

```

elif operation == "mirror":
    mirror_mod.use_x = True
    mirror_mod.use_y = False
    mirror_mod.use_z = False
elif operation == "mirror_x":
    mirror_mod.use_x = True
    mirror_mod.use_y = False
    mirror_mod.use_z = False
elif operation == "mirror_y":
    mirror_mod.use_x = False
    mirror_mod.use_y = True
    mirror_mod.use_z = False
elif operation == "mirror_z":
    mirror_mod.use_x = False
    mirror_mod.use_y = False
    mirror_mod.use_z = True

```

```

# Select the end and back the description mirror
mirror_ob.select = 1
modifier_ob.select = 1
bpy.context.scene.objects.active = modifier_ob
print("Selected" + str(modifier_ob)) # modifier ob is the active
mirror_ob.select = 0

```

IPLOOK Technologies Co., Ltd

2023.05

01 Company profile

02 Product lines

03 Solutions

04 Advantages





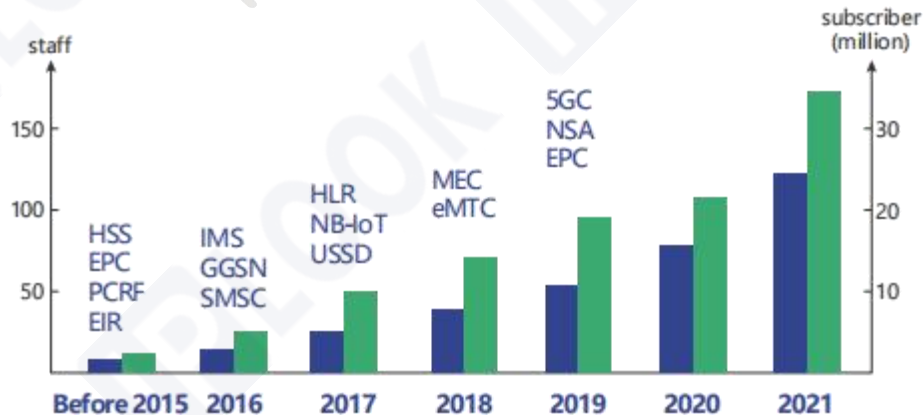
01

Company profile

Brief Introduction

IPLOOK

- **IPLOOK**, a global leader of **end-to-end mobile core solutions**
- **Over 10 years** professional experience in telecom
- **200+ employees** with over 80% are R&D or technical engineers
- Full stack of **3G/4G/5G/IMS core networks**
- Customized solutions for **MNO, WISP, MVNO, Private Networks**
- **50M+** subscribers covering over 50 countries
- **500+** commercial deployments globally in Africa, West Europe, North America, Southeast Asia, Middle East etc.
- **24×7 hotline and online support**





02

Product lines

Product lines

IPLOOK

3G Core

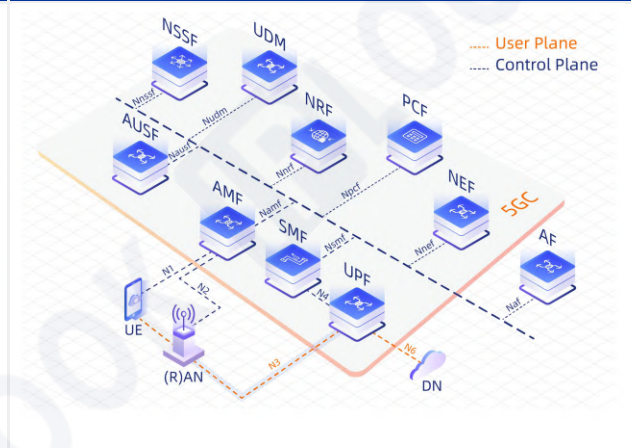
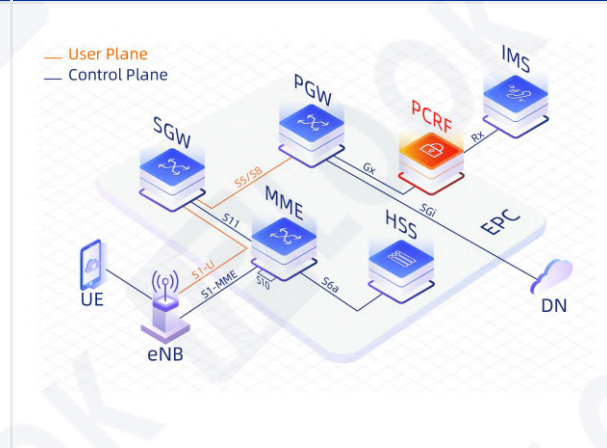
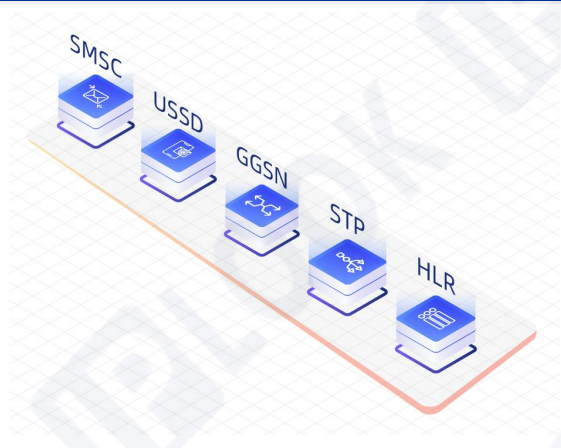
HLR/GGSN/STP/SMSC/USSD Gateway

