5G Edge Partner Program

Taqtile's Manifest; an augmented reality platform to capture industrial knowledge

Industry and an aging workforce. Manufacturers have a high number of baby boomers as a part of their workforce. As they seek to retire, they will have to figure out how to replace that significant loss of technical expertise and specialized skills.

However, today's technical-minded workers now have far more options for careers and it can be a struggle to attract and retain talent. It is imperative that manufacturers implement knowledge-automation solutions that can help them up-skill current employees, attract new ones and deliver operational efficiencies.

Manifest

Taqtile's Manifest is an enterprise SaaS platform that leverages augmented reality (AR) for knowledge capture and sharing. Manifest will harness, distribute, and apply what you know and give deskless workers instant virtual access to, and step-by-step guidance from, your most experienced technicians and trainers anywhere, anytime.

Flawless Workflows, everywhere, every time

Digital transformation of organizations' operations continues to accelerate but silos of excellence and expertise continue to exist. Leveraging AR, edge computing, and advanced networking like 5G, Manifest removes these silos with a single platform. Manifest enables flawless operational workflows everywhere and every time by aggregating these critical components of your operational systems so that jobs get done faster and better.

How does it get faster and better?

Procedures: Experts document procedures. Workers execute them. Management evaluates results and performance leading to continuous improvement.

People: Regardless of skill level and experience, institutional knowledge, expert assistance, and team collaboration is enabled and available – whenever it is needed.

Places: Traditional physical barriers disappear. Work gets done at the same speed and quality regardless of individual, team, or equipment locations.

Machines: Workers interact with equipment, sensor, and IoT data in real-time and then data is integrated with enterprise-wide systems for archiving and analysis.

> The combined solution can help manufacturers retain critical tribal knowledge and leverage it across the organization to drive operational efficiencies across production and labor.

verizon✓   T∧QTILE

Key benefits

Manifest helps individuals, teams and organizations get their jobs done faster, more accurately, and more consistently which results in:

Reduce errors and scrap: Perform operational tasks more accurately and more consistently to increase quality and avoid mistakes that lead to scrapped product and more manufacturing runs.

Lower downtime: Complete maintenance tasks faster and more accurately to keep equipment and facilities in better shape.

Decrease on-boarding and training times: Provide hands-on, immersive training and instruction remotely or at the equipment to facilitate comprehension and increase knowledge retention.

Faster troubleshooting and times to resolution: Provide guidance for non-linear workflows to help technicians diagnose and resolve unplanned issues faster.

Perform more accurate inspections: Structured guidance ensures that inspections are done consistently across individuals, teams, and locations and any issues found are captured, reported, and resolved.

Increase safety: Step-by-step instructions ensure that critical steps are not missed or skipped. AR headsets frees up hands to make for a safer way to work on equipment in many environments.

Decrease support costs and travel: Connect your experts to less experienced workers or your customers to provide augmented guidance and support regardless of location.

Force multiplier: By providing workers and teams instant access to knowledge and expertise, everyone becomes an expert and more is accomplished with less people.

Continuous Improvements: Collect and integrate job performance data by equipment, location, teams and individuals to create a continuous feedback loop for process and procedural improvements.

Industry insight

Much of the major action in AR components is around 3D sensors, cameras, audio, displays, and batteries. These components come together for positional tracking, motion tracking, gesture recognition, and machine vision. To avoid motion sickness when using AR smart glasses, many of these components are being re-invented with a focus on lowering sensor latency. The aim is to reduce the lag between the user's motion and the corresponding computer-generated response from the device. [1]

Verizon insight

Multi-access edge computing (MEC) brings technology resources closer to the end user. Data is processed and stored at the network's edge, not at some distant data center, significantly reducing latency. MEC provides both an IT service environment and cloud computing capabilities to help enable the real time enterprise.

verizon✓   TΛQTILE

Case study - Training and Safety

Industrial Workforce Training with Augmented Reality

In 2017, King County's West Point Treatment Plant experienced a failure which sent untreated wastewater pumping into Puget Sound. In the wake of this disaster, King County's Wastewater Treatment Division and Department of Natural Resources and Parks sought help from Taqtile to overhaul training for new workers.

Using the Manifest augmented reality platform, longtime employees capture their skills and knowledge by authoring work instruction over the facility's equipment in 3D with spatial computing. The work instruction job templates include supplemental materials in the form of videos, photographs, bookmarked documents like Material Safety Data Sheets and equipment schematics, and annotations.

Industrial workforce operators can access these job instructions hands-free, and use them to learn procedures on a digital twin, and to complete machine maintenance checklists in the plant as they work.

Remote assistance, remote support, and team collaboration is available from any job step using the Manifest Connect feature. Team members can share videos, photos, and even pass on job steps. From the web portal, trainers or supervisors are able to draw and place markers in the AR user's experience for real time collaboration.

