

Workshop on Best practices for successfully implementing of  
Broadband network in the Arab region  
Rabat-Morocco, 4-5 March 2014

# National Broadband Plan

Sudanese experiences



الهيئة القومية للإتصالات  
National Telecom Corp.

**Dr. Sami Salih**

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President of SDv6TF



# WSIS Recommendations

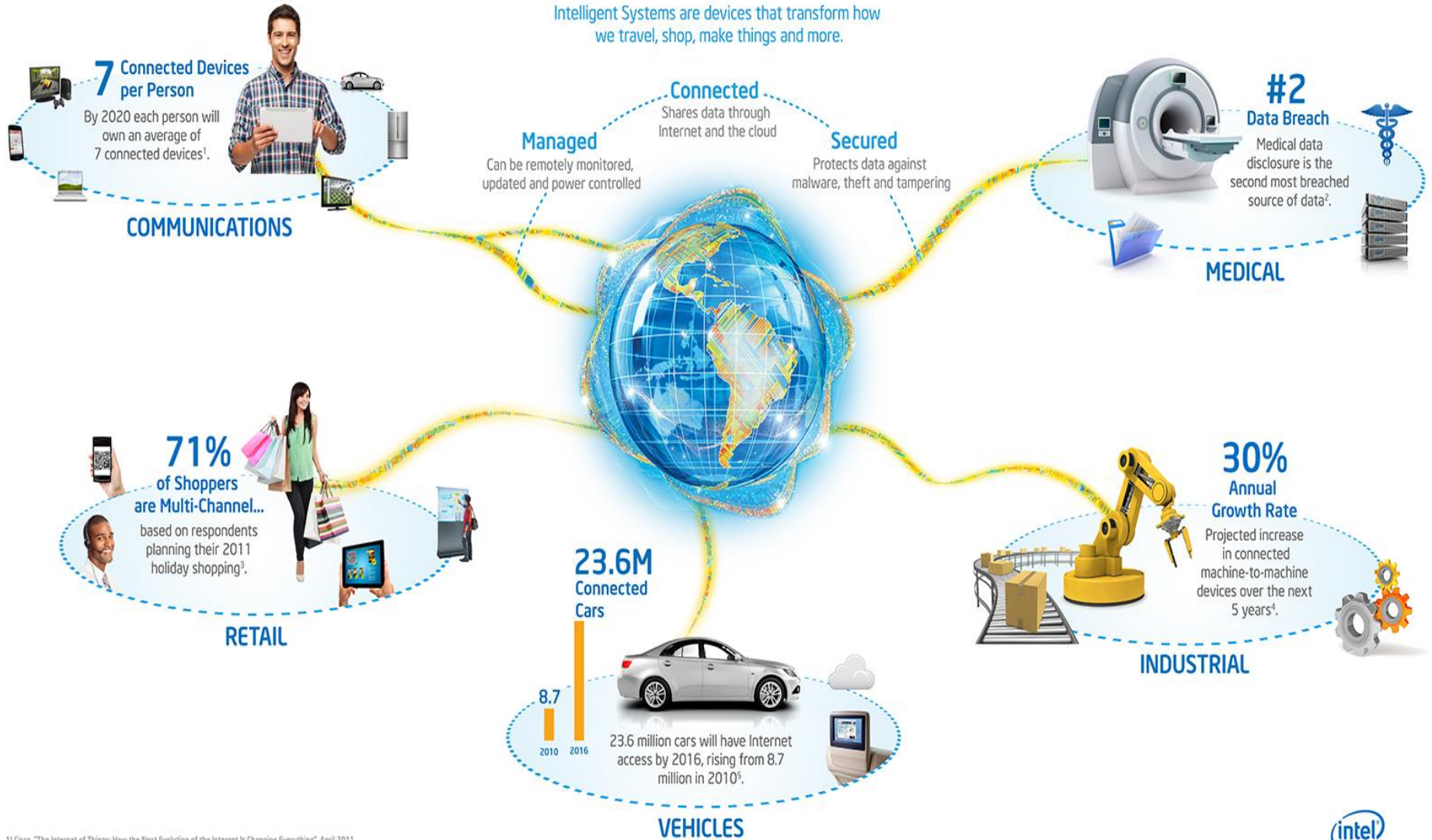
*The ability for all to **ACCESS**  
and contribute information, ideas  
and knowledge is essential in an  
inclusive Information Society*



# Intelligent Systems for a More Connected World

## WHAT ARE INTELLIGENT SYSTEMS?

Intelligent Systems are devices that transform how we travel, shop, make things and more.



