



In-Vehicle Payment

Special Interest Group Workshop

John Moon | February 25, 2021



Schedule



- 10:00 AM - 10:15 AM** - Introductions / About IVP Special Interest Group
- 10:15 AM - 10:45 AM** - Payments Ecosystem Discussion
- 10:45 AM - 11:00 AM** - Presentation - Visa - Anthony Petit
- 11:00 AM - 11:30 AM** - Use Case Discussion - EV Payments
- 11:30 AM - 11:45 AM** - Presentation - Exelon - Chris Budzynski
- 11:45 AM - 12:00 PM** - Presentation - Honda - Boris Polania
- 12:00 PM - 12:30 PM** - Use Case Discussion - Authentication in Payments
- 12:30 PM - 12:45 PM** - Presentation - Validsoft - Dan Thornhill
- 12:45 PM - 01:00 PM** - Workshop Conclusion



Steve Crumb
Executive Director, GENIVI



Profiles



John Moon

- COO, Connected Travel
- GENIVI IVP SIG Team Lead
- Former Managing Director, Honda Innovations
- JMoon@connectedtravel.com



Michael Nunnery

- Marketing Executive, GENIVI Alliance
- a.k.a “GENIVI Mike”
- GENIVI IVP & EV Charging Group Mkt. Lead
- MikeNunnery@comcast.net

Joining Us Today



GENIVI IVP SIG Purpose

- In-vehicle payment services are an area of growing interest to Auto OEMs, suppliers, retailers and consumers
- Auto OEMS are seeking to build new in-vehicle service based businesses tied commerce and advertising
- Payments technology is complex from a technical, business and regulatory perspective
- No one organization exists to organize the payments ecosystem to work with the Auto OEM ecosystem
- In the absence of payments expertise, Auto OEM's and partners can spend years understanding the landscape of payments technology while it also constantly evolves
- In-vehicle payments use cases have additional UX requirements for driver safety and security that are unique to the vehicle, drivers and passengers
- Merchants will want standards for integration as they are not structured to support proprietary standards, and merchants will have a hard time justifying the cost of integrating with each OEM's systems

GENIVI IVP SIG Objectives



1. Develop technical standards in cooperation with payments ecosystem partners
1. Develop payment interfaces that lower merchants and brands ability to address drivers
1. Reduce cost for OEMs to explore service monetization
1. Explore driver UX that enables commerce transactions to be conducted safely in the vehicle

In-Vehicle Payment SIG Goals 2021

1. Establish regular meetings with core team of participants
 - a. Target for core team is 10 companies
 - b. At least 1 from each category (OEM, payment brand, Tier 1, etc)
2. Identify technical resources/leads (GENIVI and others)
3. Form working groups around project topics
4. Kick off 2 projects, complete 1 project in 2021

