



NEXT GENERATION DIGITAL COCKPIT

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STUNNING VISUAL EFFECTS



COMPUTER AIDED DESIGN



STYLING AND DESIGN



SIMULATION MEANS BETTER PRODUCTS, FASTER

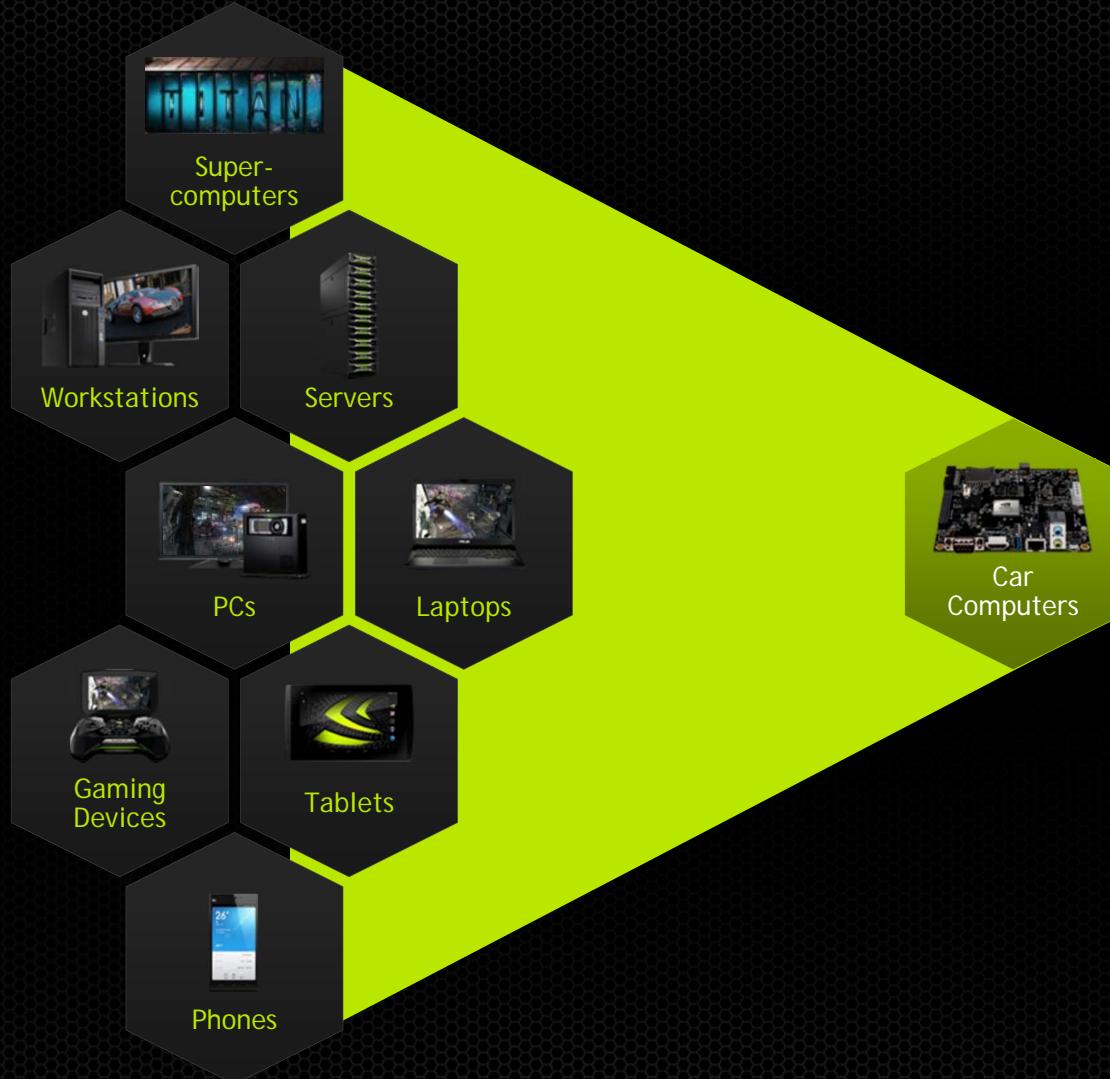


INTERACTIVE POINT OF SALE



NVIDIA

Silicon Valley



AUTOMOTIVE COMPUTING PLATFORM



Tegra Visual Computing Module



NVIDIA AUTOMOTIVE PARTNERS



TESLA





NVIDIA®
AUTOMOTIVE
BY THE NUMBERS

CARS ON THE ROAD

6.2M

MANY MORE COMING...

20+ Brands

100+ Models



SOFTWARE DEFINED CAR



DISPLAY SURFACES TAKING OVER THE CAR



MERGE OF PHYSICAL AND DIGITAL



AUTOMOTIVE DETAILS



VIRTUAL COCKPIT



DIGITAL QUALITY GOAL

Craftsmanship

Create instrumentation so finely crafted that it is too expensive to physically build.