1) Cisco, "The Internet of Things: How the Next Evolution of the Internet is Changing Everything", April 2011

2) Bloor Research, "Security challenges in the US healthcare sector" White Paper, December 2010, <http://www.mcafee.com/us/resources/white-papers/vp-bloor-healthcare-security.pdf>

3) Deloitte U.S., 2011 Annual Holiday Survey, [http://www.deloitte.com/assets/Docum-UnitedStates/Local%20Assets/Documents/Consumer%20Business/us\\_retail\\_AnnualHolidaySurvey\\_2011\\_pr\\_102611.pdf](http://www.deloitte.com/assets/Docum-UnitedStates/Local%20Assets/Documents/Consumer%20Business/us_retail_AnnualHolidaySurvey_2011_pr_102611.pdf)

4) McKinsey Global Institute analysis, "Big data: The next frontier for innovation, competition, and productivity", June 2011

5) Wall Street Journal, <http://online.wsj.com/article/SB1000142405270230406504576349763614933844.html>, estimate from research firm, Frost & Sullivan

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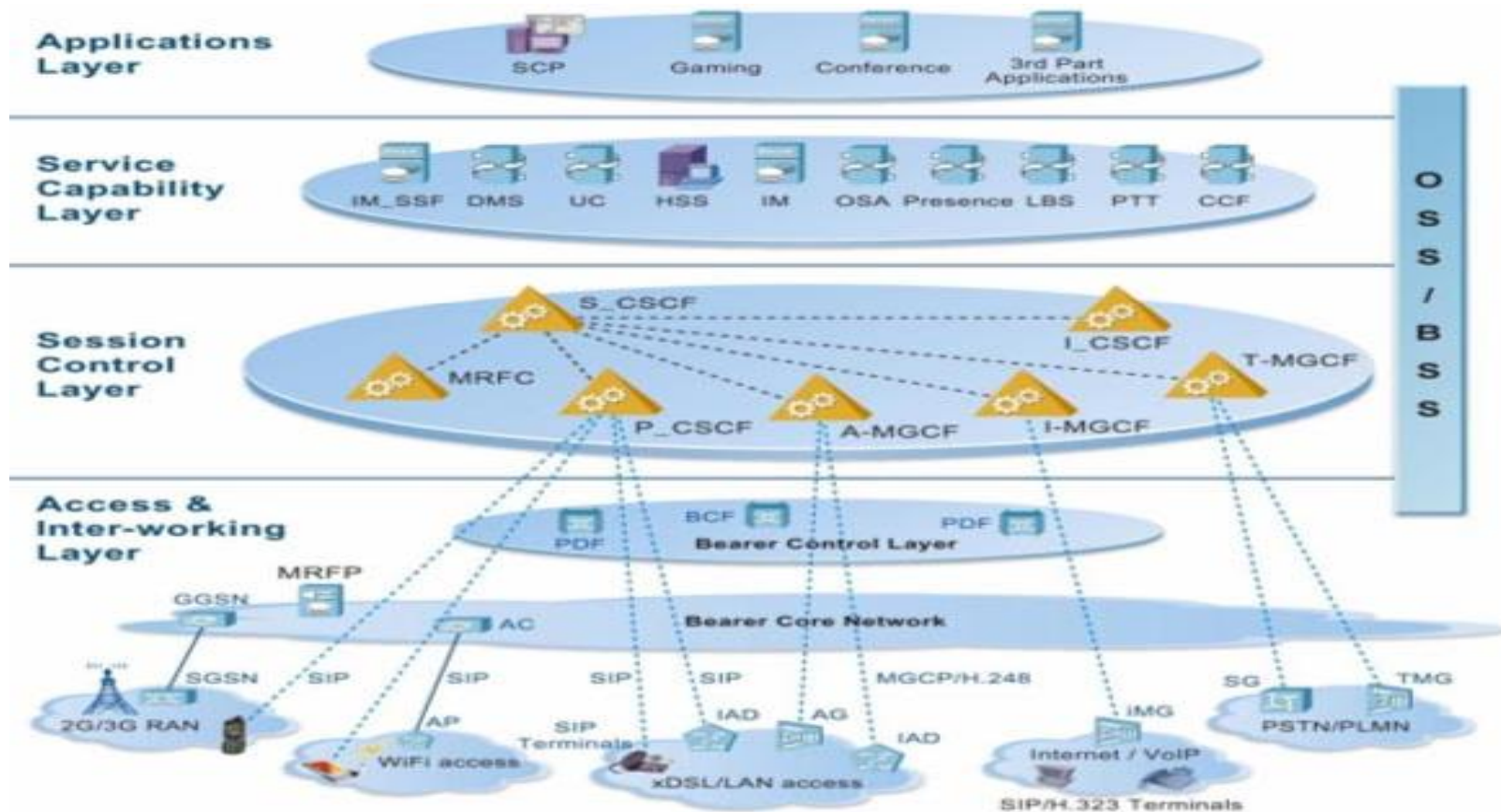
**PART (I)** Broadband, What? Why? How?

