

# ICT and Accessibility for Persons with Disabilities in South Africa

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15 July 2008



# Presentation Outline

- Disability Context in South Africa
- Meraka Institute
- Research Initiatives
  - South African National Accessibility Portal (NAP)
  - Ability Based Technology Intervention
  - Intelligent Room
  - South African Sign Language
- Other supporting initiatives
  - FOSS
  - W3C



# Disability Context in South Africa

- SA 2001 census- between 5-12% of South Africans living with disabilities
- Persons with disabilities impacted by
  - Poverty
  - Unemployment
  - Education & training opportunities
- Many causes of disability
  - Violence & war, poverty, lack of information, failure of medical services, environmental factors and accidents



# Meraka Institute

- Strategic ICT initiative from South African Government
- Institute within Council for Scientific and Industrial Research (CSIR)
- ICT as core research focus
- Objectives:
  - Facilitate National, Economic and Social Development through needs based ICT research, development, innovation and human capital development



# Research Initiatives: National Accessibility Portal (NAP)

- 5 year needs based research, development and innovation initiative
- Address the information and communication needs of persons with disabilities
- Use ICT to empower persons with disabilities to live independently
- Inclusion, Accessibility & Language
  - Unique as it includes all **different** disabilities
  - **Accessible Access** to relevant information and services
  - **Standards compliant** (W3C,etc.)
  - Language support (all **Indigenous** languages including **Sign Language**)



# National Accessibility Portal

- In partnership with South African Disability Sector and Government
- **Jointly** conceptualised initiative with OSDP in The Presidency, The Meraka Institute, CSIR and Disability Persons Organisations (DPOs: DeafSA, SANCB, NCPPDSA, Quad-Para, ILC, SAFMH)
- Based on Internet technologies and uses open source software to provide affordable ICT technology
- 5 persons with disabilities part of the core NAP team



# National Accessibility Portal

- Informed by:
  - Integrated National Disability Strategy 1997 & Census 2001
  - Articles 9 & 21 of the UN Conventions on the rights of persons with disabilities,
  - Inclusive Education (White Paper No.6), National R&D Strategy,
  - DOC Medium term strategy map, strategic goal 9 (KFA5) – Contribute to the building of an inclusive information Society globally, DPO Workshops,
  - NEPAD Strategy,
  - Africa Decade of persons with Disabilities (1999 – 2009)

