



 **MOBILEUM**

**Border & National Roaming**



# Border Roaming Realities



- Mobile Coverage on borders overlap across countries and license areas
- Subscribers at the vicinity of border areas have access to roaming coverage in HPLMN
- Roaming coverage in HPLMN causes customers to inadvertently latch on to roaming network

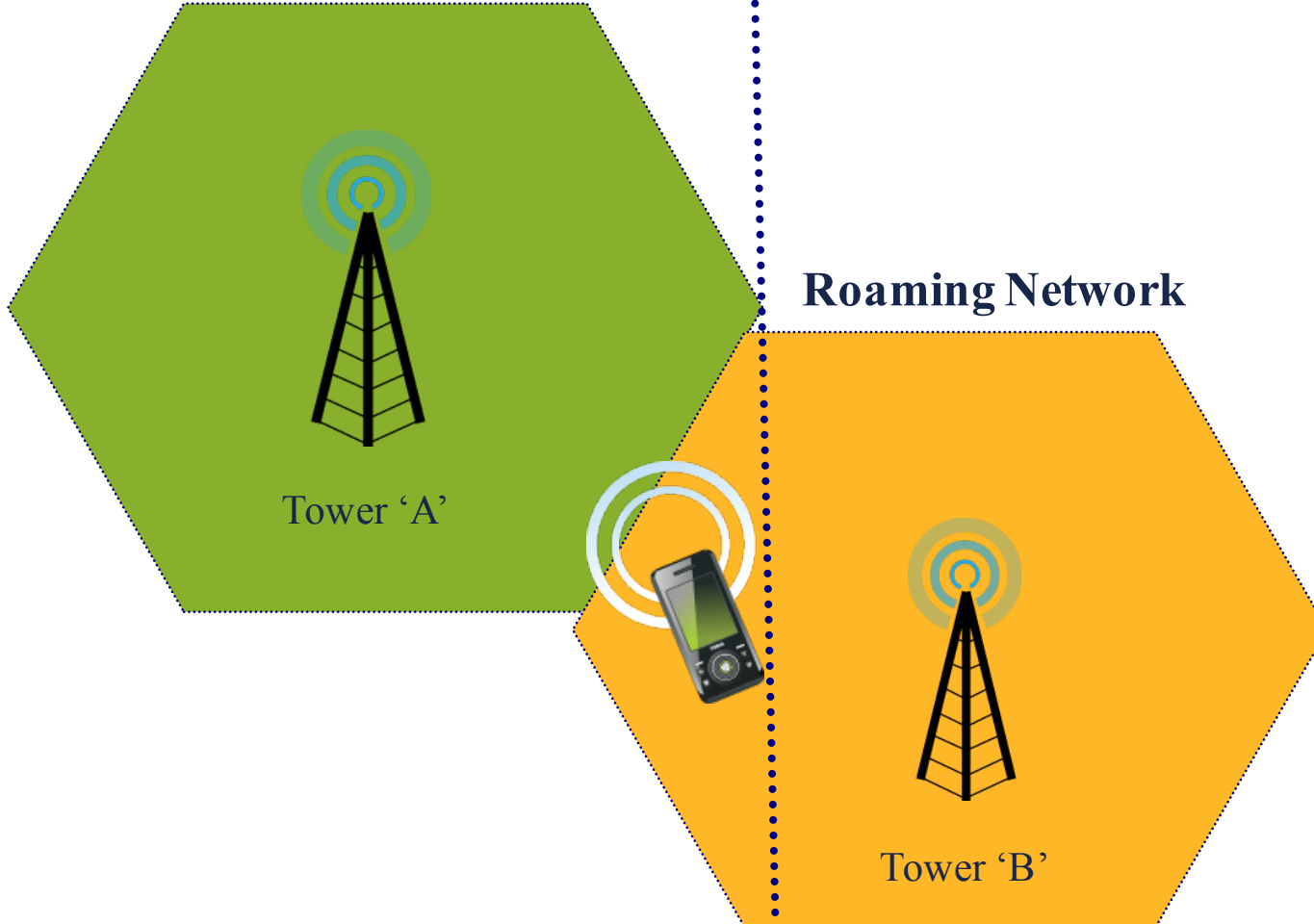




# Roaming Overlaps on Borders

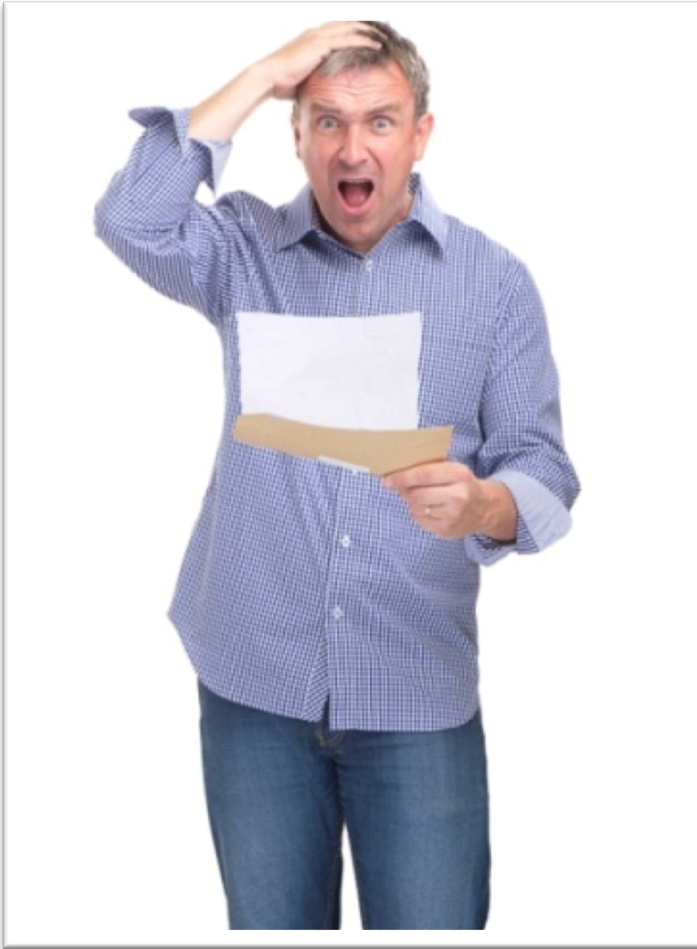
Device in a border area latching on to a VPMN n/w, despite the availability of home n/w is a scenario of inadvertent roaming usage

Home Network





# Impact of Border Roaming



- High roaming charges consequent to inadvertent roaming
- Customer disputes, dissatisfaction and potential churn
- Customer Service Costs
- Usage Reversals



# Border Roaming Gateway Solution

## Prevent Border Roaming

- Move subscriber back to home network in case of accidental border roaming
- Multiple approaches available and flexibility to choose
- Available across all radio technologies – 2G, 3G and 4G
- Auto-detection of border roaming areas in testing mode



# Border Roaming Gateway – Value Proposition

## For Mobile Operators

- Plugs revenue leaks to border networks
- Easy integration with Mobileum's NTR
- IR 73 compliant
- Offers effective, flexible and easy to deploy solution
- Centralized deployment with no customer dependencies
- Works in national and international border areas

## For Subscribers

- Protection against inadvertent roaming usage



# Key challenges with National Roaming

- Costs of roaming onto partner networks are high – they need to be kept to a minimum
- Larger networks will retain roaming subscribers – even when back in home coverage – increasing costs even more
