

IMMERSIVE XR & VR MEETS UNMATCHED MOTION FIDELITY

SIMON HOLLOWAY, COMMERCIAL DIRECTOR AT DYNISMA

SIMON HOLLOWAY

Commercial Director

2003 - 2009

Pi Research

Business Development Manager

2009 - 2014

Cosworth

Business Development Manager
Head of Sales - Sports
Global Sales Manager - Motorsport

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RML Group

Commercial Director

2023 - Present

Dynisma

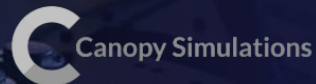
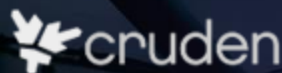
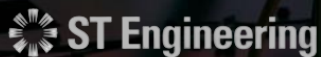
Commercial Director



A MEMBER OF
**SILVERSTONE
TECHNOLOGY
CLUSTER**

DIFFERENTIATED BY MOTION

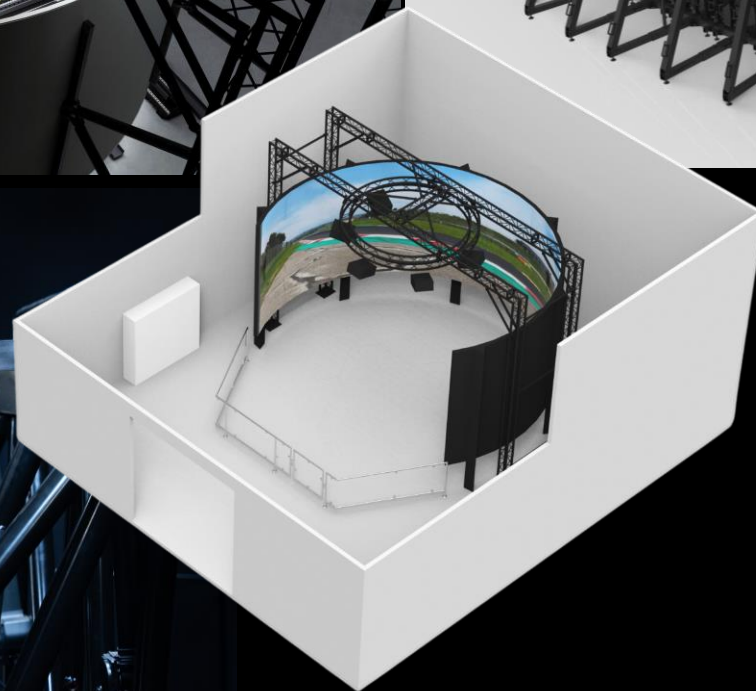
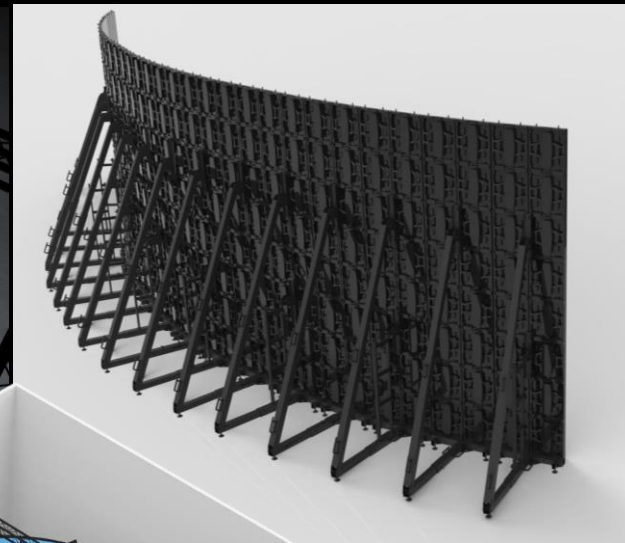
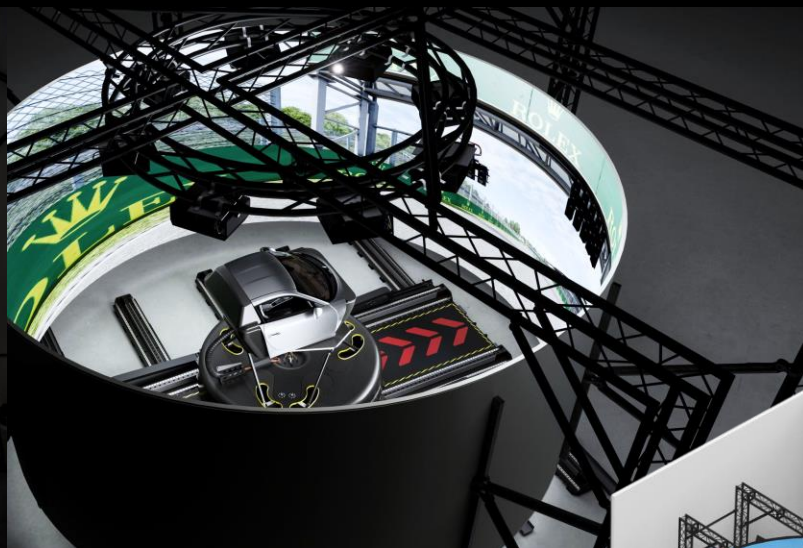
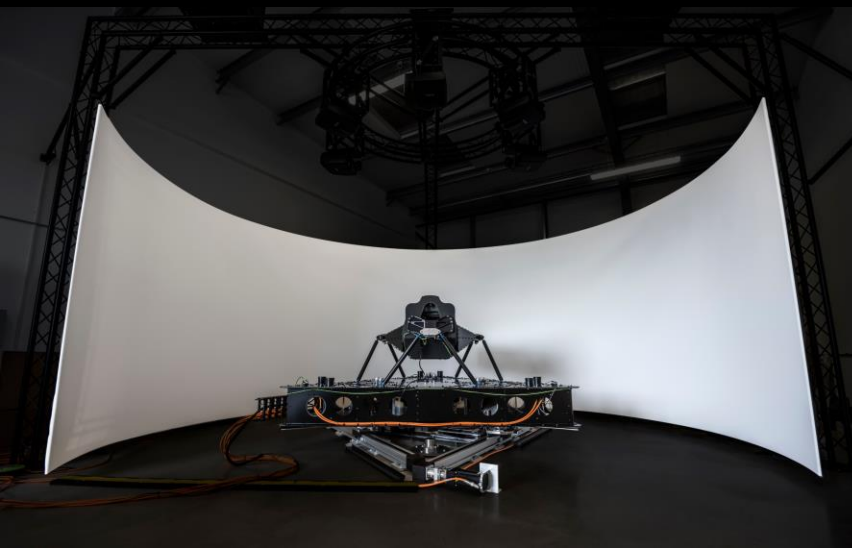
- Dynisma supplies turnkey simulators to Automotive and Motorsport customers using our expertise in design, manufacture and use of simulation.
- Our simulators are differentiated by our unique DMG technology.
- This means we are open to supply simulators to suit the customer's preferred choices for modelling software, visuals, mockup construction etc. including use of our partner network.



