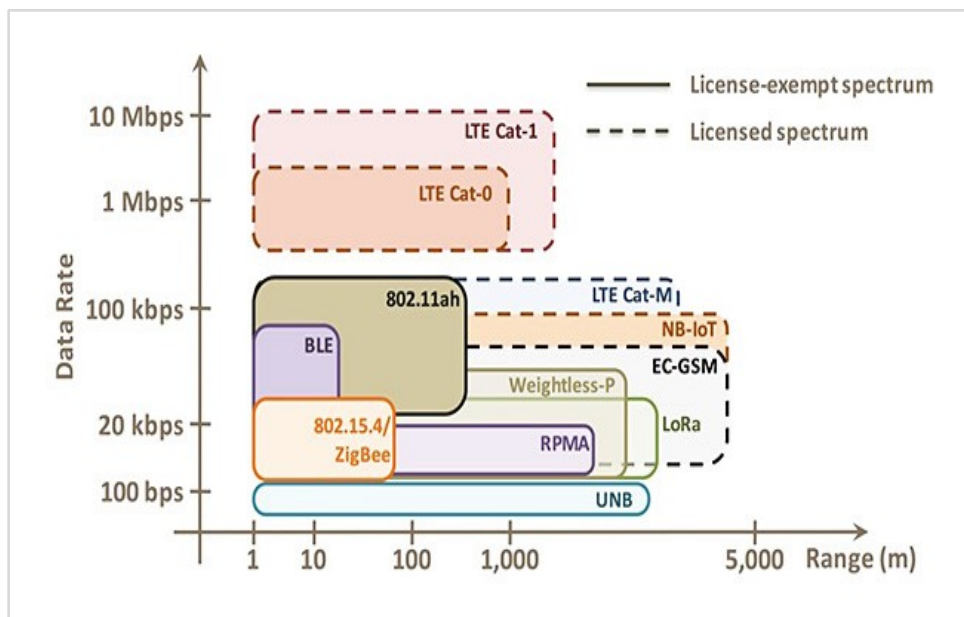




Roaming IoT Offering



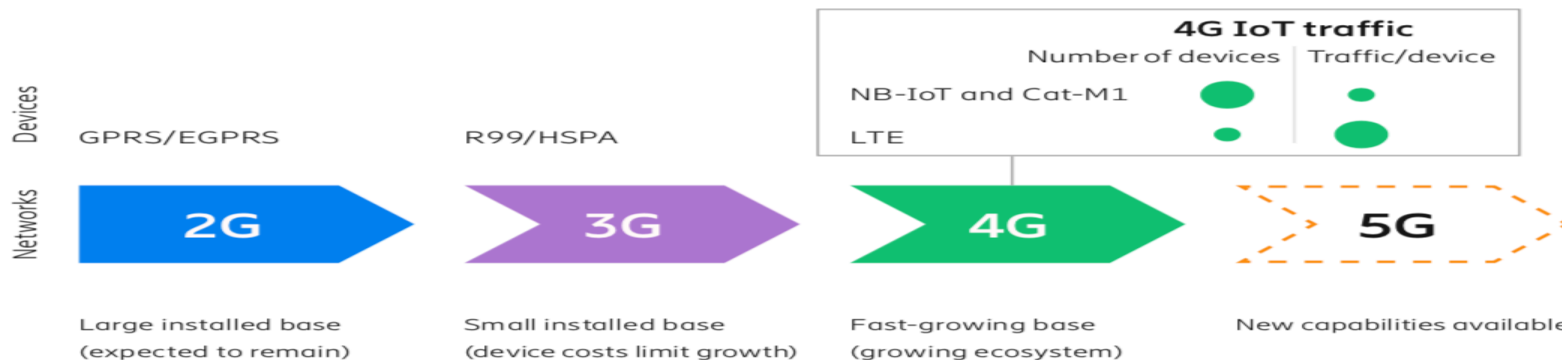
Mobile IoT Growth



IoT connections (billion)

IoT	2018	2024	CAGR
Wide-area IoT	1.1	4.5	27%
Cellular IoT ²	1.0	4.1	27%
Short-range IoT	7.5	17.8	15%
Total	8.6	22.3	17%

Evolution of cellular networks supporting IoT traffic growth







What do IoT Enterprise Need?

