5G Industrial Edge Computing

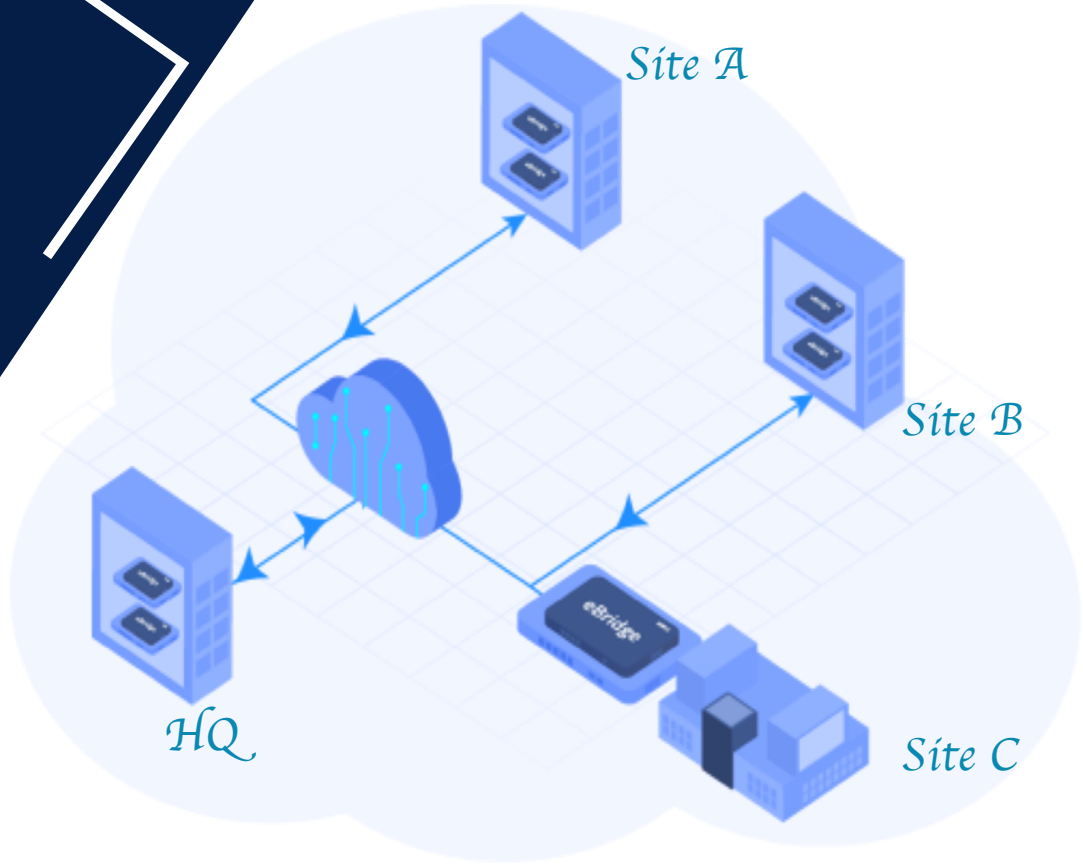
Industrial IOT

edgeWares™

ABOUT ESIX LIMITED

eSix is a networking edge technology company focus on the industrial high-speed networking. Based in Hong Kong Science Park.

edgeWares™ is an eSix product with its patent technology which helps industries, enterprises building their network infrastructure easily. It can utilize the current Internet broadband, MPLS, 4G, 5G connection, or any dedicated network infrastructure



Key Problems and Needs

- *Problem:* 5G Industrial Applications cannot operate to the same level of sophistication as fixed networks with respect to bidirectional visibility, seamless connectivity and VPN support while on the move. These creates difficulties for most large campus deployment

- *Needs*: Commercially important for self-driving cars, autonomous trucks, unmanned automatic ports, smart transportation, AGV in various countries

- *Solution:* eSix L2 Overlay technology for **mobile** network implemented as a **common bridge** between 5G (and other networks) and different silo Industrial Applications.

eSix consolidates the fragment technologies using in smart port with 5G.