TURNKEY SOLUTIONS

CONFIDENTIAL | 2024

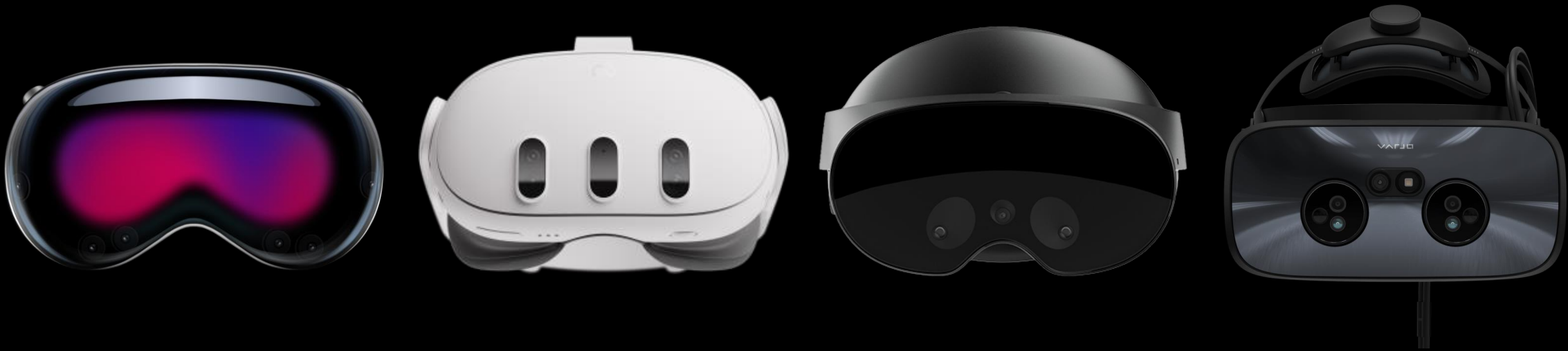
VISUALISATION SOLUTIONS



WHY VR / XR?

