



ZeroLight at XRDC presents

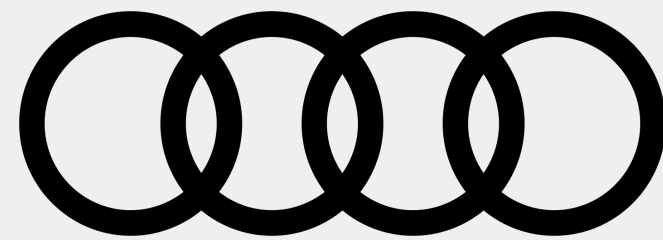
# Mastering XR for Automotive

Chris O'Connor



At ZeroLight we specialise in Automotive visualisation, the team has developed XR experiences for many brands

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# ZeroLight XR

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## High quality & performance

High-poly content with advanced lighting and reflections



## Fully integrated with your existing models

Our solutions don't require manual re-modelling for VR or AR

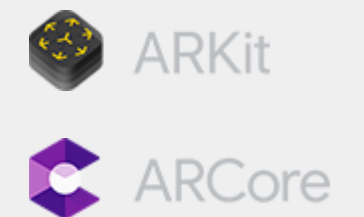
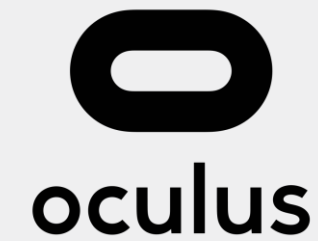


## Full range of VR and AR devices

We support the latest and emerging headsets and mobile devices

Innovation is important, we work with the latest and greatest technology

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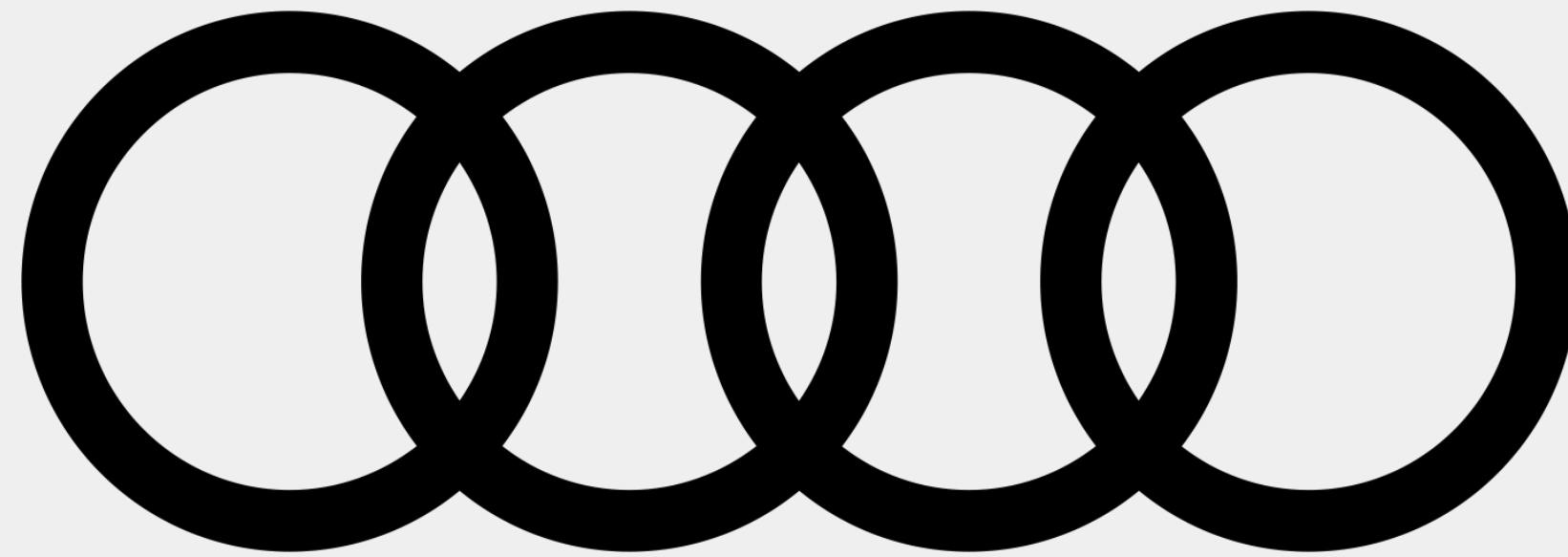






# VR Projects

Audi VR





# Audi VR

## Features and Challenges

- 7 million polygon cars with very detailed materials





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SHOT IN REAL-TIME





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- Due to success it's now rolling out to dealerships worldwide





# Pagani VR





# Pagani VR

## Features and Challenges

- Pagani only make ~40 cars a year
- Quality and detail is extremely important
- Any part of the car can be customised
- Customers use 4K configurator then VR

