



***Redefining motion simulation –
how Dynisma embraces bandwidth
to close the gap between drivers
and vehicle models***

Gavin Farmer – Commercial Manager

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



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**I'VE TRIED NEARLY EVERY CONCEPT &
MANUFACTURER ON THE MARKET
THAT PROVIDES A TURNKEY SOLUTION
AND THE LATEST FROM DYNISMA IS
VERY MUCH THE NEXT GENERATION IN
TERMS OF PERFORMANCE AND
FEEDBACK**



DARREN TURNER
FACTORY ASTON MARTIN DRIVER
AND 3 X LE MANS WINNER



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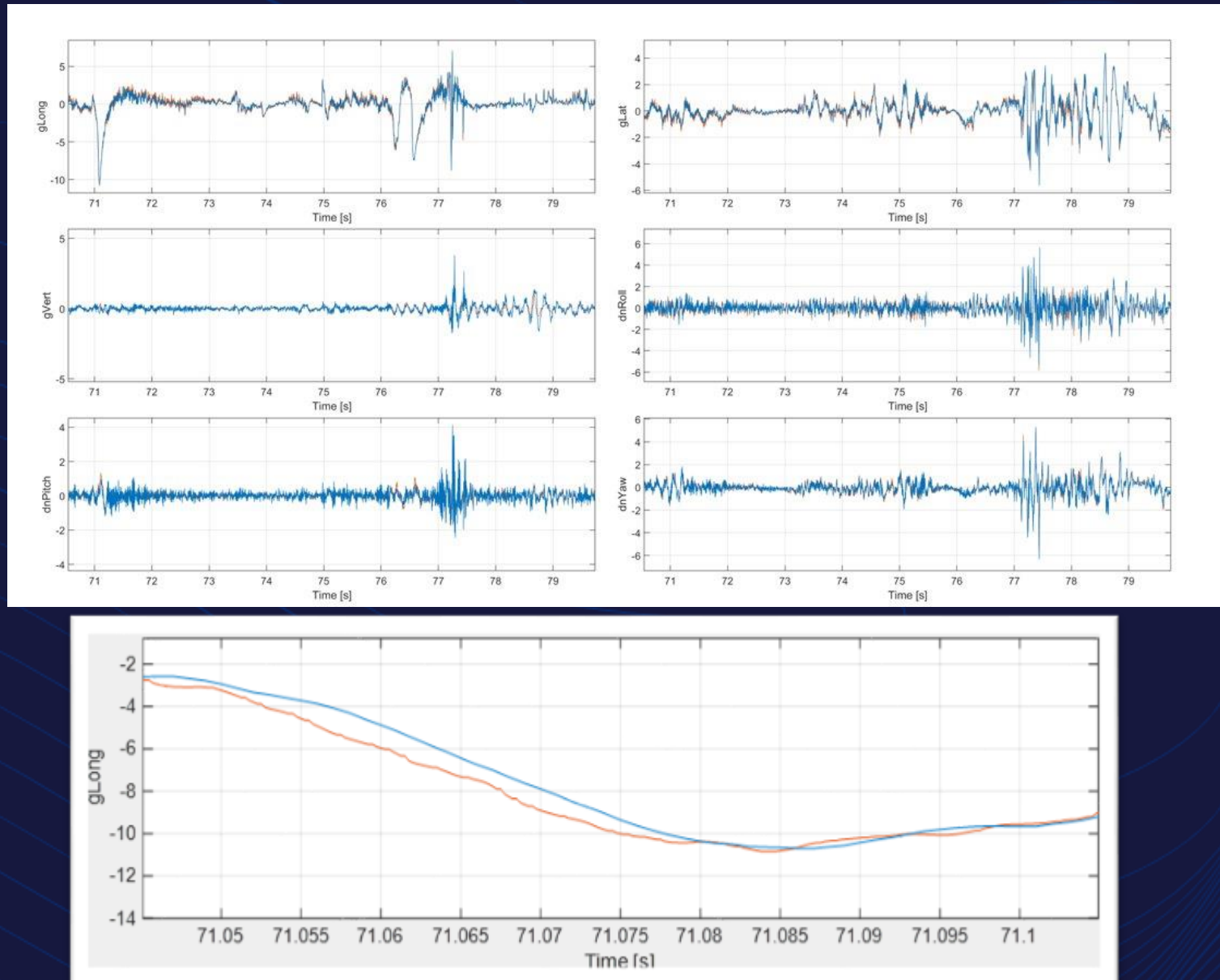
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WHAT IS “REDEFINED?”



