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SECURING THE IOT CONNECTED CAR WITH DIGITAL IDENTITY

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Strange Times for the Automotive Industry





“We are currently experiencing the biggest change the automotive industry has ever seen. It all comes down to whether we believe we can earn as much money in the future from mobility services as we can from selling cars. I see tremendous opportunities for this. Being able to offer people premium mobility at any given moment is an exciting prospect.”

Peter Schwarzenbauer

Member of the Board of Management of BMW AG, responsible for MINI, Rolls-Royce, BMW Motorrad, Customer Engagement and Digital Business Innovation BMW Group

 **ChargeNow**

ChargeNow provides easy access to the world's largest network of public charging stations.

 **DriveNow**

DriveNow is the car-sharing service from the BMW Group and Sixt that gives customers the flexibility to rent cars when and where they need them.

 **ParkNow**

ParkNow enables digital payment for both on and off-street parking.

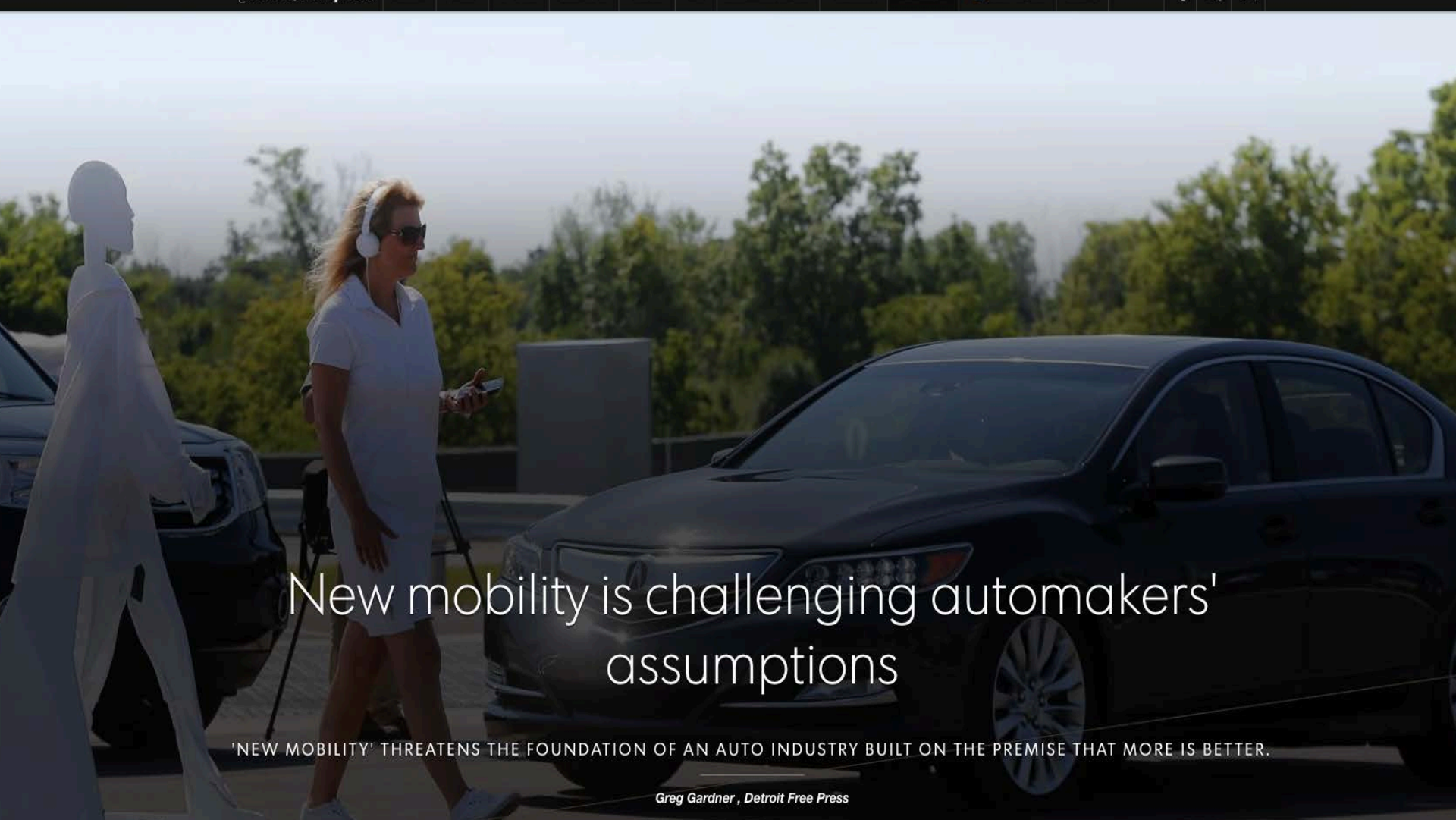
 **ReachNow**

ReachNow offers a range of expanded on-demand mobility solutions in the US and China.





