

# **FIXED MOBILE CONVERGENCE**

**A TECHNICAL OVERVIEW  
UKNOF LIGHTNING TALK**

**Cable&Wireless**

# WHAT IS FMC?

**IT ALLOWS MOBILE TRAFFIC GENERATED IN-BUILDING TO BE CARRIED OVER THE FIXED INFRASTRUCTURE, MAKING MOBILE DEVICES AN EXTENSION OF THE FIXED NETWORK...**

**...IN ESSENCE ONE DEVICE CAN WORK AS A FIXED DEVICE IN THE OFFICE, USING THE EXISTING NETWORK, AND SEAMLESSLY MOVE TO A MOBILE NETWORK OUTSIDE**



# MOBILE NETWORK OVERVIEW

## WHAT'S LOW POWER GSM?



- OFCOM AUCTIONED OFF THE GUARDBAND SPECTRUM IN APRIL 2006- THERE ARE 12 LICENCE HOLDERS INCLUDING COLT, BT & O2
- THE GUARDBAND WAS THERE TO SEPARATE DECT FROM THE MOBILE OPERATORS TO PREVENT INTERFERENCE
- GUARD BAND OPERATES WITHIN THE GSM 1800 SPECTRUM IN PAIRED FREQUENCY BANDS OF 1710 -1785 MHZ & 1805 -1880 MHZ.
- ITS IDEAL FOR IN-BUILDING SOLUTIONS BUT NOT NATIONAL COVERAGE AS IT IS LOW POWER (200mW)
- THE FREQUENCY RANGE IS NOT DIVIDED UP AMONGST THE GUARDBAND LICENCE HOLDERS ITS OPEN FOR ALL REGISTERED OPERATORS TO USE

