

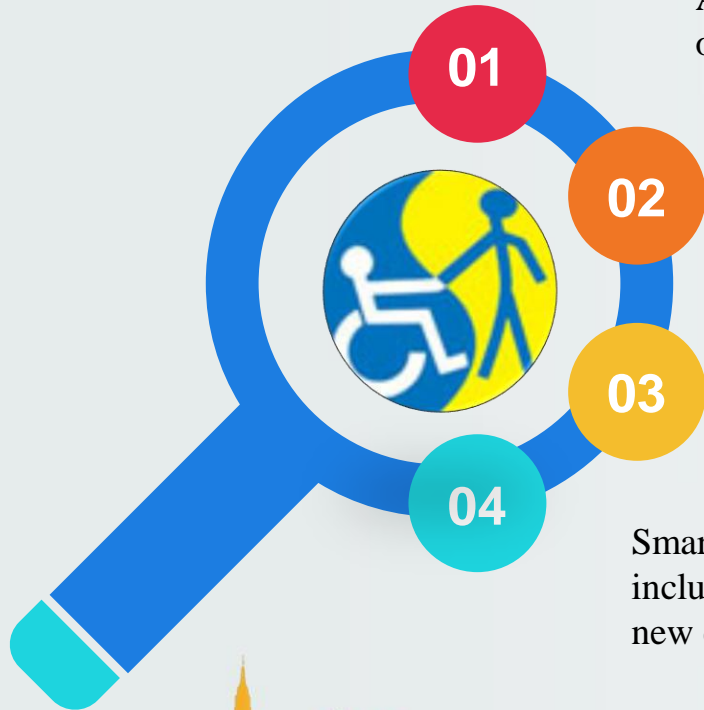
# Making Disabled Friendly Smart Cities

National Centre for Promotion of Employment for Disabled People



# Disability Scenario

According to the World Health Organization (WHO), about 15% of the world's population lives with some form of disability.



India is home to approximately 7-10% people living with disabilities.

An equal number rapidly acquiring disability on account of medical conditions and accidents. To this will add another 90 million aging population of the country.

Smart Cities Mission is the greatest opportunity to ensure inclusion and participation of persons with disabilities in ALL new developments that will now take place in India.





# Smart Cities Mission & Disability



## Urban Infrastructure

Universal design or Barrier free design components for buildings, parks, playgrounds, schools, colleges, hospitals, recreational areas, public toilets, etc.



## Transport

Access to pathways, junctions, footpaths, bus shelters, crossings and public transportation.



## Health

Availability, awareness and access to medical facilities, especially e-medicines.



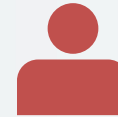
## ICT Led Solutions

Accessible digital technology for websites, mobile applications, products and services.



## Education

Inclusive and quality education.  
Access to digital learning .



## Citizen Friendly Governance

Accessible websites, applications, government portals or community engagement platforms.





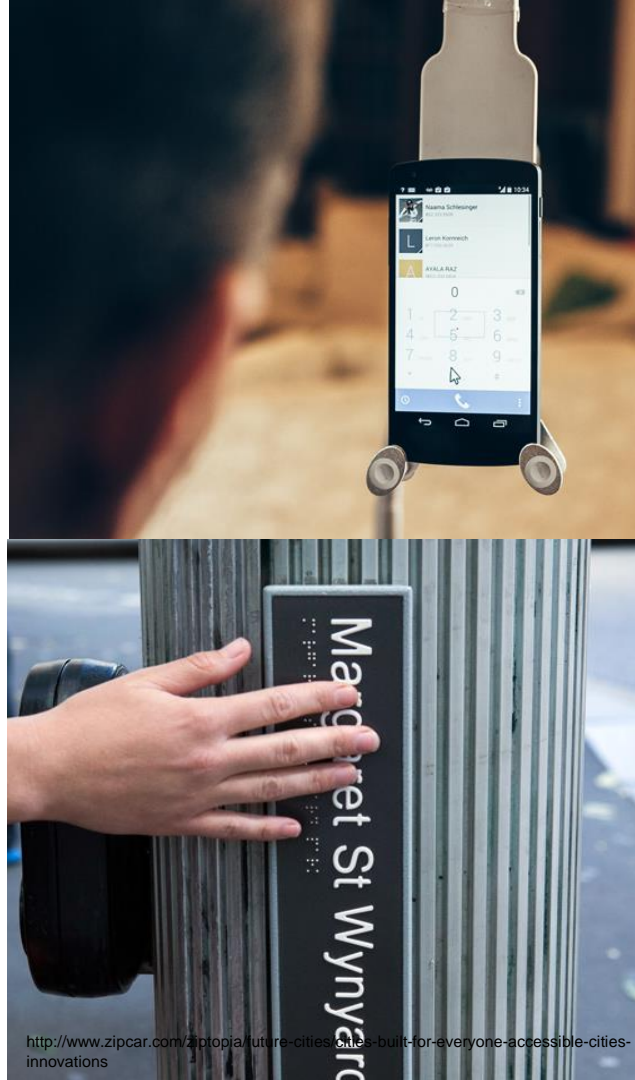
# Legal Framework

## Rights of Persons with Disabilities Act, 2016

Accessibility for the physical environment, transportation, information and communications, including appropriate technologies and systems, and other facilities and services to be provided.