- Communication between the VM and the driver run deeper than the conventional measures, although they in themselves are essential
- Bandwidth challenges are something to be excited by, not afraid of
- There is no upper limit to the usefulness of motion bandwidth – more is always better, enough is never enough
- Similarly with latency – measured human reactions are not the same as human perceptions
- First we redefined the objectives, then we set off in pursuit of the solutions. The objectives are unbounded, so the solutions will be continual



UNRIVALED MOTION FIDELITY & RESPONSE

FEATURES & BENEFITS

BANDWIDTH

In excess of 100Hz bandwidth, an order of magnitude better than most simulators.

Transfers more vehicle motion information to the driver and passengers, including information that requires corrective action

SIGNAL-TO-NOISE RATIO

Unique mechanical design and controller eliminates parasitic motion and renders movements below the human perception threshold

Drivers feel and respond to the smallest of movements, and are not presented with disturbing mechanical miscues

LATENCY

Class leading latency of 3-5ms, an order of magnitude faster than competing systems which add up to 50% to the driver reaction time

Stimulates and responds to real vehicle motion, enabling vehicles to be controlled on the limit. Eliminates simulator sickness

ISOTROPIC PERFORMANCE

Consistent performance in all six degrees of freedom, mirroring the symmetrical performance of the vehicle's dynamic capabilities

Consistent ride and handling performance through the entire manoeuvre. Consistent long vs lat performance at high yaw angles

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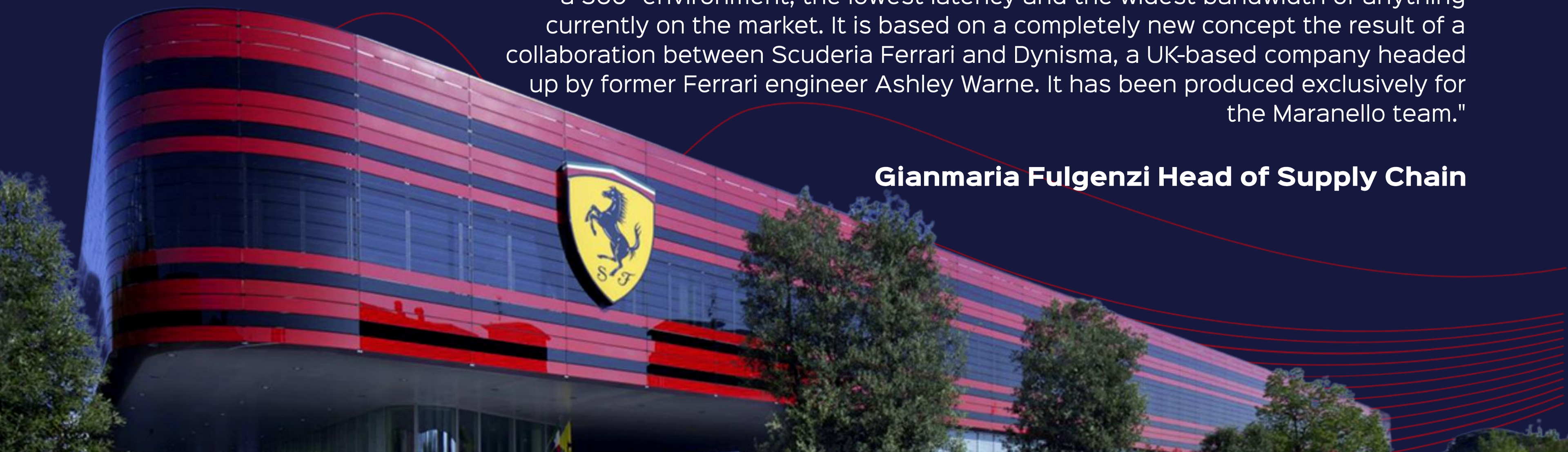
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FERRARI F1



"The new simulator is absolutely at the cutting edge in this field and reproduces in a 360° environment, the lowest latency and the widest bandwidth of anything currently on the market. It is based on a completely new concept the result of a collaboration between Scuderia Ferrari and Dynisma, a UK-based company headed up by former Ferrari engineer Ashley Warne. It has been produced exclusively for the Maranello team."