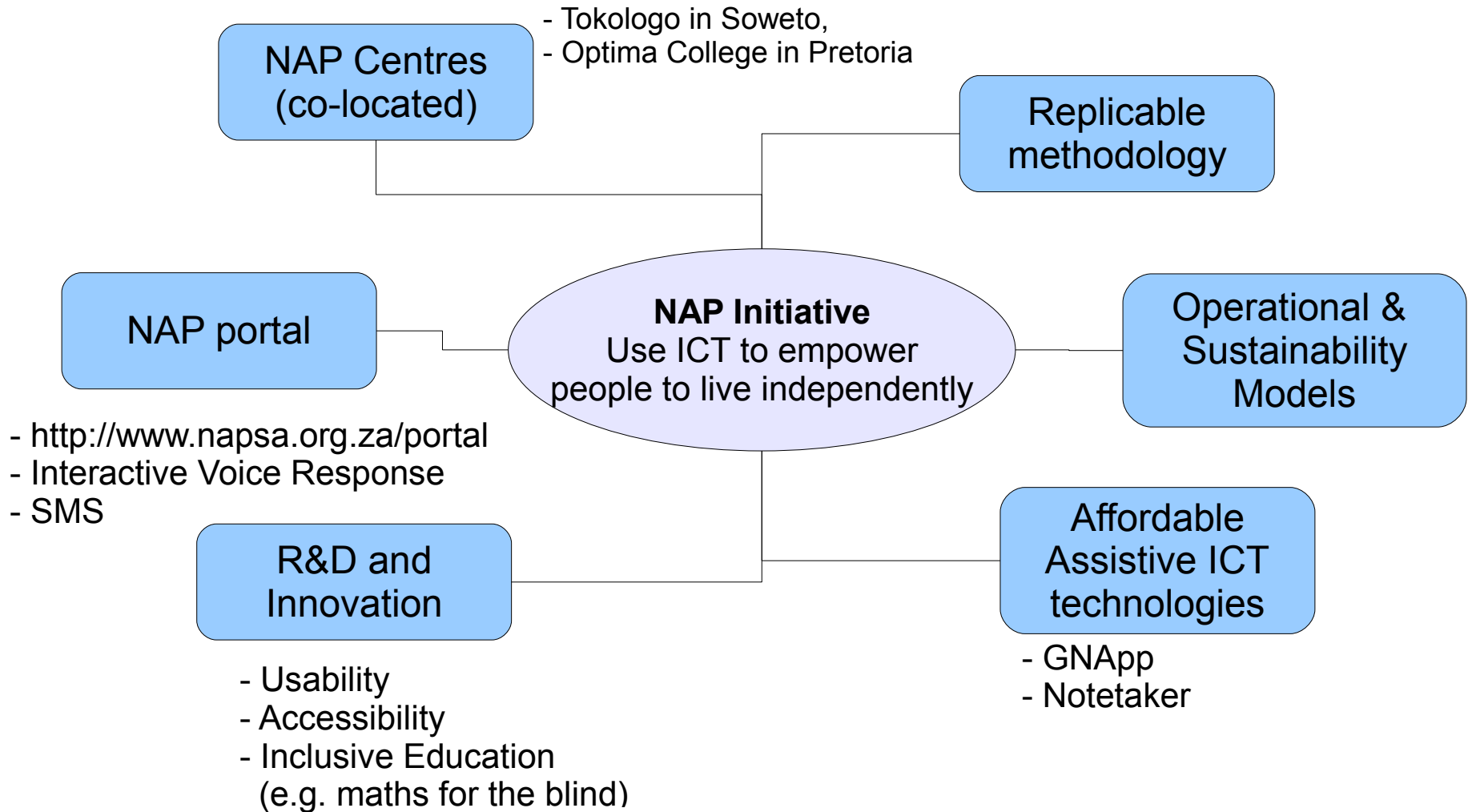


# NAP Challenges

- Portal
  - Allowing for usability and accessibility on same interface
  - Operational & sustainability challenges, e.g. hosting
  - Useful statistics in terms of usage (audience, areas)
  - Building of user base
  - Relevant content
- Assistive Technologies
  - Distribution
  - Commercial partners



# National Accessibility Portal



# NAP Portal: Home page

Skip to content | Change view options | Change my language



**NAP**  
National Accessibility Portal

Empowering the disability sector through Information & Communications Technology

Home | About | Contact us | Register | Login | Site map | Search

### You can get information on

- Assistive devices
- Communication
- Disability related information
- Economic empowerment
- Education
- NAP Information
- Recreation
- Research
- Training

### You can search for information

Type keyword or phrase

### You can contribute to NAP

How do I contribute information  
Add new content

### You can improve your accessibility for NAP

Change view options  
Change my language

### Recent discussion forum postings

Does Affirmative Action work?  
Death penalty  
Luxembourg adopts euthanasia law  
Are 'controlled' mental illnesses ever really 'under control'?  
Employment equity & reasonable accomodation

*Discussion forums...*

#### Today's news feeds

**Muscular Dystrophy Association seeks volunteers - Peninsula Gateway**  
Muscular Dystrophy Association seeks volunteers Peninsula Gateway, WA - Feb 20, 2008 The Muscular Dystrophy Association is searching for summer camp volunteers who are looking for a rewarding and memorable experience. ...

**Disability backlog creating hardship - Lawrence Journal World**  
Disability backlog creating hardship Lawrence Journal World, KS - 14 hours ago Endris is among the thousands of Kansans whose Social Security disability case has taken years — not months — to decide. Unable to work and without an ...

**Gardner on the slopes**  
BBC News's Frank Gardner takes on Ski Sunday's slalom run

**United Nations: Social Development Commission Takes Up Texts On ... - Insurance News Net (press release)**  
United Nations: Social Development Commission Takes Up Texts On ... Insurance News Net (press release), PA - Feb 14, 2008 Highlighting the World Programme of Action concerning Disabled Persons, the Standard Rules on the Equalization of Opportunities for Persons with ...

**Gardner on the slopes**  
BBC News's Frank Gardner takes on Ski Sunday's slalom run

#### The latest information is

**Uganda: Disabled Ask for Special Beds**  
PERSON with disabilities (PWDs) have asked the Government to furnish maternity wards in the country with adjustable beds for disabled expectant women.

**US Deputy arrested in wheelchair dump video**  
A deputy who was videotaped dumping a paralyzed man out of his wheelchair onto a Tampa jailhouse floor turned herself in.

