

Automated Valet Parking Demonstration

- Corktown -

Center for
Automotive Research

November 2, 2020



Partnership By:



Detroit Automated Valet Parking (AVP) Demonstration

Demonstrations / Shared Learnings



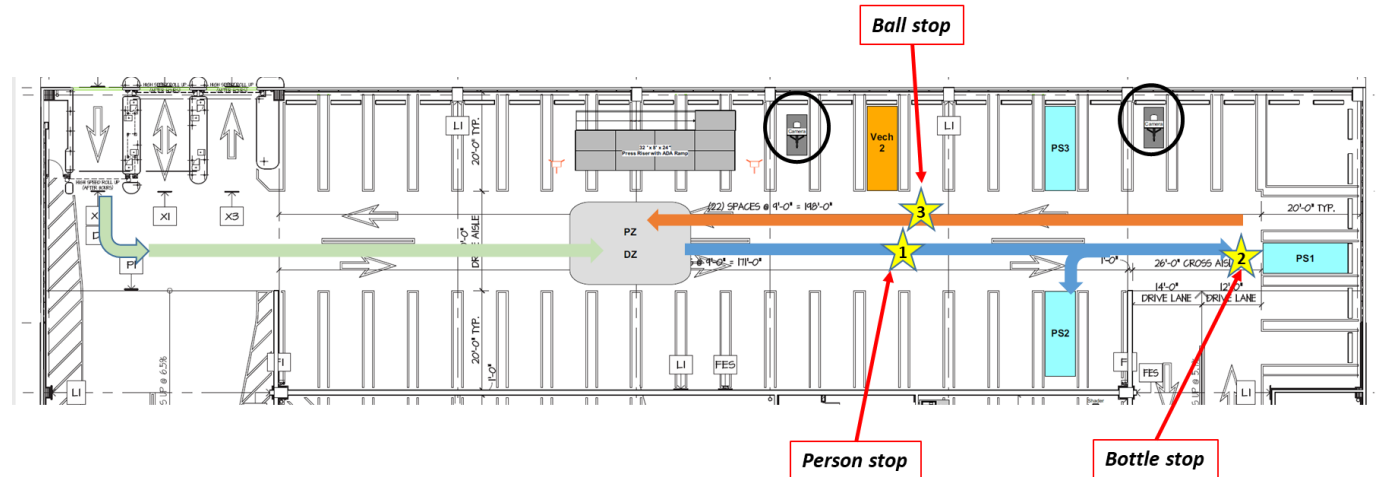
Bedrock Assembly Garage - Corktown



2 Ford Escapes enabled with Bosch AVP



Ford, Bedrock, and Bosch
Formed a unique cross-industry partnership to produce
1st NA AVP technology demonstration - in Detroit!