As an industrial workforce training solution, Manifest streamlines the process for updating and disseminating maintenance operating procedures, so updates are instantly available to all, across their network and on AR devices, iPads, Android, and the Manifest web portal.

King County received a Digital Edge 50 Award from CIO Magazine for this innovative partnership with Taqtile.[2]

> Manifest can run on HoloLens, Magic Leap and RealWear headsets. It also supports Android and Apple mobile devices within a Chrome browser

Case study - PBC Linear

Laboratory training with Augmented Reality

PBC Linear, a Chicago manufacturing company, uses Manifest for remote support both internally at their factory, and with customers around the globe.

In this use case, Support Tech Jackson Duncan helps Factory of the Future Manger Beau Wileman troubleshoot a 3D printer extruder problem using Manifest's remote assistance feature Manifest Connect between a Magic Leap augmented reality head mounted device and the Manifest Web Portal.

With the Manifest Web Portal, pointers, guides, and 3D ink can be displayed onto the AR user's experience to visually assist a remote support issue. Manifest Connect calls can be initiated from the Job Board or any step in any job template. Teams can share photos, videos, and job steps can also be handed off to team members.

Remote assistance with augmented reality using the Manifest® AR platform. The Manifest Connect feature within Manifest allows users to connect with one another while using Manifest. The Manifest Connect capabilities include being able to call web to web or web to device. Other features include being able to share a video, share a file and share a job with another user. You can find this functionality in the 3D client on the user command strip or in the web portal side menu.[3]

> Customers on Verizon's 5G networks can enjoy near real-time experiences like Taqtile's Manifest with near-zero lag & a wide selection of 5G devices

verizon   **TAQTILE**

Manifest can run on Verizon 5G mobile phones by:

Apple, Samsung, Google, Motorola, OnePlus, Nokia, TCL & Kyocera

Verizon 5G mobile hotspots

Inseego

Verizon 5G Fixed Wireless Access

5G Business Internet

Verizon 5G Edge (6) (7)

Public MEC with AWS

Private MEC with Azure

Verizon Private 5G

Optional compute & storage available

Wearable headsets

Hololens, Magic Leap, RealWear and others

Sample customers (9)

About The 5G Edge Partner Program

Verizon was the first in the world to launch 5G mobility service for customers in 2019 and continues to work with key partners to lead the development of the 5G ecosystem. (9)

The 5G Edge Partner Program is part of this work and it aims to accelerate 5G Edge adoption and development by partnering with best-in-class, cross-industry, application providers and developers who will change how we live, work and play.

Why Taqtile and Verizon

The power of Verizon's 5G network, combined with our Edge infrastructure and the Manifest application delivers a bundled solution that's secure, scaleable and easy to consume.

Together, we deliver tangible value across industrial knowledge use cases and whether you deploy over public or private 5G, on mobile phones or tablets, or on selected wearables, it's all available on a single Verizon bill and contract.

Why Verizon

Superior coverage: Our 4G LTE network covers 327 million people. That's over 99% of the U.S. population.

5G innovation: Verizon 5G Ultra Wideband is the fastest 5G in the world, with ultra-low lag and massive capacity.(10)

Trusted security: Managing over 500,000 security network and hosting devices gives us valuable insights into the digital landscape.

Massive capacity: We obsess over the details, analyzing millions of gigabytes of data every day.

Easy integration: We've certified 900+ machine-to-machine (M2M) chipsets, modules and devices.

Tools

Verizon 5G Edge Developer Portal

Verizon Open Source

Learn more

To find out more about how Taqtile's Manifest and the Verizon 5G Edge Network can accelerate digital transformation and improve safety, efficiency and lower downtime across your shop floor, contact us directly at:

vz.5g.edge.partnership@verizon.com

info@taqtile.com

Links and references

(1)   Global Data - Thematic Research: Augmented Reality (2021)
(2)   https://taqtile.com/case-studies/industrial-operator-training-with-augmented-reality/
(3)   https://taqtile.com/case-studies/remote-assistance/
(4)   Based on RootMetrics® by IHS Markit's RootScore® Reports: 2H 2019. Tested with best commercially available smartphones on four national mobile networks across all available network types. Experiences may vary. RootMetrics awards are not an endorsement of Verizon. Network details & coverage maps at vzw.com.
(5)   https://www.verizon.com/5g/#ready
(6)   https://www.verizon.com/about/investors/runs-on-verizon/aws
(7)   https://www.verizon.com/about/news/verizon-debuts-cloud-computing-microsoft-azure
(8)   https://www.verizon.com/about/news/verizon-joins-forces-digital-catapult
(9)   Partner customers are not necessarily Verizon customers and it is not being implied. More information on partner's website
(10) 5G Ultra Wideband (UWB) available only in parts of select cities. 5G UWB access requires a 5G capable device with select voice/data & 5G UWB plans. 5G Nationwide available in 2,700+ cities.

verizon ✓ TAQTILE