BENTLEY

A woman with blonde hair, wearing a white short-sleeved dress, white headphones, and sunglasses, is walking from left to right. She is holding a smartphone in her left hand. In the foreground on the left, there is a white silhouette of a person walking in the same direction. To the right, a black sedan is parked. The background shows a line of green trees under a clear sky.

New mobility is challenging automakers' assumptions

'NEW MOBILITY' THREATENS THE FOUNDATION OF AN AUTO INDUSTRY BUILT ON THE PREMISE THAT MORE IS BETTER.

Greg Gardner , Detroit Free Press

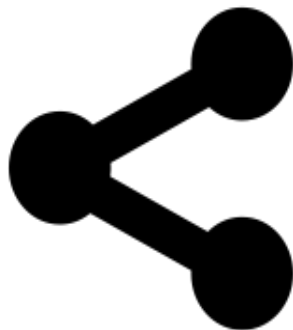
Core Pieces of New Mobility



Connectivity



Sharing



Autonomous



Services



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NEW MOBILITY = DIGITAL SERVICES

&

DIGITAL SERVICES REQUIRE DIGITAL IDENTITY

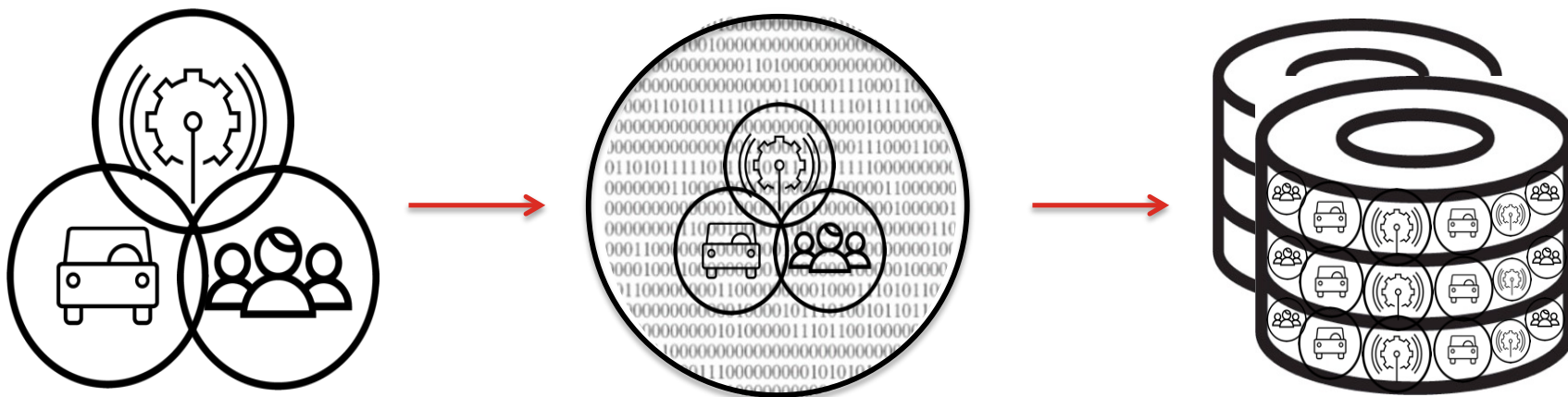
A high-angle, black and white photograph of a massive crowd of people, seen from behind. The individuals are densely packed, filling the entire frame. The perspective is from slightly above and behind the crowd, looking down the rows. The lighting is somewhat dim, creating a somber or contemplative mood. The text "What is Digital Identity?" is superimposed in the center of the image.

What is Digital Identity?

