

# Base Station Evolution for LTE

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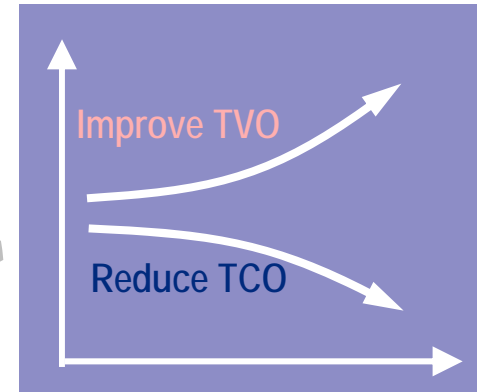
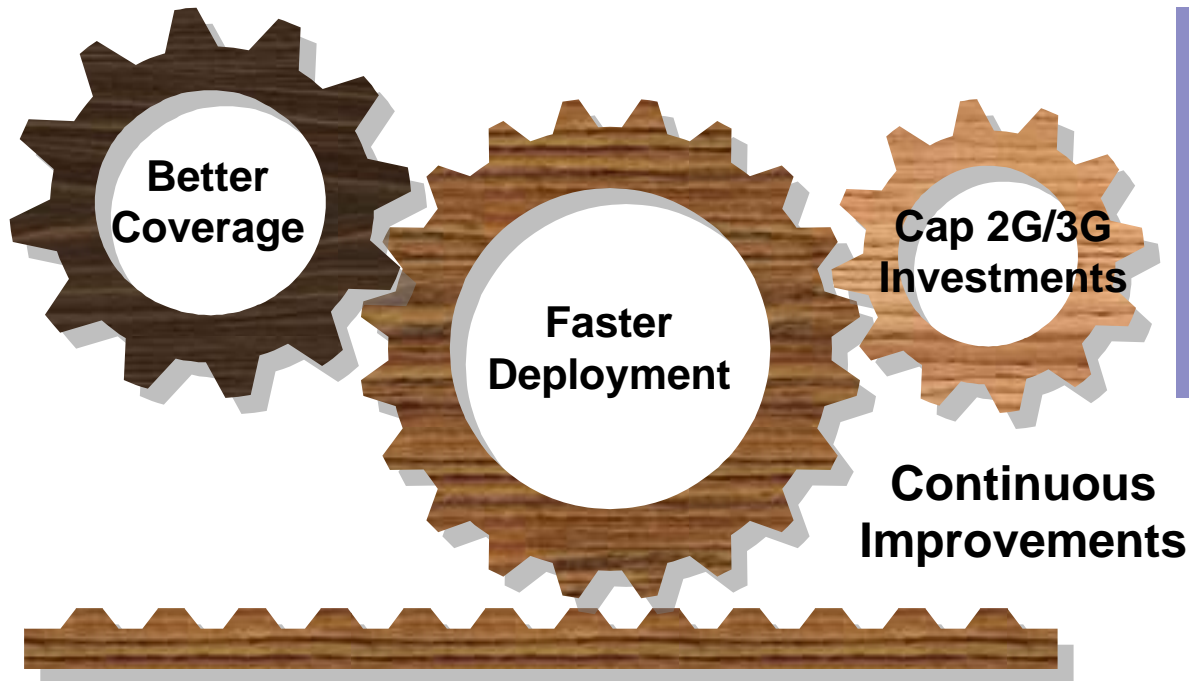
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# Agenda

- Operator Requirements
- Challenges of Traditional Base Station Solutions
- Base Station Design Considerations
- Distributed Base Stations

# Operator Requirements



## Benefits:

- ❑ Better coverage reduces CAPEX, increases network reliability, promotes the brand, and attracts more subscribers
- ❑ Fast deployment keeps one ahead of the competition and provides quick returns on investments
- ❑ Cap legacy equipment investment with future-proof solutions
- ❑ Increased Total Value of Ownership and Reduced Total Cost of Ownership

# Challenges of Traditional Solutions



## Hard to Acquire Sites

- Difficult site acquisition and installation, leads to long construction cycle and large investment