IVP Ecosystem



In-Vehicle Payments Use Cases



Pay for Telematics Services



Vehicle Loan or lease



Vehicle Registration Fees



Pay for Parking



Pay for Media and Entertainment



Pay for Tolls

Order for Pickup



Pay for Fuel

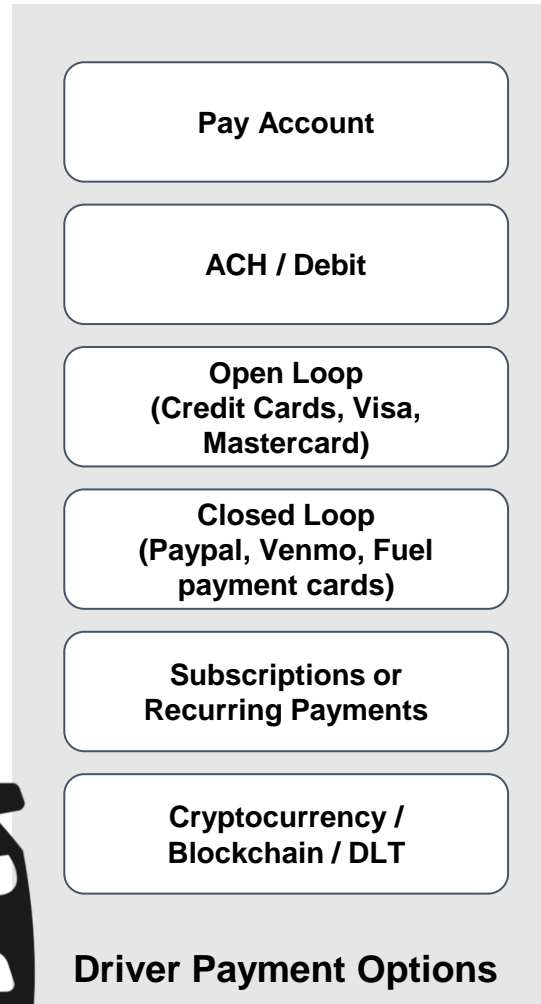


Insurance Payment



Pay for Charging

Unifying Payment Options Key To Removing Friction



Vehicle Loan or lease



Vehicle Registration Fees



Pay for Parking



Pay for Tolls



Pay for Fuel



Order for Pickup



Insurance Payment



Pay for Charging



Pay for Telematics
Services



Pay for Media and Entertainment

In-Vehicle Payments Technical Concepts



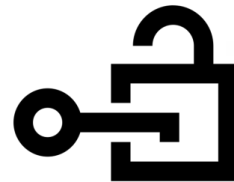
Payments

Driver Interface
Tokenization
Merchant
Integration
Payment
Processing /
Gateway Integration



