



中国移动
China Mobile

Future Network——Intelligence, Deterministic, Elastic and Accessible

2019.10

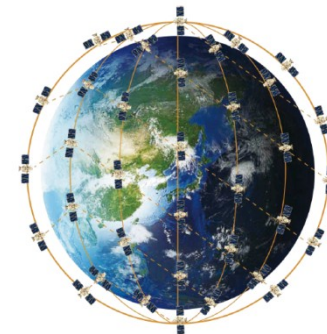
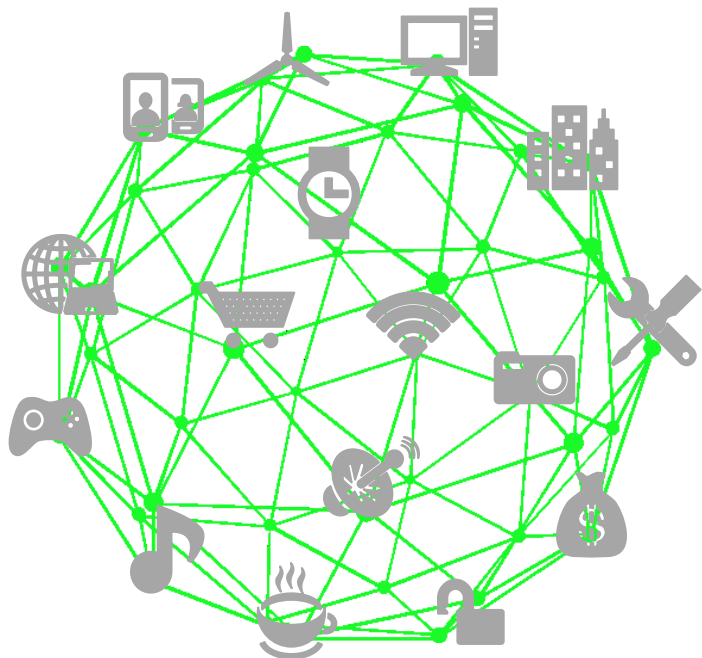
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Evolution and Breakthrough is driving network development in parallel

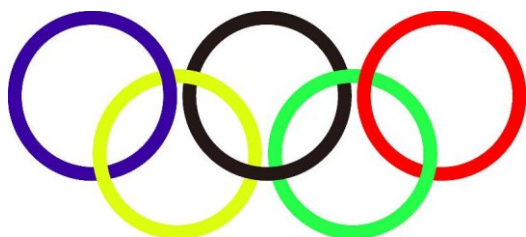
5G Evolution: 5G Creates a New Era for Connected Society, will continue evolves



New Breakthroughs: New use cases, new technologies, new business model come out

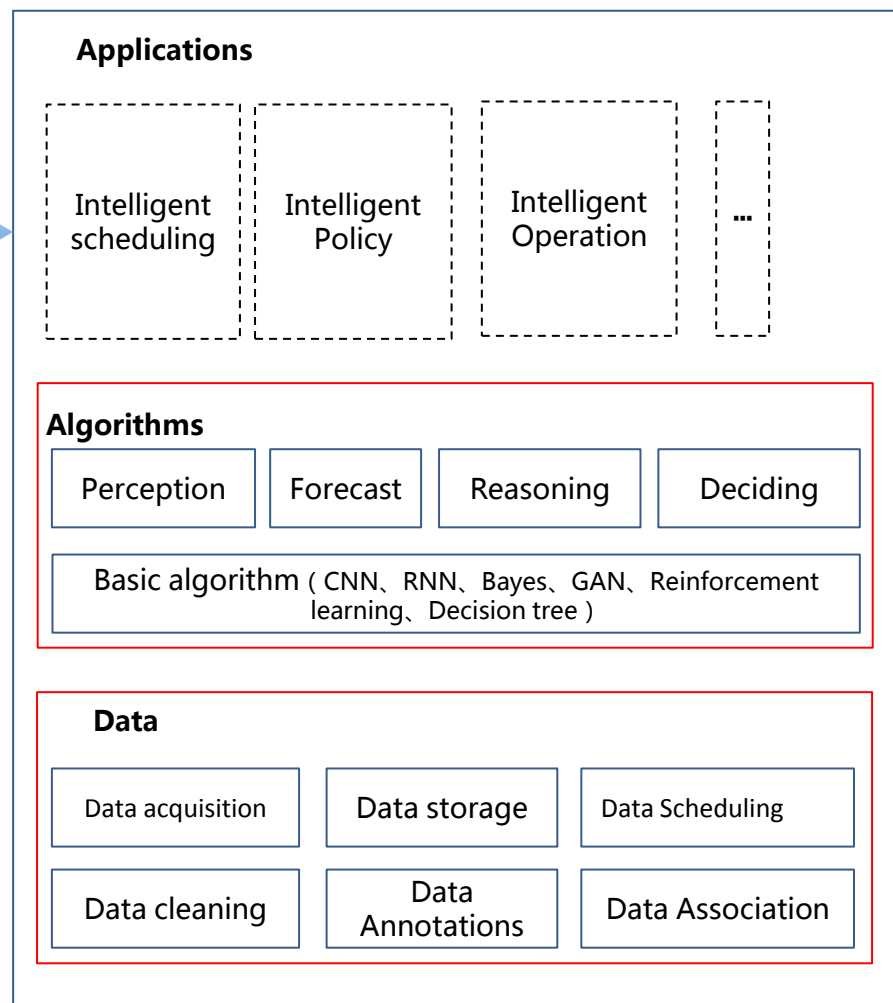
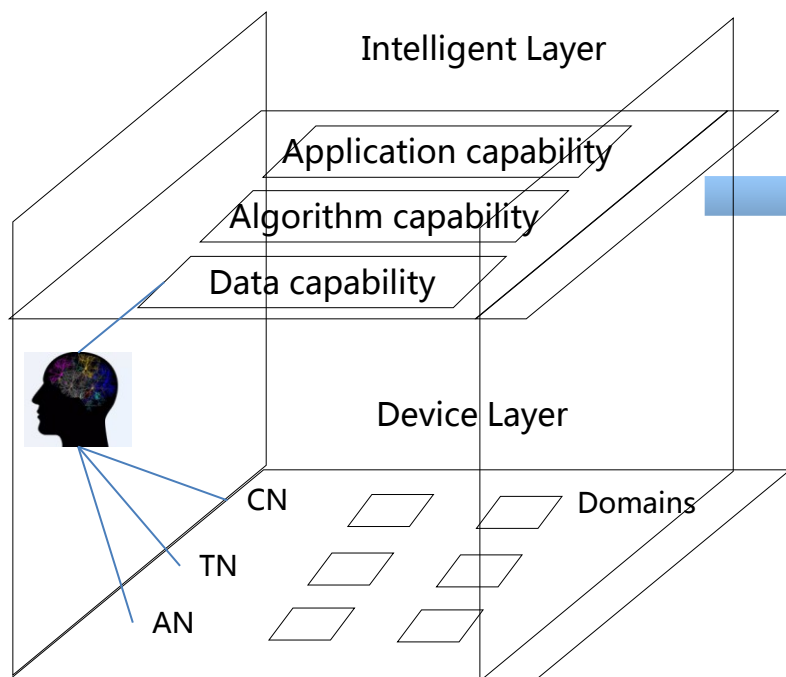