## UN Convention on Rights of Persons with Disabilities

Accessibility to the physical, social, economic and cultural environment, to health and education and to information and communication, in enabling persons with disabilities.



# Global Smart Initiatives

## Assist-Mi

Offers real-time support for users with disabilities. Using location-based technology.

## Braille Street Signs

Sydney is currently rolling out a network of Braille Street Signs accompanied by information pylons and digital technology—making it simpler for residents who are vision-impaired to navigate the city streets.

## Taxi of Tomorrow

NYC’s “Taxi of Tomorrow,” expand city access and convenience to everyone.



# Accessibility Components for Physical Environment

## Movement in the outdoor

- Environment and outside buildings
- Public Transport
- Way-findings
- Pathway
- Parking
- Gaps, grates and other openings
- Outdoor facilities
- Public Spaces

## Entering, exiting and evacuating buildings

- Ramps
- Handrails
- Entrance door and door handles
- Reception counter desk
- Fire emergency warning systems and signals

## Movement within buildings

- Horizontal circulation (Corridors)
- Vertical circulation (Stairs and lifts)
- Information & signage

## Use of individual rooms and facilities

- Window
- Switches & controls
- Toilet & water supply facilities
- Acoustics
- Security Access Systems
- Conference & meeting rooms
- Cafeterias
- Kitchens and Kitchenettes

Source: <http://www.unicefinemergencies.com/downloads/eresource/docs/Disability/annex12%20technical%20cards%20for%20accessible%20construction.pdf>

# Accessibility Components for ICTs

## Content for Websites/Mobile Applications

The information in a web page, websites & mobile application like texts, images or sounds.

## Web browsers

Web browsers, media players or other agents.

## Assisstive Technology

Screen readers, alternative keyboards, switches, scanning software, etc.

## Developers for Websites/Mobile Applications

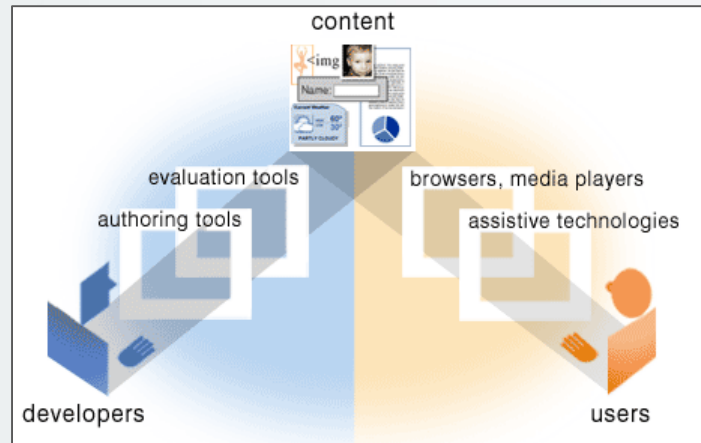
Designers, coders, authors, etc developing the applications, portals, pages or software.

## Authoring Tools

Software that creates websites, portals and mobile applications.

## Evaluation Tools

Web accessibility evaluation tools for websites and applications.



Source: <https://www.w3.org/WAI/intro/components.php>

# Recommendations

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## **Built Environment Initiatives**

Anything and everything to do with the built environment must be in accordance with the newly released **National Building Code of India 2016** (Part 3, Section 13).

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## **ICT led Initiatives**

Anything and everything to do with IT, electronics and/or digital technology should be strictly in accordance to the latest version of **Web Content Accessibility Guidelines (WCAG)/ Guidelines For Indian Government Websites (GIGW)** or the **European Standards - EN 301 549**.

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## **Implementation**

All procurement should be made accessible. Tenders, RFPs, and EOIs should have mandatory accessibility clauses.

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# ABOUT NCPEDP

National Centre for Promotion of Employment for Disabled People (NCPEDP) is a non-profit voluntary organisation, registered in 1996, working as an interface between Government, Industry, International Agencies and Voluntary Sector towards empowerment of persons with disabilities. In the past 21 years, NCPEDP has established itself as a leading cross-disability organisation. Headquartered in New Delhi, NCPEDP has a pan India presence through its National Disability Network (NDN) with members from majority States and Union Territories across the country. NCPEDP works on six core principles, also called the six pillars of the organization, namely: 1) Education; 2) Employment; 3) Accessibility; 4) Legislation/Policy; 5) Awareness/Communication; and 6) Youth.

For more information, please visit [www.ncpedp.org](http://www.ncpedp.org)

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