Automated Valet Parking (AVP) Demonstration

Stakeholder Value



For drivers searching for a parking space



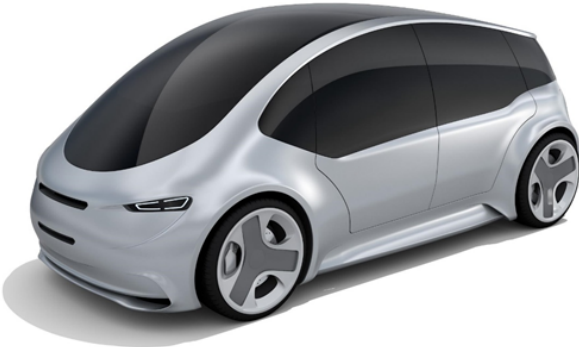
For vehicle manufacturers



For real estate development companies and parking facility operators

Automated Valet Parking (AVP) Demonstration Solution Enablement

VEHICLE REQUIREMENTS



automatic
transmission



electric power
steering system



ESP



start/stop
function



electric
parking brake



communications
unit

Automated Valet Parking (AVP) Demonstration Solution Enablement

INFRASTRUCTURE REQUIREMENTS



cloud back end



connectivity hardware



sensors



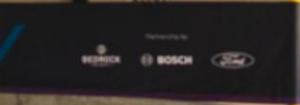
parking garage server*

*will be replaced by cameras as edge device in the future

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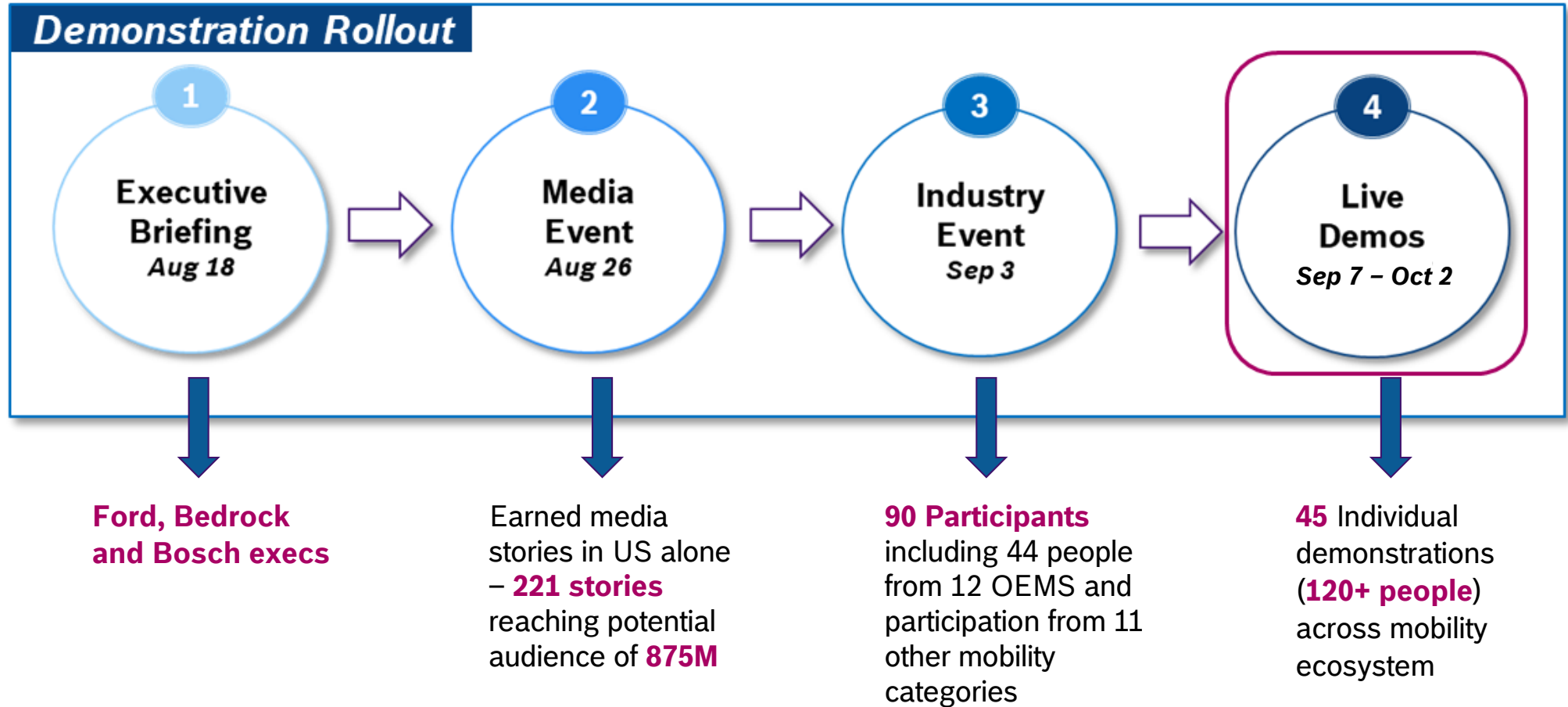


**AUTOMATED VALET
PARKING EXPERIENCE**
In Corktown



Detroit Automated Valet Parking (AVP) Demonstration

Demonstration Rollout: Results Overview



Detroit Automated Valet Parking (AVP) Demonstration

Demonstrations: Preliminary Survey Feedback (40% Response Rate)

- ▶ **78%** have experienced a driverless vehicle previously
- ▶ **100%** stated that the AVP Technology “**Met**” or “**Exceeded**” their expectations
 - ▶ **42%** say AVP tech “*exceeded their expectations*”
- ▶ On a scale of 1 to 5, **90%** of participants scored AVP greater than 4 in its ability to manage the parking experience
- ▶ **78%** willing to **pay** for AVP feature



Detroit Automated Valet Parking (AVP) Demonstration

Takeaways (1 of 2)

- ▶ Infrastructure ...
 - ▶ Infrastructure-based valet parking could be faster to market than vehicle-based solution
 - ▶ Infrastructure input (V2I) will always be critical – even to the most capable AV's
- ▶ Scaling ...
 - ▶ Industry standards critical
 - ▶ Infrastructure / OEMs lifting at same rate
- ▶ Government / Regulators ...
 - ▶ High interest in data interface ...
 - ▶ ... But minimal jurisdictional interest



Detroit Automated Valet Parking (AVP) Demonstration

Takeaways (2 of 2)

- ▶ Live demonstration in real-world environment important to understanding / acceptance
- ▶ ROI to infrastructure provider / parking operator focused around:
 - ▶ Increased density
 - ▶ Competitive advantage
 - ▶ Incremental services / process optimization
 - ▶ Decreased liability
- ▶ Stereo-camera based solution ...
 - ▶ Extremely compelling to infrastructure providers



Automated Valet Parking (AVP) Demonstration

Stuttgart Airport: Fully Automated and Driverless Parking

- ▶ The new Mercedes-Benz S-Class is equipped with the technology to enable driverless, fully automated parking.
- ▶ For AVP, Bosch is using camera-based infrastructure for the first time to detect lanes and obstacles.
- ▶ The parking garage operator Apcoa is testing barrier and payment functions as the basis for automated valet parking, enabled by its APCOA FLOW digital mobility platform.



STR Airport Parkhaus – P6

Automated Valet Parking (AVP) Demonstration

Reference Material

▶ **Detroit AVP Demonstration Videos**

<https://www.youtube.com/playlist?list=PLvPEEHwpQNMQBZzD3UhDwSj2c1k4CEi15>

▶ **Stuttgart Airport AVP Video**

<https://www.youtube.com/watch?v=B5dgKed7BTw&feature=youtu.be>



THANK YOU!