4G Core(EPC)

MME/HSS/SGW/PGW/PCRF/DRA

5G Core(5GC)

AMF/UDM/AUSF/UPF/SMF/PCF/NEF/NRF/
NSSF/LMF/N3IWF



NFV deployment



Support X86 server
& Cloud



High availability
Easy scaling



Interop with multi-
vendor eNodeBs



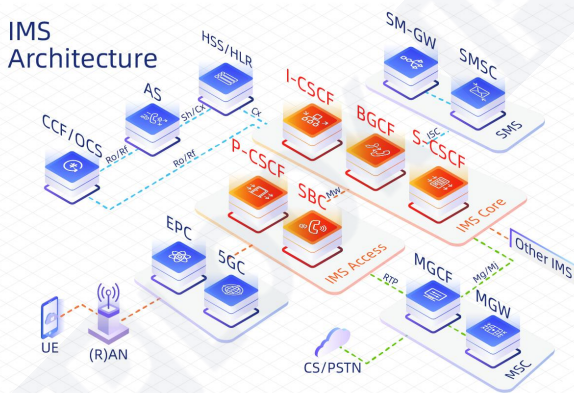
Converged 3G/4G/5G
core network

Product lines

IPLOOK

IMS(VoLTE/VoNR)

AS, I/S/P-CSCF, BGCF, SBC/MGW



MCX System

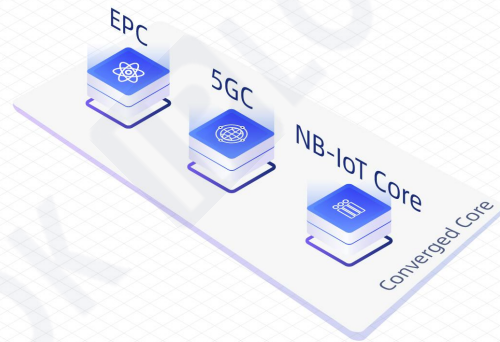
Setup over IMS, converged dispatch functions

MCPTT Architecture



NB-IoT Core

For smart cities, like metering, sharing bicycle, asset's location etc.



NFV deployment



Support X86 server
& Cloud



High availability
Easy scaling



Interop with multi-
vendor eNodeBs



Easy to integrate



03

Solutions

End-to-end 4G/5G Converged Solution

- ▶ A Turn-Key 4G/5G Wireless Solution: Radios + Core Network(4G/5G Data + VoLTE or VoNR) + BSS/OSS Systems + CPEs
- ▶ Fully virtualized EPC/5GC on X86 COTS hardware and Cloud
- ▶ Multi-vendor radios supported, 3rd Party application supported
- ▶ Processing scalability supporting 1,000 to 1,000,000 subscribers