Customer Case

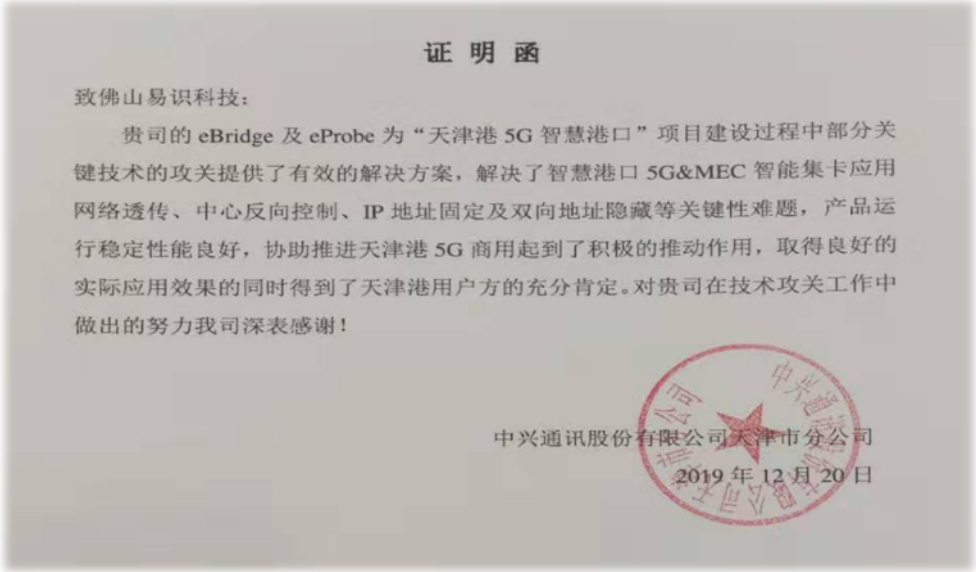
Tianjin Port: Seamless Supervision over 5G

Working with ZTE, **eSix** delivered seamless bidirectional supervision of multiple high speed unmanned AGVs in TianJin Port Project (December 2019).

Problem solved: Replaced their old solution that they are able to control, supervise the unmanned truck seamless across the whole port.

Old Solution	eSix Technology
VPN + IPSec:	edgeWares™
Fix line focus	Mobile focus
10s to few minutes or failure on tunnel handover.	Tunnel handover < 0.15s. 70x faster
Cannot regain control the AGV in critical time manner	Achieve the goal of controlling AGV seamless.

Thank You letter from ZTE to eSix on
"TianJin Port pilot success"



证 明 函

致佛山易识科技：

贵司的 eBridge 及 eProbe 为"天津港 5G 智慧港口"项目建设过程中部分关键技术的攻关提供了有效的解决方案，解决了智慧港口 5G&MEC 智能集卡应用网络透传、中心反向控制、IP 地址固定及双向地址隐藏等关键性难题，产品运行稳定性能良好，协助推进天津港 5G 商用起到了积极的推动作用，取得良好的实际应用效果的同时得到了天津港用户方的充分肯定。对贵司在技术攻关工作中做出的努力我司深表感谢！