## New Lessons we learnt

- Virtual car was completed before the real car
- Carbon fibre is easier to perfect in CG

## Success and what's next

- Configurator used worldwide in dealerships
- Our car of choice for R&D





Toyota VR



**TOYOTA**

# Toyota CHR VR

## Features and Challenges

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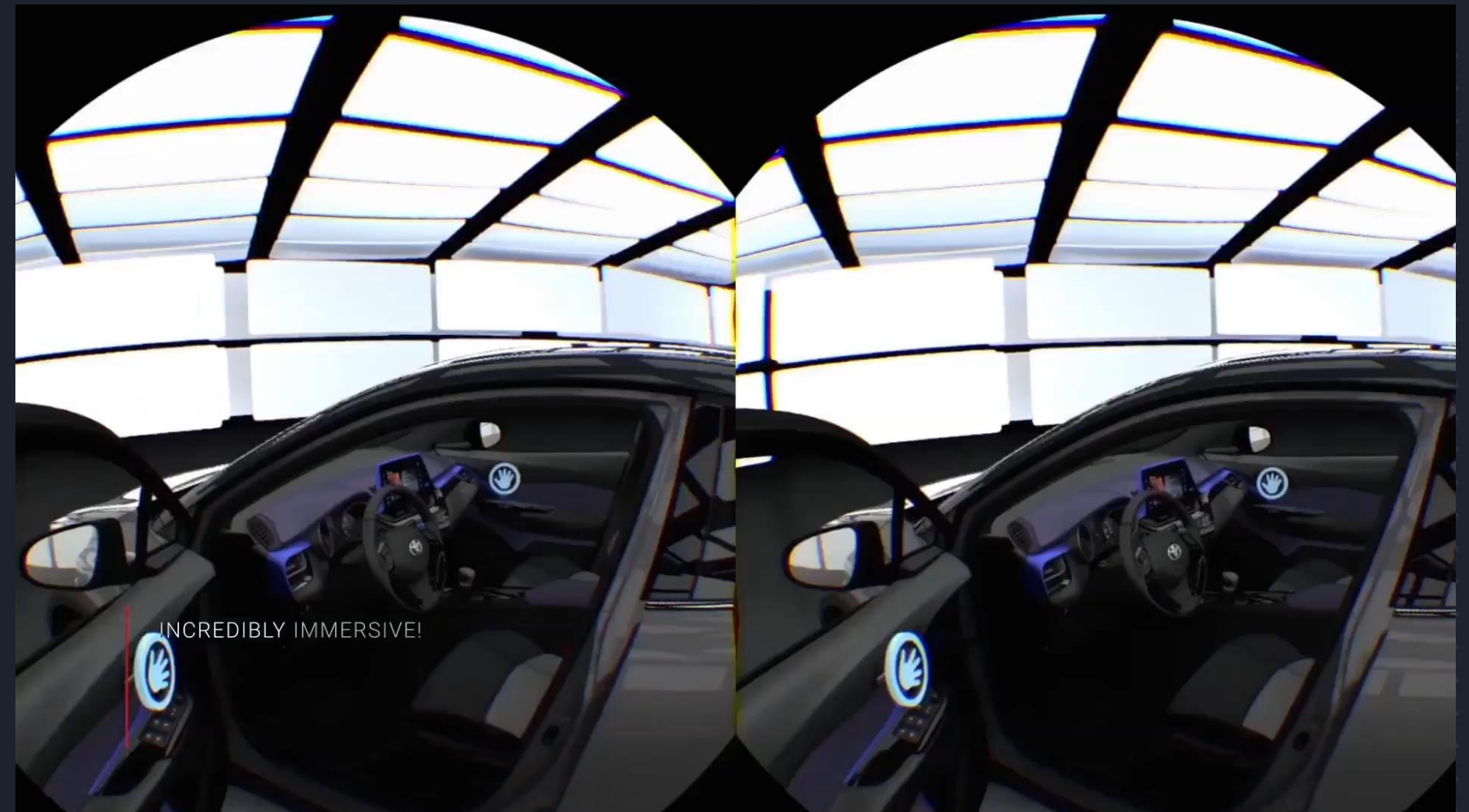
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- User takeaway Cardboard VR app



