Latest Wireless Deployment Trends for Smart Cities

Ronald van Kleunen

5th of October 2017
International Convention Center (ICC)
Cape Town, South Africa
Urban Villages / Ruralization
Villages move into Cities
Road chaos after traffic lights broke down in Xi’an, China, in 2014. Traffic control sensors are vulnerable to hacking.

What is the definition of a Smart Nation / Island / City / Town / Village?
SMART CITY CONCEPTS

- Smart Governance and Smart Education
- Smart Citizen
- Smart Healthcare
- Smart Energy
- Smart Building
- Smart Technology
- Smart Mobility
- Smart Infrastructure

Source: Frost & Sullivan
ITU and UNECE
United for Smart Sustainable Cities (U4SSC)

Source: [http://www.itu.int/en/ITU-T/ssc/united/Pages/default.aspx](http://www.itu.int/en/ITU-T/ssc/united/Pages/default.aspx)

ITU and UNECE launched "United for Smart Sustainable Cities" (U4SSC) in response to the **Sustainable Development Goal 11: "Make cities and human settlements inclusive, safe, resilient and sustainable".**
Towards Being World’s First Smart Nation

Singapore is building a Smart Nation that leverages the capabilities of a Smart City. With an approach that combines innovation and technology, Singapore aims to create an ICT ecosystem that will drive economic growth and improve the quality of life for its residents.

SKILLED TECH TALENT

Singapore is home to more than 146,000 infocomm professionals, with a wide range of training and development opportunities.

Source:
https://www.smartnation.sg/
http://smartisland.com/wp-content/uploads/2015/02/Singapore-Smart-Nation.png
Singapore: Autonomous Buses by 2020 (Driverless)

Singapore: Solar powered Trash Bins every 50m freewifi@Orchard
South Korea, Songdo: Clever Rubbish

The waste disposal system is also impressive - or it would be if you could see it. Because there are no rubbish trucks trawling the streets or vast bins dotted around blocks of flats. Instead, all household waste is sucked directly from individual kitchens through a vast underground network of tunnels, to waste processing centers, where it's automatically sorted, deodorized and treated to be kinder to the environment.

Dubai the first city in the world to have analyzed the smartness and sustainability of its urban services taking the ITU standardized KPI’s.
Smart City Expo – World Congress

Digital Thailand and adoption of BICSI’s ANSI/BICSI-002 Data Center Standard

Source:
https://www.bicsi.org/uploadedfiles/BICSI_Website/Global_Community/Presentations/Southeast_Asia/12_Thailand4.0.pdf
https://www.bicsi.org/uploadedFiles/BICSI_Website/Global_Community/Presentations/Southeast_Asia/1_DCStandard.pdf
Spectrum Management

The 3rd Annual Sub-Sahara Spectrum Management Conference

November 2017 / Nairobi, Kenya (tbc)


The 3rd Annual Middle East & North Africa Spectrum Management Conference

24 & 25 January 2017 / Dubai, UAE


https://eu-ems.com/ Previous Spectrum Management events in Senegal, Morocco

Spectrum Management in South Africa

Independent Communications Authority of South Africa (ICASA)

National Frequency Plan

Spectrum Allocation Table:

Wireless Trends and Smart Cities
(low bandwidth sensors and high bandwidth applications)

5G (Mobile/Cellular) Frequency

Wireless LAN (WLAN) Frequencies: 2.4 GHz and 5 GHz

Field Area Network (FAN) Low-Power Wide-Area Network (LPWAN)
Applications

• Location Based Services (LBS)
  • Outdoor (with GPS – Global Positioning Systems)
  • Indoor (Location Maps)
• Connected consumers
  • Shopping Mall / Supermarket
• Track family members (Kids)
• or items (Scooters)
• Home automation / integration
  • Thermostat / Air-Con / Door-locks / etc.
Applications

• Parking Application
  • Only pay for what you use
  • Or enable it if you forgot to buy a parking ticket
• Food ordering (queue busting)
  • In a restaurant using tablets
• Bank branches
  • Run applications from tablets to reduce queues
Industrial sensors

Source: Harbor Research

Health Sensors

Source: https://www.cooking-hacks.com/documentation/tutorials/ehealth-biometric-sensor-platform-arduino-raspberry-pi-medical
BICSI Professionals are needed to create ...

- Architects and Consultants
- Audiovisual (AV) Professionals
- Authorities Having Jurisdiction (AHJs)
- BICSI Credential Holders
- Broadband Service Providers
- Cabling Installers and Technicians
- Civil Engineers
- Communications Managers—Corporate and Government
- Communications Resellers and VARs
- Construction Managers (CMs)
- Data Center Designers and Engineers
- Electronic Safety and Security Professionals
- End Users
- Facility Owners and Managers
- General Contractors
- ITS Contractors
- ITS Design Consultants
- Management Professionals
- Marketers
- Military Personnel
- Network Designers and Administrators
- Outside Plant (OSP) Engineers
- Project Managers—Government, Military, Civilian and Corporate
- Quality Controllers
- Sales Engineers and Professionals
- Wireless/Digital Professionals
... a Smart integrated environment
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