The Four Corners of Digital Identity



Digital Identity



The information that makes something unique

Credentials and Authentication



Establishing Digital Trust and Assurance

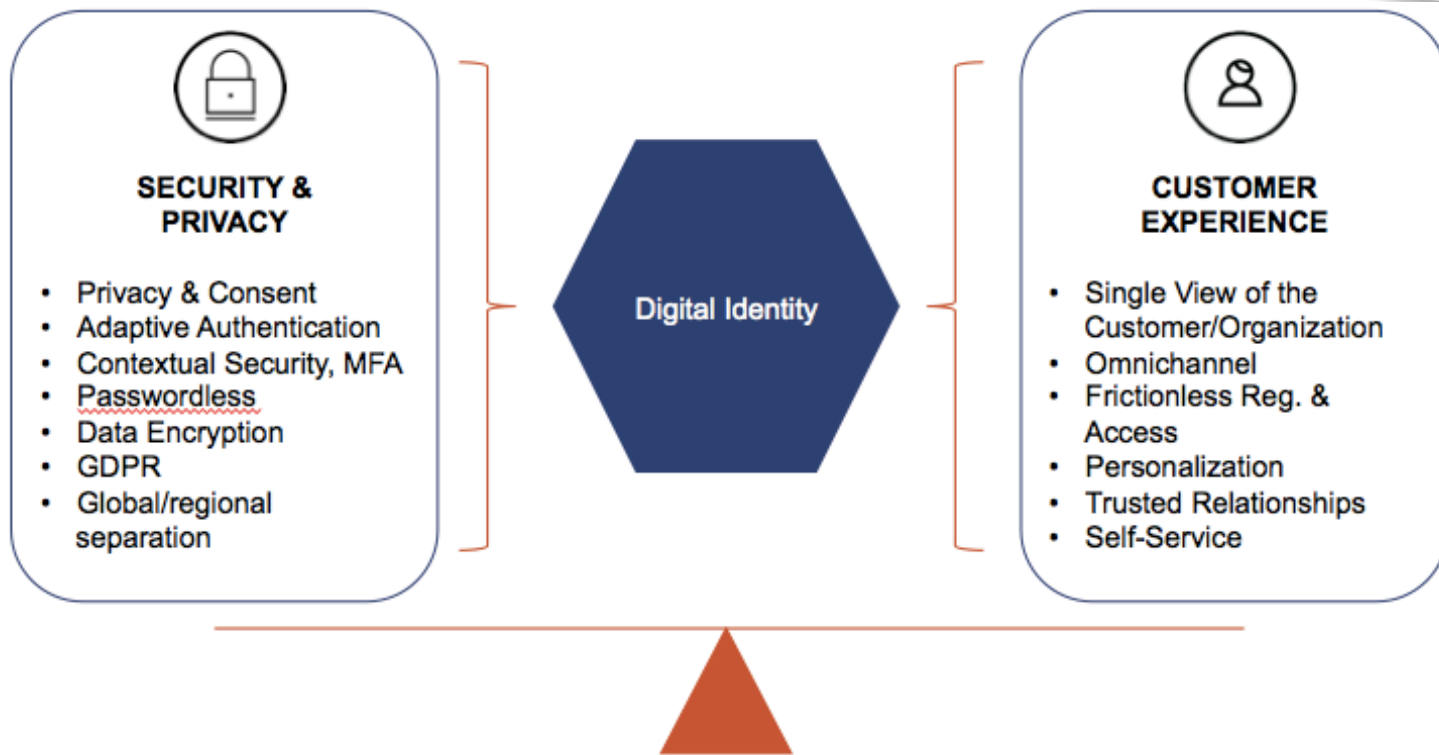
The Four Corners of Digital Identity



Authorization

Yes or No?

The Intersection of Security and Experience



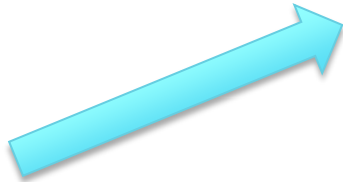
Privacy and Consent Matters

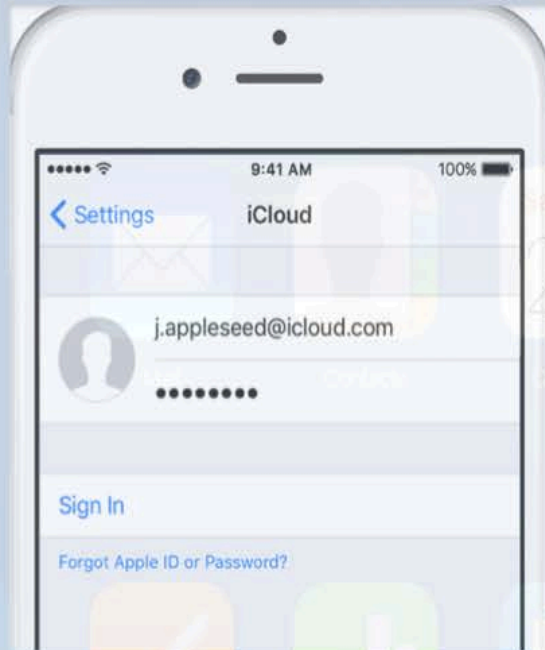


- Data Access
- Data Exchange
- Data Monetization
- Device Data
- Consumer Trust
- Regulatory Compliance