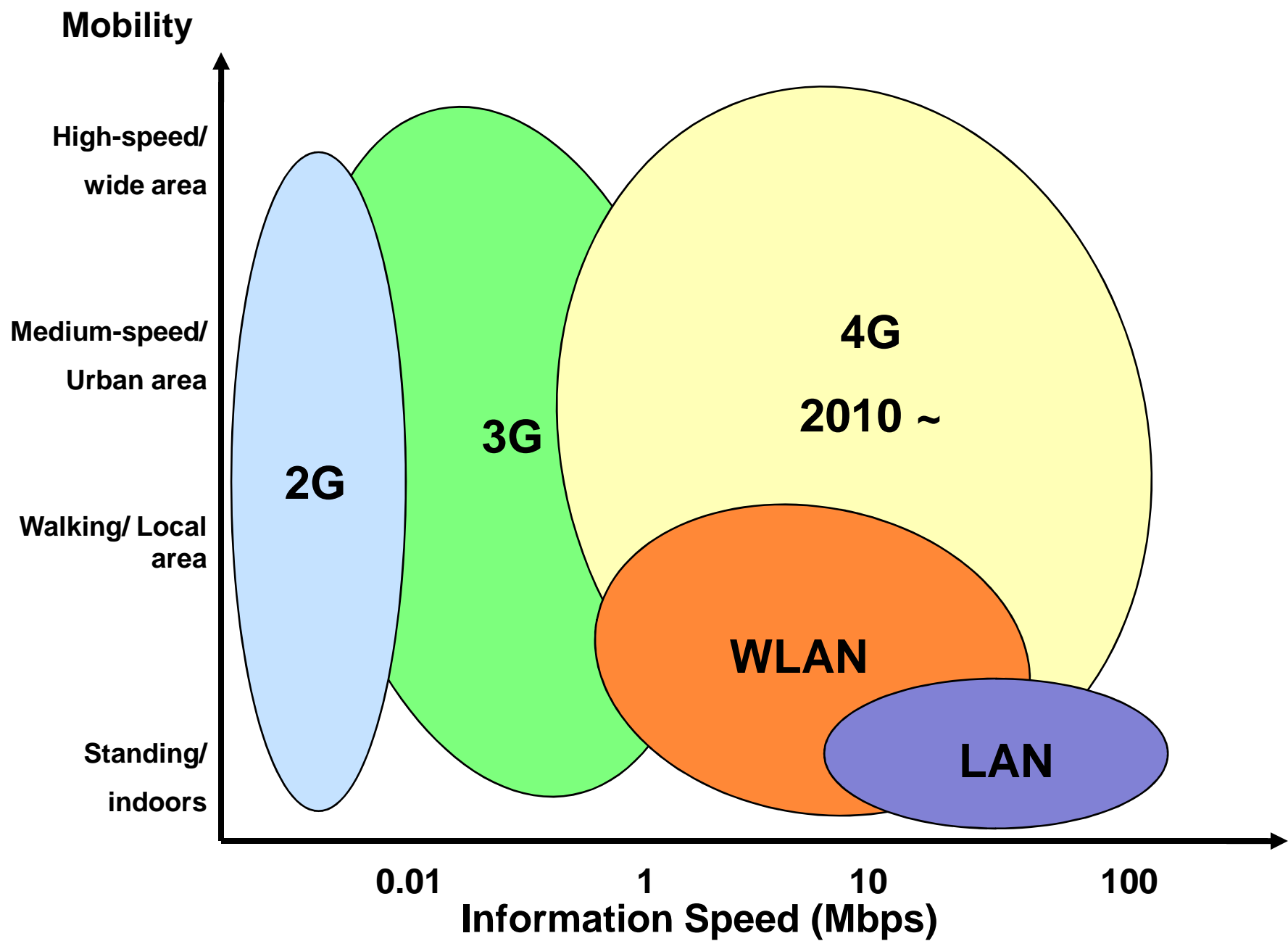
**PART (II)** Sudanese Telecom. Market : A Survey