Nissan VR





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## Features and Challenges

- Visualise the new Nissan Leaf in any configuration
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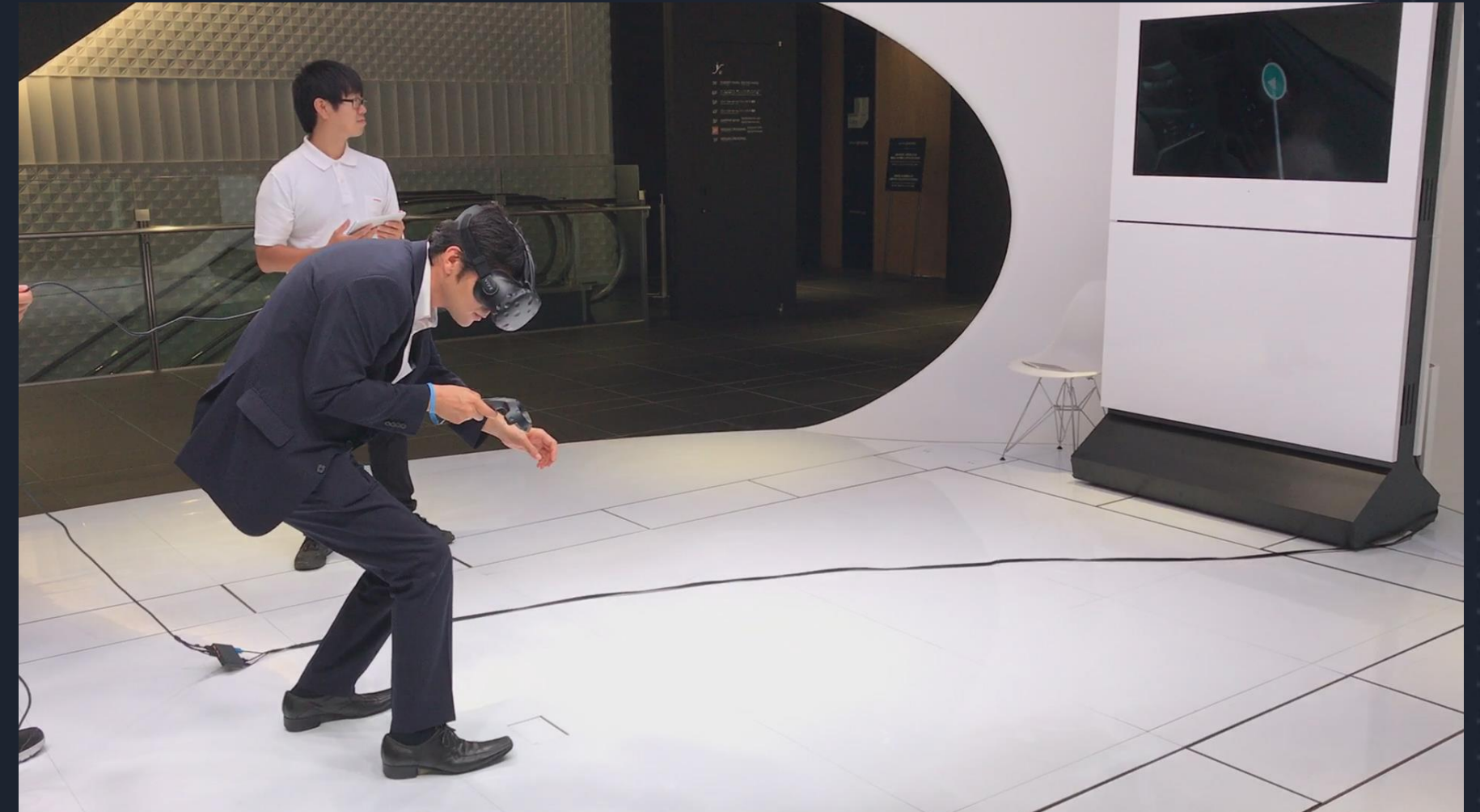
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- Visitors spent more time with Virtual car



# Porsche VR





# Porsche Mission-E VR

## Features and Challenges

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- Porsche connected customer journey