- Operators need to be able to monitor, and report on the roaming health across a country and hence need Cell level of geo location
- Operators want to be able to control, based on region, which partner operators are preferred e.g. Operator A in City 1 and Operator B near the border.....
- Some devices use unusual frequencies – and need to be treated differently sometimes (e.g. AWS in the Americas)





# Scope of National Roaming Management Service



**NATIONAL ROAMER RECLAIM**



**ROAMING STEERING – 2G, 3G, 4G(LTE)**



**INSIGHT – ANALYTICS AND REPORTING**





# National Roamer Reclaim

*“The **Border & National Roaming** solution manages accidental international border roaming and reclaim of returning roamers in an unique and innovative manner – which is currently subject to patent application”*

- Reclaiming home subscribers in a timely fashion is critically important
  - Retention of national roamers is a particular problem around the world and the EI solution is **UNIQUE** in resolving this
  - It is proved to be highly effective whilst having no negative impact on customer experience
- 
- The solution is entirely signalling based – and works based on application of in-depth experience in the behaviour of signalling networks and their impact on handset behaviour





# Why Mobileum

## STEERING CUSTOMERS

**350+**

**MOBILE OPERATOR NETWORKS**

## LTE SUPPORT

**100+**

**SS7 & DIAMETER HANDLING**

## OTA INTEGRATIONS

**75+**

**INTEGRATED WITH 7 OTA  
VENDORS**

## CENTRALIZED MULTI-TENANT DEPLOYMENTS

**20+**

**INCLUDES OPERATOR GROUP &  
SERVICE PROVIDERS**

## VIRTUALIZATION SUPPORT

**Virtual Machines  
NFV (ETSI MANO)**

## PATENTS

**TRAFFIC REDIRECTION (SS7)  
ANTI-SOR DETECTION  
LTE STEERING**



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THANK YOU