**PART (III)** National Broadband Plan

# Definition of Accessibility

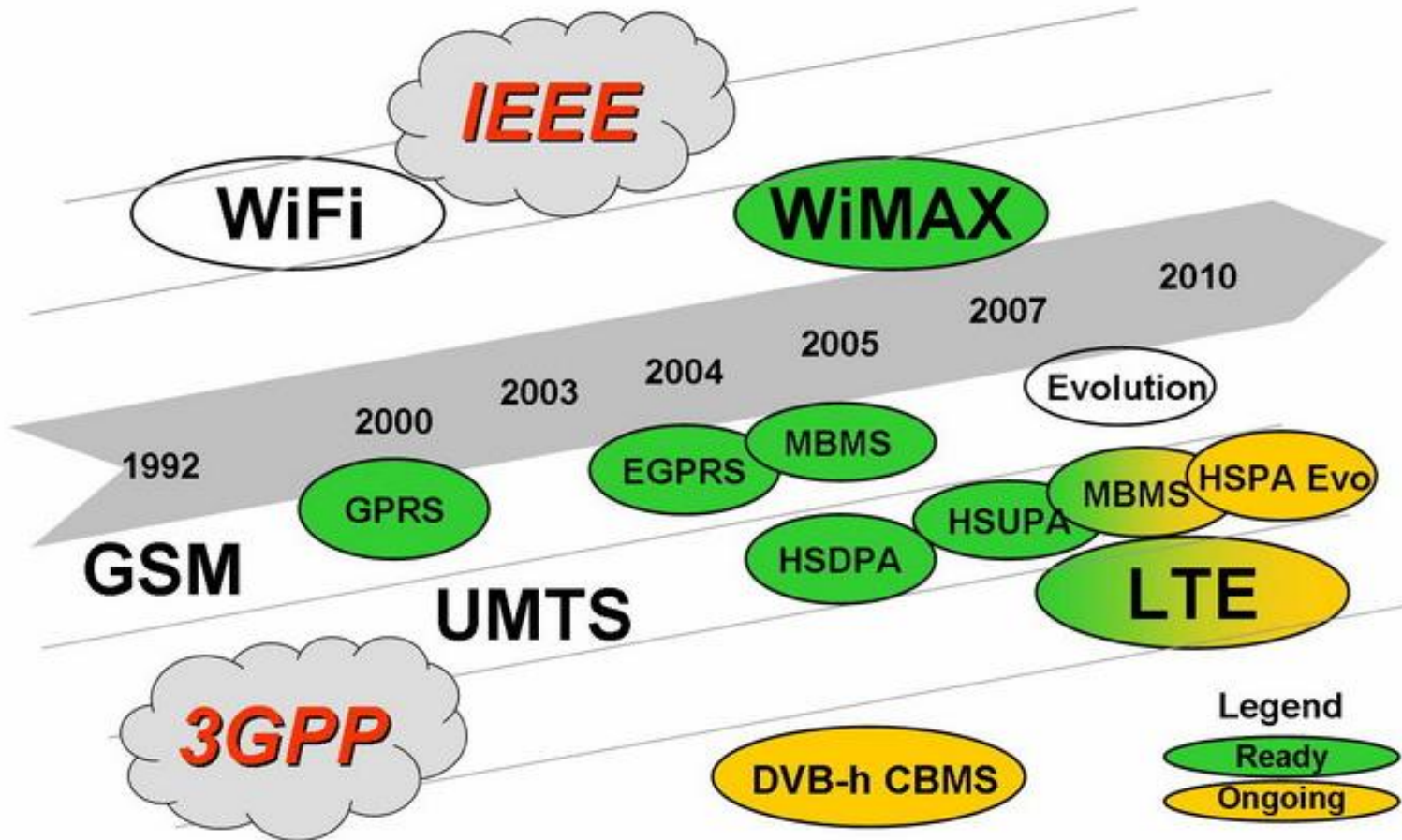
Provide mean(s) to connect with the Information Networks







# Development of Access Techniques

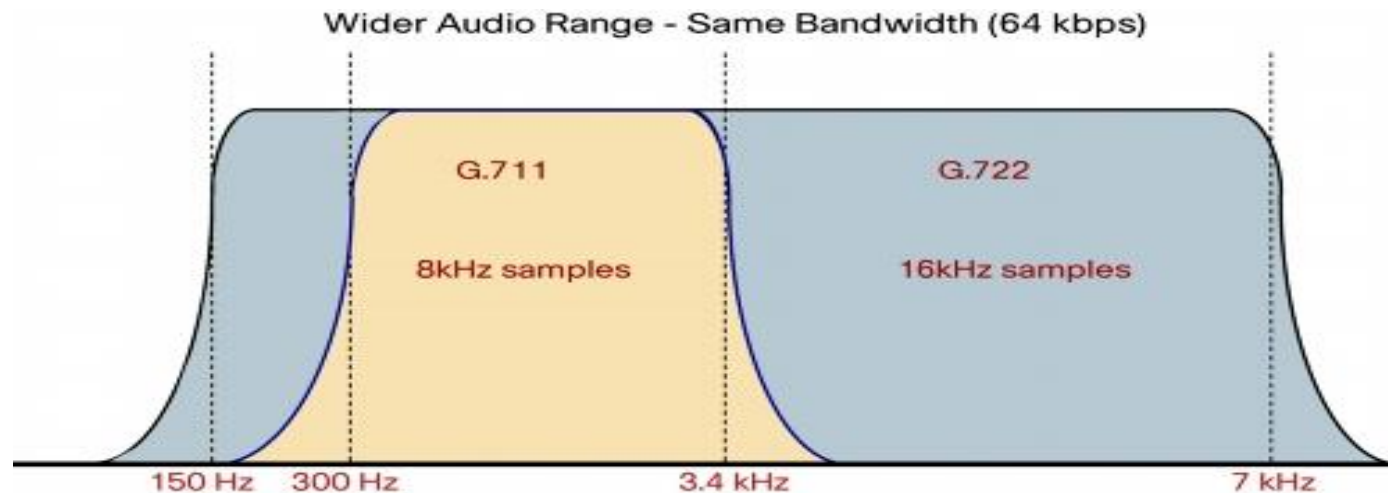


# Narrowband Definition

## Narrowband Telecom Definition (Voice Grade Bandwidth)

In **Analog** transmission systems, a narrowband channel has nominal bandwidth of **4 kHz**, which is the standard for analog voice.