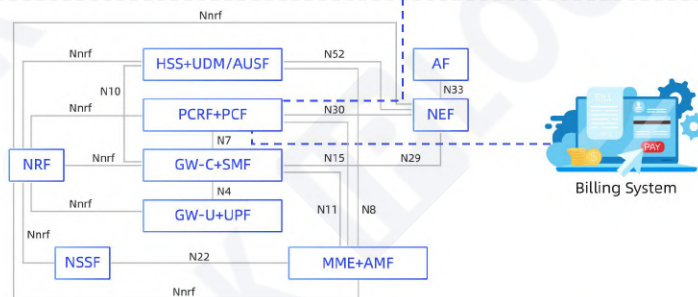
Cloud Platform



MCPTT System



4G/5G Converged Core Network



MEC



Radio

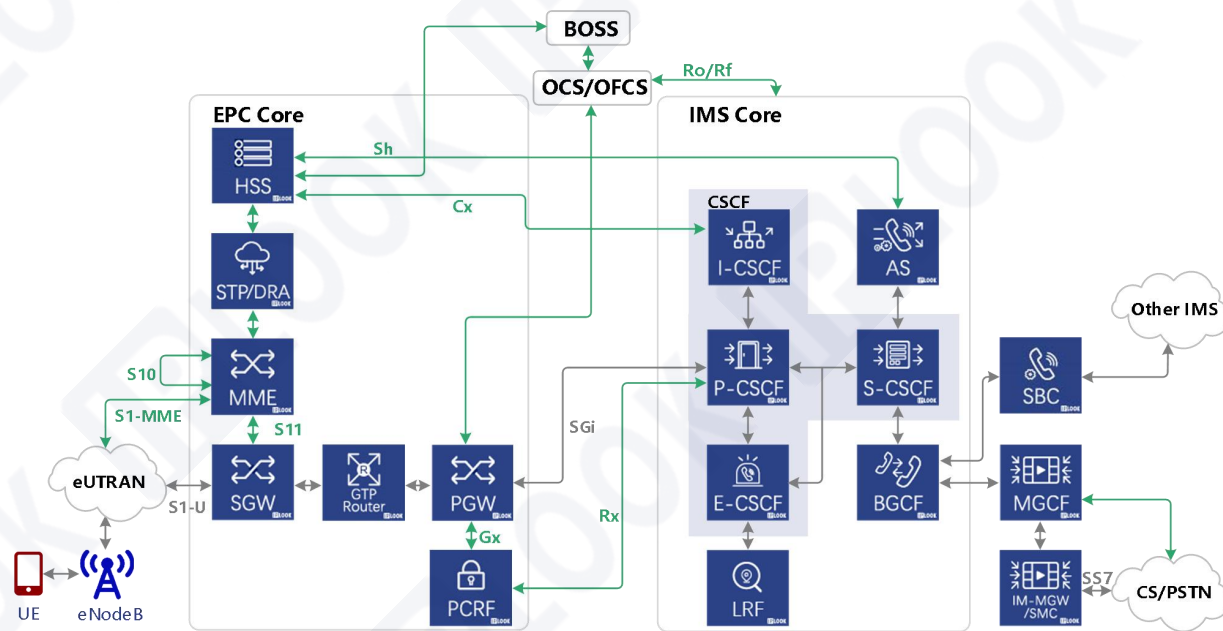


Terminal



Solution for MNO

- Replace existing 2G&3G sites by 4G sites.
- Upgrade the traditional 2G&3G core network to NFV core network.
- Upgrade the OSS/BSS to new system with OCS.
- Our new core network is 5G ready platform. It would be upgraded to support 5G NR smoothly.



Solution for MVNO

IPLOOK enables MVNOs to become **Light MVNO**(with HSS/HLR,BOSS), **Full MVNO**(with more like, STP, DRA, GTP- Router, PGW/GGSN, PCRF, SMSC/USSD) and **MOCN operator**(with more like MME, SGW, SGSN, MSC, GMSC) .

