



# 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

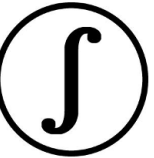
- COO, Connected Travel
- GENIVI IVP SIG Team Lead
- Former Managing Director, Honda Innovations
- [JMoon@connectedtravel.com](mailto:JMoon@connectedtravel.com)



## Michael Nunnery

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

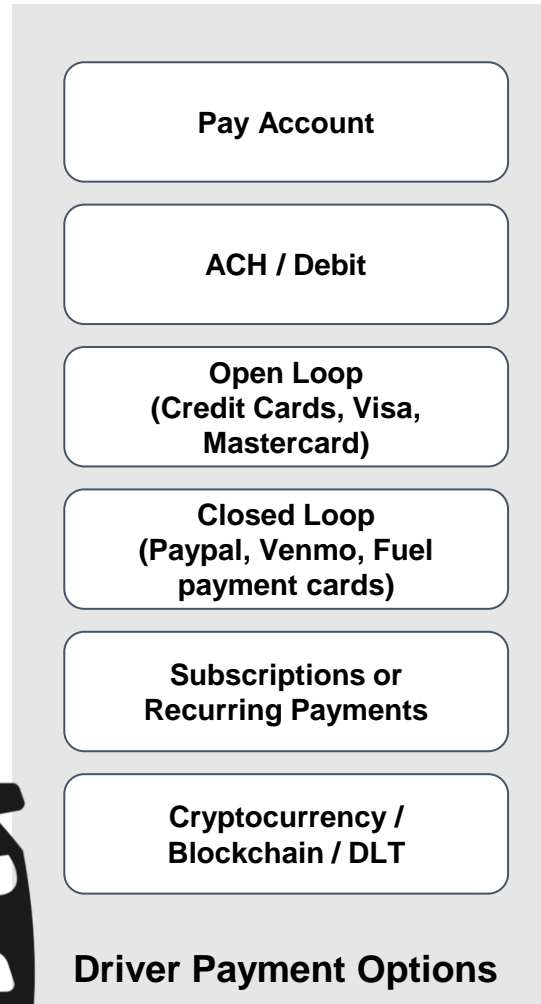


Insurance Payment



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



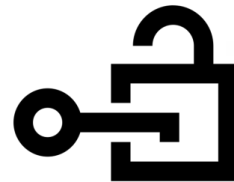
## Payments

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**



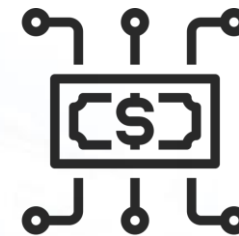