Look at today from tomorrow, what would excite next 10 years?!



Faster? Higher? Stronger?

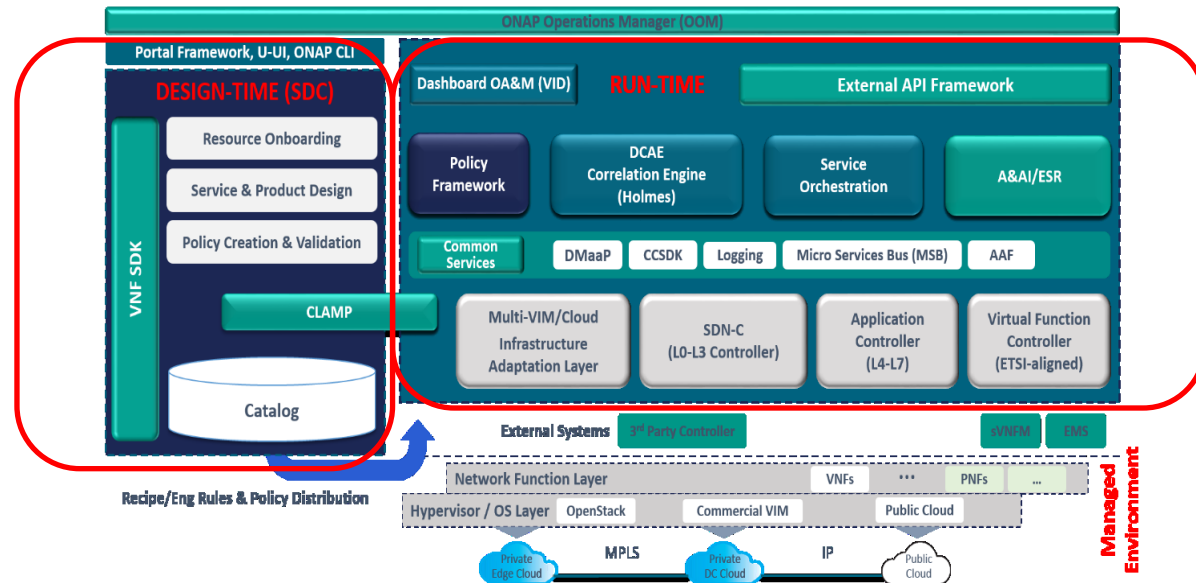
- **Intelligence: AI Native Network**
- **Deterministic : All light network**
- **Accessible : 4G&5G&B5G , Fix&Mobile, Space &Terrestrial convergence**
- **Elastic: Lite Core——Plug and play design For Factory, Silcing**



•From AIOps to Noops, From One Touch to Zero Touch, ONAP is becoming a network brain

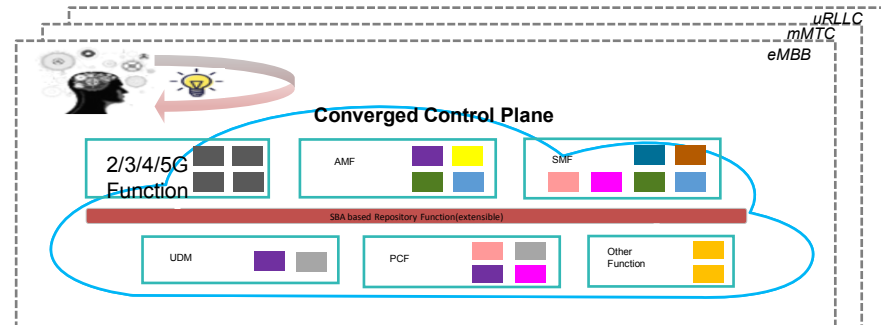
Now :

- Orchestration
- Monitoring
- Management
- Close-loop control
- Automatic Scale in/out