## Hard to Install

- Extremely heavy and challenging requirements for auxiliary support

## Hard to Transport

- Large volume, very heavy , bulky and hard to transport

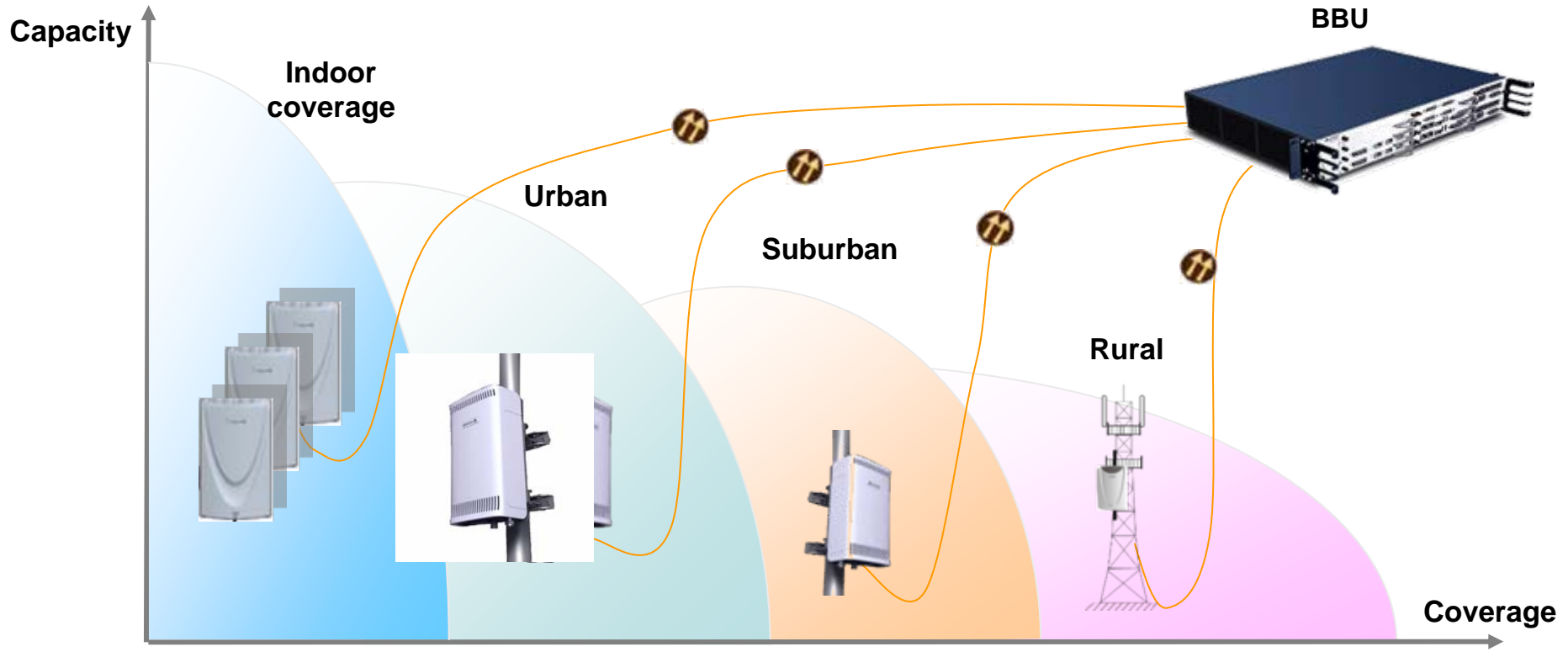
## Hard on the Environment

- High energy costs and noise, hard to protect the environment

# Base Station Design Considerations

- **SingleRAN**
  - Software defined radios
  - Multimode operation
  - Maximum flexibility
- **Green Designs**
  - High Efficiency Power Amplifiers
  - Miniaturization
  - Alternative Energy Sources
- **Broadband Radio Designs**
  - Scalable channel bandwidths versus fixed channelization
- **Reliability and Availability**
  - System design to eliminate single points of failure

# Distributed Base Station (DBS) Solutions



Indoor environment



Urban area



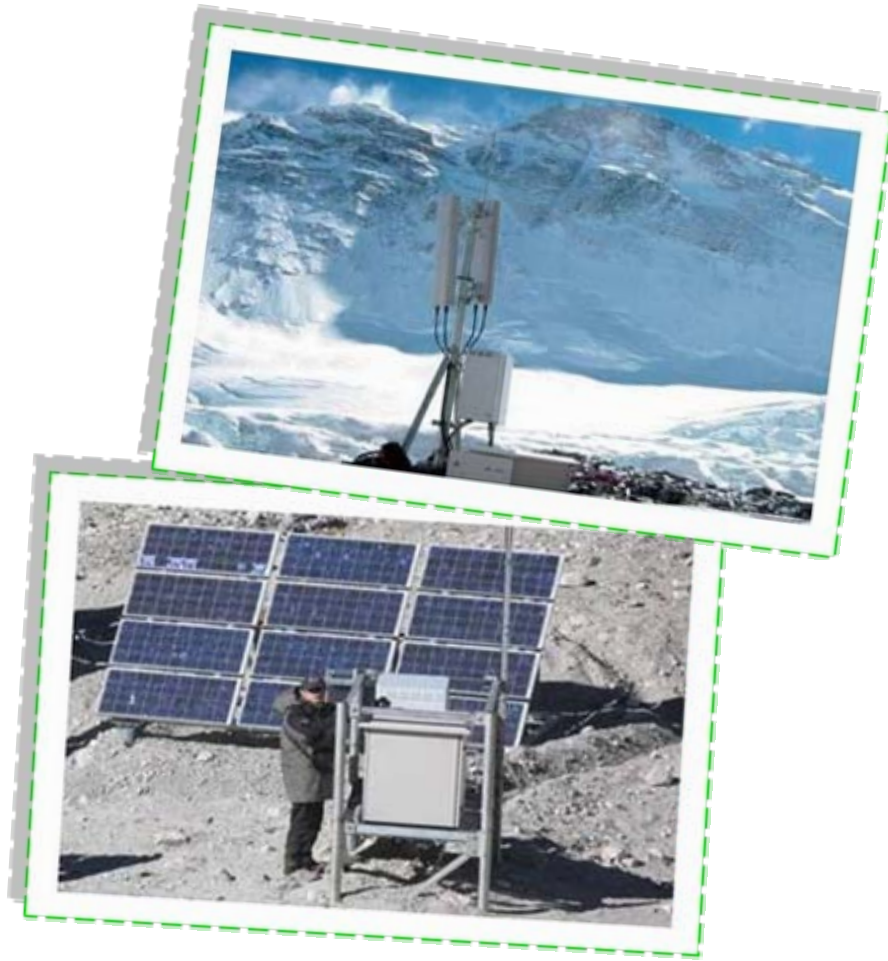
Suburban area



Rural, mountainous area

# Alternative Energy Example

From 5200 to 6500 meters on Mount Everest



## The highest BTS in the world

- BTS3006C@O4 uses **solar energy** for power supply on Everest at **5200 meters**
- Provided communications at **6500 meters** for **Olympic Torch Relay**

**Thank you**

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