In **Digital** systems, a narrowband channel is **64 kbps**, which is the fundamental standard for **PCM** digitized voice.





# Broadband Definitions

✓Legacy; Baseband signals or systems are a range of frequencies measured from close to 0 hertz to a cut-off frequency (a maximum bandwidth or highest signal frequency). Broadband refers to telecommunication that provides multiple channels of data over a single communications medium, typically using some form of frequency or wave division multiplexing.

✓ITU; transmission capacity that is faster than primary rate Integrated Services Digital Network (ISDN) at 1.5 or 2.0 Megabits per second (Mbps).

✓OECD; for a service to be considered broadband, [the threshold] in respect to downstream access [should be up] to 256 Kbps.

✓OFCOM; broadband' is used to refer to higher bandwidth, always-on services, offering data rates of 128 kbps and above.

✓FCC; broadband access is "Internet access that is always on and faster than the traditional dial-up access".

# Broadband Definitions (Cont...)

Summarizing, all of these are technical definitions, based on the fact of transmitting more than one data stream in the same wire by using different frequencies or channels. But for the not-technical user, broadband is strictly tied to “effective” speed, or, in other words, “subjective” speed: if your 1 Mbps is the slowest in town, it is no more *broadband*.

## **General remarks for our definition:**

Speed, services or technologies-based will cause the term “broadband” to be a floating point definition and have to be updated over time.

Functionality definition may make the term overly subjective.

Broadband system is an enabling ICT platform that capitalizes the value of services and applications offered by a wide range of providers, to the benefit of socio-economic.

## **Our Definition:**

- Neither related to speed nor to the technology
- Should be measure end-to-end
- In multi-services platforms
- Why we need BB
- Who will benefit

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# Case of Sudan

- Independence 1956
- Population 36 M
- Area 1,886,068 km<sup>2</sup>
- GDP\Capita \$ 2,657
- Neighbors 7 Countries.





الهيئة القومية للإتصالات  
National Telecom Corp.

**National Telecommunication  
Corporation**

# About us

## National Telecommunica- tion Corporation

### Brief

**NTC was founded in September 1996 with a vision to provide an effective regulatory framework and adequate safeguards needed to ensure fair competition and protection able to fulfill the consumer interests. NTC, as governmental body, is committed to perform its functions independently and effec-**



الهيئة القومية للإتصالات  
National Telecom Corp.



## **Vision**

**Realization of a knowledge society through an equitable, legitimate and competitive environment with advanced information and communications systems**

## **Mission**

**To avail information and telecommunications services of state-of-the-art technologies with high quality and reliability affordable to all in cooperation with all stakeholders in a healthy, independent and transparent regulatory environment that encourage investment and free competition.**



الهيئة القومية للإتصالات  
National Telecom Corp.



# Telecommunications Progress

- ✓ 1859 – Telecommunications introduced in Sudan
- ✓ (1st telegraph link between Cairo & Sawaken),
- ✓ 1871–1873 Telegraph line reached Khartoum (Small unit for Post & Telegraph).
- ✓ 1892/1903 – First Telephone exchange in Sudan (Eldaba & Khartoum).
- ✓ 1910 -1971 – The service was run by a government body known as Posts & Telegraphs (P&T)
- ✓ 1971- 1978 Telecommunication was separated from the Post service and run as
- ✓ a governmental Department.
- ✓ 1978 – 93 Sudan Telecommunications Public Corp, (STPC).

## Telecommunications Progress (Cont ...)

- ✓ **1993 – 94 Privatization of Telecommunication Sector.**
- ✓ **1994-2001 National Telecommunication Council**
- ✓ **2001, National Telecomm. Corporation (NTC) formed under**
- ✓ **Telecommunication Act 2001.**
- ✓ **1994, Sudan Telecom Co. (SUDATEL) started as an Operator & Service provider.**
- ✓ **1997, license issued to a cellular service provider Sudanese Mobile Telephone Co. (MOBITEL).**
- ✓ **1997, First ISP, Sudanese Internet Service Co. (Sudanet).**
- ✓ **2001, First Pre-paid service, Ashraaf International (Ashraaf com).**
- ✓ **2003, license issued to the second mobile operator (Areeba).**
- ✓ **2005, license issued to the second fixed operator (Canar).**
- ✓ **2006, Sudatel launch its 3G - UMTS Network (Sudani).**

# Internet progress

**1996, Internet was introduced in Sudan by the Sudan Internet Services Co. Ltd. [Sudanet] with 128Kbps Bandwidth capacity.**

**In early 1998, the Sudan Telecom Co. Ltd. [Sudatel] introduced its Internet Service in the country as a value added service to its basic fixed telephony services with 265Kbps Bandwidth capacity.**