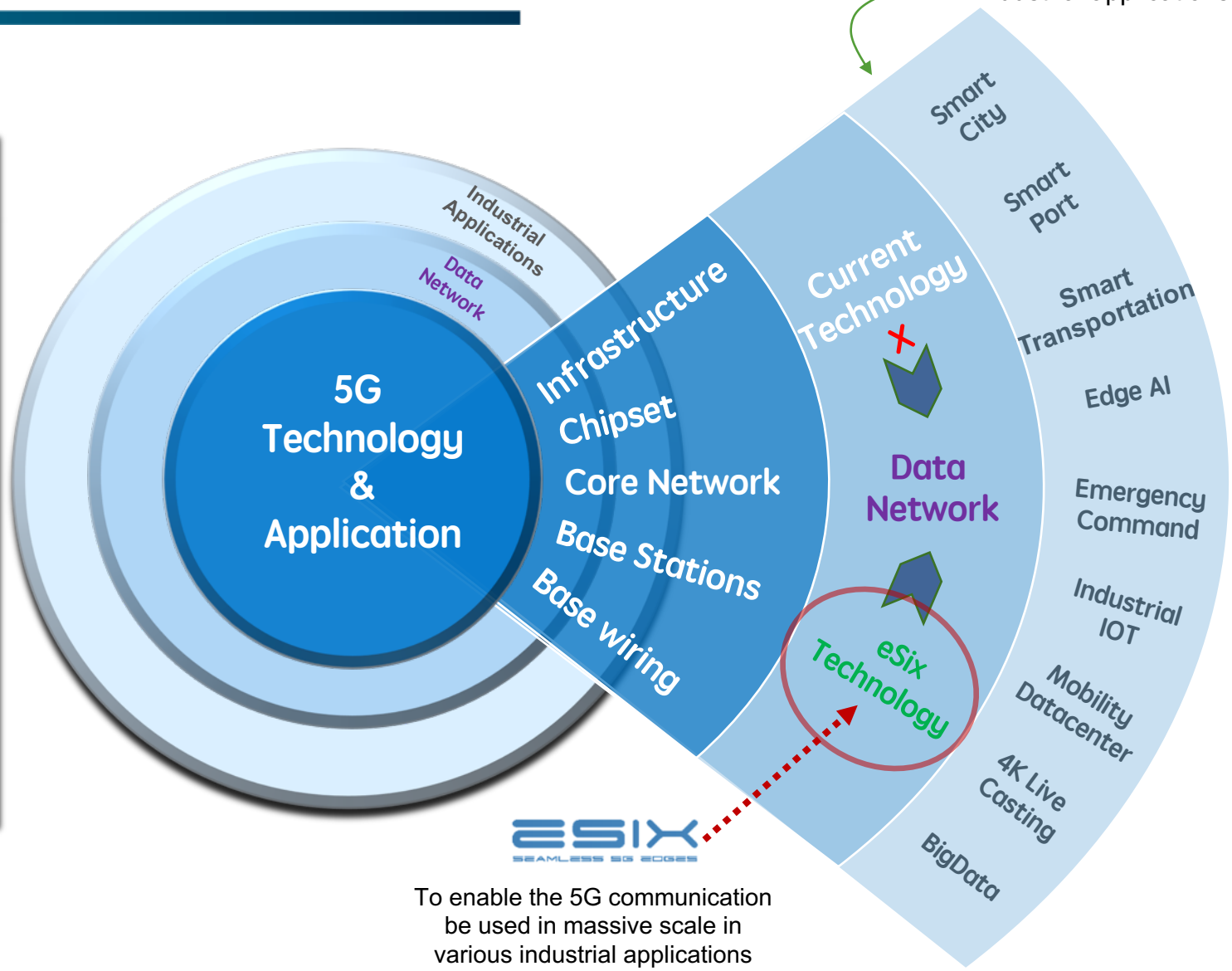
中兴通讯股份有限公司天津市分公司

2019 年 12 月 20 日

Technology Breakthrough

eSix Attacks 5G Industrial Rollout Pain Points

Current Network Technology (competitors)	eSix Technology
Silo technologies for each application. Very complicate to to scale.	Layer-2 technology fit for all applications, support massive equipment easily.
Designed for **fixed network**, not mobile networks nor 5G	Address high speed mobile network with fast moving objects. Best for 5G environment.
10s to few minutes on tunnel handover. Cannot regain control of remote vehicle in time.	Tunnel handover at < 0.15s (**70x times faster)**. Regain control of vehicles seamless.
Slow and difficult deployment requiring weeks and months. High CAPEX. High OPEX.	Plug-n-Play, Zero configuration, central management: Low CAPX and OPEX
Security and privacy issue over wireless	Enhanced security. Privacy protected by Blockchain, etc