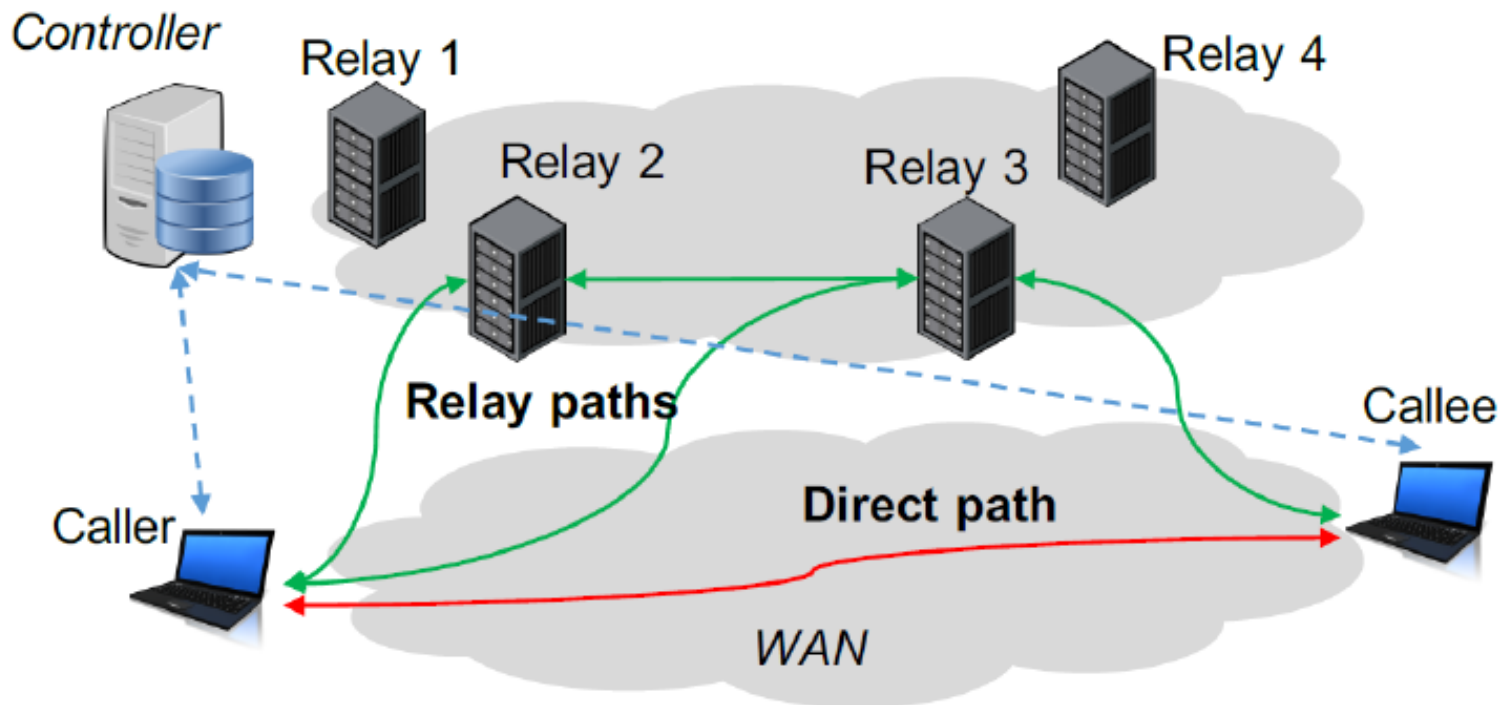


Future:

- Self-healing
- Multi-domain Autonomous
- Slicing management

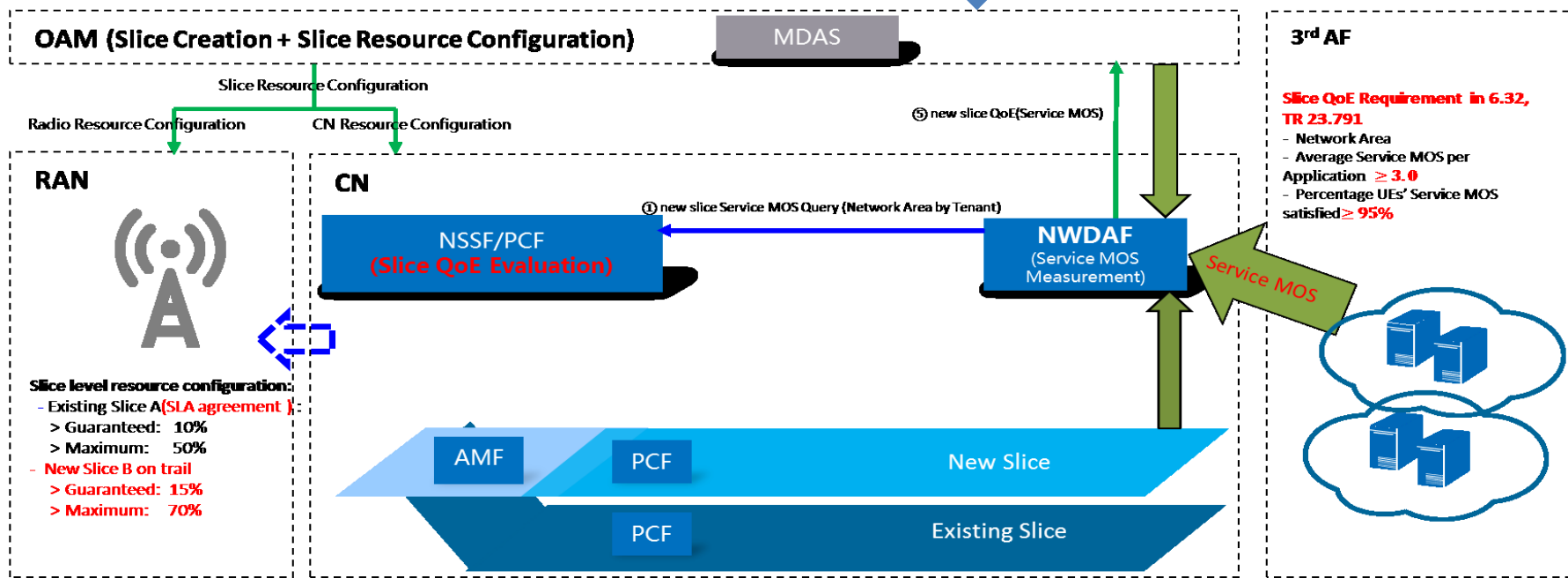


Global Optimum vs Local Optimum



Every body is talking about network slicing, but very few people know how to slice

	Now	Future
BE Slice (best effort)	By QoS	By Dynamic QoS/QoE
DE Slice (dedicate slice)	Manually Configured	AI Controlled





•How to improve QoE for big video(4K/8K)?