**In Nov 1999, Sudatel became the only pop in Sudan with 2Mbps from EMIX.**

**Sudatel opened its Internet service provisioning to other potential service providers, the enterprise and universities sectors using its existing data communication infrastructure.**

# Legislation Maturity

**1974, Telecommunications Law.**

**2000, National Telecom Corporation Bill**

**National Telecom Council Bill 1994**

**Telecom Act. 1974**

**2002, A new Telecom.**

# Market Share



**Coverage:** 1087 City

**Technology:** GSM / UMTS

**Subscribers:** 11,599,196



**Coverage:** 661 City

**Technology:** GSM / UMTS

**Subscribers:** 8,728,195



**Coverage:** 1,318 City

**Technology:** GSM / UMTS

**Subscribers:** 6,909,926



**Coverage:** 156 City

**Technology:** WLL CDMA

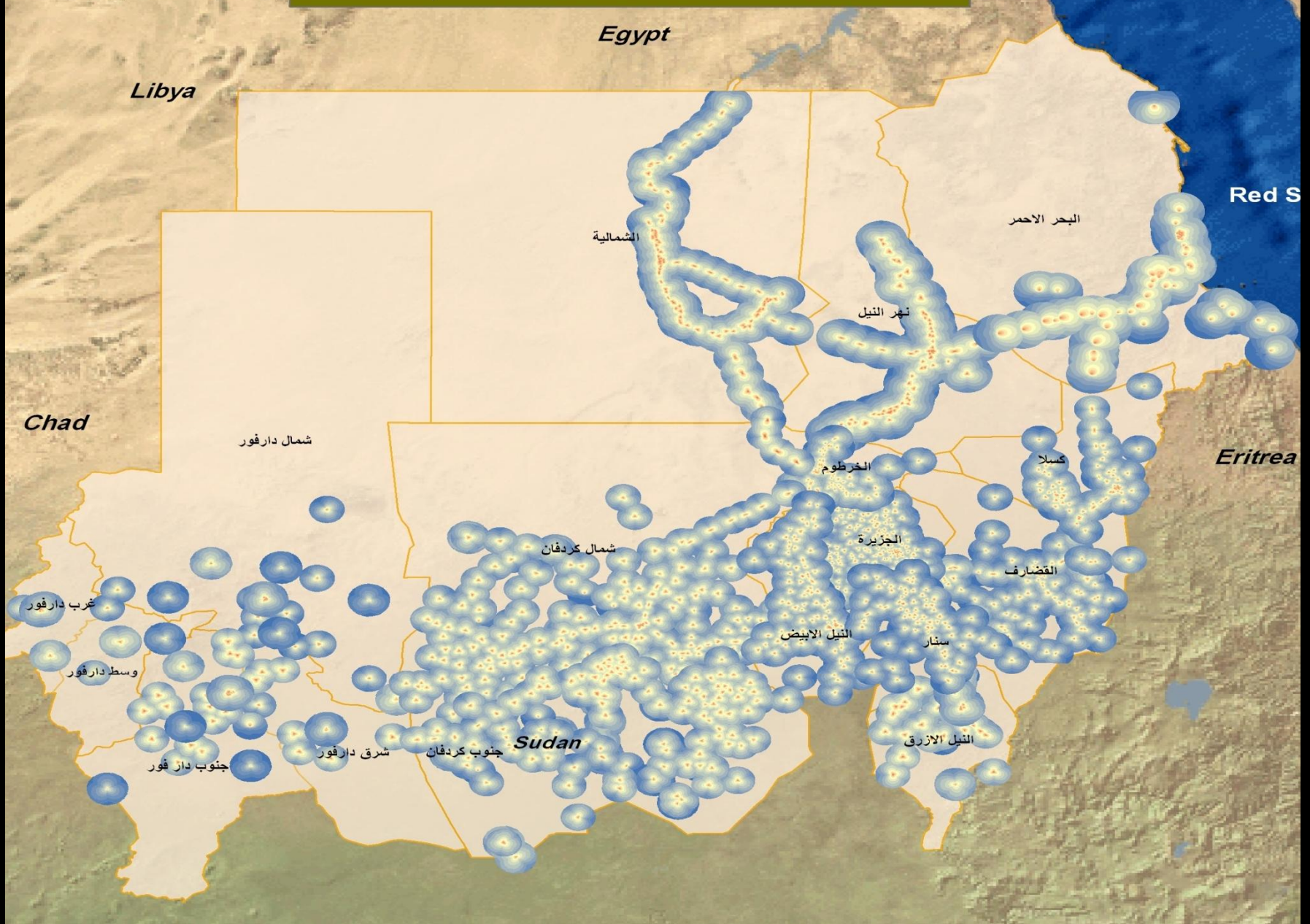