Design

Align with vehicle interior design and styling



 **NVIDIA**
AUTOMOTIVE

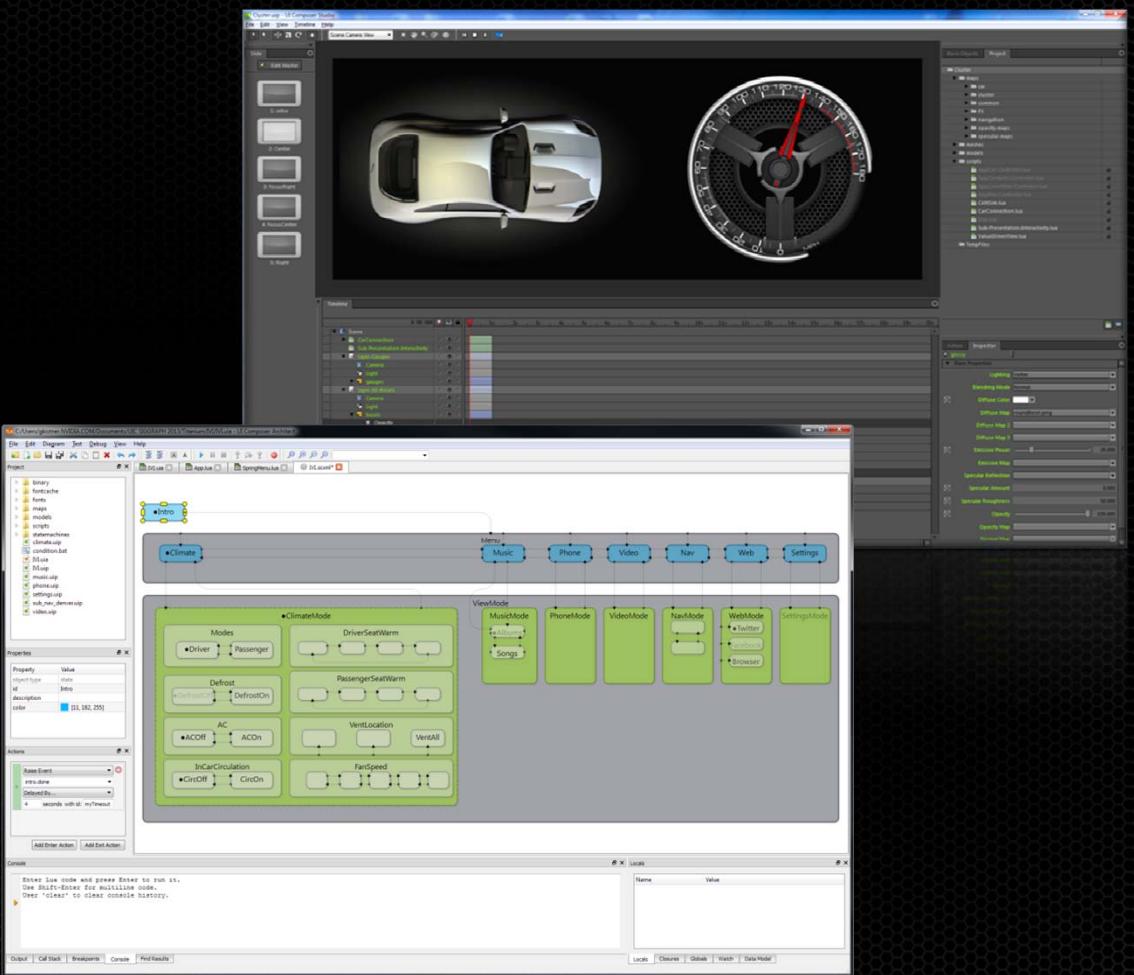
 **NVIDIA**

UI COMPOSER

NVIDIA's HMI Platform

UI Composer Studio

- Professional **design** environment



UI Composer Architect

- Integrated **engineering** environment

UI Composer Viewer

- High performance **runtime**

MATERIAL DEFINITION LANGUAGE



diffuse
tint: red

diffuse
tint: yellow

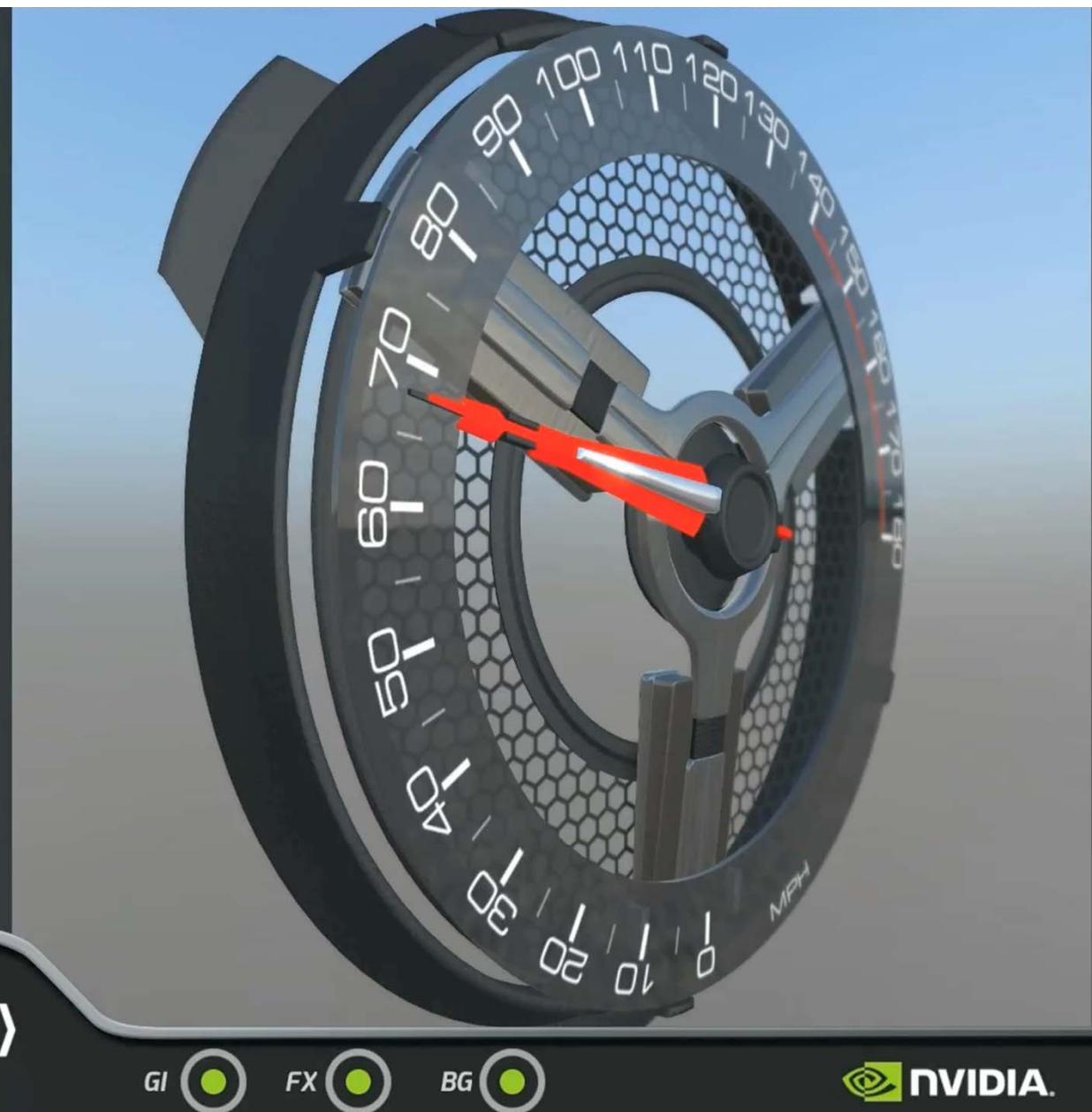
glossy
roughness:

glossy