Data requirements for Internet of Things (IoT) applications

● Low ● Medium ● High

	Application (select examples)	Data rate	Frequency of data transfer	Data per report	Traffic (MB/ device/month)	Reliability requirements	Security	Level of coverage
 Connected-car applications	Fleet management	●	●	●	●	●	●	Global
	Usage-based insurance	●	●	●	●	●	●	Global
	Stolen-vehicle recovery	●	●	●	●	●	●	Global
	Vehicle platform	●	●	●	●	●	●	Global
	In-vehicle entertainment and access	●	●	●	●	●	●	Global
	Vehicle diagnostics	●	●	●	●	●	●	Global
 Connected- industry and -retail applications	Retail-goods monitoring and payment	●	●	●	●	●	●	National
	Agriculture yield	●	●	●	●	●	●	National
	Public-space advertising	●	●	●	●	●	●	National
	Manufacturing and processing	●	●	●	●	●	●	National
	Logistics routing	●	●	●	●	●	●	Global
	Predictive maintenance, including equipment	●	●	●	●	●	●	Global
	Vending machines	●	●	●	●	●	●	National

McKinsey&Company | Source: 4G Americas; expert and customer interviews; McKinsey analysis



IoT Roaming Connectivity Services

Cost effective
Global
coverage



Policy Control



Control/Visibility
to Enterprise



Testing



SERVICES

Steering



Assure desired
service levels



Asset Tracking



eSIM
Subscription
Manager



OUTCOMES

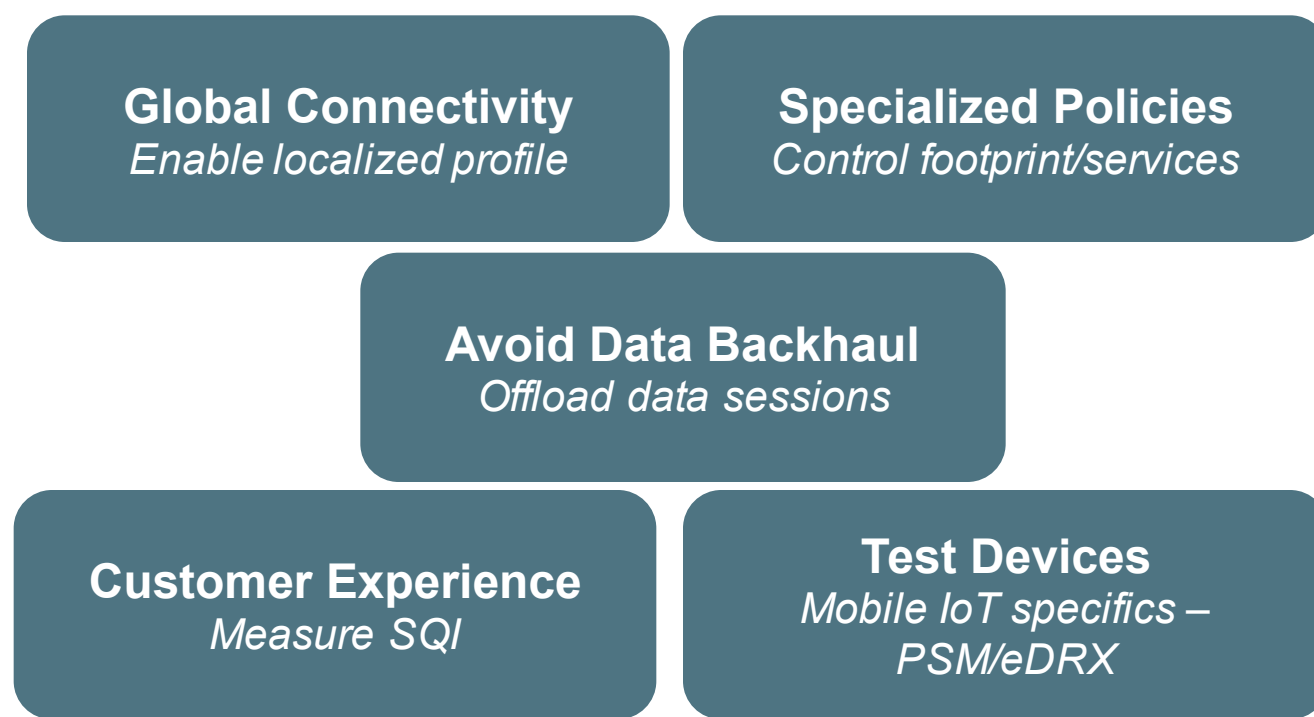
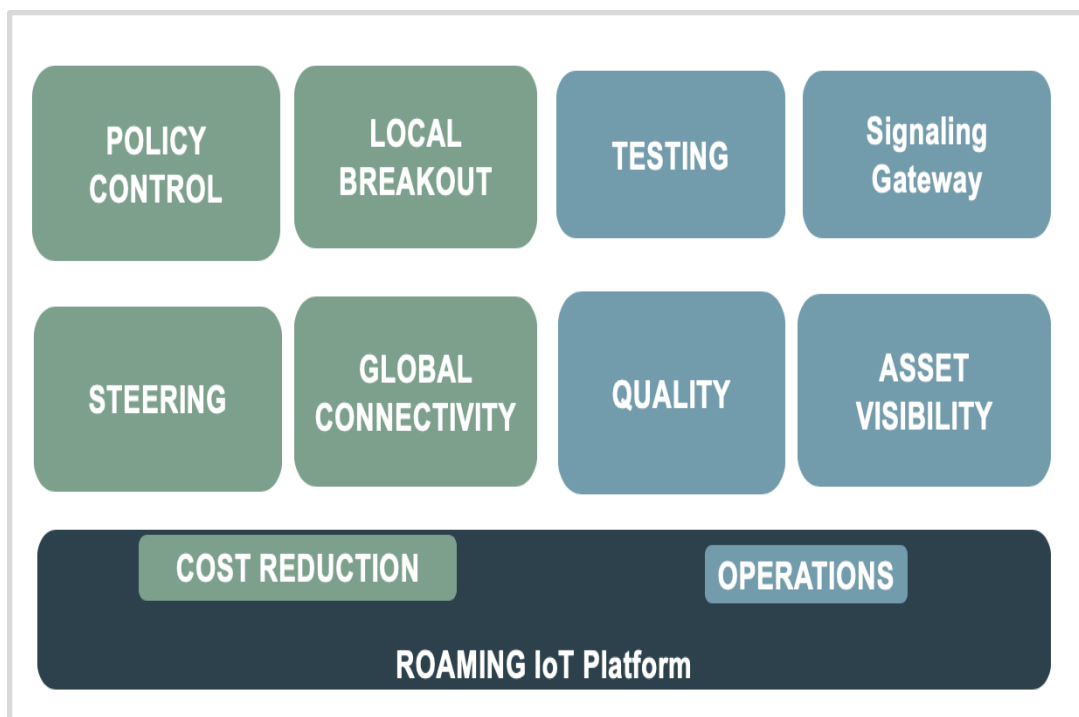
COST REDUCTION

OPERATIONAL EFFICIENCY



Roaming IoT Platform

Take Control of Roaming IoT Devices through Enhanced Visibility coupled with Action





