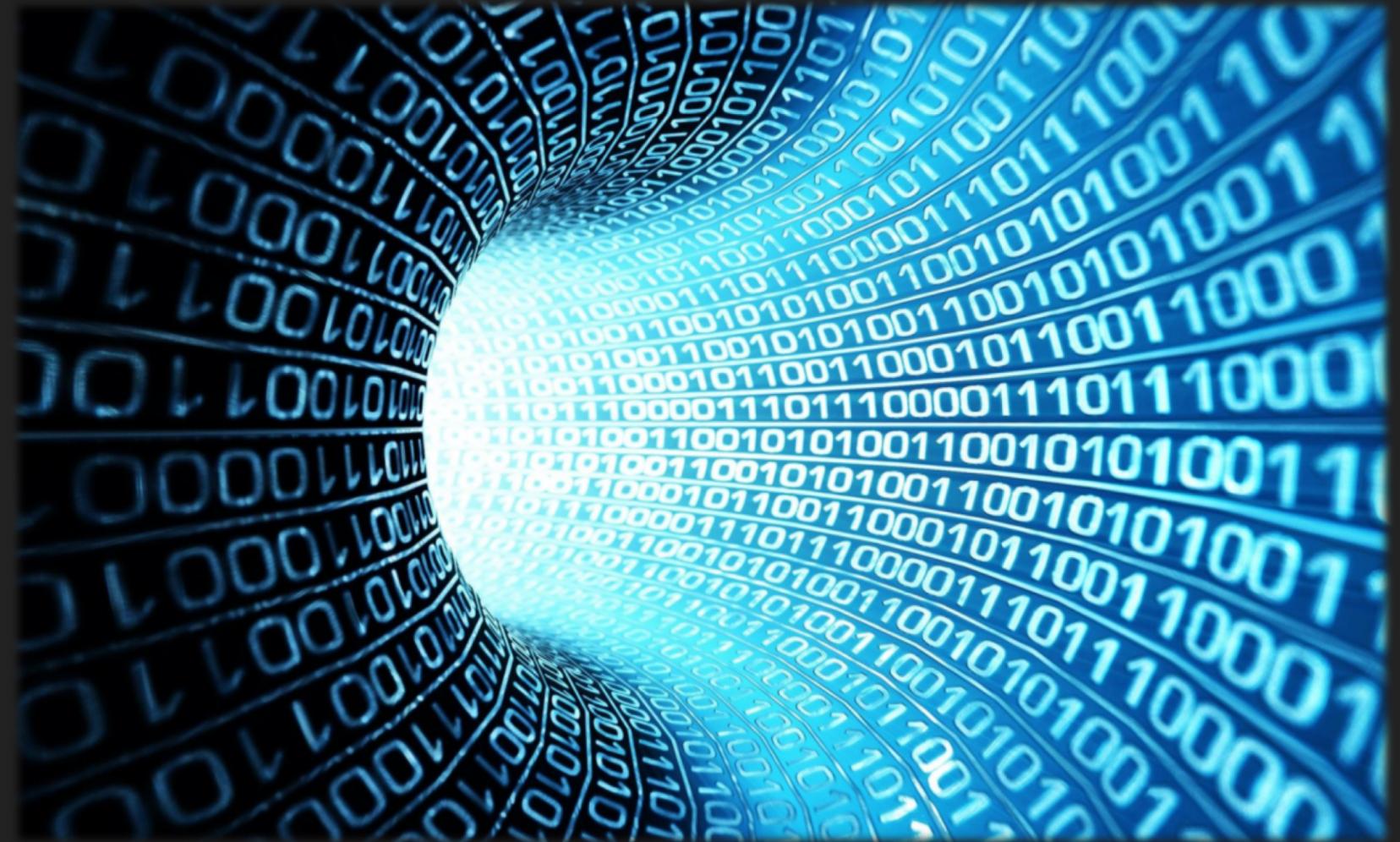
**Silicon Valley leaders have launched attractive/competitive offerings.  
Why establish an automotive alternative?**

## CASE FOR AN AUTOMOTIVE STANDARD

- **Maintain OEM brand DNA, consistent with automotive experience**
- **Enables direct acquisition of vehicle/customer data for analytics**
- **Enables the automotive industry to direct access to customers and associated monetization opportunities without paying a “toll”**
- **Enables automotive industry to control which apps have access to vehicle**
- **Enables a proprietary automotive standard/platform to offer products and services for which the automotive industry is the SME**
- **Offers customer’s product/service choice in a changing environment**

# VEHICLE DATA ADMINISTRATION

- **SDL Enables Each OEM to Build Custom Vehicle Data Practices**
- **OEMs Decide What Data to Make Available and Who is Allowed Access**