Authentication

Biometric
Eye
Voice
Fingerprint
3D Secure



UX

Voice
Touch
Headunit
Mobile



In-Vehicle Payment Challenges



Security



Fraud



Regulations



Driver Safety



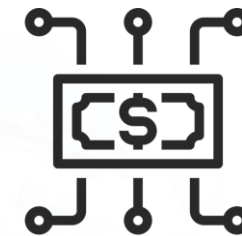
**Merchant
Integration**



**Vehicle Technology
Integration**



**Payments Ecosystem:
Partner vs Vendor**



In-Vehicle Payments Ecosystem - Discussion



VISA

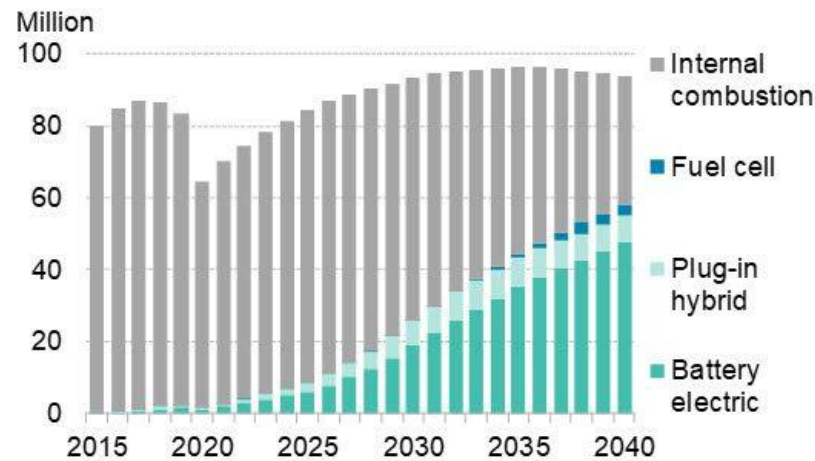
Anthony Petit
Visa



EVs & Payment

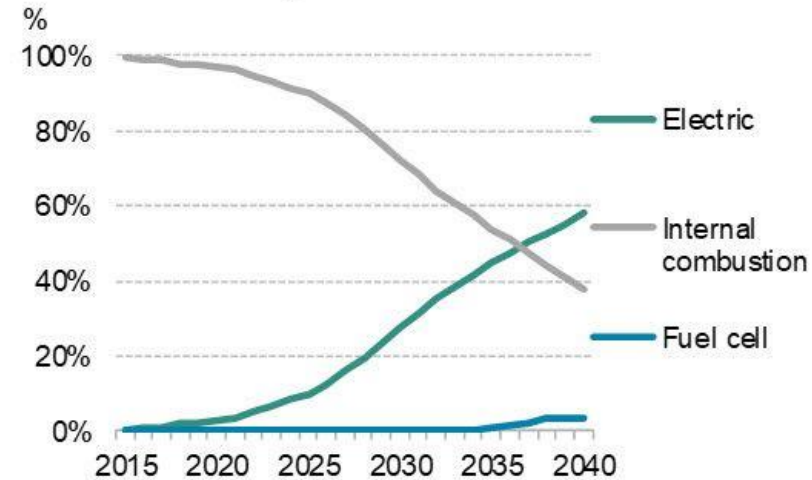
EV Market Growth

Figure 1: Global annual passenger vehicle sales by drivetrain



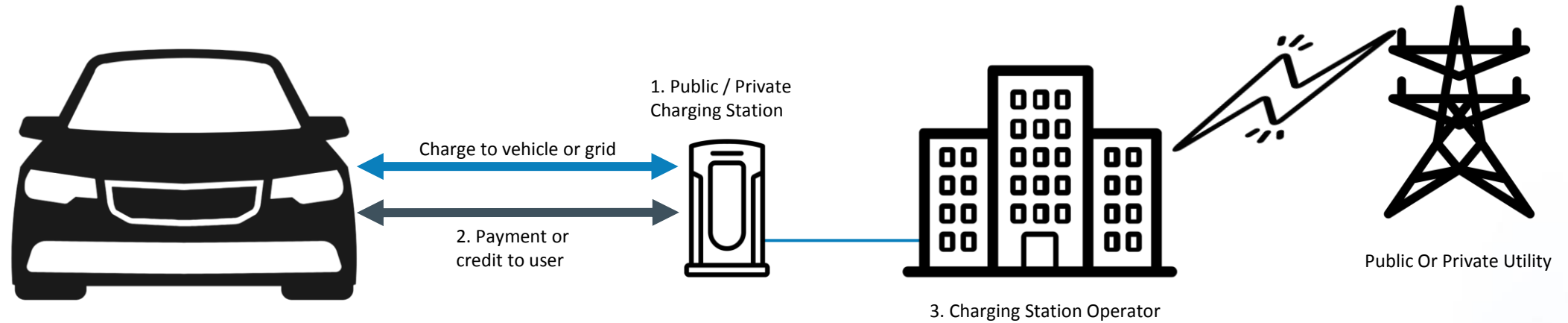
Source: BNEF. Note: Electric share of annual sales includes battery electric and plug-in hybrid.

Figure 2: Global share of total annual passenger vehicle sales by drivetrain



”Simpler vehicles but more complex infrastructure”