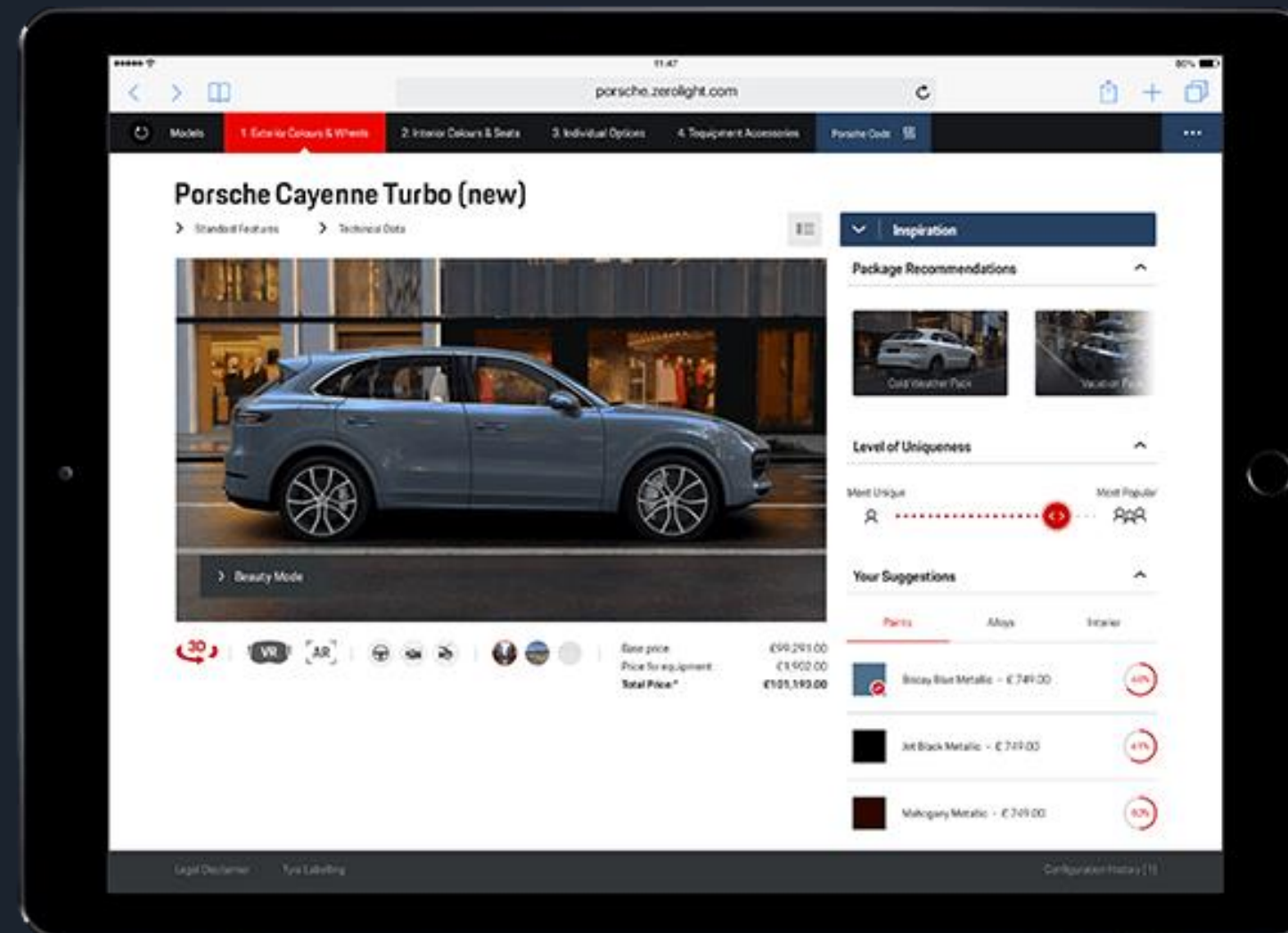




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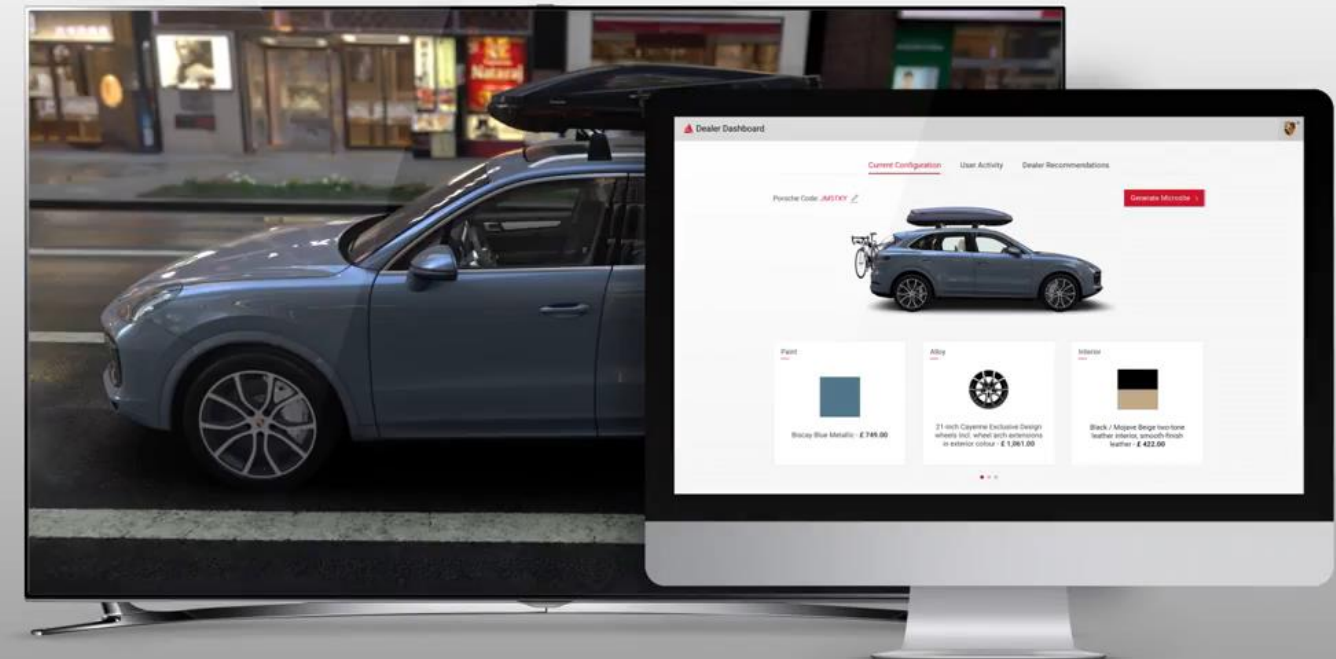
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