Gianmaria Fulgenzi Head of Supply Chain



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DYNISMA
DMG //

A HIGHLY DYNAMIC
MOTION PLATFORM WITH
LARGE HORIZONTAL
EXCURSION FOR ROAD AND
RACE CAR SIMULATION



DYNISMA
DMG X

A HIGHLY RESPONSIVE MOTION
PLATFORM UTILISING DMG
TECHNOLOGY WITH AN
EMPHASIS ON VEHICLE RIDE,
NVH AND HANDLING
SIMULATION



DYNISMA
DMG 360

A UNIQUE COMBINATION OF HIGH
BANDWIDTH, HIGH STIFFNESS, LOW
LATENCY, VERY LARGE
HORIZONTAL EXCURSION, HIGH
ACCELERATIONS AND
UNLIMITED YAW MOTION



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UNLIMITED YAW

- By unlocking true 1:1 yaw cueing, DMG-360 ensures that nothing obscures or attenuates yaw stability cues
- 1:1 yaw cueing eliminates the need for any re-centering or washout in yaw and potentially reduces the need to apply filtering to only two degrees of freedom, namely surge and sway.
- By keeping yaw excursion independent of other degrees of freedom, Dynisma can make maximum acceleration and bandwidth capability available anywhere in the yaw envelope
- Eliminates mis-cues in slow speed city driving scenarios



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DYNISMA'S ENGINEERING TEAM



- We continue to build the strongest engineering team to support DIL simulator projects
- Our team includes former simulator users, people from engineering simulation and software roles, and smart young Engineers ready to support customer projects
- Our simulator designs are scalable and customizable, and we are enthusiastic about addressing individual customer requirements