**Subscribers:** 319,790

**Total Subscribers: 27,557,097**

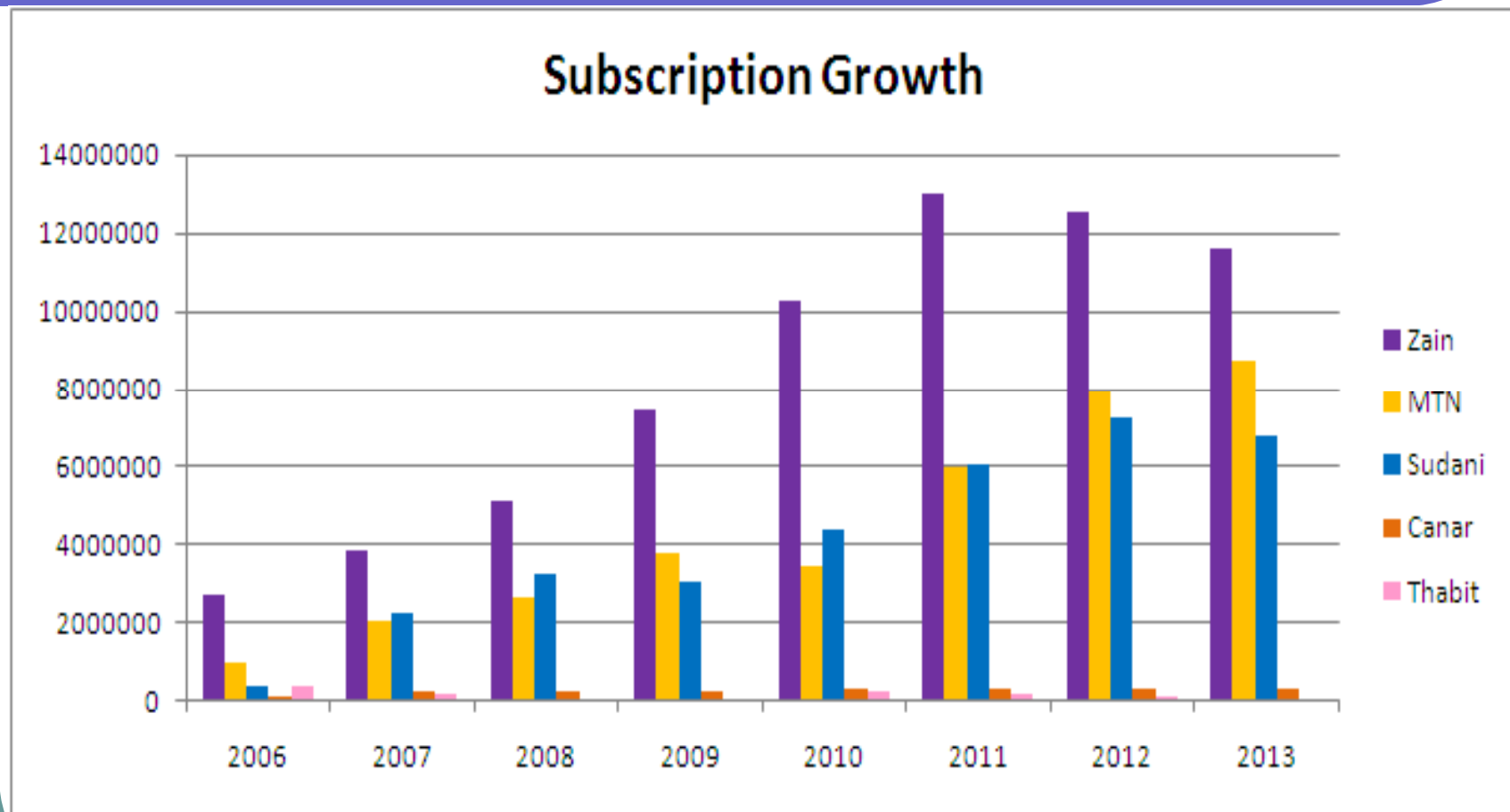




## تغطية شبكة الهاتف السيار للعام ٢٠١٣

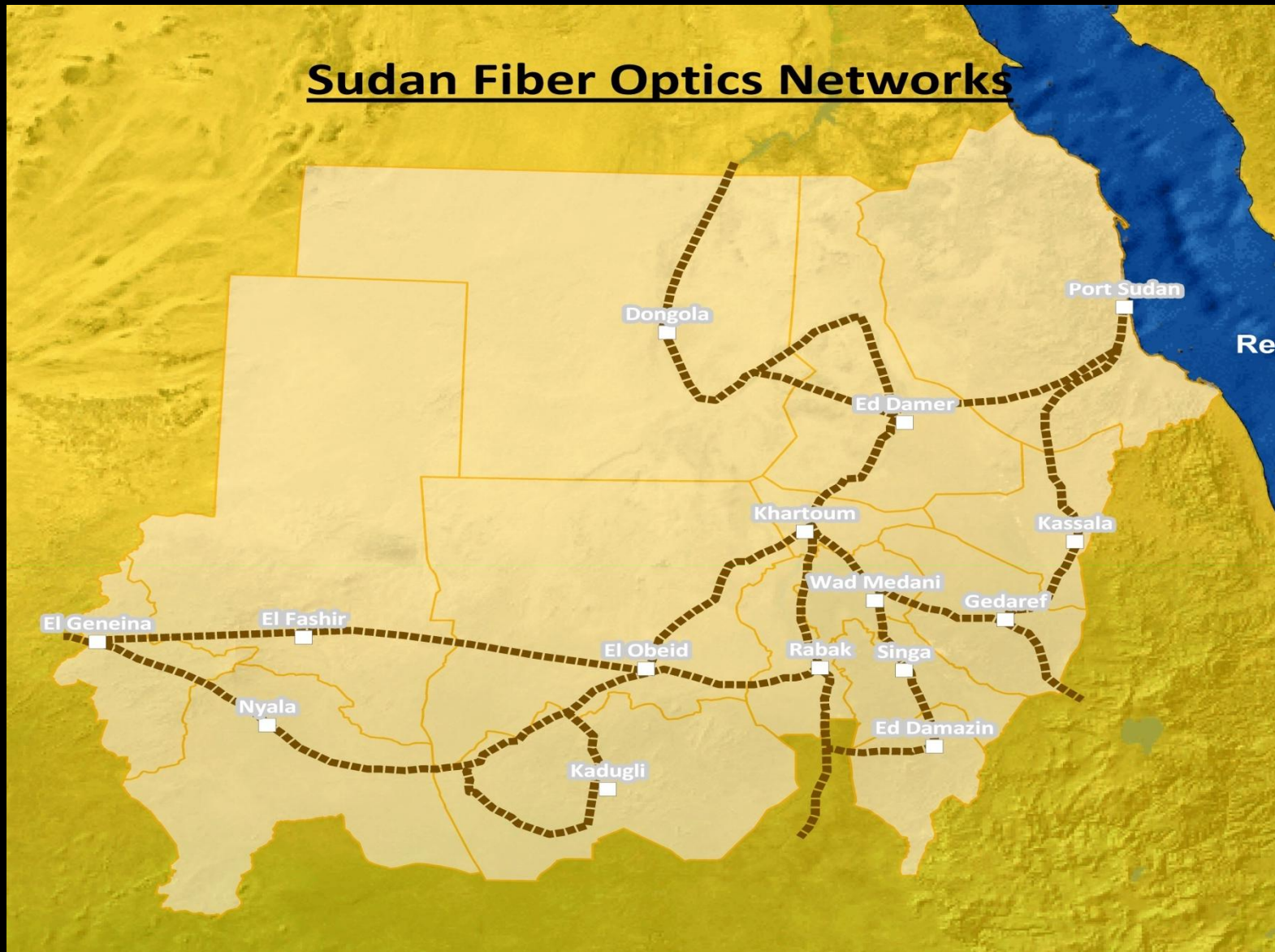


# Subscribers Growth





## Sudan Fiber Optics Networks



**National optic fiber network: 23000 Km**

**Bordering neighboring countries: Saudia Arabia, Egypt, and Ethiopia.**

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# ملاح الخطة الوطنية لتطوير خدمات النطاق العريض في السودان

## الرؤية؛

أن تصبح تقانات النطاق العريض متوفرة في جميع المناطق المغطاه بخدمات الإتصالات بحلول 2020م، وأن تطور تطبيقات جاذبة تقنع جميع أصحاب المصلحة بجدوى خدمات النطاق العريض.