Global Partnership

Extensive Experience in Delivering Successful Deployments

CHNT 正泰电器

天津港集团 TIANJIN PORT GROUP

intel

ZTE中兴

珠江数码

Pearl River Digital Broadband

SANY

DELL

Digital Transaction

Hong Kong

CHERY

Midea

中国电信 CHINA TELECOM

DEFENCE INNOVATION

Thailand

物联云平台 众智云 可信蜂窝物联网私有云

保利投顾

Poly Real Estate

China unicom中国联通

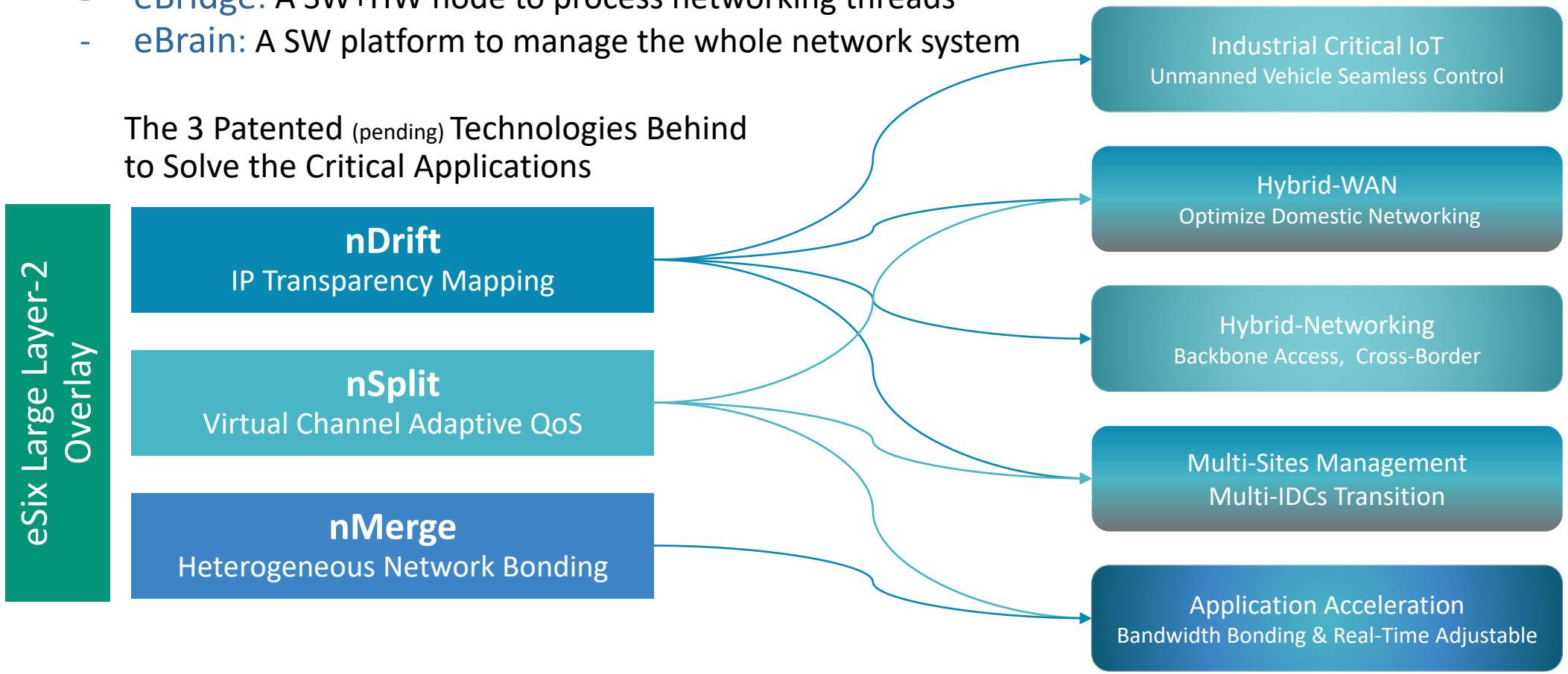
FOXCONN The Art of More

Technology and Applications

edgeWares™ : A total solution of virtual network control and management for 5G fasten roaming applications. It includes 2 components. They are:

- eBridge: A SW+HW node to process networking threads
- eBrain: A SW platform to manage the whole network system