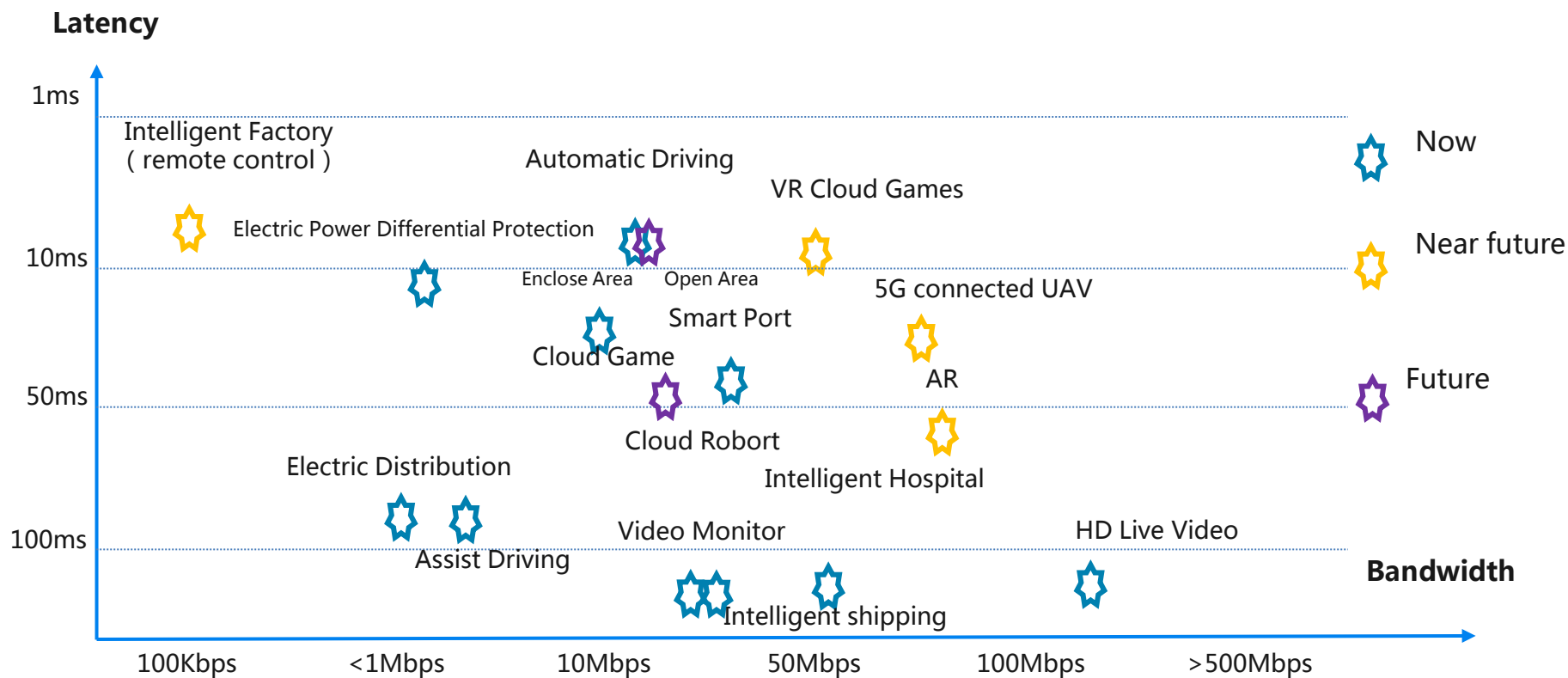
Time Delay

Packet Loss

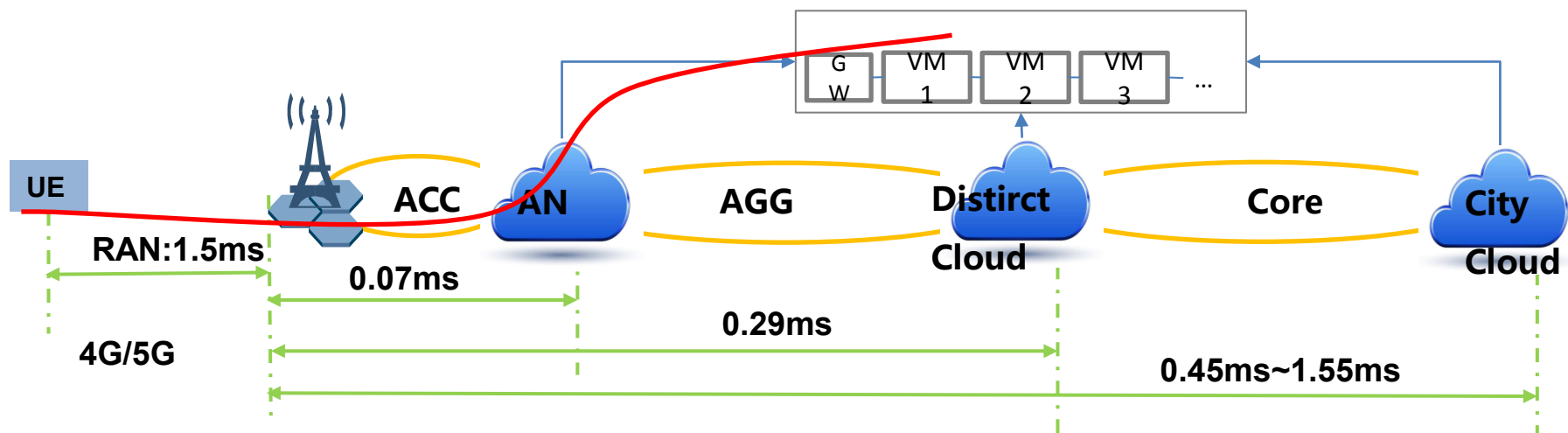
Blurred Screen

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Bandwidth is no longer a bottleneck after 5G commercialized, while latency become a focus

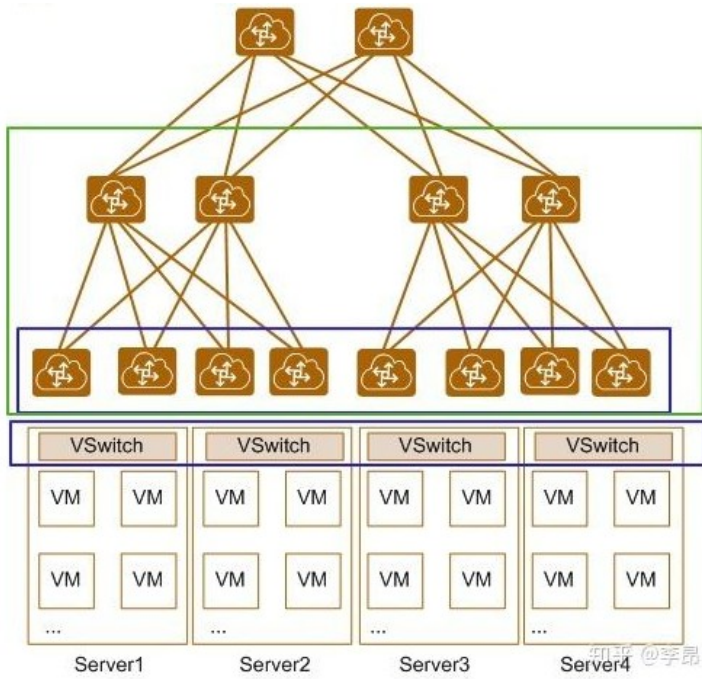


1ms time latency is unable to meet even deploy APPs in RAN part!

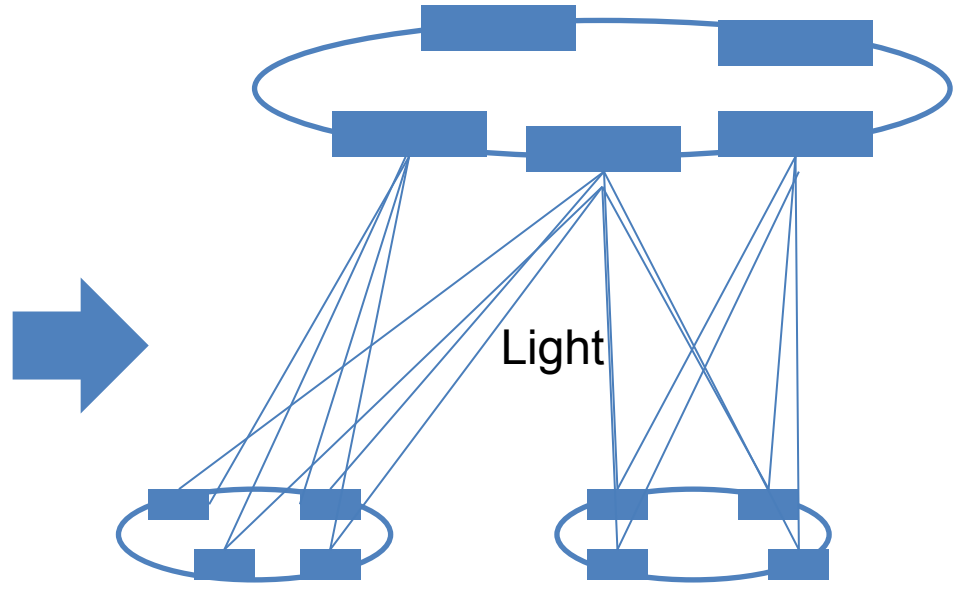


Position	AN	TN (5G)	CN GW	VM	One way trip total (5G)	Bandwidth (4G/5G)
AN	1.5ms	0.07ms	0.5ms	0.15ms	2.22ms	GE, 10GE/50GE
District Cloud		0.29ms			2.44ms	10GE, 40GE/100GE
City Cloud		0.45ms~1.55ms			2.6ms~3.7ms	40GE, 100GE/200GE