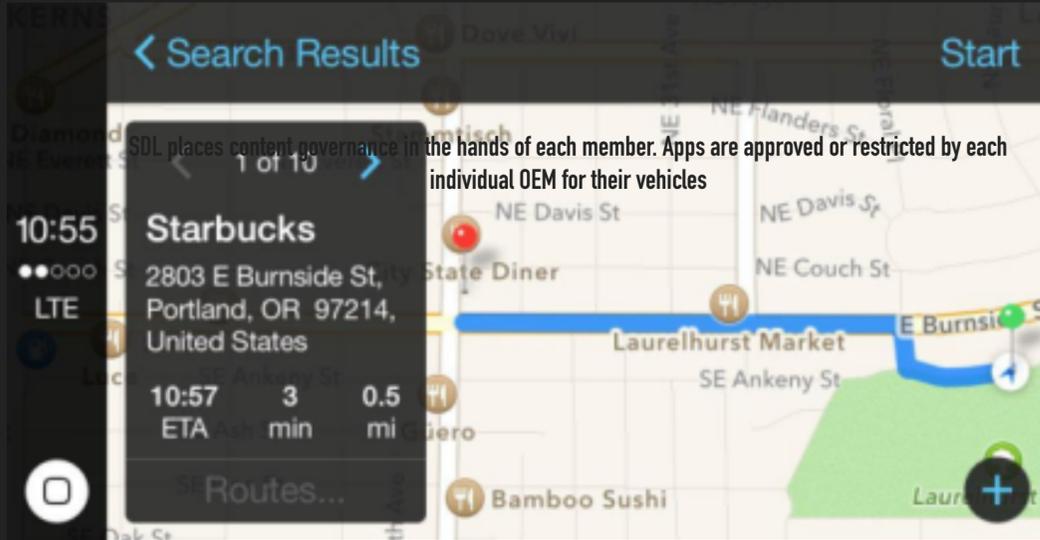


# OEMS RETAIN HMI BRANDING

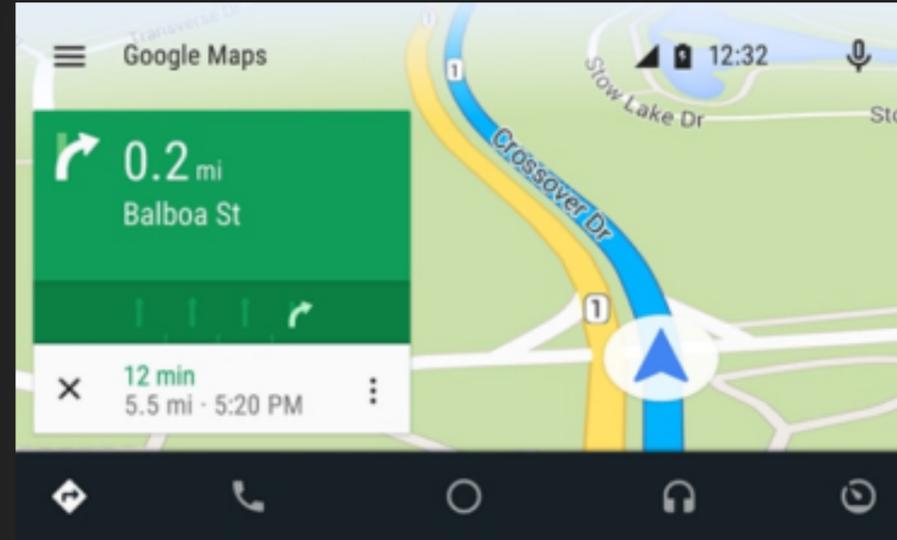


# IN-VEHICLE CONTENT CONTROL

SDL Allows Enablement of Any Mobile Nav or Voice Solutions



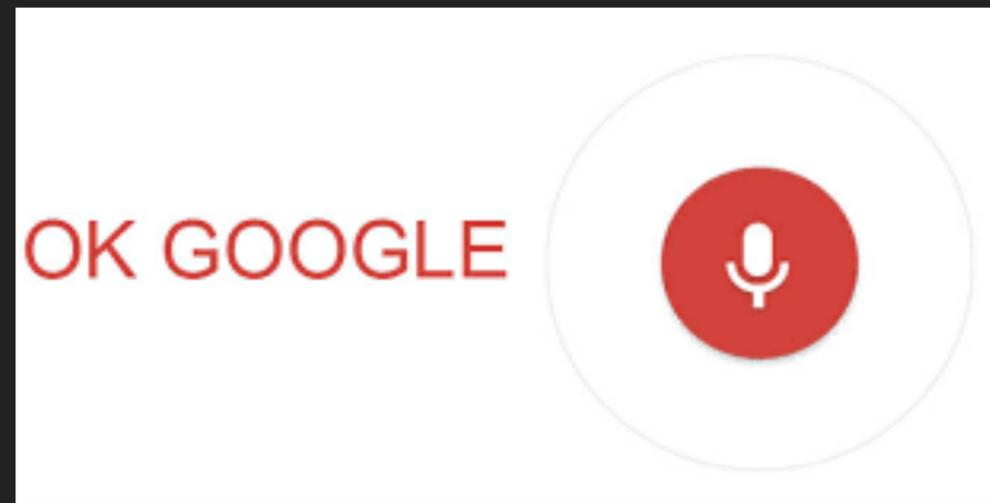
CarPlay Only Allows Apple Maps, Siri



Android Auto Only Allows Google Maps, Google Now and Waze



SDL places content governance in the hands of each member. Apps are approved or restricted by each individual OEM for their vehicles