- **Stereoscopic vision**
The realistic 3D effect provided by stereoscopy benefits drivers when it comes to judging the distance to objects, particularly when they are close-up. Drivers find it easier to finely clip the apex of a corner, an effect that is emphasised around street circuits with walls such as Monaco.
- **Cost**
A fraction of the cost of projector or LED displays and therefore more affordable to upgrade as technology evolves.
- **Excursion**
Removes limitation of screen size for excursion.
- **FOV**
Allows for an unlimited field of view in the room. Especially useful with large excursion systems.
- **Parallax**
No additional parallax correction is required, as the visuals move with the driver's head motion.
- **Immersion**
One of the main comments from those that have tested the system is of a much greater feeling of immersion in the simulation compared to projected visuals.

WHAT VR SPEC MATTERS?



Resolution

Higher pixel counts per eye provide clearer and more detailed visuals, enhancing immersion

Field of View (FOV)

A wider FOV offers a more encompassing experience, reducing the "tunnel vision" effect.

Refresh Rate

Higher refresh rates (e.g., 90Hz or above) ensure smoother motion, reducing motion sickness.

Tracking Accuracy

Precise head and hand tracking are crucial for realistic interactions within the virtual environment.

Comfort and Ergonomics

Lightweight designs with adjustable straps and balanced weight distribution enhance user comfort during extended use.

Latency

Low latency between user actions and system responses is essential to prevent motion sickness and maintain immersion.

Compatibility

Support for various platforms and content libraries broadens the headset's usability.




TRACKING & MOTION COMPENSATION

Dynisma proprietary software compensates for motion system displacement, providing corrected VR eye point




LIMITATIONS




Resolution

Resolution is lower than projectors, so far away objects can appear blurry. This has not really been an issue and will improve as headsets evolve.




Frame Rate

Projectors and LED walls are running at >120Hz. In VR the current Varjo headset achieves 90Hz; in XR the frame rate is the same but we currently experience some dropouts linked to the additional processing required. This will improve as headsets and the software evolve.



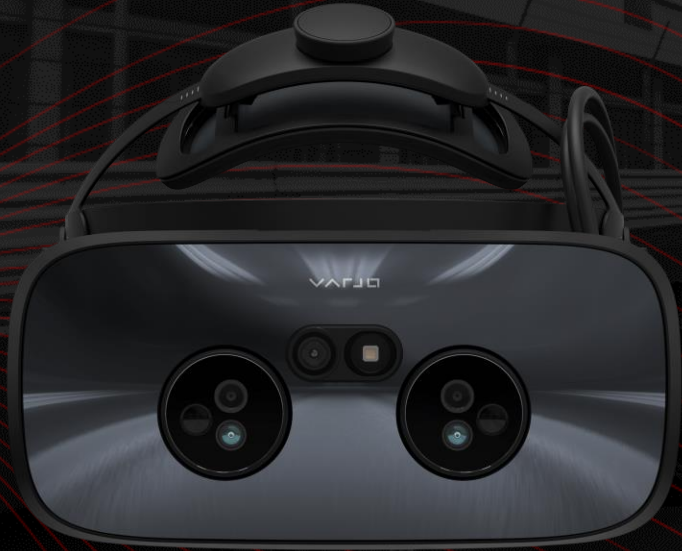
Comfort

The size/weight of the headset means it is less comfortable than projected/LED visuals. This will reduce as headsets evolve to become smaller and lighter. We are not sure how a driver would feel about a full 8hr test day wearing a headset.



Glasses

We have found that users wearing glasses in the headset struggle with the VR/XR more than those without. This is expected to improve with the trend towards headsets that can incorporate custom optics to suit glasses wearers.



MOTORSPORT APPLICATIONS



DRIVING THE CIRCUIT DE MONACO IN XR ON THE DYNISMA DMG-1 SIMULATOR





OMP

XRP





AUTOMOTIVE APPLICATIONS



GAYDON RIDE REPLAY ON DMG-X DRIVING SIMULATOR





**VR USE AT
TRADE SHOWS**

THE RISE OF AR/VR TECHNOLOGIES



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**SILVERSTONE
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