**Running blind: seven marathons, seven continents, seven days**  
The day Dave Heeky fell down a hole in the road, he realised that he badly needed a guide dog. Until then, he had done his best not to draw anyone's attention to the fact that the world was darkening around him because of a degenerative eye disease.

**SA Social grant spending Increased**  
South Africa is to increase its disability and old age grants by R70 to R940 a month by April, and its child support grants by R10 in April and a further R10 in October to R220 a month.

**First paraplegic to row across Atlantic honoured**  
Paraplegic Angela Madgen finished the Atlantic Paving Race in 67 days. She and teammate Franck Fessler, an amputee, finished eighth out of 22 two-person teams.

*More recent content additions...*

#### Latest events and news

**Latest events**

- Aesthetic and Disability - Feb 2-29
- Little Stars Golf Day - Feb 27
- Closing date for "Om Die Dam" Ultra Marathon - Feb 29
- The Bridge School International / ISAAC Scholarship
- Alta du Toit School Fete, Mar 1

*More events...*

**Latest news**

- Elderly people with diabetes at risk of physical disability
- Cannabis helps multiple sclerosis survivor
- New doubt if Iraqi suicide bombers were mentally ill
- British soldiers to help fund renovations and repairs at Forest Town School
- Amputee and paraplegic duo row the Atlantic


*More news...*

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# NAP Portal: Language Options

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## Change language

Note: Content not available in the preferred language will be shown in English

- [English](#)
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- [Sesotho sa Leboa](#)
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Communication > News > Health > Older diabetics at risk of physical disabilities

## Communication

### Health

**Content actions**

[Edit content](#) | [Add this content in another language](#) | [Request alert](#)

### Older diabetics at risk of physical disabilities

Elderly people with diabetes may be at heightened risk of physical limitations that could hinder their independence, a new study suggests. British researchers found that among more than 800 adults age 65 or older, those with diabetes were more likely to have problems with walking and performing daily tasks like bathing, climbing stairs and dressing.


#### Elderly people with diabetes at risk of physical disability

2008/02/26

Overall, 46 percent of those with diabetes used some form of mobility aid, such as a cane or walker. That compared with 31 percent of men and women without diabetes. Furthermore, 4 percent of diabetics were "highly dependent" on someone else to care for them, whereas only 1 percent of those without diabetes were, the researchers report in the journal Diabetes Care.

<http://www.sciam.com/article.cfm?id=older-diabetics-at-risk-0>

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**You can get information on**

- Assistive devices
- Communication
- Discussion forums
- Events
- NAP Mailing lists archive
- News
- Publications
- Disability related information
- Economic empowerment
- Education
- NAP Information
- Recreation
- Research
- Training

Communication > News > General news items > SA Social grant spending increased

## Communication

### General news items

**Content actions**

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### SA Social grant spending increased

South Africa is to increase its disability and old age grants by R70 to R940 a month by April, and its child support grants by R10 in April and a further R10 in October to R220 a month.


### Social grant spending to be increased

2008/02/27

The total number of South African grant beneficiaries is 12.4-million, and expenditure on social assistance will be R75.3-billion in 2008/09. The new increases are in line with the government's "war room" approach to tackling poverty in the country, announced by President Thabo Mbeki in his State of the Nation address earlier this month. The new approach will see various government departments working with non-governmental organisations and the business community to identify interventions targeting specific types of households and to implement them with urgency.

[http://www.southafrica.info/ess\\_info/sa\\_glance/social\\_delivery/budget2008-social-210208.htm](http://www.southafrica.info/ess_info/sa_glance/social_delivery/budget2008-social-210208.htm)

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- You can get information on
  - Assistive devices
  - Communication
  - Disability related information
    - Disability specific information
    - Facilities
    - Fights
    - Role players
  - Economic empowerment
  - Education
  - NAP Information
  - Recreation
  - Research
  - Training

[Disability related information](#) > [Role players](#) > [Physical disabilities](#) > [Provincial](#) > KwaZulu-Natal

## Disability related information

### KwaZulu-Natal

You can add additional content by using the content actions

<b>Content actions</b>
<a href="#">Add new content</a>

KwaZulu-Natal has the following entries. Please choose an entry to view.

#### [Association for Persons with Physical Disabilities\(Chatsworth\)](#)

This Association is affiliated to the National Association for persons with physical disabilities.

#### [Association for Persons with Physical Disabilities\(Phoenix\)](#)

This Association is affiliated to the National Association for persons with physical disabilities.