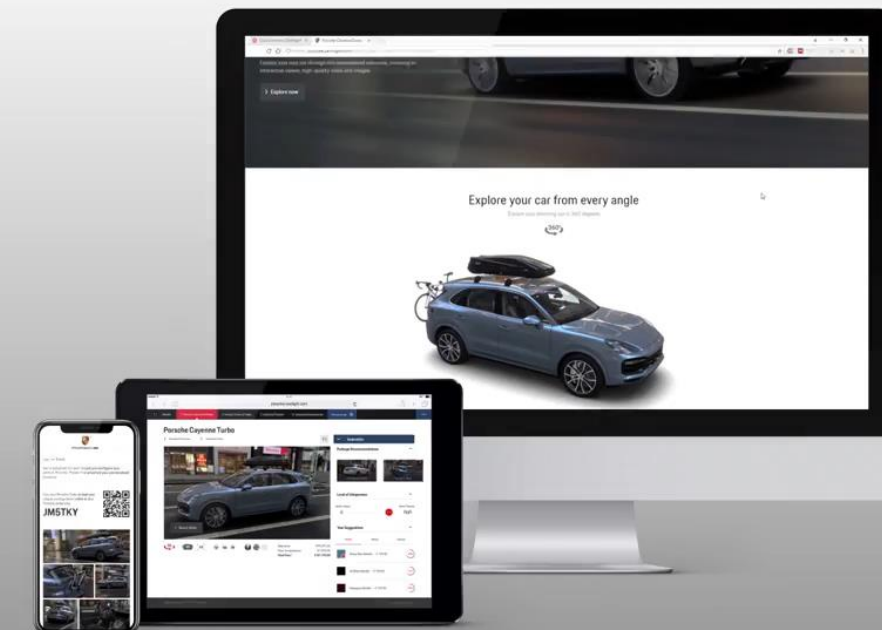
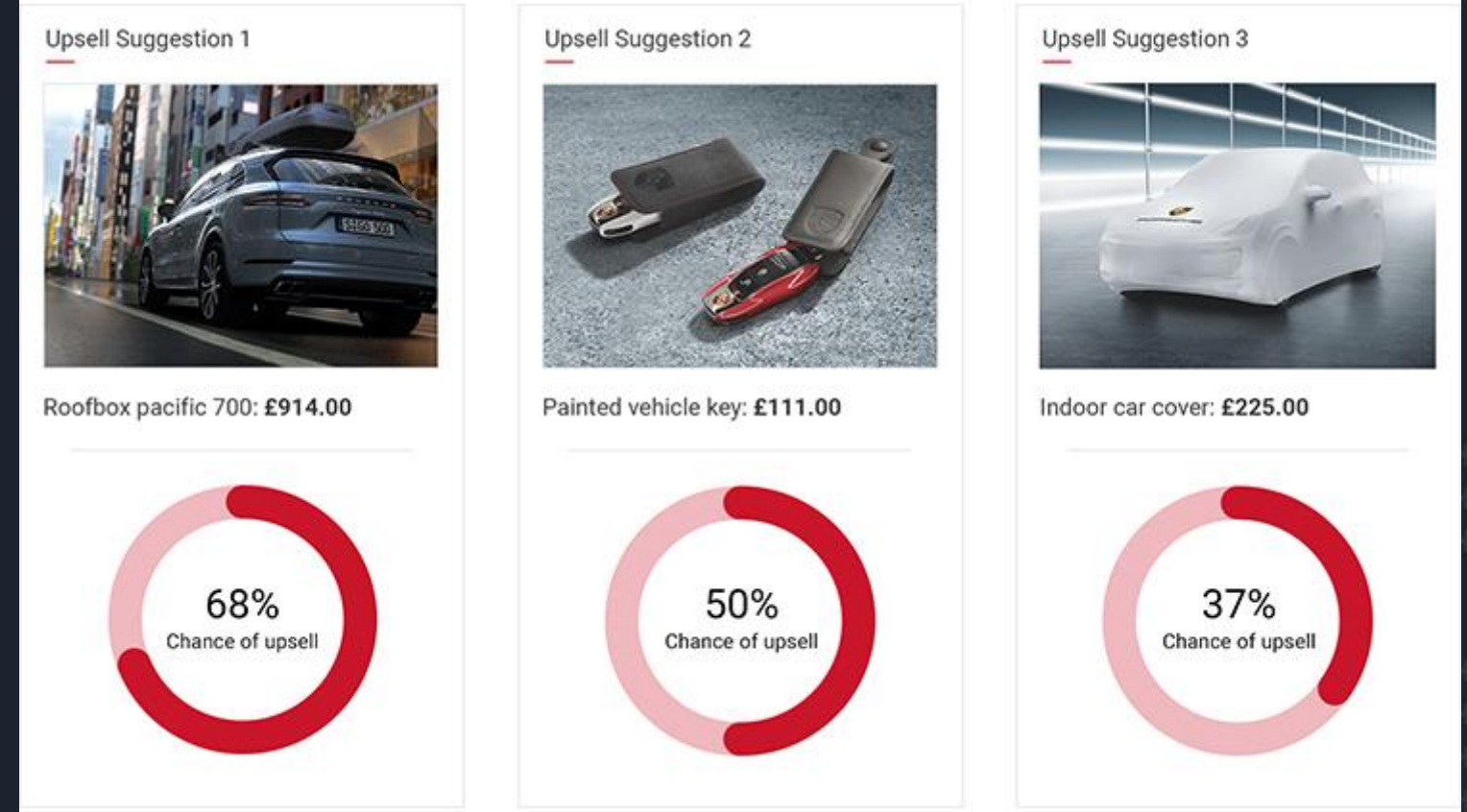
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## Achievements and what's next