roughness:

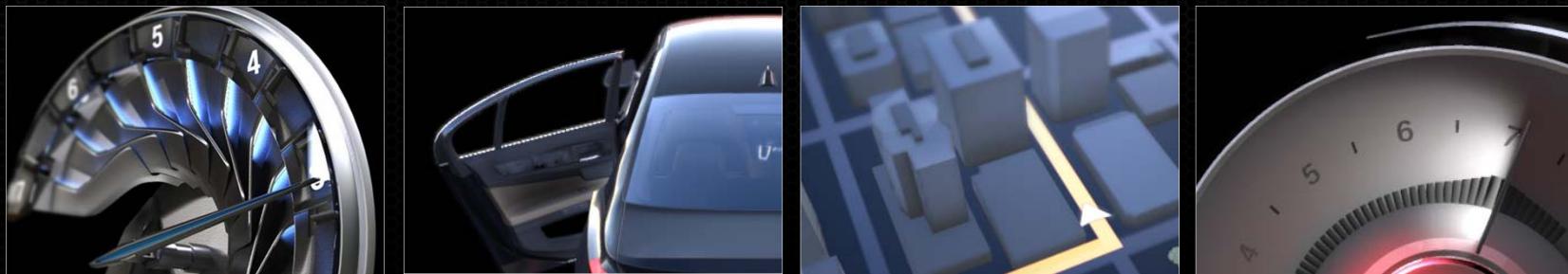
specular







The Science Behind the ART



PHOTOREAL RENDERING FOUNDATION

- Physically based lighting
- Physically based materials
- HDR: Full High dynamic range floating point pipeline

TECHNOLOGIES

- IBL: Image Based Lighting
- MDL: Material Definition Language
- Beam Traced Area Lights
- Subsurface Scattering Materials

HARDWARE

- Tessellation Shaders
- Geometry Shaders
- Compute Shaders

EFFECTS

- Bloom & Tonemapping
- Depth of Field