

A woman is shown in profile, wearing augmented reality glasses. The lenses of the glasses display various digital data visualizations, including line graphs, bar charts, and code snippets. The background is a blurred blue-toned image of a server room or data center with glowing lights and server racks.

From Standards to Impact: Shaping the Future of AI-Powered Virtual Worlds

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21 October 2025





AI-Powered Virtual Worlds: Connecting People, Cities, and Industries to shape the digital future we want.

Brilliant Innovation, Broken Connections

**Digital
Sovereignty**

**Cyber
Resilience**

**AI & Data
Governance**

**Green
Transition**

**Skills &
Inclusion**

**Smart
Infrastructure**

**Cross-Border
Interoperability**

**Trust &
Transparency**

Standards: Turning Vision Into Trust

**Trust by design:
Interoperable, secure, accessible, measurable, future ready.**



Interoperability



**Security,
privacy & trust**



**Accessibility
& inclusion**



Sustainability



**Resilience &
future readiness**

How International Telecommunication Union Can Help

ITU: United Nations specialized agency for digital technologies



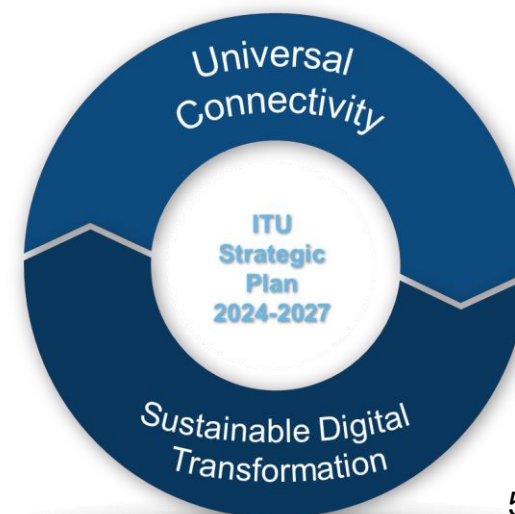
194

Member States



1000+

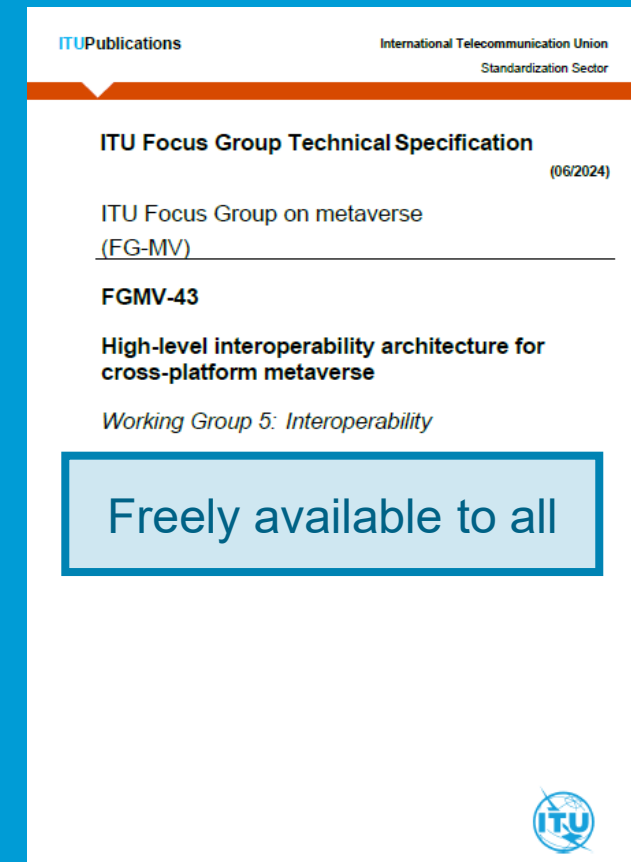
companies, universities, research
institutes and international organisations



From Exploration to Standardization

From December 2022 to June 2024, ITU Focus Group on metaverse delivered 52 reports.

- Capabilities and requirements of **generative AI** in metaverse applications and services
- The reference framework of **industrial metaverse**
- **High-level interoperability architecture** for cross-platform metaverse
- **Cyber risks, threats, and harms** in the metaverse
- Responsible Use of AI for **Child Protection** in the metaverse
- **Policy and regulation** opportunities and challenges in the metaverse
- **Economic Value Creation and Competition** in metaverse
- Requirements of **accessible products and services** in the metaverse
- Methodology on assessment of **GHG emissions** of metaverse
- And more...





ITU-T Study Group 20 Standards

“IoT, digital twins and smart sustainable cities and communities”

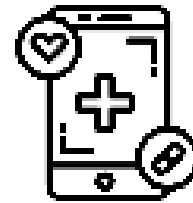
200+ international standards — freely available to all!



Internet of things
and its
application



Smart sustainable
cities, digital services,
energy management &
digital twins



Digital Health
Related to IoT and
smart sustainable
cities



Citiverse,
virtual worlds
& AI



Shaping the Standards Landscape for AI-Powered Virtual Worlds

First-ever ITU standards on Metaverse

(Requirements, interoperability, and reference model)

First-ever ITU standard on Artificial Intelligence of Things

(Defining framework, technical features, and approaches)

Pioneering new work on Agentic AI and Embodied AI in cities

(Addressing the next frontier of intelligent, adaptive, and interactive systems)

www.itu.int/metaverse/

Global Initiative on Virtual Worlds and AI

Discovering the Citiverse

itu.int/metaverse/virtual-worlds



UNICC

دبي الرقمية
DIGITAL DUBAI



From Standards to Real-World Impact

Join a Growing Coalition of 60+ Partners:

Global Initiative on Virtual Worlds and AI – Discovering the Citiverse

Founding partners:



UNICC

Champions:



Ministry of Internal Affairs
and Communications



Supported by :



ETRI

Stanford
University



THE
SANDBOX

IDC



Center on the Legal Profession
HARVARD LAW SCHOOL

UAB
Universitat Autònoma
de Barcelona



bizztech



METAWORLDX



SWPS University



And more...



Scan me

3 Key Pillars of Action

Pillar 1 – Bringing Virtual Worlds to Life:

- Strategic Guidance
- Digital Inclusion and Accessibility
- Scaling Framework
- Evaluation and Assessment

Pillar 2 – Connecting Cities with the Virtual and Real Worlds:

- Emerging Technologies
- Use-case Identification
- Security and Trust
- Interoperable Citiverse
- Sandbox Experiment Facility

Pillar 3 – Tunneling the Citiverse:

- Citiverse Assembly
- Citiverse Challenge
- Citiverse Alliance
- Awareness Building
- Virtual Worlds Toolkit
- Citiverse on the Ground
- Annual Training
- Talent Grants Programme

Deliverable in the Spotlight: *Citiverse Use Case Taxonomy*



Shaping the Future Together

Be part of the **1st Citiverse
Assembly**
(3 November 2025, Valencia,
Spain)

www.itu.int/metaverse/

1st UN Citiverse Challenge

Citiverse: Designing digital public infrastructure of future cities

Student Category

Startup Category



Co-organized by:



IoT Convergence &
Open Sharing System



OPEN & AGILE SMART CITIES
& COMMUNITIES



UN Virtual Worlds Day

Next Edition:

11-12 May 2026, Geneva, Switzerland

itu.int/un-virtual-worlds-day/



Hosted by y

Tomorrow's digital future is built today.

People-Centred. Trust by design. Open standards. Together.



Thank you!



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