# FMC COMES IN MANY FLAVOURS

## THE TECHNOLOGY OPTIONS

### WiFi

- NOT DESIGNED FOR VOICE
- INTERFERENCE
- LIMITED HANDSET CHOICE
- POOR BATTERY LIFE

### FMS

- MOBILE REPLACEMENT
- DOESN'T OFFER A CONVERGENT SERVICE
- STILL NEED FIXED & MOBILE SUPPLIERS

### FMC/GSM

- LICENCED SPECTRUM
- DESIGNED FOR VOICE
- WIDE RANGE OF DEVICES

# ....UNTIL NOW NOBODY HAS HAD WHAT IT TAKES TO MAKE FMC A REALITY

**NETWORK  
OWNERSHIP**

**MSP NETWORK**

**SPECTRUM  
LICENCE**

**ACQUIRED IN MAY 2006**



**RIGHT SUPPLIER  
RELATIONSHIPS**

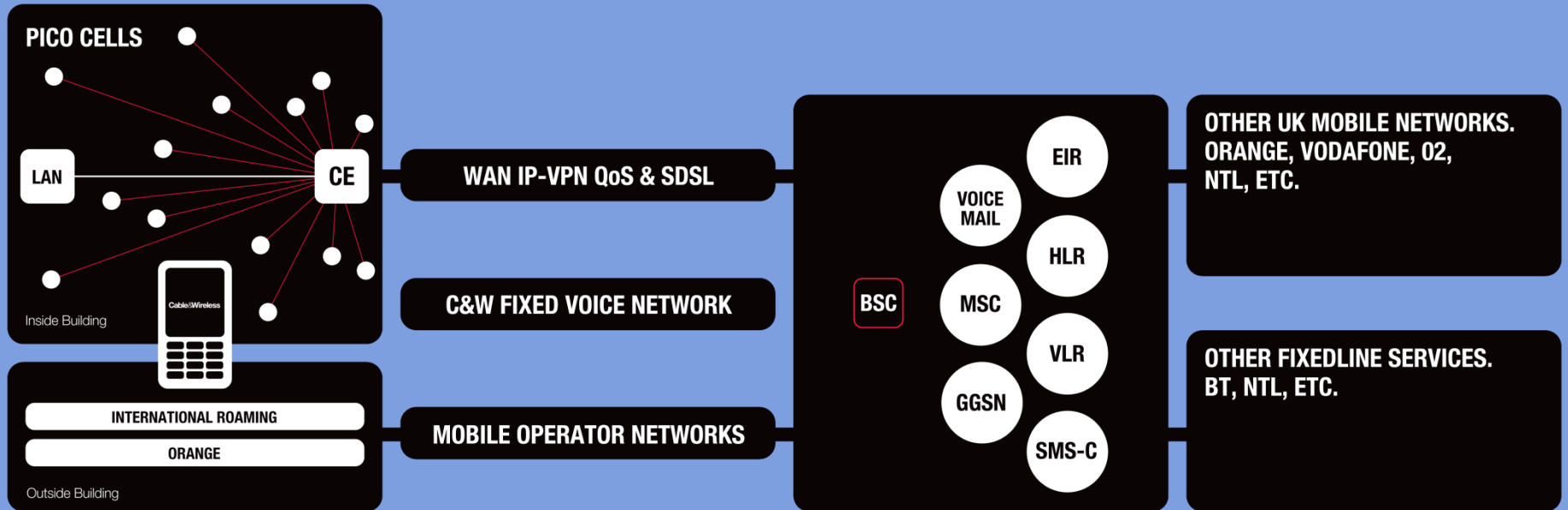
**ERICSSON** 

**NATIONAL ROAMING  
AGREEMENT**

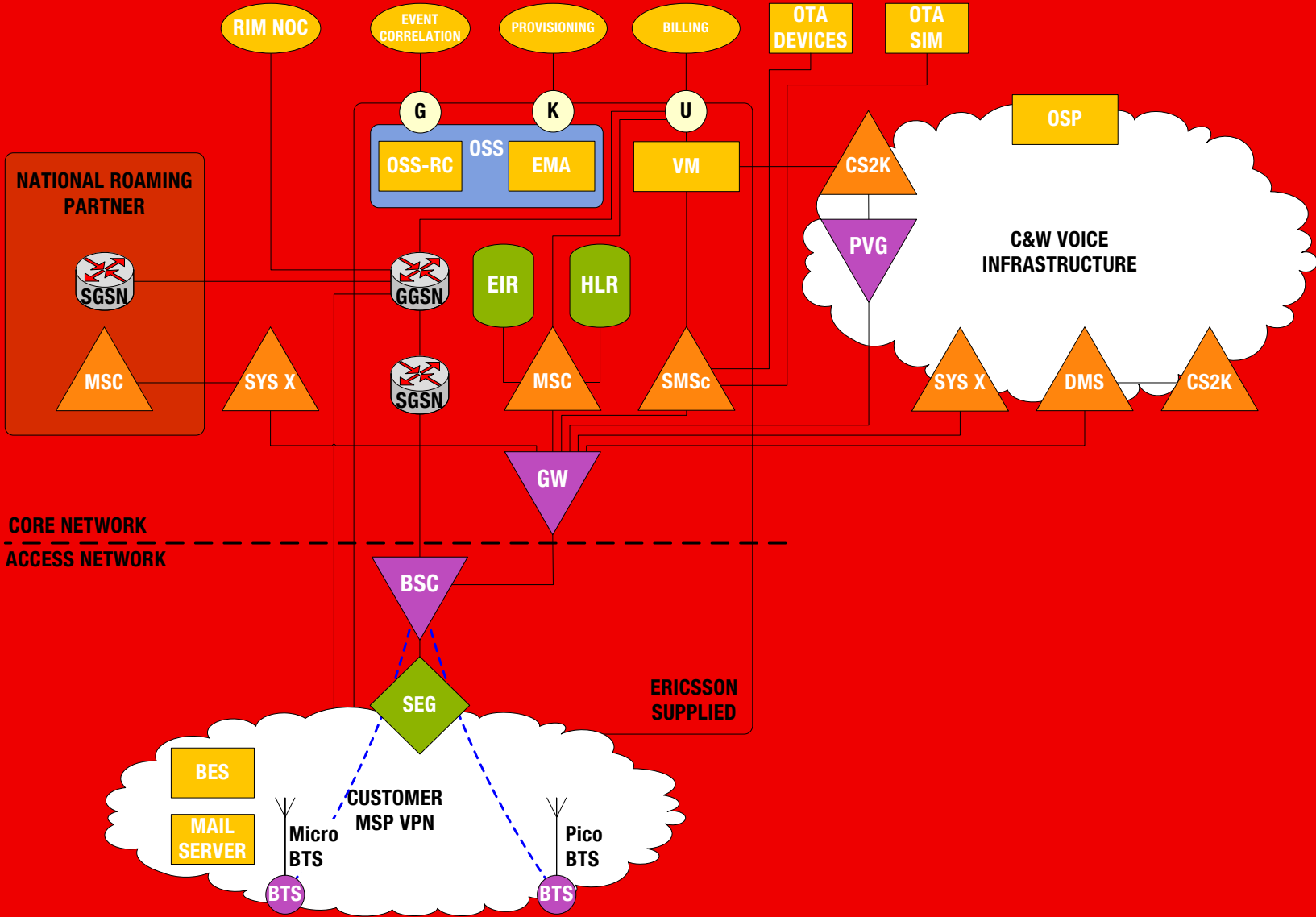


# FMC EXPLAINED

## HOW DOES IT WORK?



# ARCHITECTURE IN MORE DETAIL



# FMC ARCHITECTURE

## PICOCELL CAPACITY REQUIREMENTS

No. OF CALLS	INBOUND FROM BSC (Kbps)	OUTBOUND TO BSC (Kbps)
IDLE	3.05	2.75
2	62.98	66.84
4	99.45	120.34
6	172.54	183.37
8	202.80	208.56
10	207.67	221.12
12	244.02	242.17
14	246.34	287.17

**NOTE:**

**ALLOCATION PER CALL IS AFFECTED BY DYNAMIC HALF RATE ALLOCATION**



# FMC ON-SITE COMPONENTS



- THE C&W FMC SOLUTION USES ERICSSON RBS 2409 LOW POWER GSM PICO CELL (+23 DBM – 200 MW)