Spine-Leaf Switches



ALL Light Switches



Latency



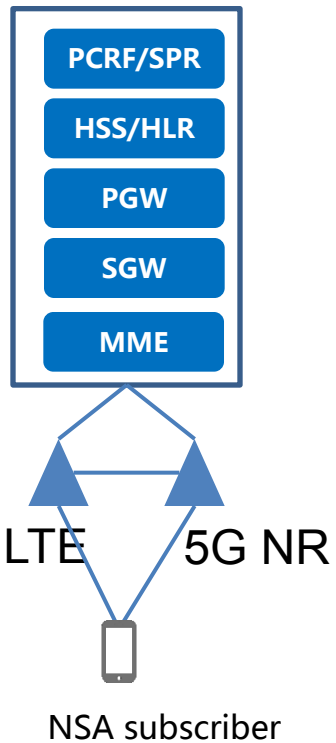
Power



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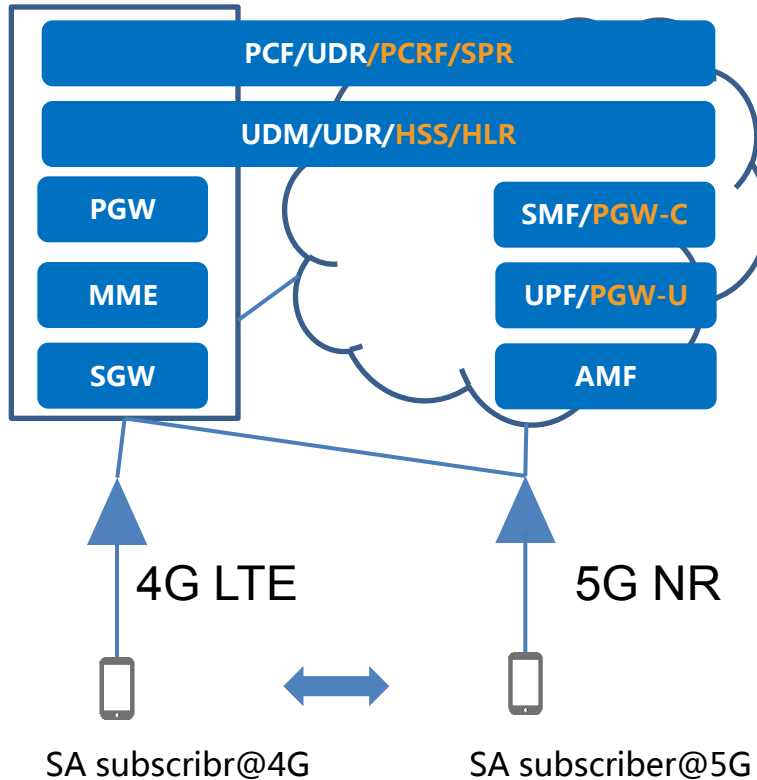
NSA (2019)

Upgrade EPC
support NSA



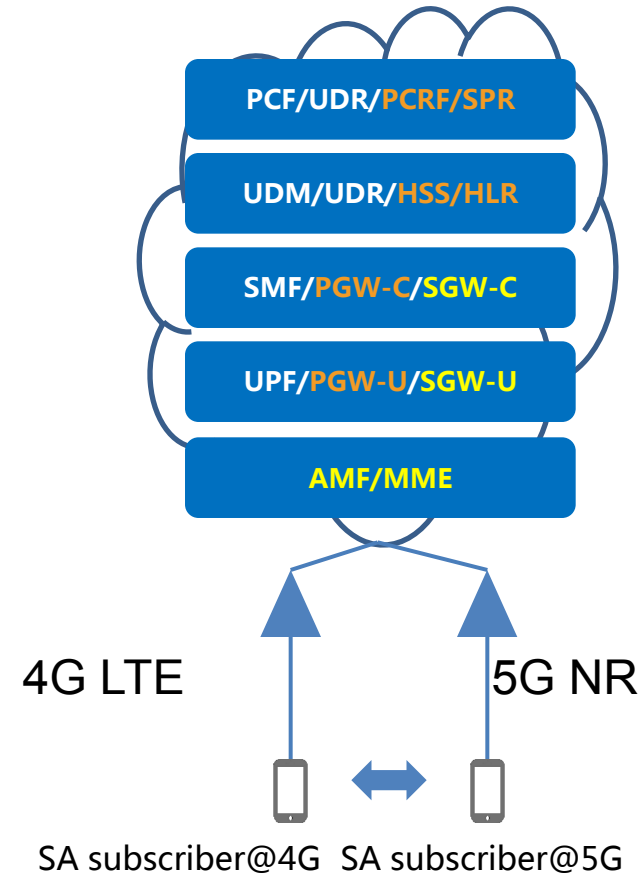
5GC&EPC Convergence (2020年)