- Every part of the buying experience is customised for you



BMW VR





# BMW M5 VR

## Features and Challenges

- Designed to excite and engage M Drive customers



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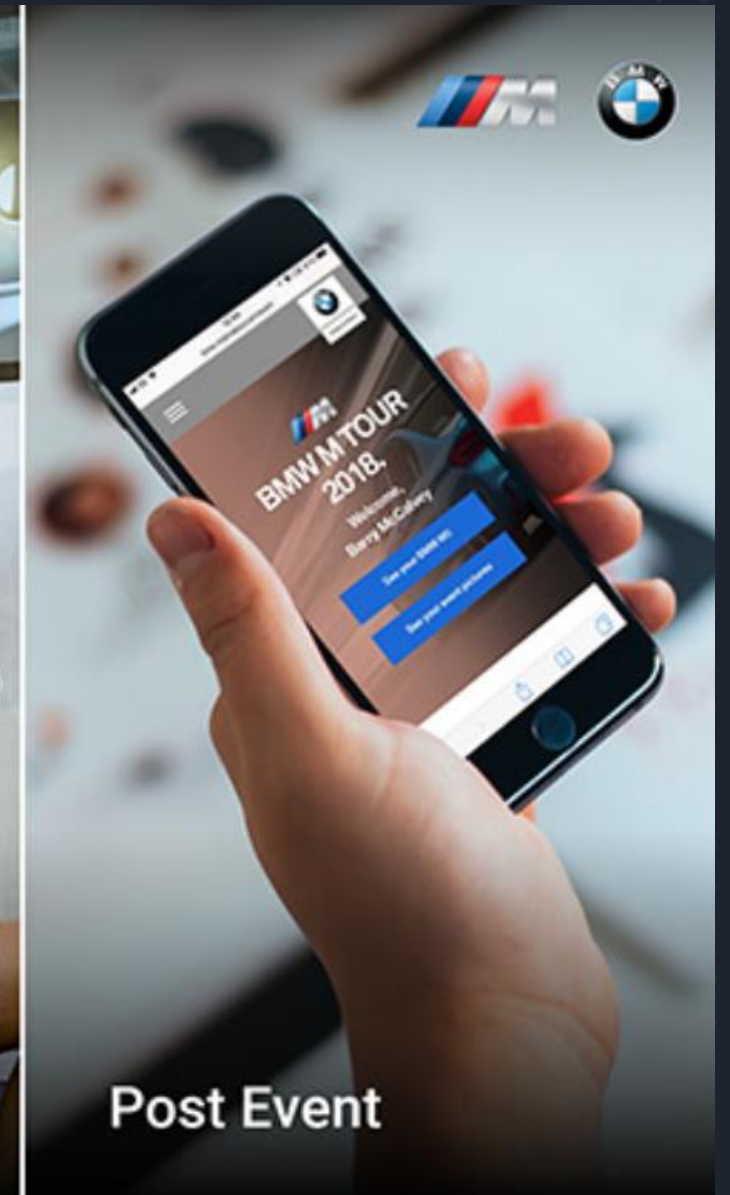




