**FUJITSU**
**Workstation**
**CELSIUS**

Ebook: Virtual Reality

FUJITSU

# Create. Innovate. We Are (VR) Ready.

shaping tomorrow with you

# Why To Jump On The Virtual Reality Train?

Virtual Reality as an aid to design, engineering, architecture and manufacturing has been around for decades. But it is only now that this exciting technology is set to explode.

2016 will go down as the year when everything changed. VR not only became more powerful, but the technology became affordable.

It is no longer the preserve of large automotive and aerospace firms. Even small architectural practices can now get on board.

There are more possibilities than you think. Be inspired by this new technology.

# Workstation Graphics Power Fuel Innovations and Drive Digitalization

## Pen
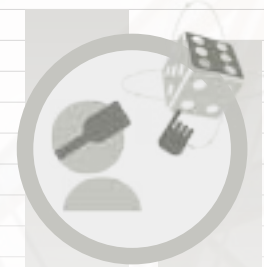- Drawings per hand
- On paper

## 2D Data
- Computer generated data
- Increase in graphical needs

## 3D Data
- 3-dimensional models displayed on 2-dimensional monitors
- Data explosion
- Design, simulation, calculation and visualization

## 3D Realities
- Augmented Reality
- Virtual Reality
- Mixed Reality

Product Development

Planning

Testing

Assembly

Maintenance

Training

Marketing

# Reality Spectrum



## MIXED REALITY (MR)
Mix of reality and digital, computer generated content

| Real Environment | Augmented Reality (AR) | Augmented Virtuality (AV) | Virtual Environment |
|---|---|---|---|
| Reality | Real world with digital information & data overlay | Merging of real world objects into virtual worlds | Computer generated world simulating the real world |

# Professional Usage Areas

**Engineering**

**Retail**

**Healthcare**

**Media & Entertainment**

**Architecture**

**Defense**

**Aerospace**

**Show & Tell**

# Mixed Reality:
# For Design And Beyond

"VR can evoke a visceral response that simply cannot be matched by viewing a 3D CAD model or realistic rendering or animation on a 2D screen."

→ Fujitsu Mixed Reality Brochure – sponsored by NVIDIA

## Product Development and Manufacturing

- Concept Design
- Virtual Prototyping
- Marketing & Sales
- Training

- Requirements Capture
- Design Development
- Design Review
- Production Simulation
- Maintenance

## Architecture, Engineering, and Construct (AEC)

- Communication
- Collaboration
- Safety Training
- Design Verification

- Concept Design
- Design Development
- Sales / Marketing
- Project Planning
- Construction
- Maintenance

# The Virtual Reality Ecosystem
## Are You Aware Of What It Takes To View Your Data In VR?

## Data pipeline

Take your existing 3D data or enrich it due to missing information (manual or semi-automated)

Import data into a VR engine (Unity, Unreal, Autodesk VRED, ESI IC.IDO, etc.)

Bake lighting into scene for a more realistic experience (ray tracing)

Define your storyline, i.e. the interaction in the VR scene (animation, teleportation, walk-around, etc.)

## Choose hardware

VR-ready graphics and maximum frequency processor

Highly recommended in order to ensure a smooth operation and a future proof investment (e.g. for collaborative scenes).
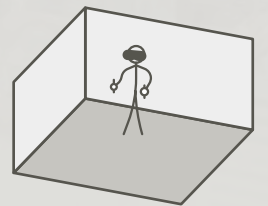
Choose a professional head-mount display (HMD) like the HTC Vive, Oculus Rift or a Mixed Reality Headset

Test your VR scene upfront!

## Choose the experience

Seated: good for jumping between CAD and VR

Room scale: good for design review or customer presentations

# Professional Virtual Reality Experience with VR-READY Certified Workstations

| | CELSIUS H970 | CELSIUS W570 | CELSIUS M770 | CELSIUS R970 |
|---|---|---|---|---|
| | 17.3-inch mobile workstation | World's smallest VR-ready desktop workstation | Cable-free and whisper quiet | Up to 56 cores / 112 threads |
| Head-Mount Display (HMD) | Fujitsu recommends HMDs with a minimum of 90 frames per second | | | |
| Processor | Intel Core i7 or Intel Xeon processor with maximum frequency | | | |
| VR-Ready Graphics | AMD Radeon Pro WX or NVIDIA Quadro professional, VR-ready graphics cards | | | |

**Fujitsu Offers A Future Proof Virtual Reality Experience:**

→ High-fidelity visuals
→ High interactivity / tracking
→ Stereo real-time rendering
→ Fully immersive

→ Ultra-high frame rate
→ Ultra-high resolution
→ Ultra-low latency

# Autodesk's VR Center of Excellence Powered By Fujitsu Workstations

In January 2017 Autodesk opened its VR Center of Excellence at its European headquarters in Munich, Germany. The VR Showroom gives customers from the automotive, design and architectural communities the opportunity to get hands-on with the very latest VR / AR and MR technologies. The state of the art facilities, which show off the latest Autodesk VRED and Autodesk Stingray professional VR software tools, are being powered by FUJITSU CELSIUS workstations.

For more information see:

▶ **youtu.be/E5H3c1euX9o**

## Powered by FUJITSU CELSIUS workstations

- 3x CELSIUS M740 with
  2x NVIDIA® Quadro® P Series GPU
- 1x CELSIUS R940 with 72 CPU cores for CGI ray tracing
- 1x STYLISTIC R726 tablet for Media
  control via Blackmagic Multiview

# Testimonials
## Here's what our customers say:

### Education
#### Higher Education

"Our students used Unreal to design a virtual reality Ethiopian village environment to explore using Oculus Rift within the dedicated VR lab in order to promote the charity WaterAid. It's that type of ingenuity – as well as experience with the best technology – that will serve them well as they enter the job market."

**London Design & Engineering UTC**

### Manufacturing

"If we miss an error during the materials assembly stage, it leads to rework in subsequent stages abd delays in the final construction schedule. Our objective was to ensure we could catch every error by harnessing the power of ICT in the inspection of assemblies"

**Hiro Nishihara**
Executive Director and Factory Manager, Oyama Factory, TOMOE Corporation

### M&E
#### Media & Entertainment

"To meet computational requirements, we needed hardware at the highest level. The significant benefits that Fujitsu's powerful graphics workstations give us include primarily the ability to accelerate the implementation of projects and the effective implementation of these changes."

**Dominik Koziarski**
New Business Manager,
i3D Network S.A.

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For more information visit:
**http://www.fujitsu.com/fts/products/computing/pc/vr**