

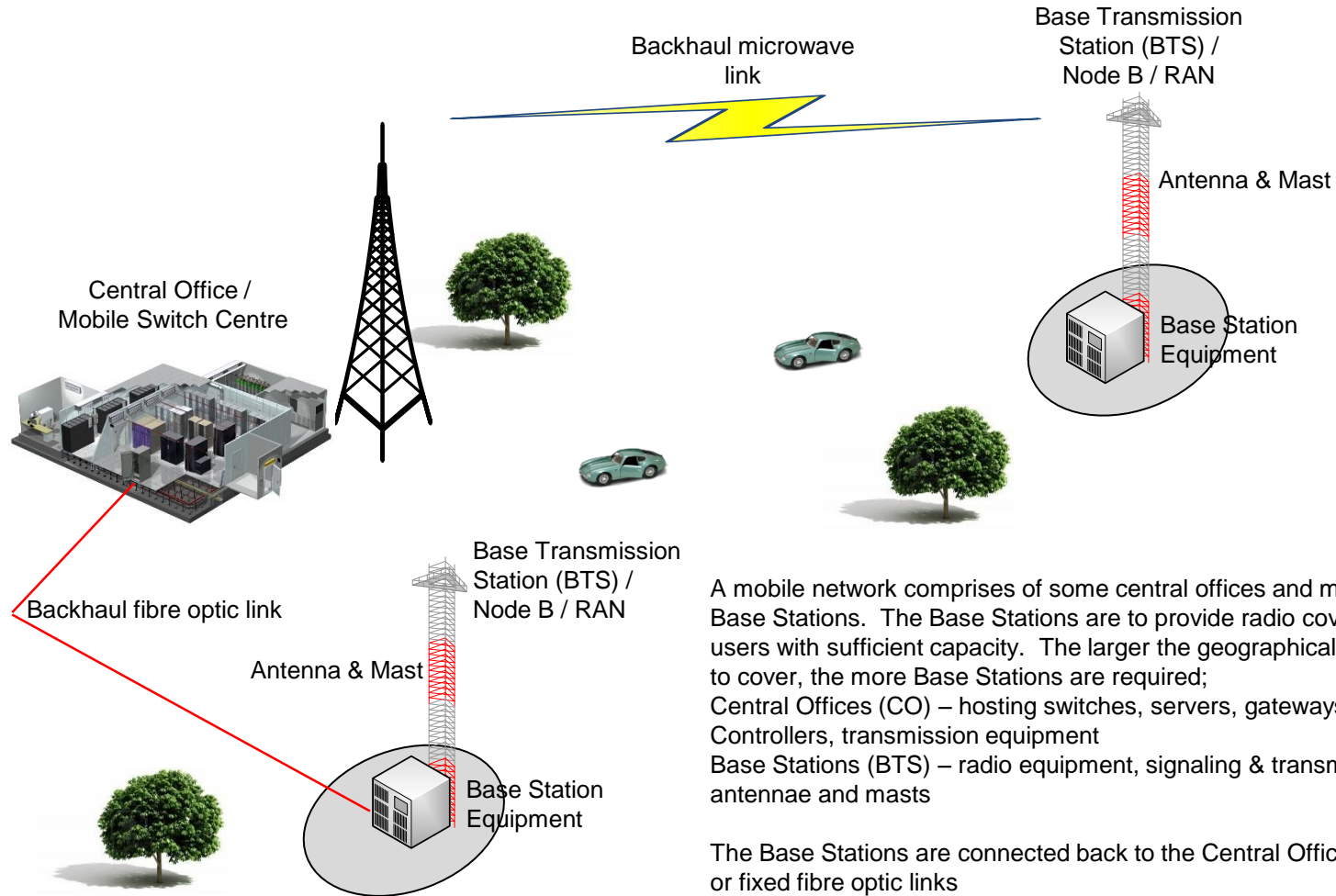
Fibre To The Antenna

Prepared By:

Matthew Lam *BE ME DipMgt CEng MIET MIPENZ*

January 2015

Key Elements of a conventional mobile network



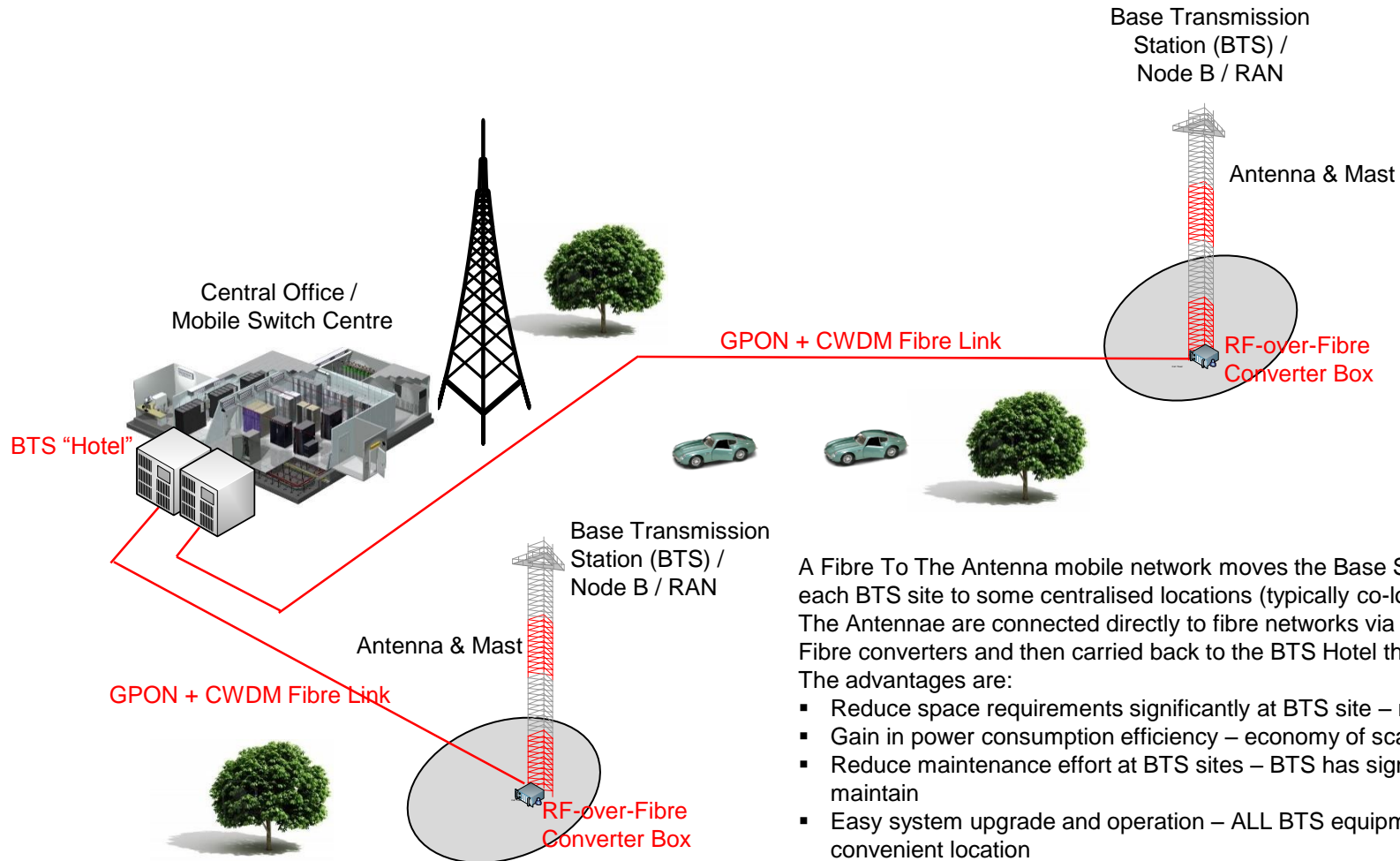
A mobile network comprises of some central offices and may be thousands of Base Stations. The Base Stations are to provide radio coverage to the end users with sufficient capacity. The larger the geographical area and population to cover, the more Base Stations are required;

- Central Offices (CO) – hosting switches, servers, gateways, Base Station Controllers, transmission equipment
- Base Stations (BTS) – radio equipment, signaling & transmission equipment antennae and masts

The Base Stations are connected back to the Central Office via microwave links or fixed fibre optic links

Broadband Mobile Network - FTTA

Fibre To The Antenna (FTTA)