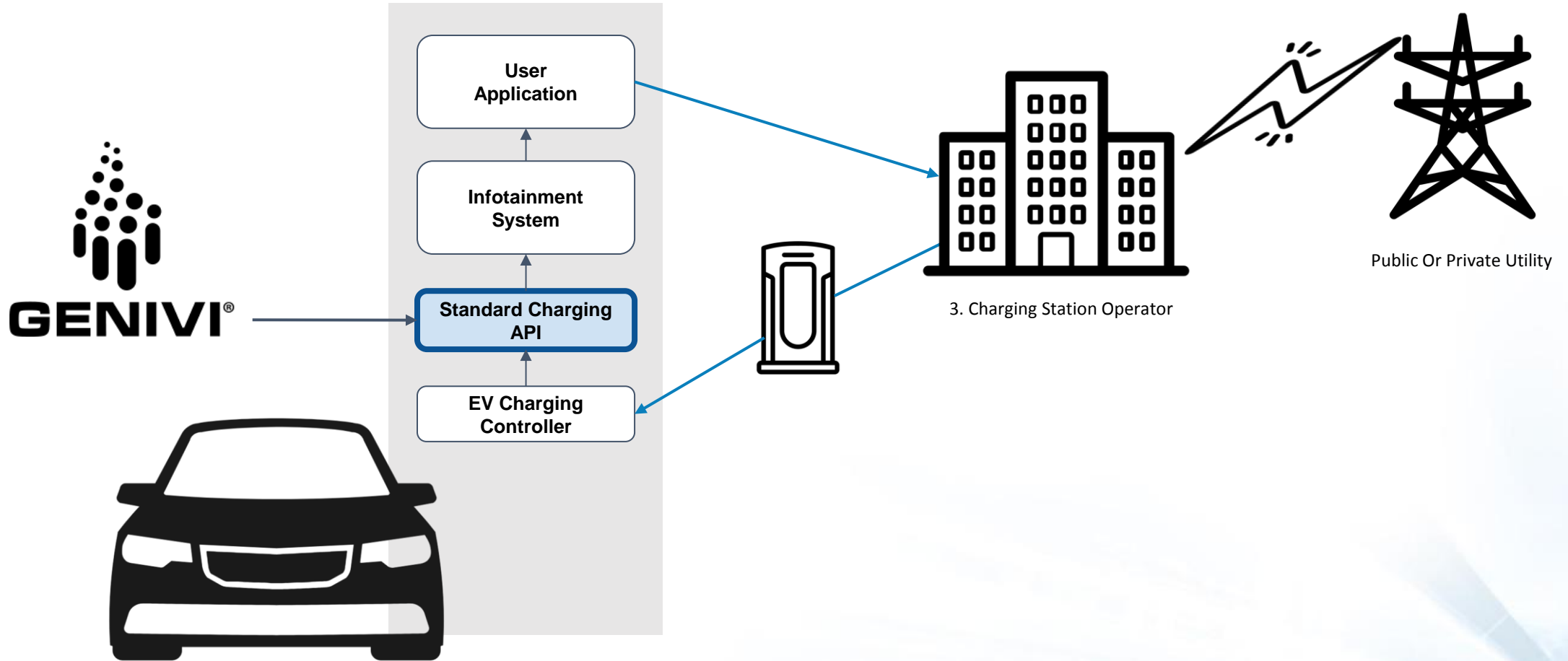
EV Charging Payment Use Case



User will manage the energy consumption or supply back to the grid conveniently through their account on their mobile device. The charging station or vehicle can also act as a point of sale device to enable public, single use interaction without being a registered user of the charging station operator.

1. Allow user to charge at a variety of public or private charging infrastructure
2. Payment can be made or credit earned at charging infrastructure
1. Charging Station Operator reconciles energy use by users and can bill or credit users accordingly

EV Charging Payment Use Case



EV Charging - Discussion





Chris Budzynski
Exelon



HONDA

The Power of Dreams

Boris Polania Honda



ID & Authentication

ID & Authentication Use Case

Strong Customer Authentication

Needs to supply two of the following three elements:

Something the
customer
knows

(e.g., pin or password)

Something the
customer
has

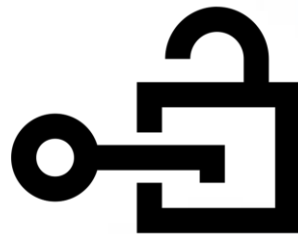
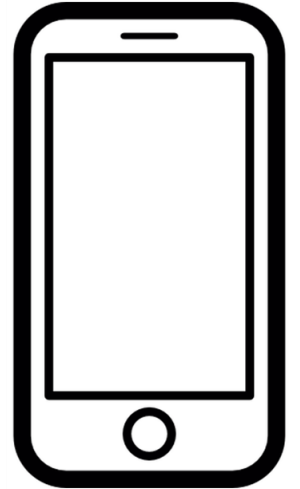
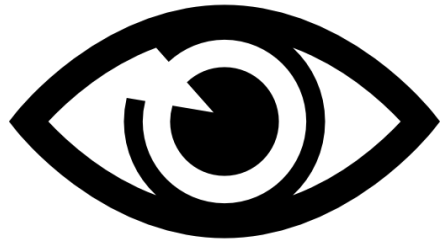
(e.g., a phone or car)

Something the
customer
is

(e.g., finger or iris scan)

Now being enforced in the European Economic Area (EEA) Countries. Why does this matter to OEMs?