- CAT5/6 CABLING CONNECTS THE CELLS TO THE CE WITHOUT THE NEED TO UTILISE THE EXISTING LAN

- COMPLEX SITES WILL HAVE DEDICATED SURVEYS TO ENSURE 100% COVERAGE

- SIMPLER SITES WILL BE DESIGNED USING PREDICTION TOOLS

# **FMC VITAL STATISTICS**

## **EACH CELL:**

- **SUPPORTS UP TO 100 REGISTERED USERS**
- **CARRIES A MAXIMUM OF 12 CONCURRENT VOICE CALLS**
- **COVERS AN AREA OF UP TO 3,600M<sup>2</sup>**
- **CONVERTS GSM TO IP AND REQUIRES 256K OF BANDWIDTH**
- **SUPPORTS SMS AND GPRS**
- **CAN BE DIRECTLY CONNECTED TO THE WAN**

# **FMC** **IN PRACTICE**



## **TESCO'S CHALLENGES**

**REDUCE TELEPHONY COMPLEXITY**

**IMPROVE CUSTOMER SERVICE EXPERIENCE**

**IMPROVE COLLEAGUE COMMUNICATIONS**

**REDUCE COST OF COMMUNICATIONS**

## **OUR SOLUTION**

**REPLACE ALL IN-STORE COMMS – FIXED AND MOBILE WITH SINGLE INFRASTRUCTURE:**

**30,000 FIXED DEVICES ACROSS 1800 SITES**

**SDSL CONNECTIVITY TO SMALL SITES**

**REPLACE 10,000 EXISTING MOBILE & BLACKBERRY DEVICES**

# NEED MORE INFORMATION?

VISIT OUR WEBSITE AT [WWW.CW.COM/FMC](http://WWW.CW.COM/FMC)

## CONTACT ME AT:

neil@CW.NET