**Merchant  
Integration**



**Vehicle Technology  
Integration**



**Payments Ecosystem:  
Partner vs Vendor**



# In-Vehicle Payments Ecosystem - Discussion



# VISA

**Anthony Petit**  
Visa

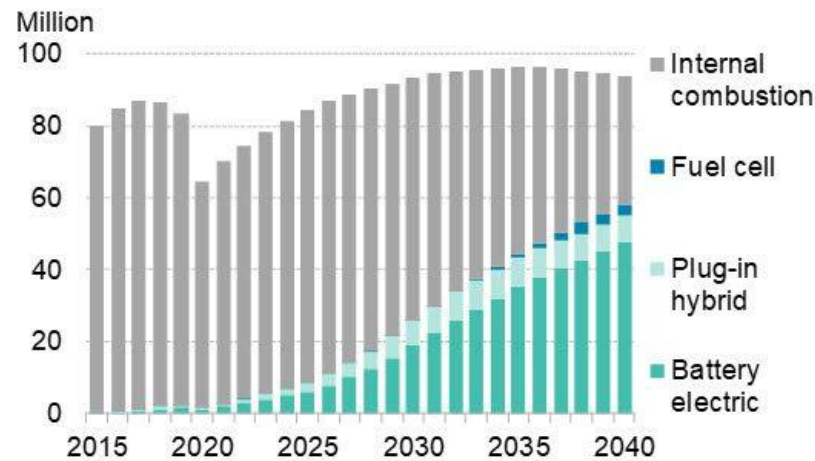


# EVs & Payment



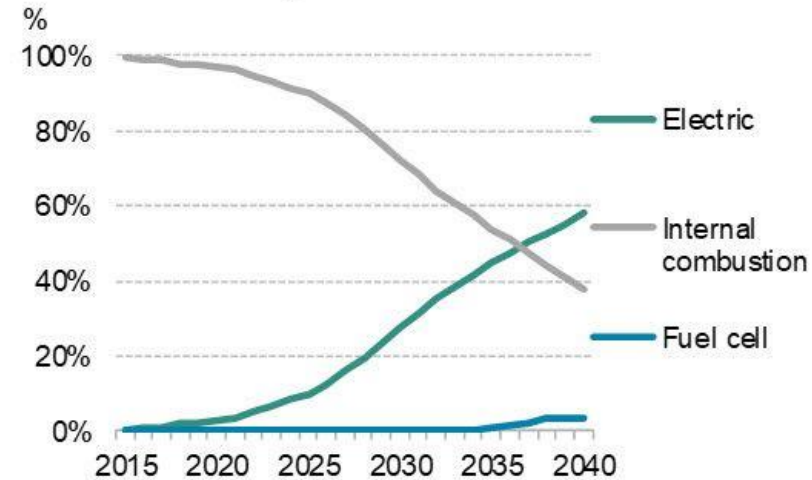
# EV Market Growth

**Figure 1: Global annual passenger vehicle sales by drivetrain**



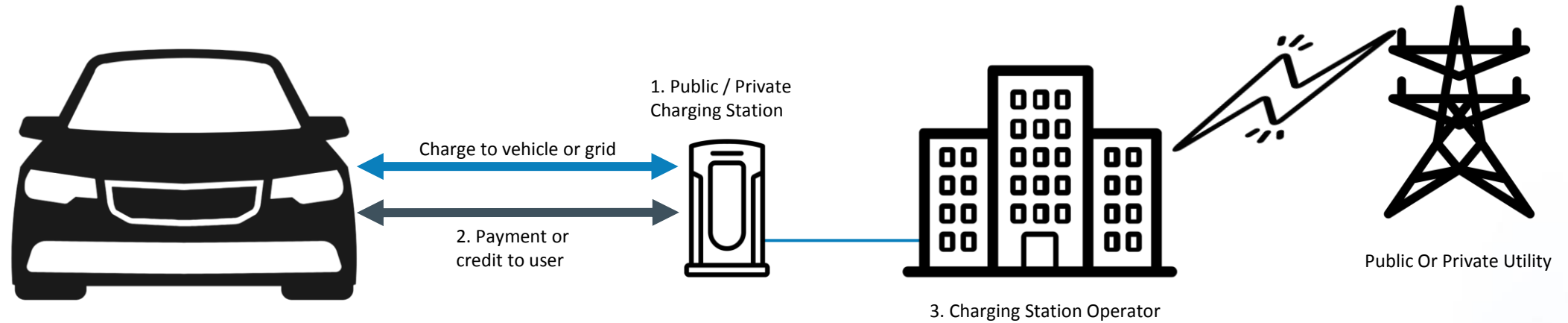
Source: BNEF. Note: Electric share of annual sales includes battery electric and plug-in hybrid.

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



”Simpler vehicles but more complex infrastructure”