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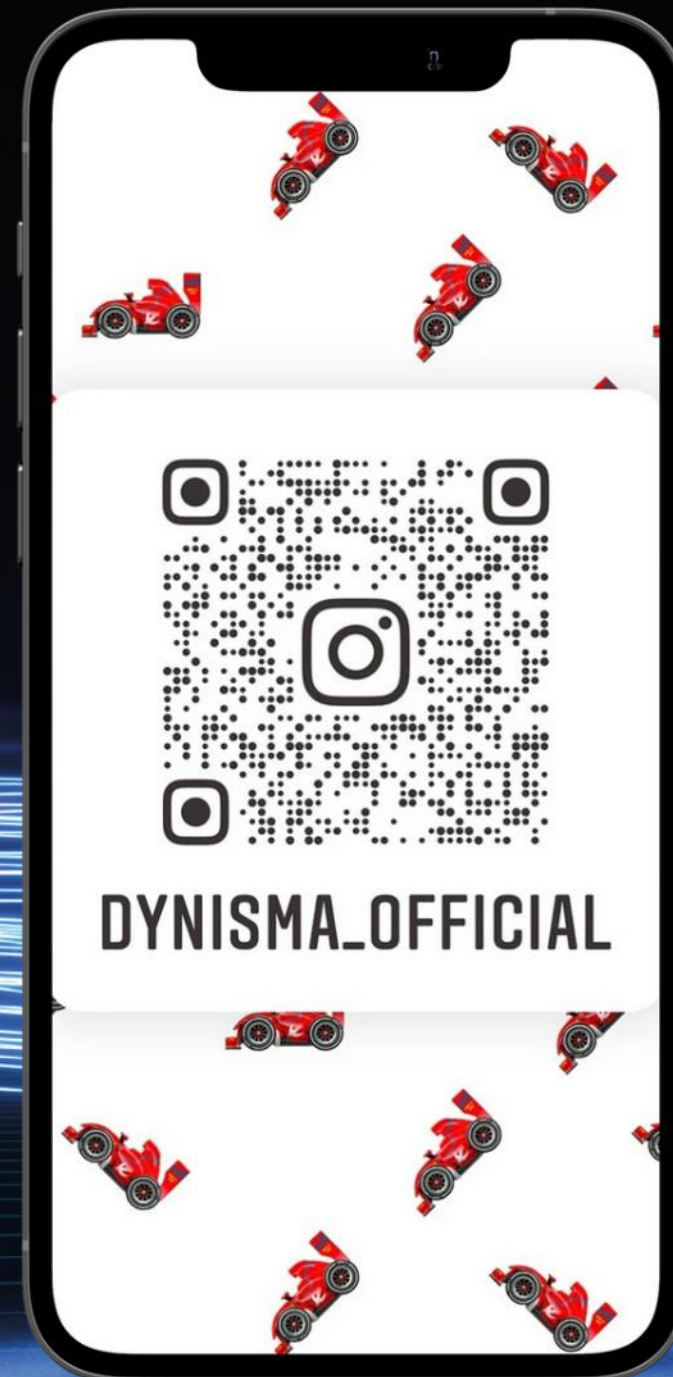
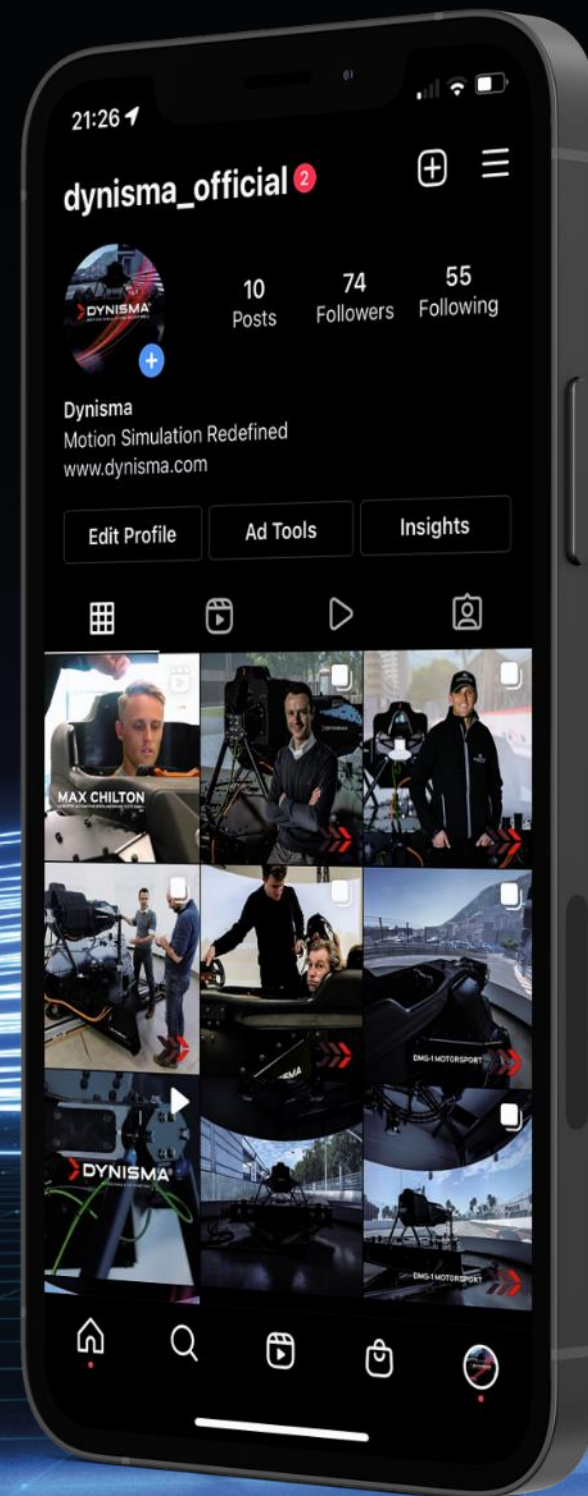
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Thank you

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