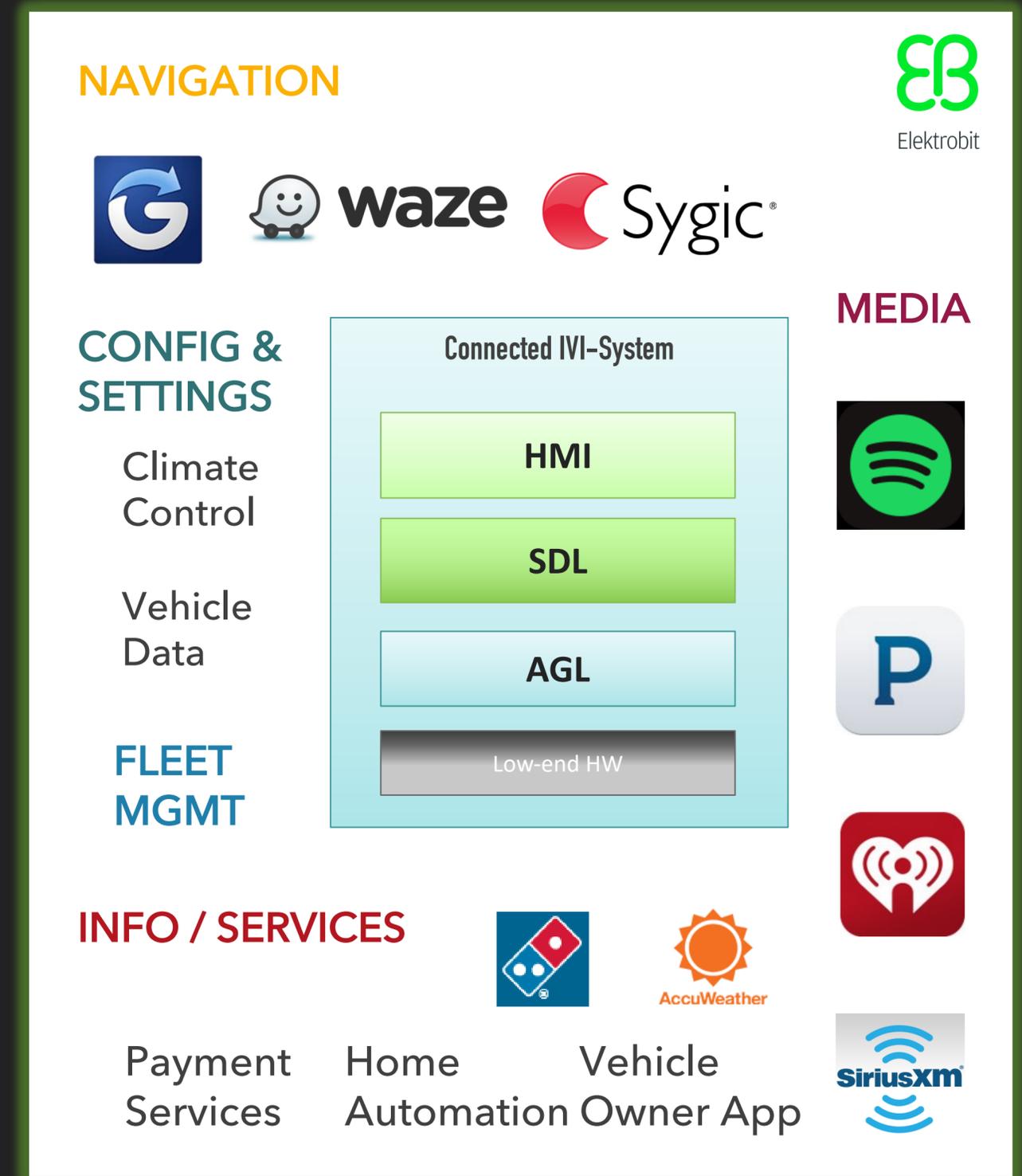
## LUXOFT

- ▶ Level 3 (Gold) membership in SDL Consortium
- ▶ Adaptation of the Open SDL to QNX 6.5 / 7.0, Windows and Android
- ▶ SDL in production on SYNC, Himawari
- ▶ In-Vehicle Translator Feature POC powered by SmartDeviceLink Technology (CES 2018)
- ▶ Plans to integrate SDL in Luxoft *AllView* and *PELUX ARP* technology demonstrators