Assure Global Connectivity

Cost Effective Worldwide Connectivity Grid



RoamSIM

Low-cost IoT Roaming

Worldwide Coverage

Dynamic IMSI Selection

Low Cost Wholesale Roaming
Dynamically Enabled Localized Profile

Global Coverage
Via ecosystem of Partner IMSIs

Hosted Solution
Reduce Setup Cost & Accelerate Launch

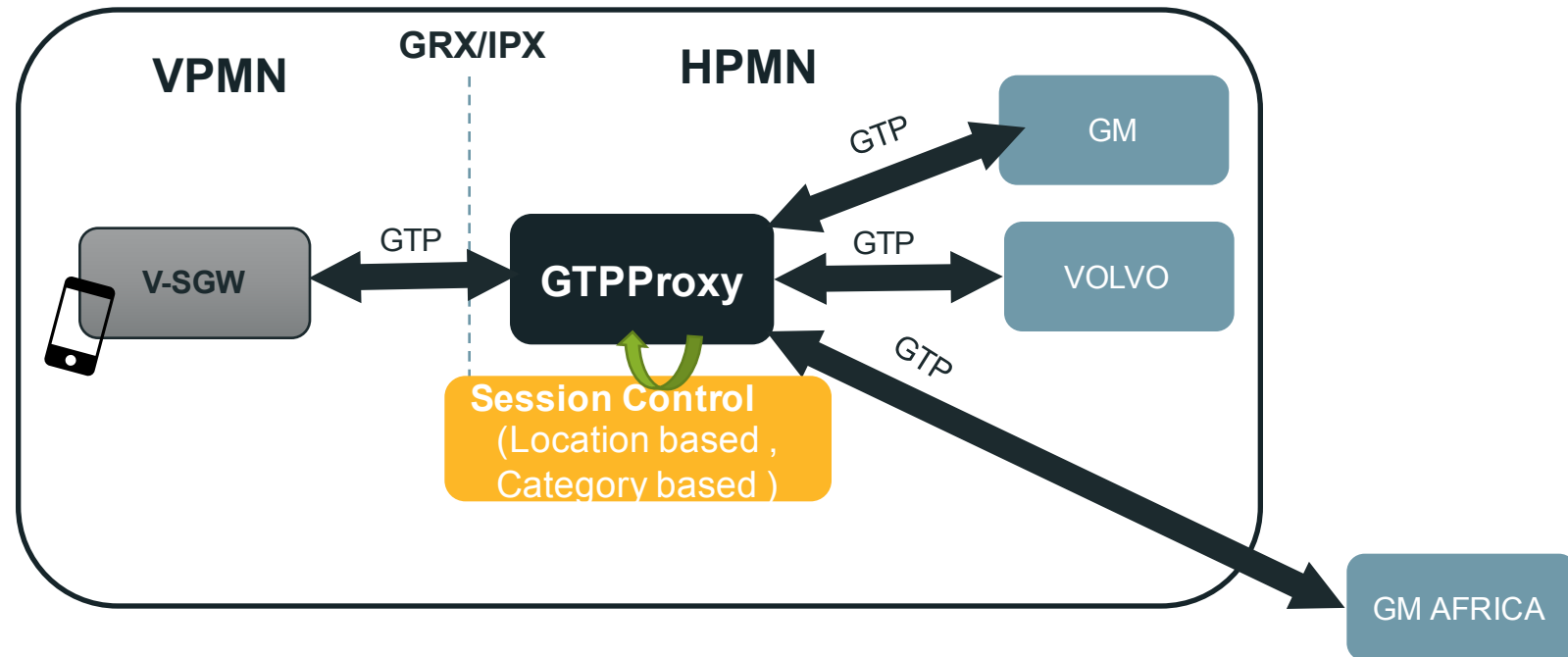
Turnkey Solution
Bundled Solution with STK, OTA, SIM Cards & TAP Processing