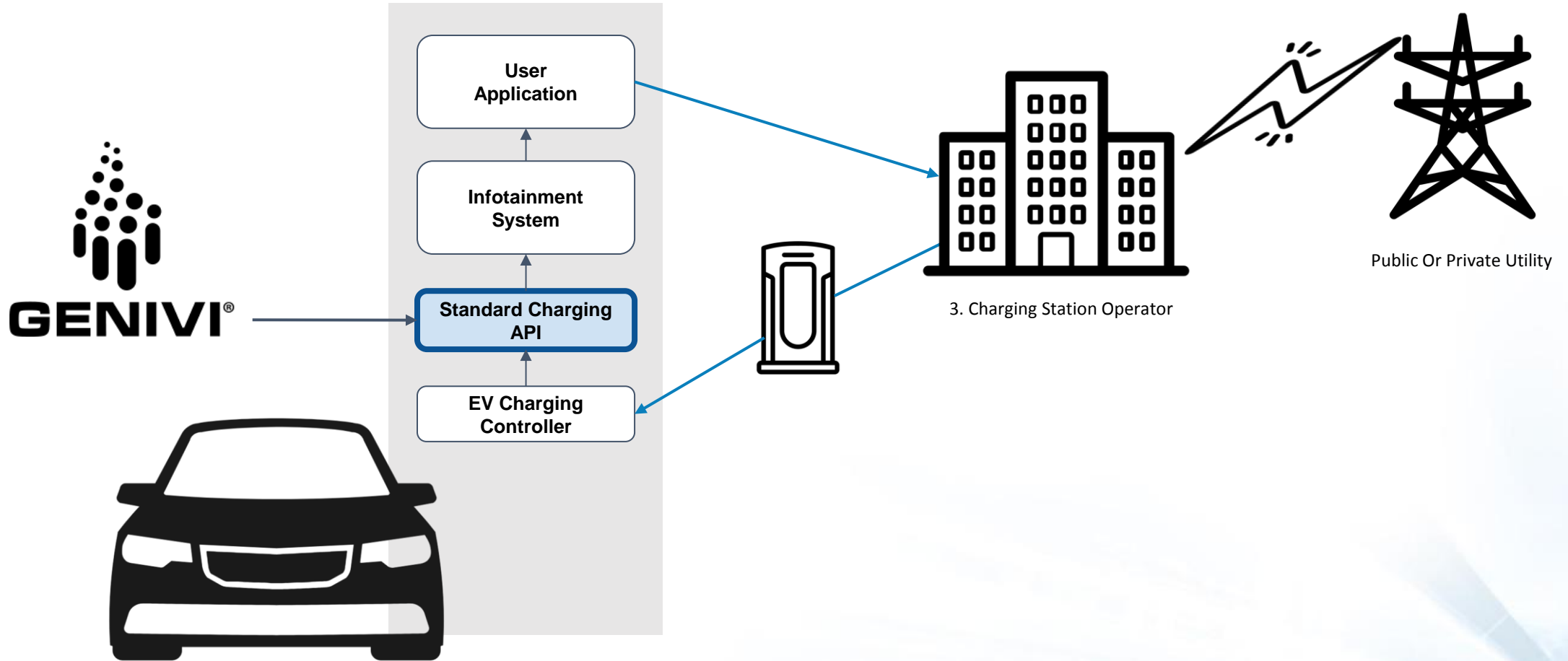
# EV Charging Payment Use Case



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)

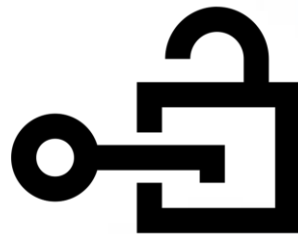
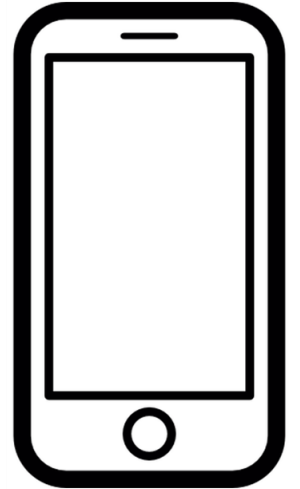
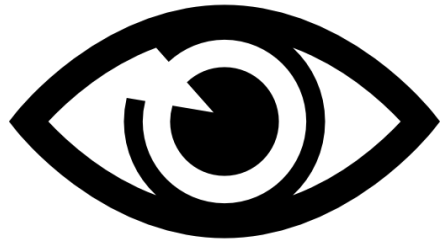
Something the  
customer  
is

(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 banner features a futuristic car interior with a glowing blue dashboard and steering wheel. Text on the banner includes: 'Informa Tech Automotive Group', 'Automotive', 'WARDS INTELLIGENCE', 'WARDSAUTO.', 'INFORMA TECH AUTOMOTIVE GROUP Focus: Connected Vehicle Commerce', 'June 8 - 10, 2021 | Virtual', 'REGISTER YOUR INTEREST: https://wardsauto.informa.com/cvc-register-your-interest-genivi', and the GENIVI logo.

## Capitalize on the \$86 Billion Industry

Be part of the conversation to make In-Vehicle Payments a viable channel and achieve widespread adoption.

Studies published in 2020 highlight the commercial future of In-Vehicle Payments, estimating a value of \$86 billion by 2025.

In-Vehicle Payments leverage the vehicle's onboard systems to facilitate payments. One of the major advantages of this is the increased convenience for drivers. Exciting new FinTech innovation, partnerships within the industry, and increased consumer demand has sparked a Payment revolution.

**But what is needed to drive In-Vehicle Payments forward?**  
**2021 Focus: Connected Vehicle Commerce** will gather the experts to bring the latest innovation, technology, and strategy to your screen for a live virtual event.

**TOPICS 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?
- 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>

## Contact us:

[help@genivi.org](mailto:help@genivi.org)

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