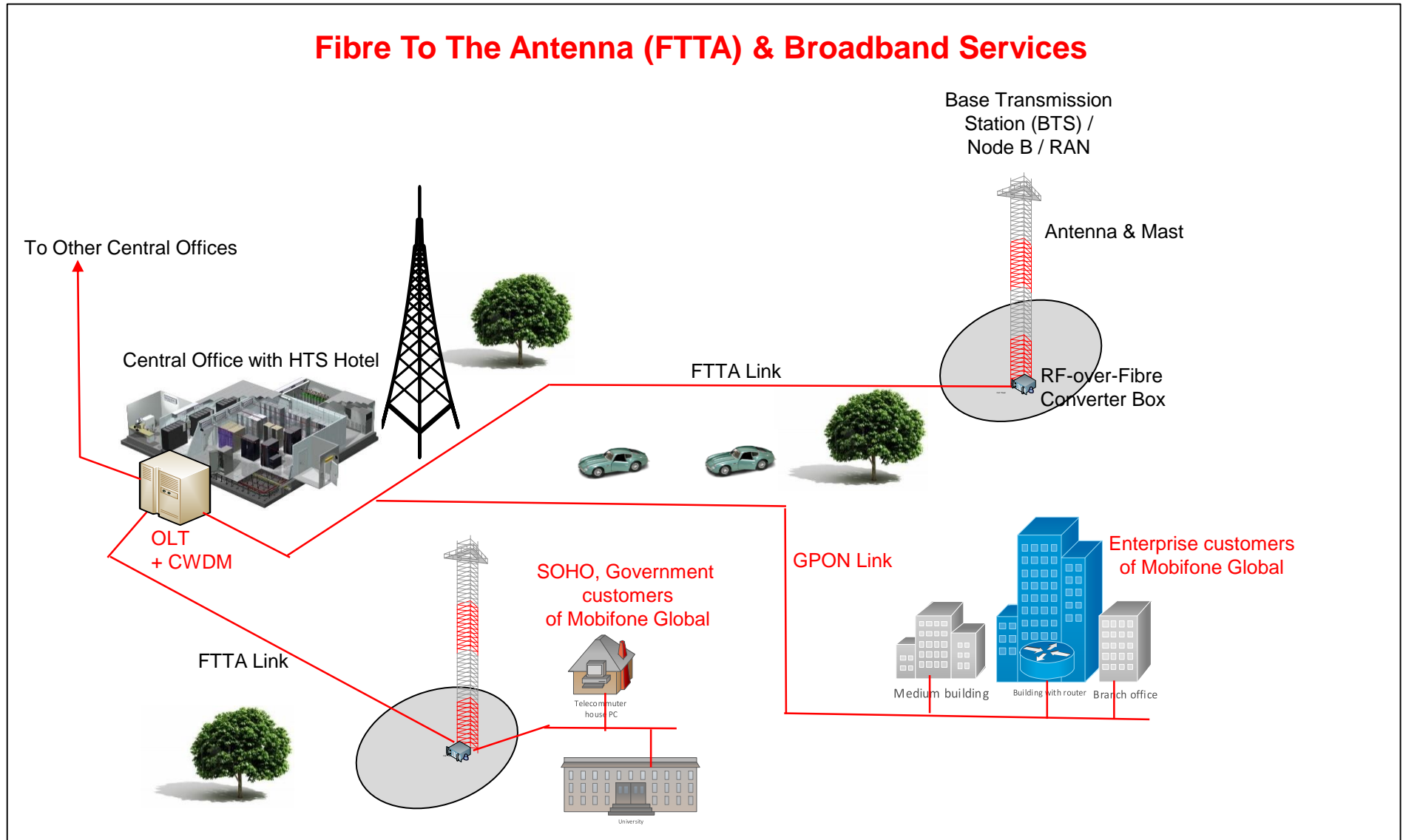


A Fibre To The Antenna mobile network moves the Base Station equipment from each BTS site to some centralised locations (typically co-located in the CO). The Antennae are connected directly to fibre networks via Radio Frequency over Fibre converters and then carried back to the BTS Hotel through WDM/ GPON. The advantages are:

- Reduce space requirements significantly at BTS site – reduction in site rental
- Gain in power consumption efficiency – economy of scale at BTS Hotel
- Reduce maintenance effort at BTS sites – BTS has significant equipment to maintain
- Easy system upgrade and operation – ALL BTS equipment are located at a convenient location

Win-Win Solutions – Metro GPON Network

The following diagram depicts how a SINGLE Fibre Network can meet the needs of both Mobifone and Mobifone Global



END