## الرسالة؛

تعزيز إستخدام تقنيات وخدمات النطاق العريض لتعزيز الإستفادة من قطاع الإتصالات وتقانة المعلومات في تنمية المجتمع السوداني.



## الأهداف؛

TBD

# محتويات الخطة

## تمهيد

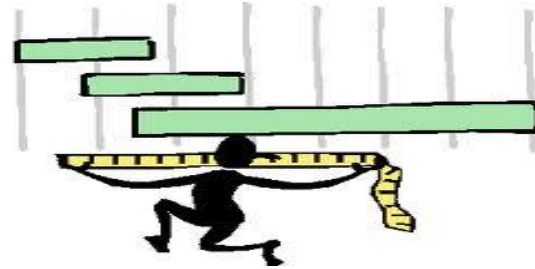
1. واقع قطاع الإتصالات وتقانة المعلومات
2. تعريف النطاق العريض
3. الجدول الزمني للتنفيذ
4. النتائج المتوقعة وأثرها على تنمية القطاع
5. التحديات المفروضة والفرص المتاحة

## محاور الخطة

1. تقسيم المحاور (زمني، تطبيقي، ....)
2. تحديد المرجعيات وأفضل الممارسات والتجارب
3. محور السياسات التنظيمية والتشغيلية
4. توفير موارد الشبكة
5. توطين التقنية والتنمية المستدامة

## منهجية التنفيذ

1. الجهات المعنية بالتنفيذ ومسئولياتها
2. الفعاليات ومناطق القياس
3. تشجيع الإستثمارات في خدمات النطاق العريض





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