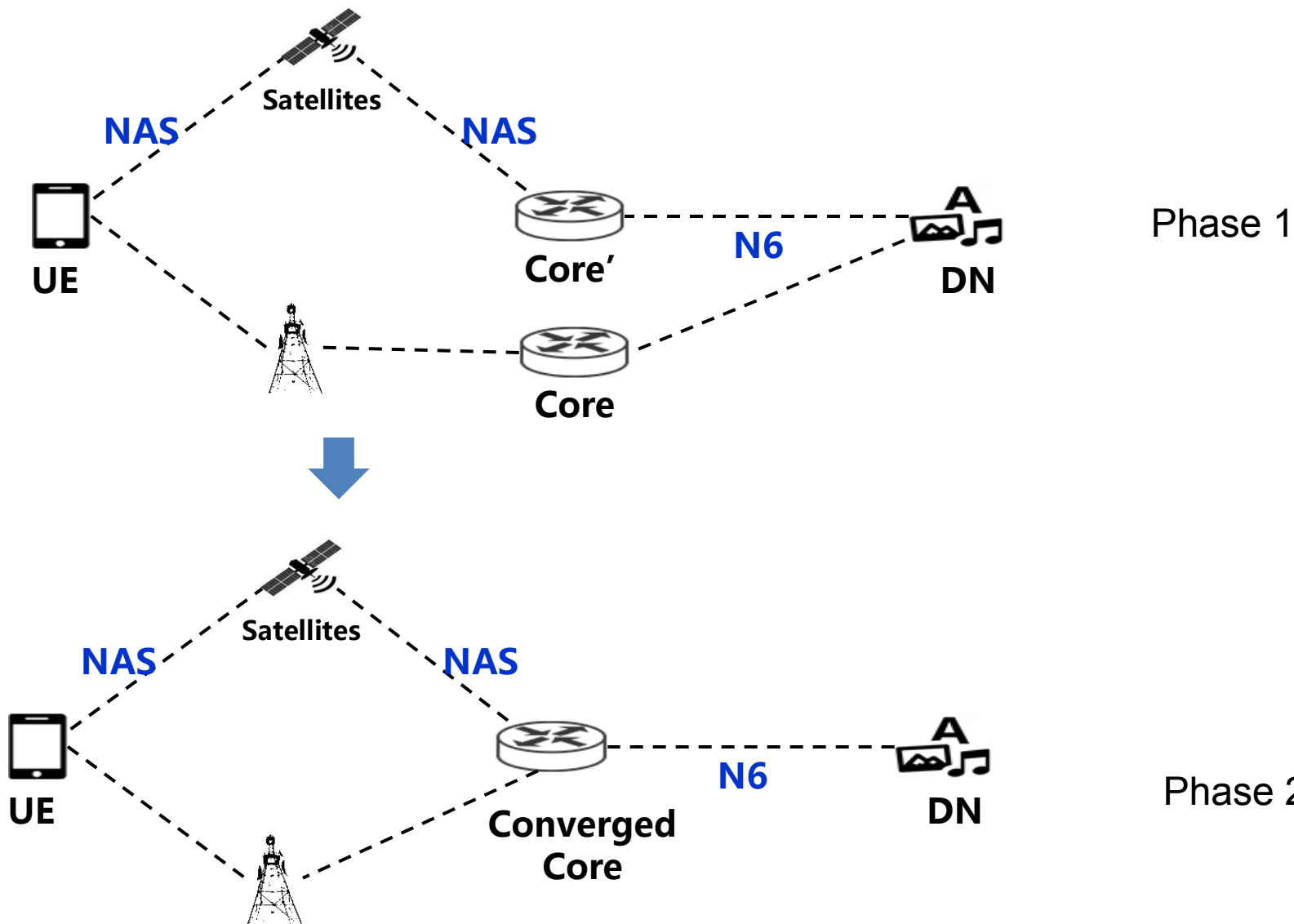
5GC support partly EPC functionalities
to support service continuity between
4G/5G



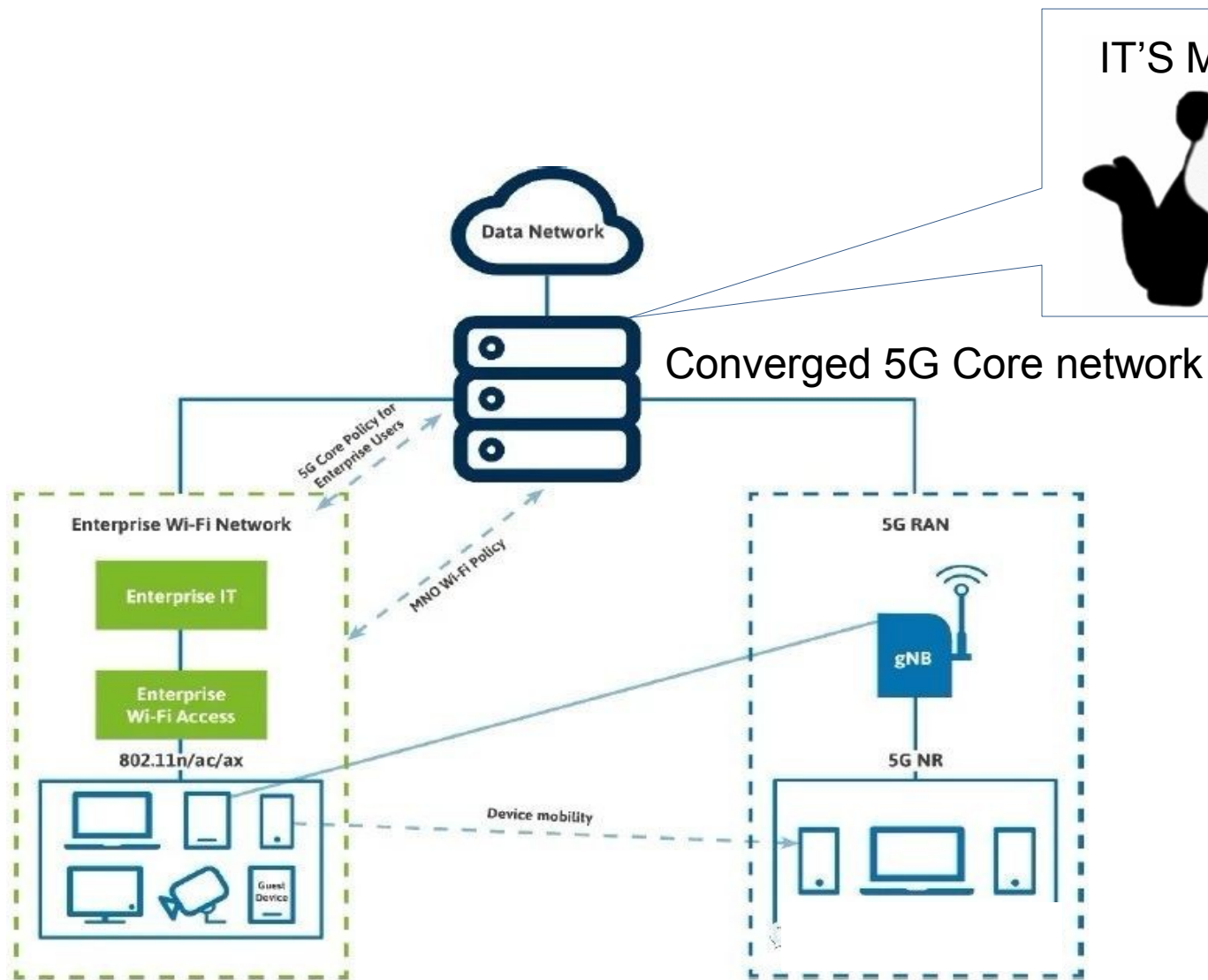
All Converged Network (2021 and Beyond)

