

6G FOR ACCESSIBILITY

INCLUSION THROUGH TECHNOLOGY

What do we mean by accessibility?

Accessibility means ensuring that everyone – regardless of ability, age, or circumstances can participate fully in the digital world.

This includes:

- Navigating websites with screen readers or voice commands
- Using alternative input methods (e.g. eye tracking, haptic feedback)
- Access accurate captions, transcripts, and descriptive audio
- Participate fully in virtual environments using assistive devices



Accessibility is not a niche concern; it is a foundational aspect of inclusion and a recognized human right. Building accessible technology ensures participation, autonomy, and dignity for all.

What are the Barriers today?

Despite the widespread reach of digital tools, many people still face exclusion:



Design Barriers

Platforms incompatible with screen readers or requiring mouse-only navigation



Economic Barriers

High costs of assistive technologies, especially in the developing regions



Knowledge Gaps

ICT professionals receive little training on accessibility standards



Language Limitations

Tools developed only in major world languages, excluding minority language speakers



Complexity Issues

Overly complex user interfaces creating barriers for users with cognitive differences

What could 6G do differently?

The transition to 6G presents a unique opportunity to reimagine connectivity from an inclusion-first perspective, embedding accessibility into the very architecture of digital systems.

Native Assistive Technology Support



Real-time, bidirectional translation from speech/text to sign language via AI-powered avatars

Seamless integration with wearable devices for instantaneous information delivery and tactile cues

Immersive Inclusion through Extended Reality (XR)



Virtual classrooms adapted for blind/deaf users with spatial audio and haptic learning modules

Sophisticated telepresence tools enabling genuine participation in remote social and professional gatherings

Ubiquitous Infrastructure for all



Equal access to telehealth, remote employment, and online education regardless of location

Reduction of the rural-urban accessibility gap

Accessibility-as-a-Service



Dynamic network adaptation based on user accessibility profiles and real-times needs

Intelligent prioritization of connections for haptic feedback devices and visual aids

From Barriers to Opportunities

CHALLENGE	HOW 6G CAN HELP
High cost of assistive technology	Cloud-based assistive services reduce dependency on expensive devices
Poor web/app compatibility	Next-gen standards mandate compliance with WCAG and ISO 30071-1
Lack of localized content	Real-time multilingual and multimodal translation
Marginalization in smart cities	Digital twins and IoT sensors guide accessible navigation

6G's technical capabilities, near-zero latency, massive bandwidth, and AI orchestration, enable solutions that were previously impossible: real-time translation, adaptive interfaces, and universal coverage that make accessibility services both more effective and more affordable.

DESIGN PRINCIPLES FOR AN INCLUSIVE 6G FUTURE

- **Universal Design from the Start** - Building inclusion into 6G's foundation rather than adding accessibility as an afterthought.
- **Meaningful Participation** - Engaging persons with disabilities in co-design, testing, and governance
- **Capacity building** - Training developers, designers, and public officials on accessible innovation

6G will shape the digital future. If designed with care, creativity, and commitment, it can be the infrastructure of a truly inclusive society where all people can participate, contribute, and thrive.

LEARN MORE AT www.6g4society.eu

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