The 3 Patented (pending) Technologies Behind to Solve the Critical Applications



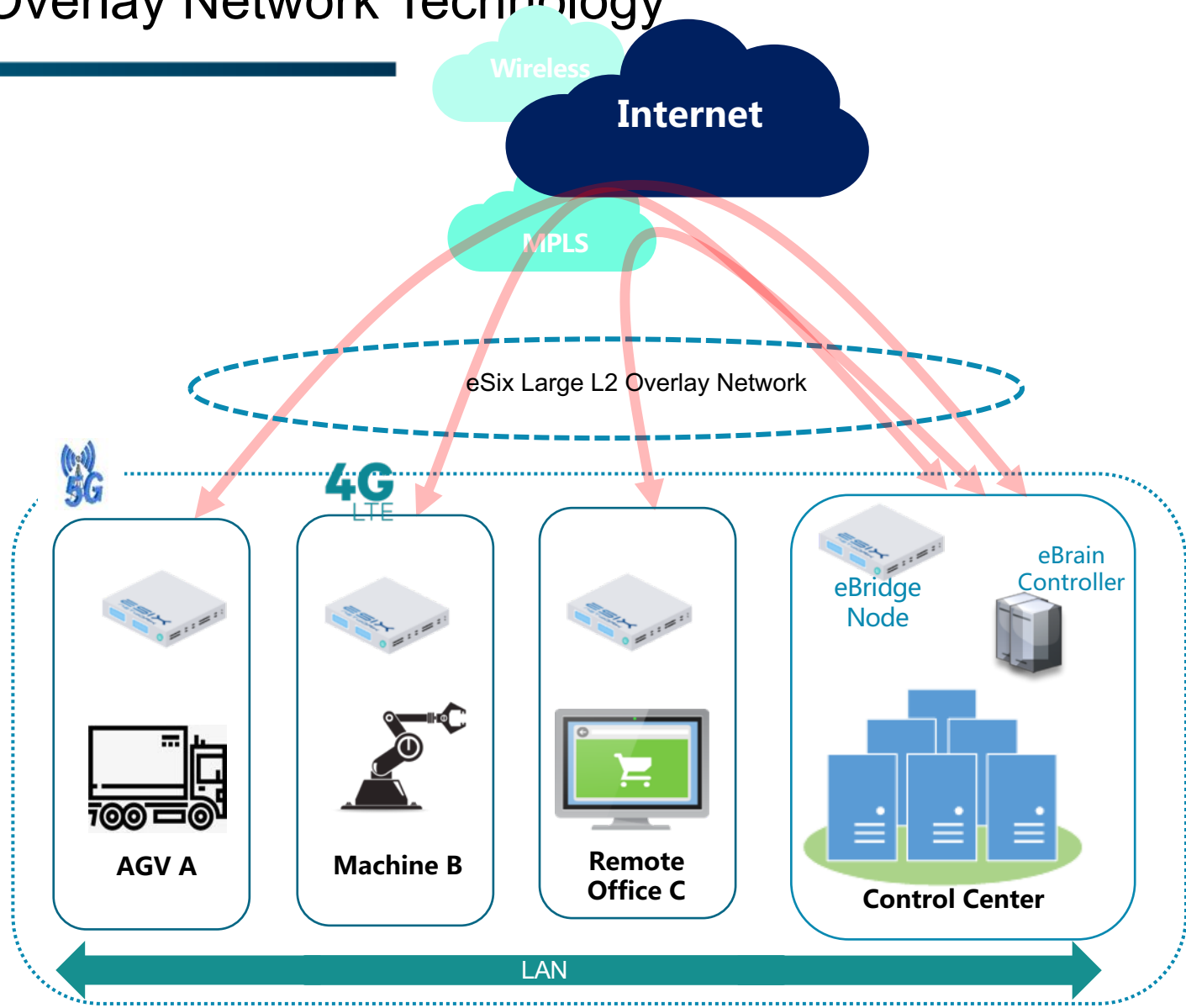
eSix Patented L2 Overlay Network Technology

Main Benefits:

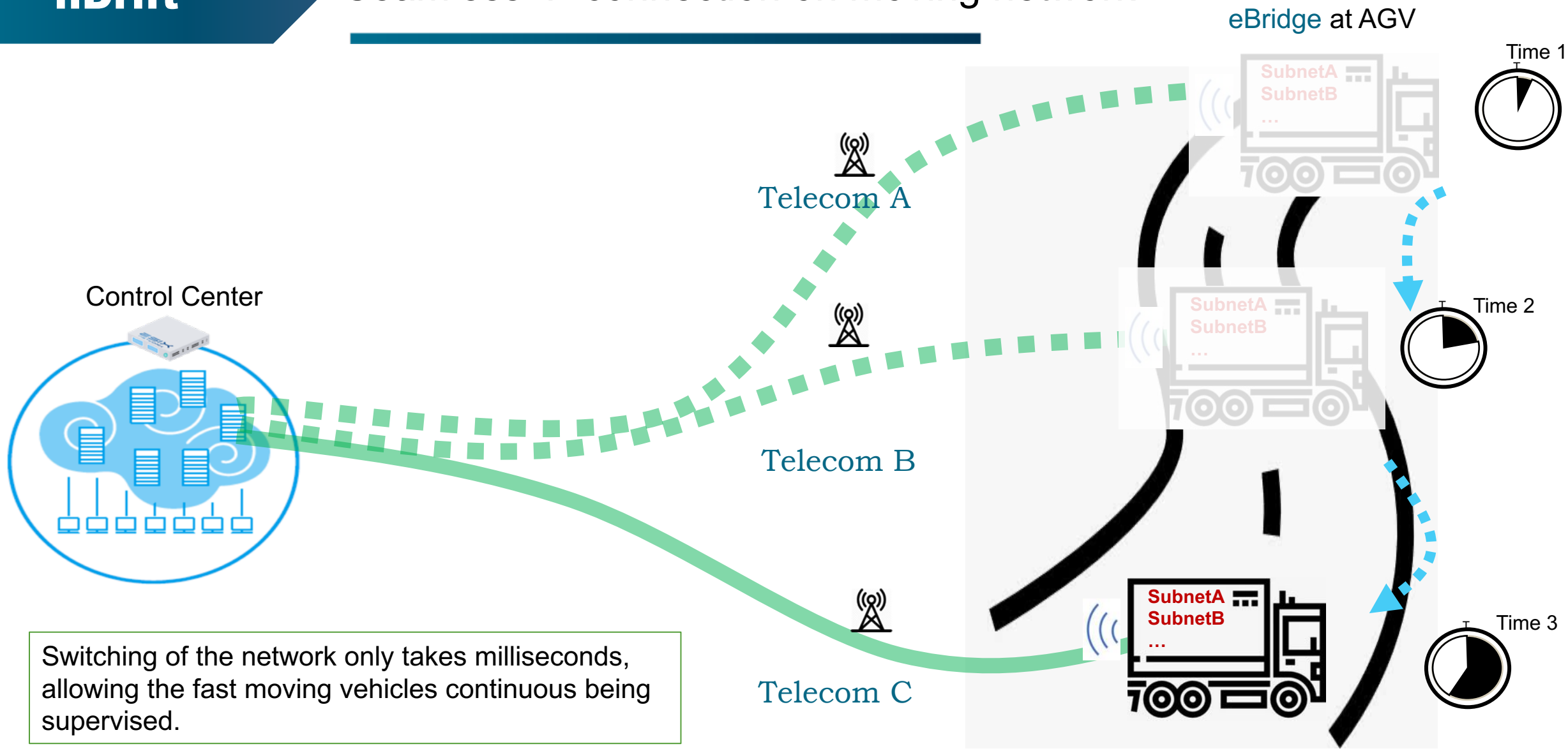
Easy: It resolves the conflict of the same subnet IP address from different sites. Its' patented technology build large L2 overlay protocol, merging massive no. of machines or sites into a LAN environment. The IP addresses of the merged network are transparent to the public network.