Offload Data Sessions to IoT Enterprises

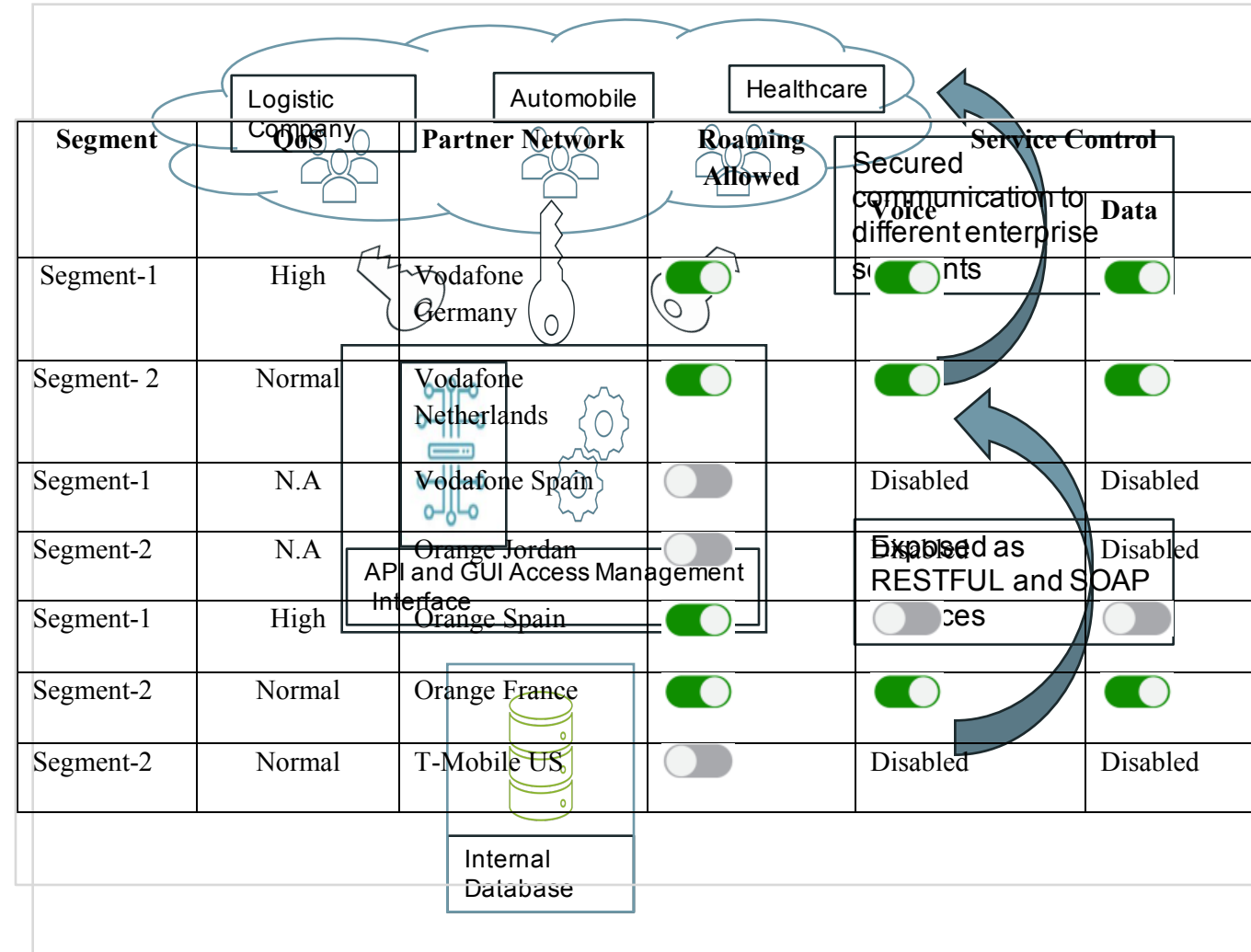
Local breakout to regional IoT Core
(Longer battery life for IoT devices)

Topology hiding (PGW IPs)





Evolve Policies for IoT Steering





Quality Assurance for IoT Devices

Steer IoT Devices on visited network outage

Quality Insight Engine

NTR
Zone/CoS -
SQI

Steer high
priority
endpoint
devices to
NW B



Network A (P)

Network B (NP)