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- Higher resolution HMD enhanced user immersion







# AR Projects



# Tethered AR

## Features and Challenges

- Using the Pagani Huayra





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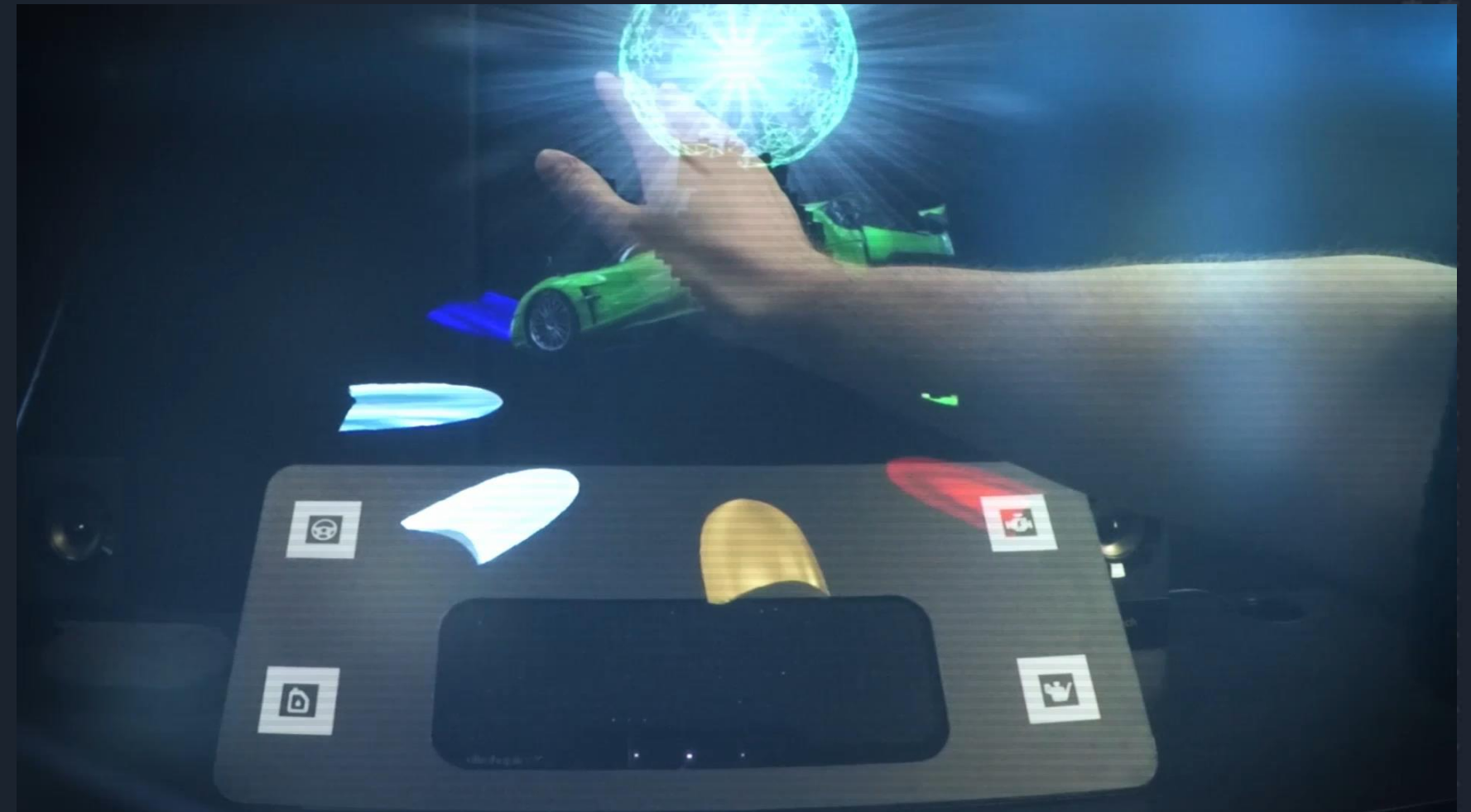
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- Haptics really help with interactions
- Transparency destroys immersion, opaque AR will be next



# ARKit/ARCore

## Features and Challenges

- Mobile devices are powerful but way less than a PC
- Clients want all Cars, all configurations, same look and quality

## New Lessons we learnt

- Fast Proxy tech developed
- Any car and any config in AR within minutes

## Achievements and what's next

- Connected to other experiences as a user takeaway
- AR for the mass market





ZeroLight XR, What's Next?