In the moving object, the switching of IP network only takes milliseconds, allowing vehicles being supervised.

The PnP feature of eBridge together with centralized eBrain controller, largely enhance the scalability of the network.

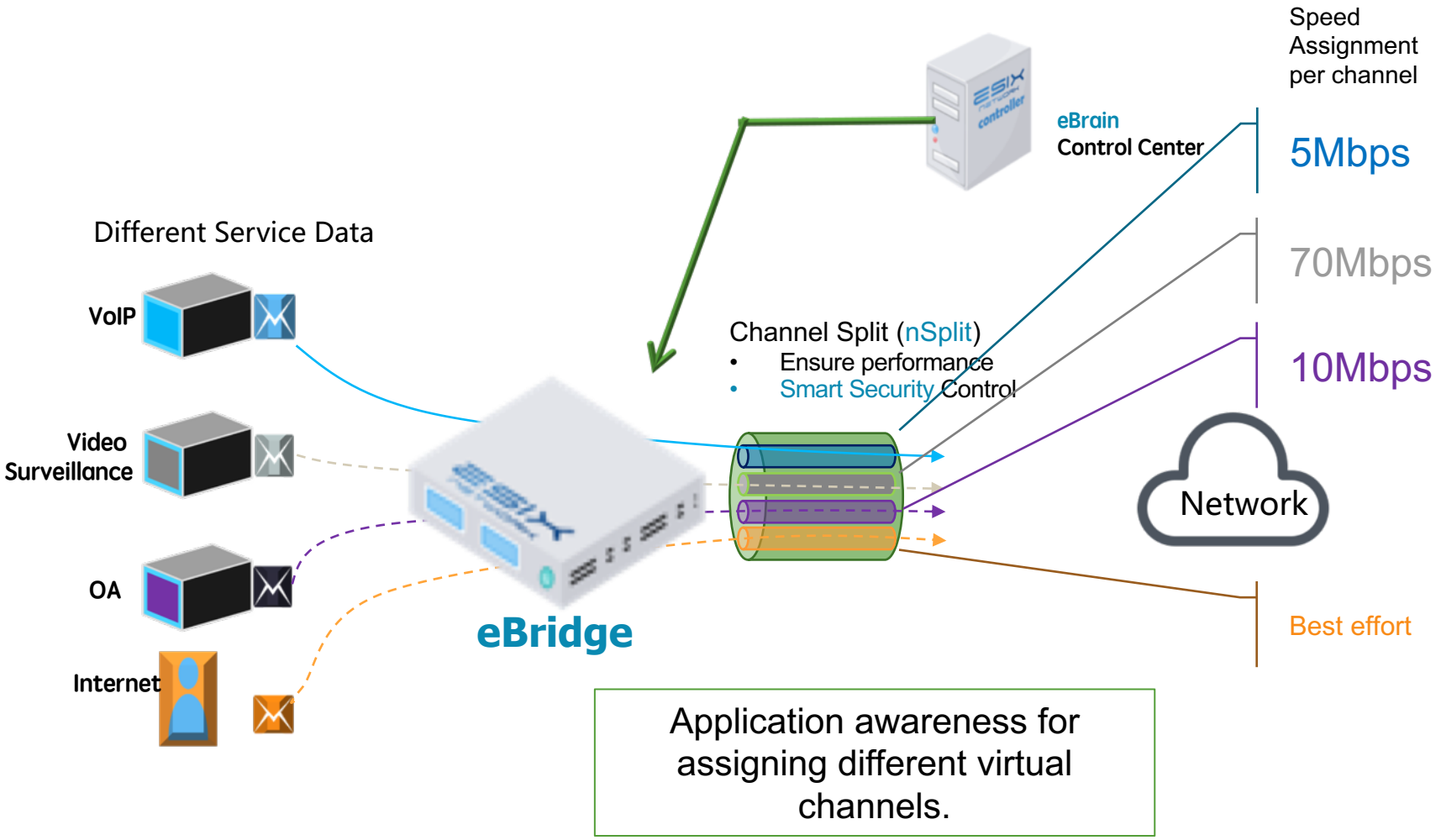


Seamless IP connection on moving network



Switching of the network only takes milliseconds, allowing the fast moving vehicles continuous being supervised.

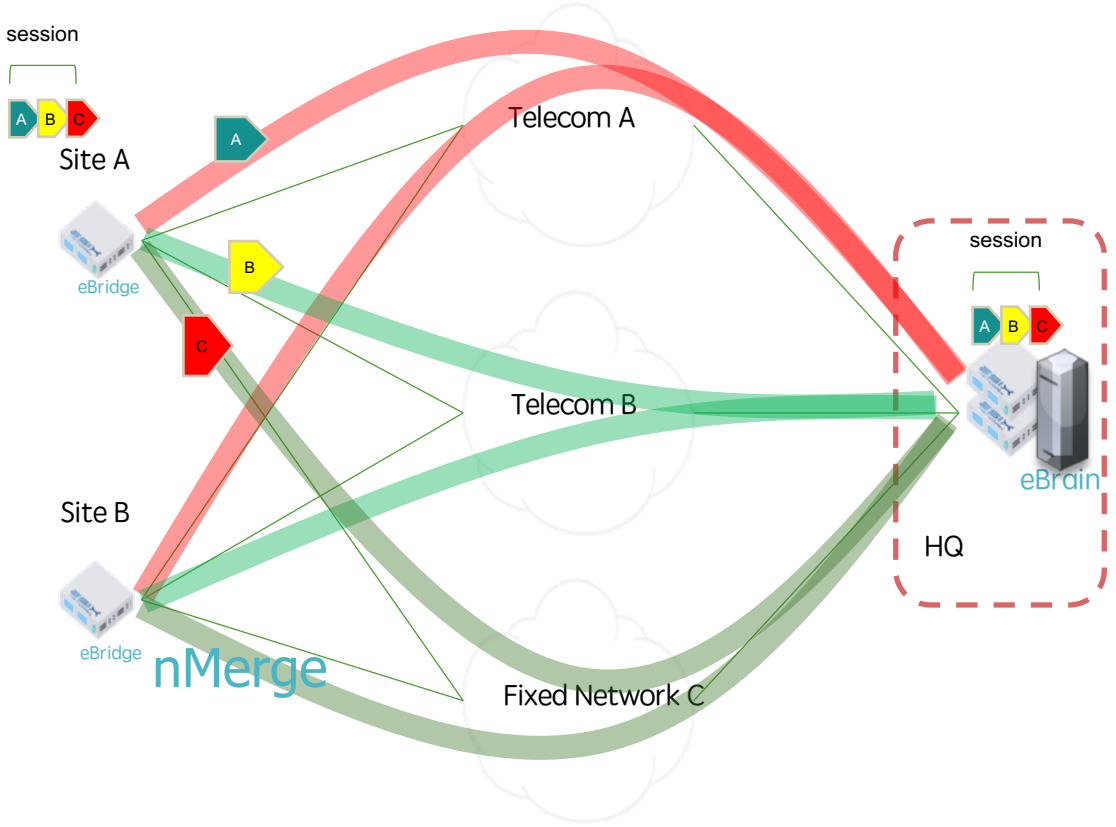
A Virtual Channel technology guarantee Performance