A Familiar Paradigm





Calendar



Photos



Pages



Numbers



Keynote



Find Friends



Find iPhone



Settings





It's All About Relationships

People



Cars



Cloud Services



Sensors

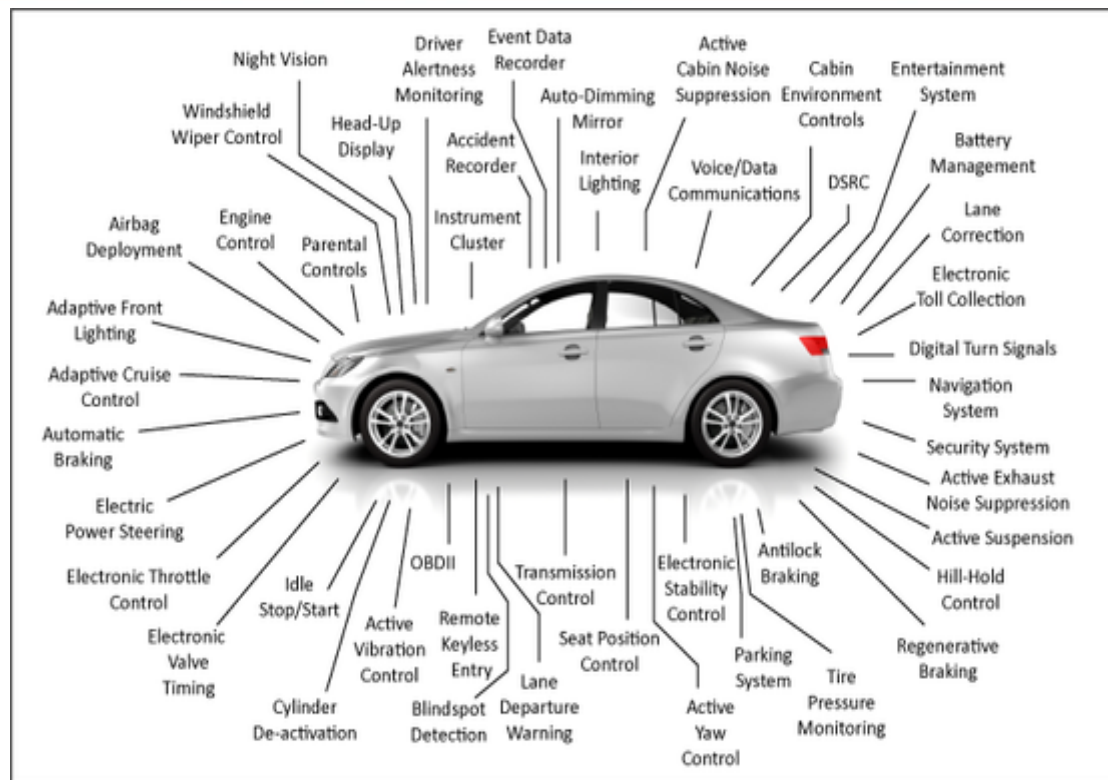


Software



Infrastructure

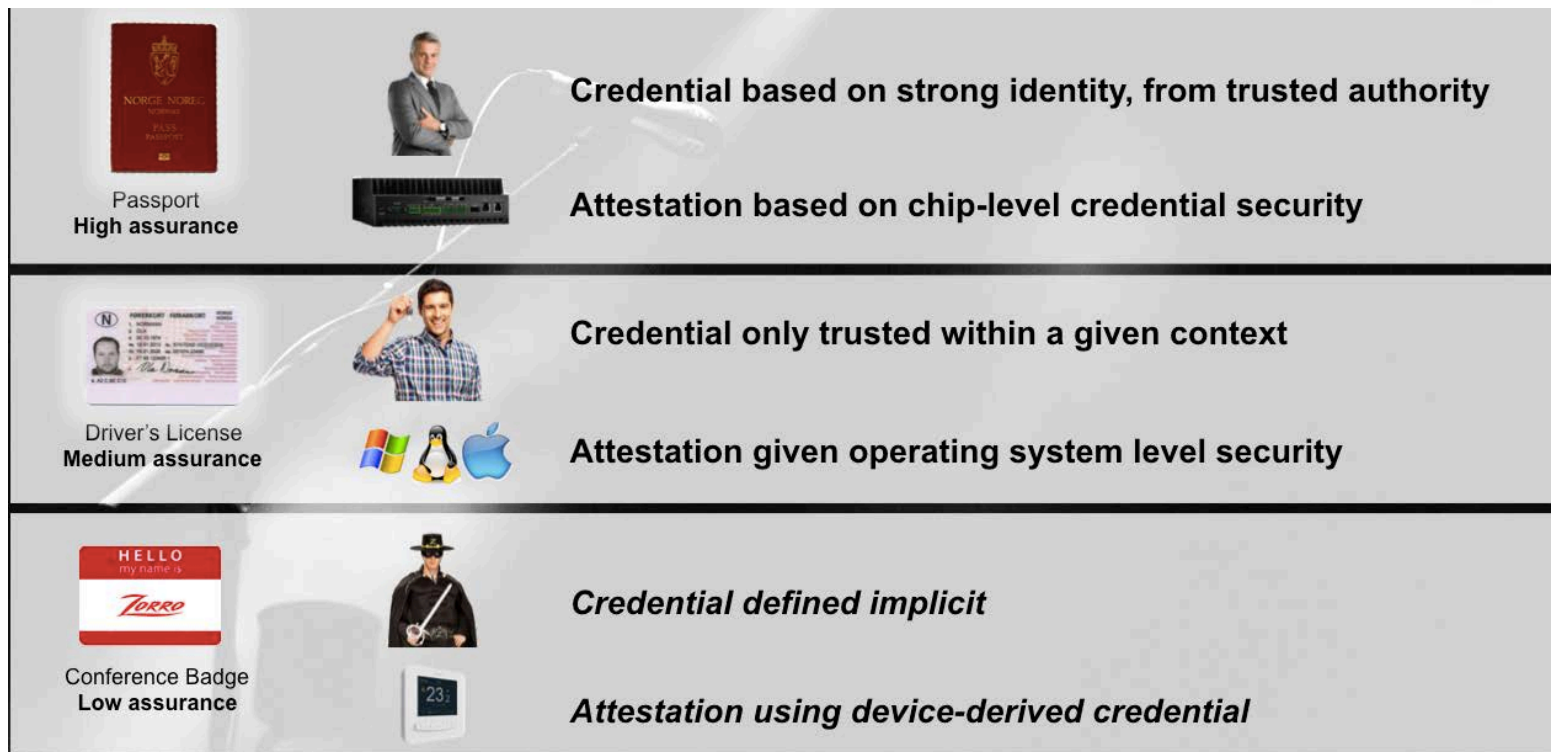
Cars and Connected Devices





- Connected Devices...
 - Exist to better serve customers and business processes
 - Are not effective in silos
 - Require varying levels of Trust and Security
 - Need Digital Identities, Credentials, Authentication and Authorization
 - Are very different across different industries and use cases, and therefore;
 - Are underserved when referred to in bulk as “IoT”

Trusted Credentials – People vs. Devices



PEOPLE



Owners



Drivers



Maintainers

Identity Keys



Voice Recognition



Biometric

VEHICLES



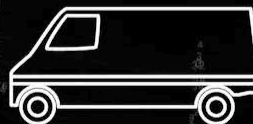
**Ownership and
Personalization**



Car Sharing



Ride Hailing



Smart Logistics

Digital Identities



Authentication



Authorization

MOBILITY SERVICES



Monetized Services
Digital content, subscriptions, etc.



Urban Mobility
Vehicle-to-Infrastructure



V2V
Vehicle-to-Vehicle

Summary



- Automotive is evolving into a new “Mobility” Industry
- This new industry favors the *as-a-service* model over ownership
- Digital Identity expands Security and Privacy from compliance & prevention tools to critical business enablers
- Cars and Mobility is just one industry example
- Reconsider “IoT” and think of connected device roles in terms of industries, business use cases and value chains

Apply What You've Learned



- Identify your customer's connected endpoints (includes devices) and consider how to apply the 4 corners of identity beyond humans
- Think about how to integrate IoT Device and Device identities with human and organizational identities.
- Learn more about the User Managed Access Standard
- Check out other standards and open source bodies such as Automotive Grade Linux (AGL) and the Car Connectivity Consortium (CCC)