ID & Authentication Use Case



ID & Authentication - Discussion





Dan Thornhill
Validsoft



Closing

TU Automotive Collaboration



TU Automotive IVP Survey:

Here it is: <https://www.surveymonkey.com/r/genivi-connected-vehicle-payments>

Save the Date (Jun 8-10):

GENIVI IVP Participants
Discount Code When
Registration Goes Live...

“GENIVI25”

The screenshot shows a virtual event registration page. At the top, it says 'Informa Tech Automotive Group' and 'Automotive' with logos for 'WARDS INTELLIGENCE' and 'WARDSAUTO.'. The main heading is 'Capitalize on the \$86 Billion Industry'. Below this, it states 'Be part of the conversation to make In-Vehicle Payments a viable channel and achieve widespread adoption.' It then mentions 'Studies published in 2020 highlight the commercial future of In-Vehicle Payments, estimating a value of \$86 billion by 2025.' The event is titled '2021 Focus: Connected Vehicle Commerce' and is scheduled for 'June 8 - 10, 2021 | Virtual'. A call to action says 'REGISTER YOUR INTEREST:' with the URL 'https://wardsauto.informa.com/cvc-register-your-interest-genivi'. At the bottom, there are five topics to include: 'Who are the Key Players in the Automotive In-Vehicle Payments Ecosystem?', 'What Does the Future of In-Vehicle Payment Authentication Look Like?', 'What Will be the Largest Consumer Benefit?', 'What is the Best Option When it Comes to Protecting Consumer Data?', and 'Mobile vs. Embedded: Which Interface Will Win?'.

Learn More:

<https://wardsauto.informa.com/focus-connected-vehicle-commerce/>

GENIVI IVP & EV Charging WIKI



In-Vehicle Payment (SIG)

1. Project Overview
2. SIG Activity
3. Proposed Areas of Project Focus
4. Community
5. Mailing List for IVP SIG notifications
6. **IVP SIG Collaboration Workshop**
7. Documentation
8. Meeting minutes recorded sessions & workshops
9. Downloadable Assets
10. Presentations
11. White papers
12. Resource articles
13. Links
14. Contact Leads
15. **Survey's**
16. **Upcoming Events**

The link to view more regarding the GENIVI IVP Special Interest Group along with resources, upcoming events, surveys, articles, etc.

- 1) From your browser enter “projects.genivi.org”
- 2) Select In-Vehicle Payment SIG from MENU
- 3) or to go to direct...url below

<https://at.projects.genivi.org/wiki/pages/viewpage.action?pageId=65896819>

Events Related to IVP & EV Charging

- **February 25, 2021 - 1st IVP Collaborative Workshop**
- April 2021 - SAE World Congress (WCX)
- **May 4-7th, 2021 - GENIVI Virtual AMM Experience with IVP panel discussions & possible workshop session**
- **June 8-10th, 2021 - TU Automotive FOCUS: Connected Vehicle Commerce (IVP)**
- June/July 2021 - IVP & EV Charging Webinar
- August 2021 - TU Automotive Week w/IVP & EV Charging panels
- August 2021 - LIVE GENIVI IVP Collaboration Workshop During TU Automotive Week
- September 2021 - GENIVI Technical Summit
- September 21-22nd, 2021 - Automobili-D (part of Autoshow Week)
- October/November 2021 - GENIVI AMM with IPV panels and workshop
- November/December - Possible IVP Automotive World Webinar
- January 5, 2022 - CES 2022 Connect2Car (IVP/EV Charging Panel)
- January 5, 2022 - CES 2022 GENIVI CES Networking Reception and Showcase with IVP Pavilion Area

Note: In-Vehicle Payment (IVP) & EV Charging Group monthly calls to be announced shortly following the Feb 25th workshop

Future Payment Topics

- ACH / Debit
- Close loop payment methods
 - Paypal
 - Venmo
- Headunit tokenization
- Secure Remote Commerce (SRC)
- Blockchain / Distributed Ledger

Thank you!

Visit GENIVI:

<http://www.genivi.org>

<http://projects.genivi.org>

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