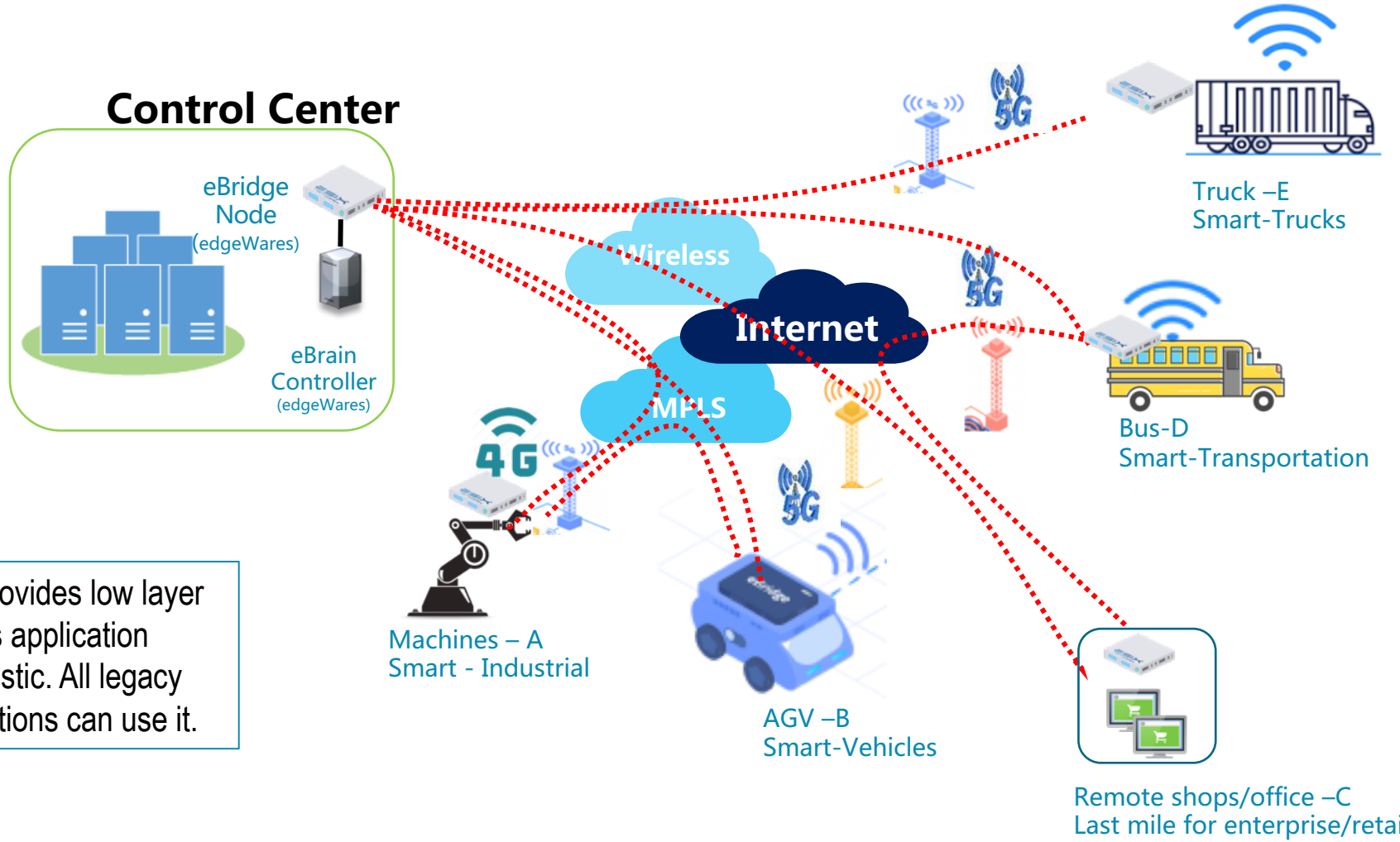
A technology for reliability, performance, security and cost

Main Benefits:

- Reliability: nMerge (Network Merger) allows resilient capability of internetworking through bandwidth bonding in multi-bearers. The UDP approach also improves the performance reliability together with nSplit.
- Security: Data is divided into packets and go through multiple bearers and consolidate at the end point. Hijacking the uncompleted data in any one bearer is useless.
- Cost: edgeWares allows users to set priority on low cost bearers and using high cost for special use. The hybrid approach helps users reduce communication cost.



The 5G Industrial Edge Solution: edgeWares™



edgeWares™ provides low layer protocol which is application technology agnostic. All legacy and new applications can use it.

THANK YOU