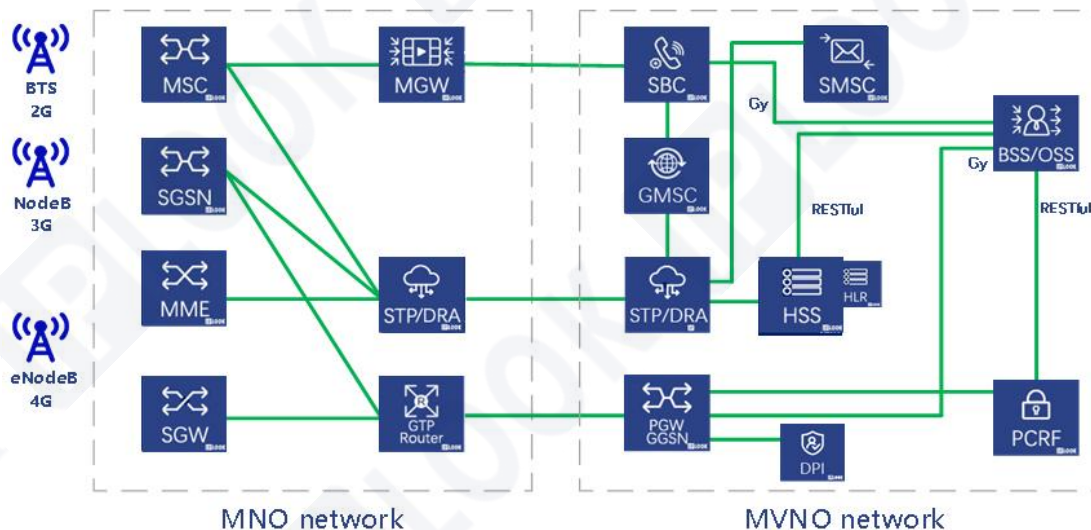
Application scenario:

International roaming for tourists & M2M

Key benefits:

Field-proven proposal for MVNO

Lower CAPEX & OPEX



Solution for WISP

Fixed wireless access over LTE for data service instead of FTTX, LAN or ADSL.

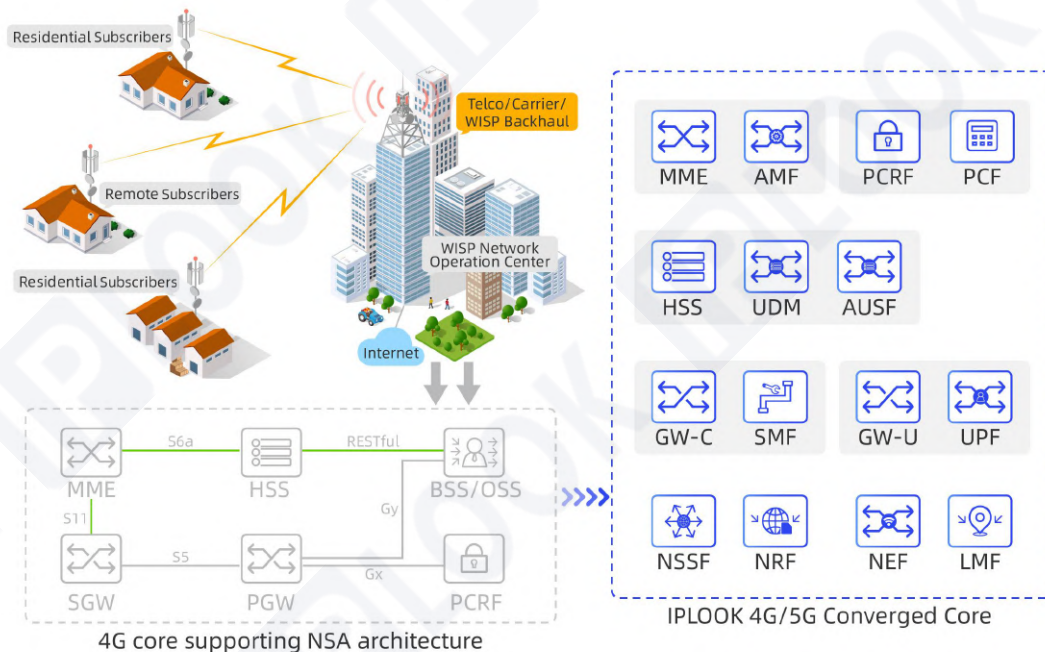
Application scenario:

Remote country; Home internet services

Key benefits:

Multi-vendor's eNodeBs supported

Multi charging mode: RADIUS, OCS, CG



Solution for Private Networks

Application scenario:

Private network for mines communication, police communication, power grid etc.