#### [Association for Persons with Physical Disabilities\(Pietermaritzburg\)](#)

This Association is affiliated to the National Association for persons with physical disabilities.

#### [KZN Cerebral Palsy Association](#)

Provincial Association affiliated to the NAPCP rendering services to persons with cerebral palsy at grass roots level

#### [Pietermaritzburg and District Cerebral Palsy Association](#)

Provincial Association affiliated to the NAPCP rendering services to persons with cerebral palsy at grass roots level




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- Disability related information
  - Disability specific information
  - Facilities
  - Rights
  - Role players
- Economic empowerment
- Education
- NAP Information
- Recreation
- Research
- Training


[Disability related information >](#) [Role players >](#) [Hearing disabilities >](#) [Provincial >](#) [Gauteng >](#) Tshwane Deaf Association

## Disability related information


### Gauteng

 Content actions

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 **Tshwane Deaf Association**

Association for the Deaf in Tshwane

 **Contact information**

**Contact person:**  
The Director

**Telephone number:**  
012 324 0950


**Fax number:**  
012 325 6641

**Email:**  
[grdeaf@iantic.net](mailto:grdeaf@iantic.net)

**Postal address:**  
PO Box 40603 Arcadia  
0007

**Physical address:**  
509 Edmond Street Arcadia  
0083

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# NAP Portal: Assistive Technologies – GNApp

- Assistive technology for quadriplegic and those who cannot speak
- Use pictures to construct sentence
- Voice reads out the sentence
- Localised for our environment
  - Culture specific pictures
  - Many South African languages
- Open source alternative to expensive imported applications



# NAP Portal: Assitive Technologies – GNApp

GNApp

please come now

Predictions

Vocabulary

different	good	more	again	almost	here	much	no	not	now	really	there	today
tomorrow	very	yes	&	because	but	if	or	goodbye	hello	please	thank you	day
people	thing	time	way	any	some	that	this	about	at	by	down	for
from	in	of	off	on	out	over	to	up	with	how	what	when
where	who	why	am	is	are	be	been	can	could	do	does	did
have	has	had	was / were	will	would	I	you	he	she	it	we	they
my	mine	your	call	come	eat	find	get	go	help	know	let	like
make	need	put	say	take	tell	think	try	use	walk	want	watch	work

Reset All Text

Speak

Press the space bar once to pause the scanning, and again to 'press' the highlighted button



# NAP Portal: Assistive Technologies – Notetaker

- Portable information device for visually impaired people
- Inbuilt speech technologies
- Functionality:
  - Email
  - Calculator
  - Audio books (DAISY)
  - Web



# Research Initiatives: Ability Based Technology Intervention

- Research into technology interventions to facilitate training based on:
  - Abilities, Learning styles, Literacy levels, Language
  - Multiple modalities (fusion and fission)
  - Smart Reasoning Engine (to facilitate the most appropriate configuration of modalities and interface)
  - Adaptive interfaces
  - Optimised content delivery and dialogue



# Research Initiatives: Intelligent Enabled Room

- Research into establishment of a smart / intelligent room
  - Sense (distributed sensors, devices)
  - Process
  - Adapt (intelligent decision making)
  - Interact (multiple modes/modalities)
  - Human Factors
- Focus:
  - Profiling and context awareness
  - Hardware, software, physical environment connectivity and integration



# Intelligent Enabled Room

- Has 5 main research themes:
  - Human Factors
    - Ethics, social and user centric design issues
  - Awareness
    - Sensing through multiple modalities
  - Intelligence
    - Optimised decision making
  - Enablers
  - Software Engineering
    - Methodologies in a Developing world context



# Research Initiatives: South African Sign Language

- Research into:
  - Enhanced web experience for Sign Language users
  - Digital video technologies as applied to Sign Language
  - Modelling and documentation of South African Sign Language
- Hosts Thibologá Sign Language Institution
  - Provides on-line Sign Language Training
  - Introductory books & courses on Sign Language



# Other supporting initiatives

- Free and Open Source Software (FOSS)
  - South African Government adopted a policy and strategy to implement FOSS
- World Wide Web Consortium (W3C)
  - Meraka hosts Southern Africa W3C office
  - W3C develops interoperable technologies for
    - Specifications
    - Guidelines
    - Software
    - Tools



Thank you !

Questions?

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[qwilliams@csir.co.za](mailto:qwilliams@csir.co.za)