5GC and EPC convergence, one
network support all 4G &5G





Wifi 6 and 5G become a new couple



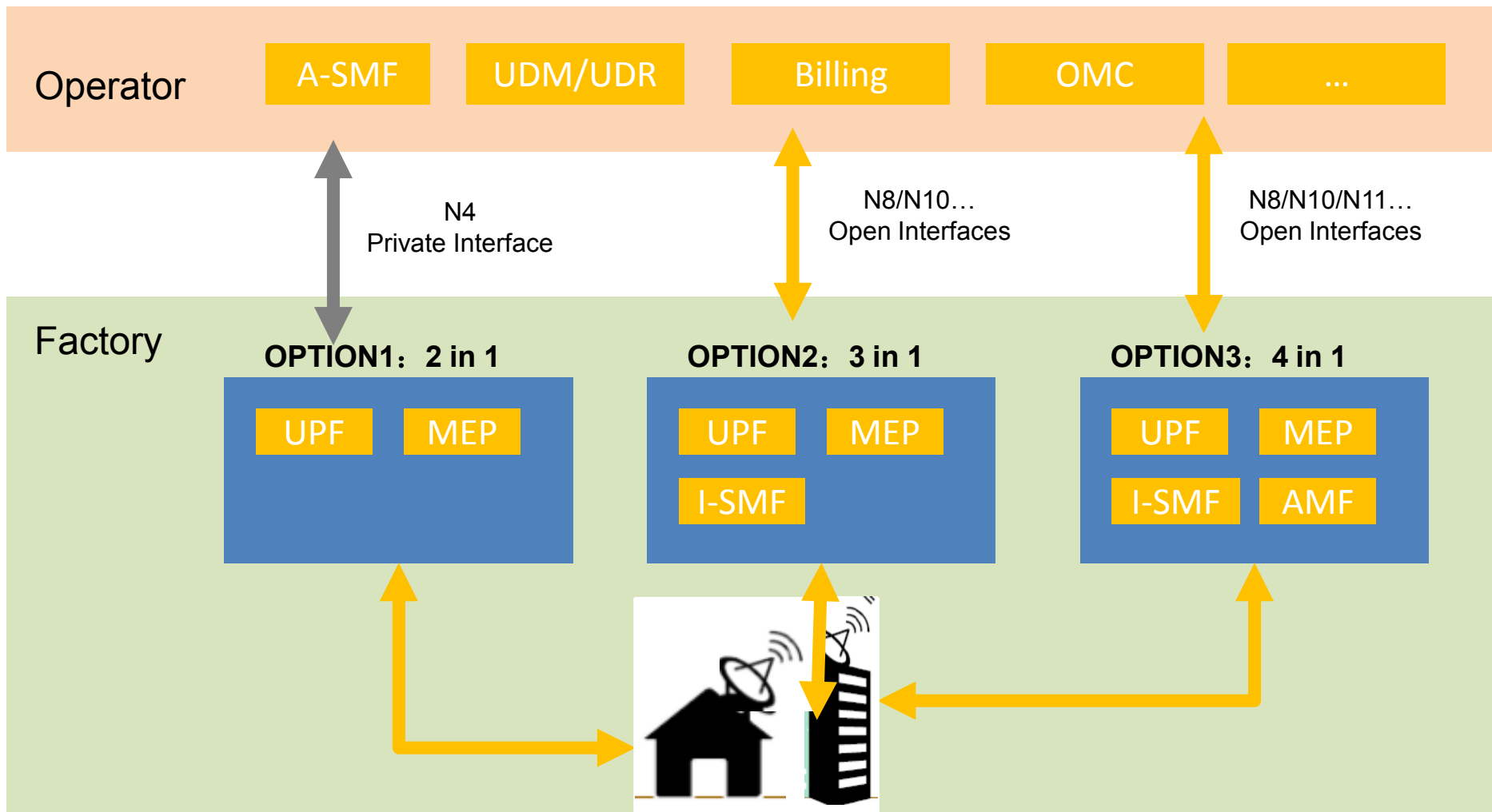
IT'S ME AGAIN



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Elastic: Lite Core——Plug and Play Design For Factory

Factory network requirement: No production data out of their factories !
Every factory can buy a lite core they need and easily access to 5G





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Let's Meet the Future

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