SQI/CoS –
Quality Index

T1

T2





Policy Controls for Roaming IoT Devices

Real Time and Fine Grained Control



RoamPolicy

Real Time Controls

Prevent Leakage

Monitor Cost

Footprint Control

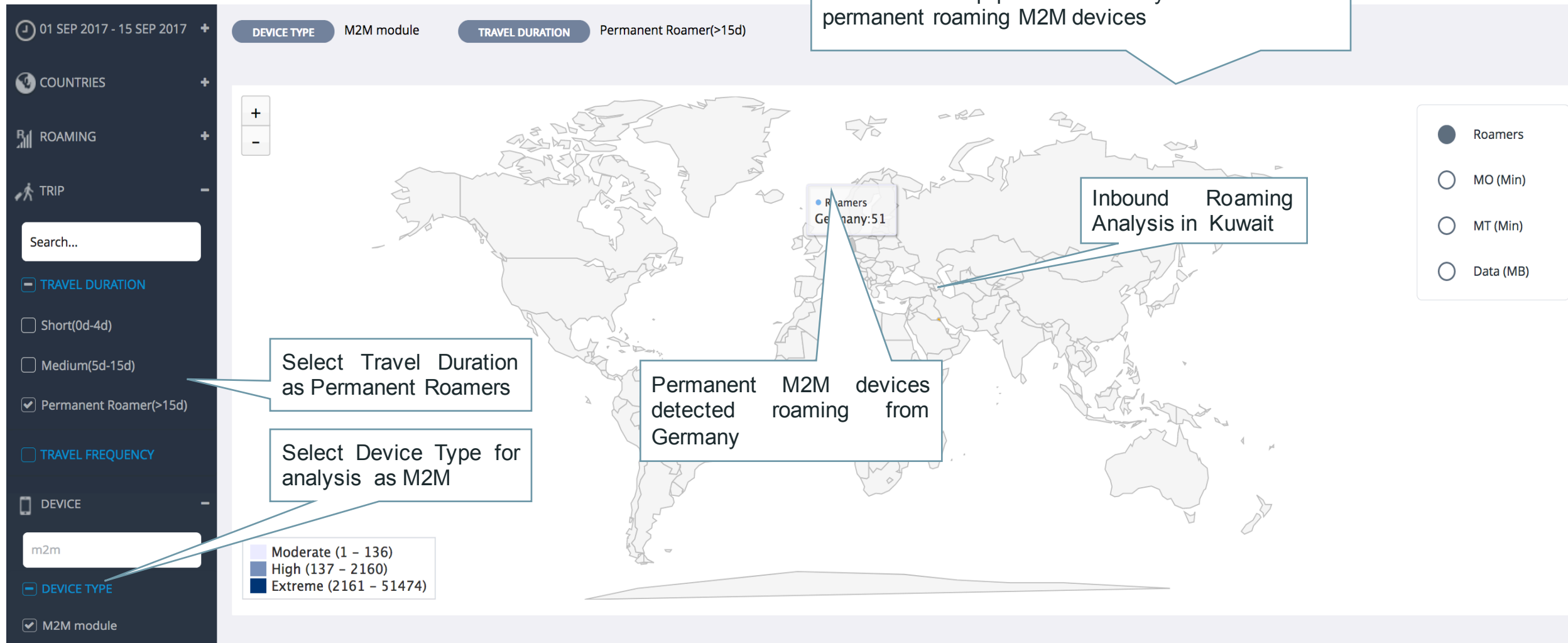
Enforce Fair Usage Policy (FUP)

Prevent Access In High Cost Networks

Implement Regulation
eCall, PR etc.



Fingerprinting Inbound IoT Devices





Testing for mIoT Roaming Devices

Enable IREG End-to-end Functional Capability Tests

MS can successfully request Power Saving Mode during attach

MT Data in PSM state

MO Data in PSM State

Validate eDRX (Extended Discontinuous Reception) Request and Activation

Exit eDRX Cycle





MOBILEUM
THANK YOU