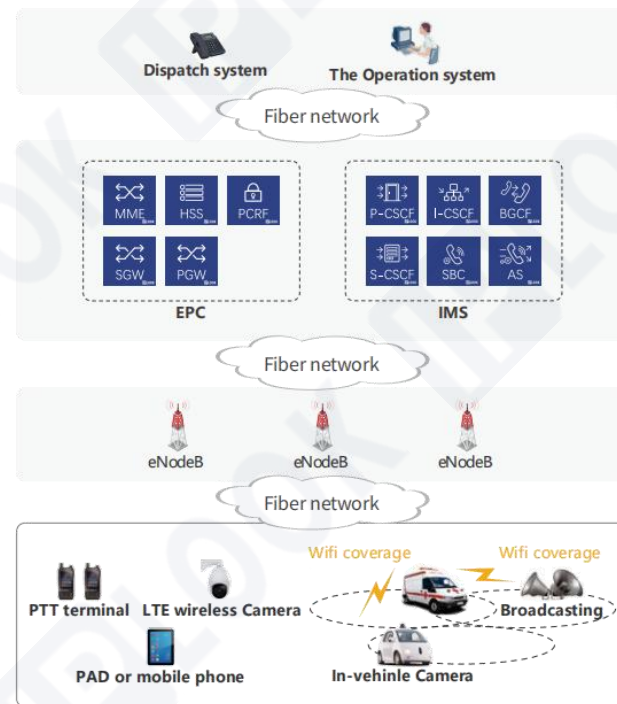
Services:

Data, VoLTE, VoNR, MCPTT, SMS

Key benefits:

Rich industrial network experiences

Better customization capability



The end-to-end solution for Police or Mining

Solution for islands

Application scenario:

LTE network designed for islands

Services:

Data, VoLTE, CSFB, SMS

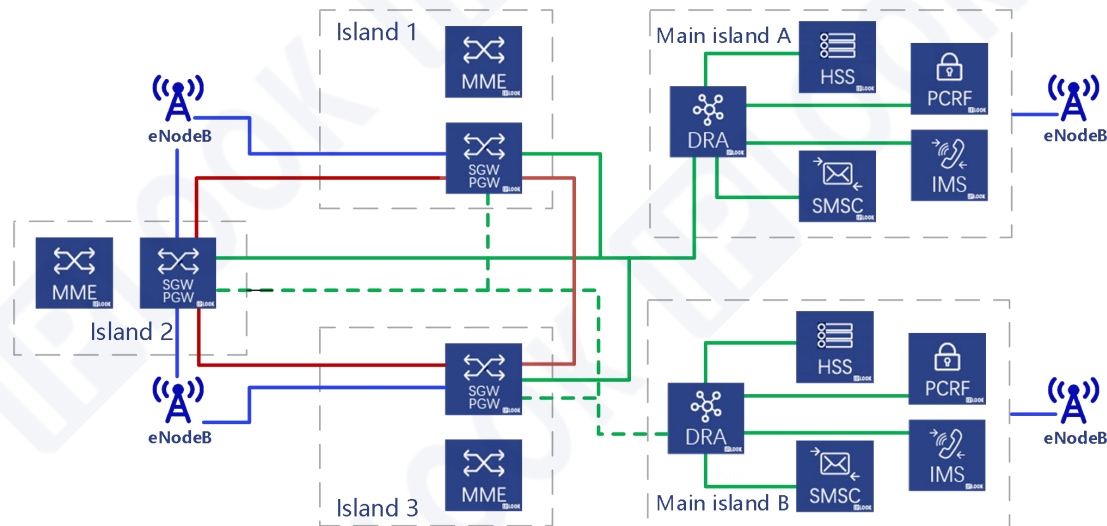
Key benefits:

High-quality network services with long latency transmission environment

Swift rollout of the new-built 4G network

1+1 standby mode

Resource sharing



LTE deployment designed for islands

Solution for NB-IoT

Application scenario:

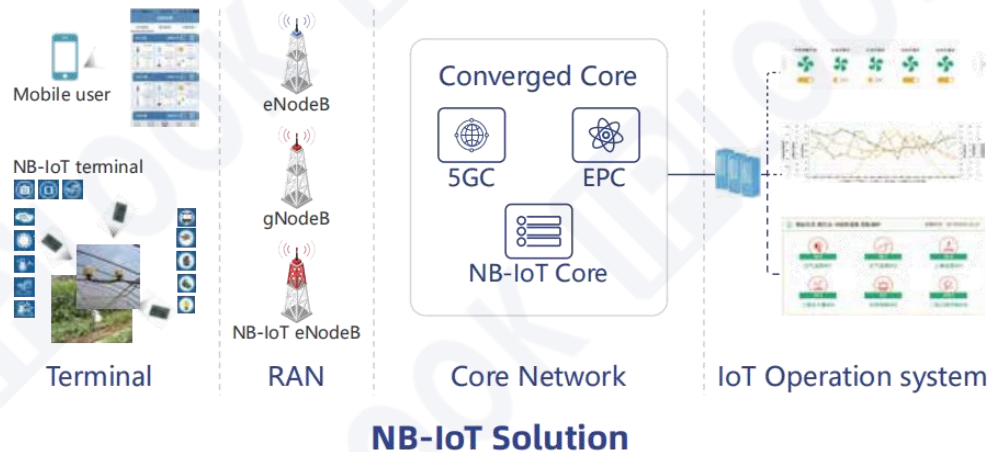
The NB-IoT core for both operator and private networks. With the solution, the IoT terminals or sensors can be some power saving NB-IoT or eMTC devices.

Services:

Small amount data transfer

Key benefits:

CAPEX-saving solution with lite eNB and core converged LTE and IoT core





04

Advantages

Certificates

- ▶ 4G/5G full **core network** elements **access certificate** in China
- ▶ **CMMI-3** and **ISO9001** certificates
- ▶ 80+ software copyrights and 100+ patents in core network field
- ▶ An official member of **3GPP**, **GSMA**, **GSA**, **O-RAN**, **WISPA**, **TIP**, **CCSA** organization





Worldwide use cases

IPLOOK has accumulated **500+ commercial deployment** in the last 10 years. With **open interfaces**, its 3GPP- compliant 3G/4G/5G core network could be easily integrated with legacy network.



The full stack core network

It has 3G, 4G and 5G full core network to ensure a **smooth upgrade**. With its open architecture, IPLOOK's core network supports multi-vendor bases stations and CPEs.



Tailor-made solution

IPLOOK provides all size scalable networks with **pay-as-you-go model** to satisfy various requirements of operators and enterprises. Onsite services and 7*24 support are included.