# ELEKTROBIT

- ▶ SDL-based Connected IVI-System
  - ▶ Minimal embedded feature set
  - ▶ Features provided via apps
    - ▶ E.g. Media, Navigation, Communication, Info, Service
  - ▶ Customer-specific embedded SDL apps for "offline" features
    - ▶ E.g. Climate, Configuration
- ▶ Suitable for low-end hardware
- ▶ Platform: Automotive Grade Linux



## PIONEER CORPORATION

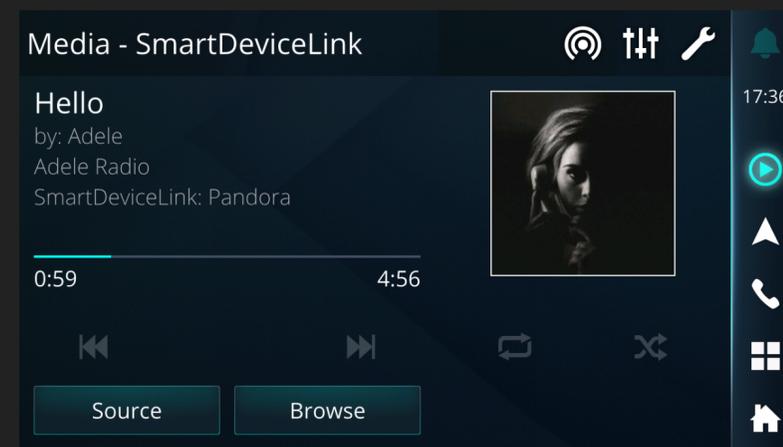
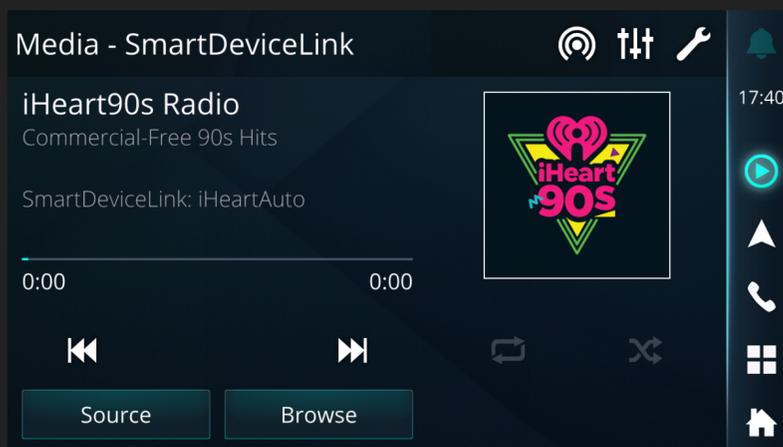
- ▶ On-going development of SDL feature for OEMs in the US and Emerging markets.
- ▶ Supporting SDL demonstrations at CES since 2015.
  - ▶ Sample Use case:
    - ▶ Automatic turn ON AC and Open garage door using geofencing
- ▶ Platform: Linux based operating system



## GARMIN

- ▶ SDL Core integration based on SDL Core 4.5.1
- ▶ SDL Policy Server integration with SHAID
- ▶ SDL HMI/RPC development using native UI to support SDL apps including projection/navigation apps.
- ▶ Platform Supports: Linux

New scalable high-performance head unit with “Lenexa” HMI



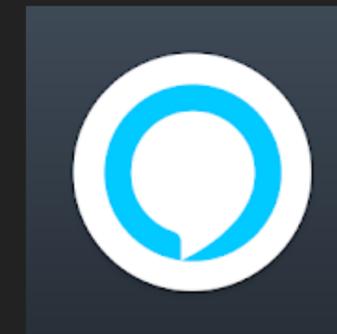
## TOYOTA

- ▶ Toyota launches SDL service in North America 2018. And Toyota is planning to introduce SDL in Japan market in late 2018
- ▶ TomTom online navigation experience combining offline maps and online services such as traffic and speed cams
- ▶ Waze navigation
- ▶ Platform: AGL (Automotive Grade Linux)



# FORD MOTOR COMPANY

- ▶ Sample launched new SDL Apps 2018:
  - ▶ Ford+Alexa and Lincoln+Alexa with Amazon
  - ▶ Waze
  - ▶ Webex with Cisco
  - ▶ Tidal Music
  - ▶ HearMeOut - Social Network
  - ▶ iHeartRadio (Flagship App)



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**THANK YOU**