# XR R&D

## 1 Volumetric Video Environments





# XR R&D

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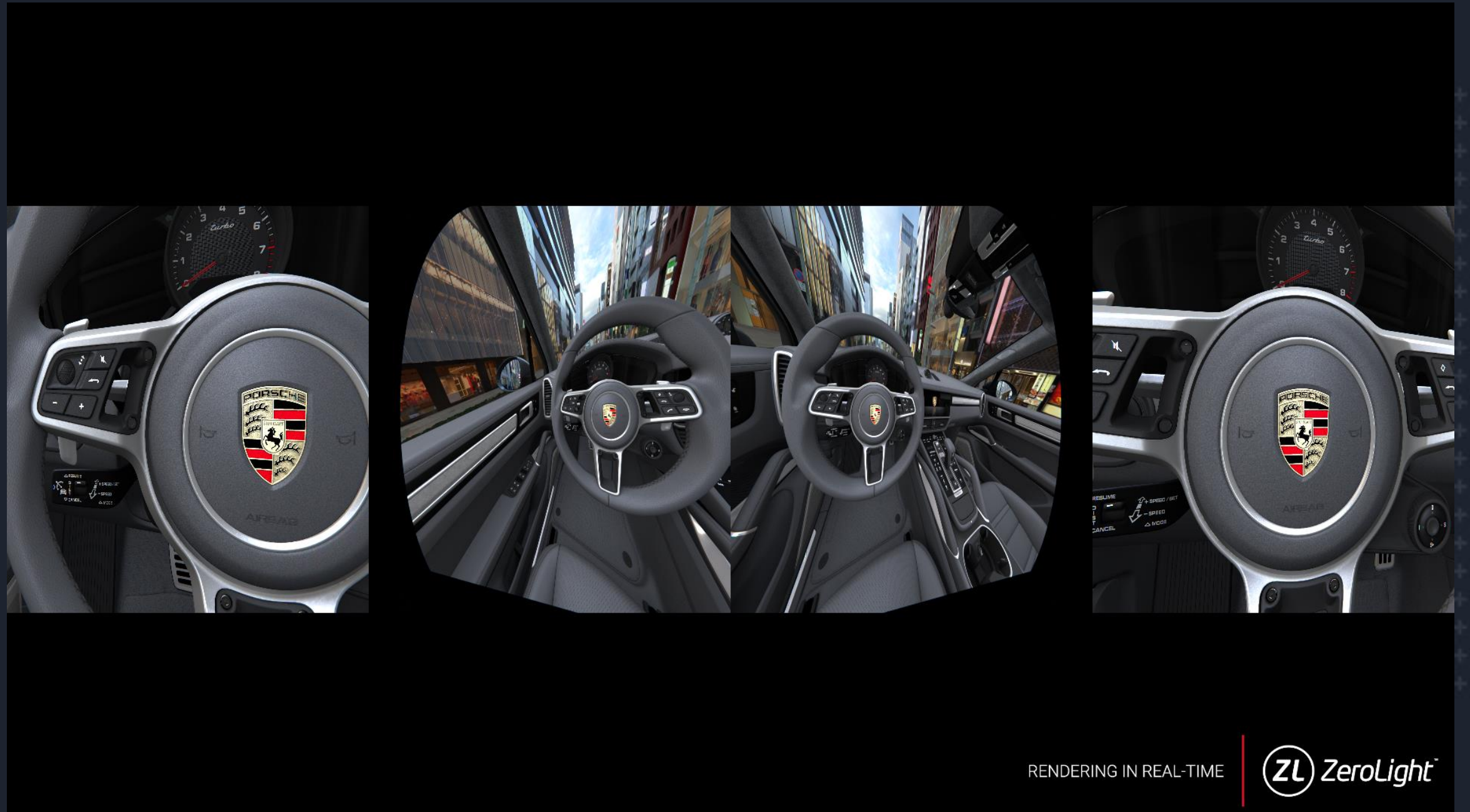
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- 2 2<sup>nd</sup> Generation VR headsets
- 3 Foveated Rendering
- 4 Data Collection
- 5 Opaque AR HMD







Conclusions



# Every project teaches us more and enhances our platform

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- |   |                                          |   |                               |
|---|------------------------------------------|---|-------------------------------|
| 1 | High quality real to life rendering      | 1 | Interaction Logic             |
| 2 | Automation of assets                     | 2 | User Immersion                |
| 3 | High FPS and Low Latency                 | 3 | Take away XR experiences      |
| 4 | Real world objects                       | 4 | Interface with all senses     |
| 5 | Know your audience                       | 5 | AR is different to VR         |
| 6 | Many different uses for XR in automotive | 6 | Anti-Aliasing Quality         |
| 7 | Hardware is always advancing             | 7 | Immersive Environments        |
| 8 | Connected experiences                    | 8 | Choose the right hardware     |
| 9 | XR sells cars                            | 9 | Technology promotes the brand |



Join the team!

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<https://zerolight.com/careers>

Questions?

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