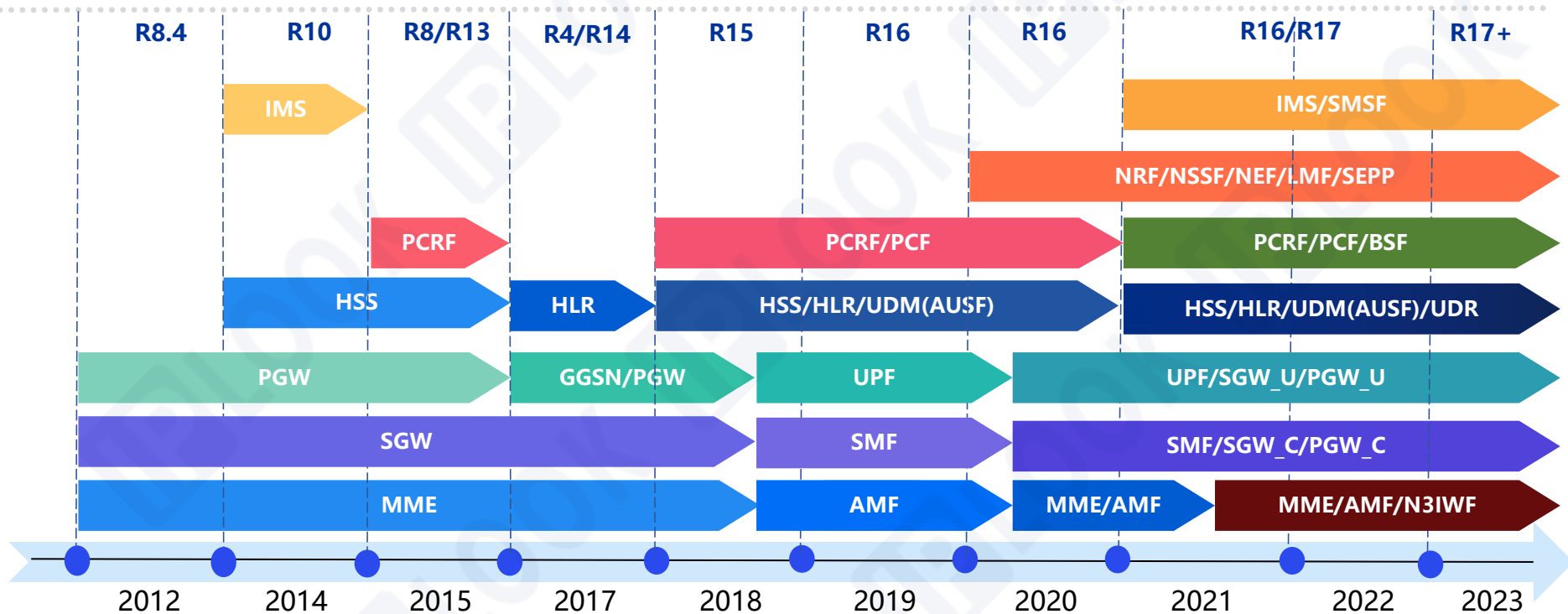
Save CAPEX & OPEX

With the compact deployment and virtualized deployment, our **NFV-based** core network software is scalable, flexible, easy to deploy and manage at a low cost.

Roadmap

V 4.2	V 5.2	V5. 6	V 6.7	V 8.7
<p>5GS/EPS interworking with N26 EPS Fallback 5GS/EPS Handover 3GPP R15 OMC Release Cloud 5G Integration 4G Lawful Interception Interfaces LEO Core</p> <ul style="list-style-type: none">• GMS Trail <p>NEs</p> <ul style="list-style-type: none">• MME/AMF• HLR/HSS/UDM/AUSF• EIR• SGW/PGW/GGSN• PCRF/PCF• PGW_C/SMF• PGW_U/UPF• NRF• NSSF• IMS• SBC	<p>3GPP R16 5G Lawful Interception China 5GS Network Elements</p> <ul style="list-style-type: none">• SEPP Trial• NEF Trial <p>IMS 5G Compliance</p> <ul style="list-style-type: none">• N5 Interface• Performance Enhancement <p>EPS Enhancement</p> <ul style="list-style-type: none">• xGW 40G Platform• GTP-Router 40G Platform <p>ARM Platform Adaption Fully CUPS Architecture</p>	<ul style="list-style-type: none">• TSN Trial• SEPP Release• NEF Release• UDR• UPF 100G Platform <p>LEO Core</p> <ul style="list-style-type: none">• GMS Release <p>R17 Feature Compliance Misc</p> <ul style="list-style-type: none">• MCPTT Trial• V2X Prototype• Space-Integrated-Ground Networks <p>Simulation Platform Lawful Interception Enhance Location Service Function Lawful Interception ETSI SEPP NWDAF</p>	<p>3GPP R17</p> <ul style="list-style-type: none">• TSN Release• R17 Feature Compliance• V2X Trial• 5G+AI Advanced Research <p>Space-Integrated-Ground Network Core</p> <ul style="list-style-type: none">• GMS Enhancement <p>Adaptation to Cloud Platform</p> <ul style="list-style-type: none">• VMware Cloud Platform• AWS Cloud Platform• ALI Cloud Platform• General OpenStack Cloud platform <p>100Gbps Platform UDR Policy Integrating</p>	<p>3GPP R18</p> <ul style="list-style-type: none">• TSN release• V2X release• 5G-Advanced LEO commercial
Q4 2021	Q2 2022	Q4 2022	2023	2024~2025

3GPP Release



Clients & Partners

IPLOOK



Industry Cooperation

IPLOOK



Terminals

IPLOOK



3G/4G/5G
Converged Core

ArrayComm.

SUNWAVE
三维通信

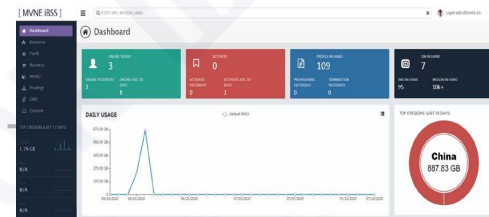
SAMSUNG

supina 三元达

arcadyan



Radios



Billing



PortaOne

Asialinfo

Nware

SPLYNX

THANK YOU



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