

SmartWAN

SKT Global Intelligent Network & Security Platform

2025.03

SKT Enterprise

SKT Enterprise

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01

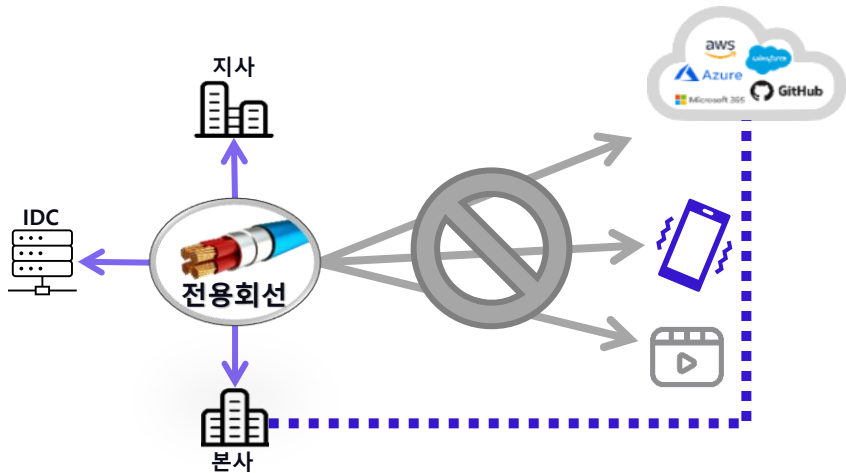
Background

01 Background

Transformation : Virtualization of Network Connectivity

Increased demand for software-based, flexible connectivity and security from fixed equipment and connectivity

Legacy Network/Security



Limitations of Legacy Network/Security

AI + Virtualization

+

Cloud/SaaS Connection

+

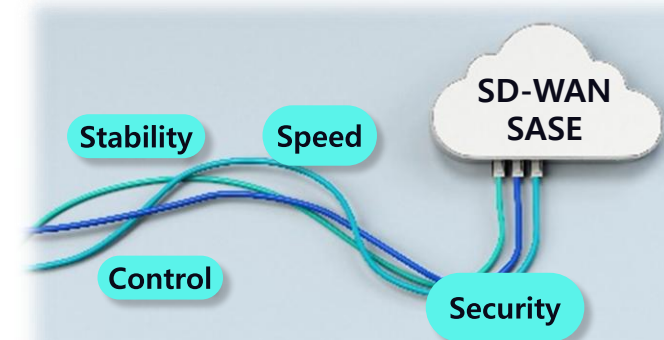
Simplify Complexity
Cost saving

+

Respond immediately to
security threats

Customer Needs

Virtualization of the network is not an option, but a necessity



"Virtualized Network/Security"
The Emergence of Platform Services

01 Background

Change : Intelligent, Diversified Security Threats

상반기 침해사고 최다 발생 업종...‘제조업’, 주로 ‘크리덴셜 스티핑’, ‘VPN’ 취약점 악용
(한국인터넷진흥원) 2022. 08. 24

"Credential stuffing" breaches using VPN vulnerabilities spiked
One vulnerability exposes all confidential information on the internal network



[긴급] KAI도 원자력연 당했던 VPN 취약점으로 해킹 당했다 <머니투데이> 2022-11-21

"Domestic government and corporate VPN services are not secure"
KAI, Han Won-yeon, and other institutions with technical information are targeted



다.

Ransomware infections spike through Cisco VPN vulnerability
Global Standard as a vulnerability...



01 Background

The Era of SD-WAN & SASE

SD-WAN and SASE Market are expected to grow at a high CAGR of 33% and 26%, respectively, in '2024-'2031.

* Source: verified market research

SD-WAN

- Includes CSP, DC, and SASE manufacturers in addition to Telco
- Using SD-WAN equipment and Global PoP, we provide quick and easy connection of domestic and overseas dedicated lines

* SD-WAN : Software Defined WAN

SASEZTNA SDP

- Government-led push to make ZTNA mandatory
- The best solution to prevent continuous hacking incidents using VPN service vulnerabilities

- * SASE : Secure Access Service Edge
- * ZTNA : Zero Trust Network Access
- * SDP : Software Defined Perimeter

From the existing method of providing network, security equipment, and line services individually, to providing all services with an integrated platform

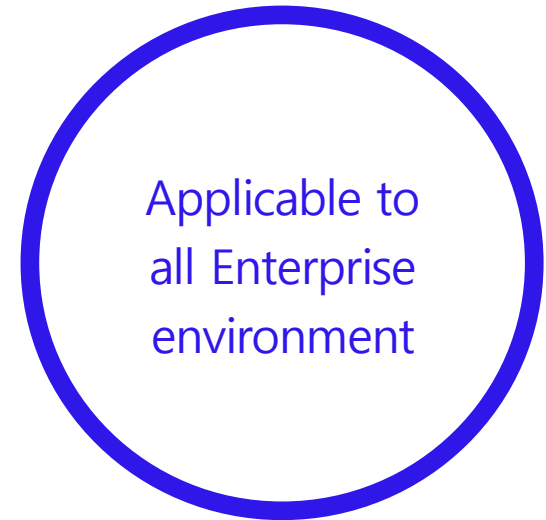
SD-WAN & SASE are『 Global Mega Trend 』

02

Overview

02 Overview

SmartWAN is an intelligent network & security solution that improves network performance and provides security features at the same time.



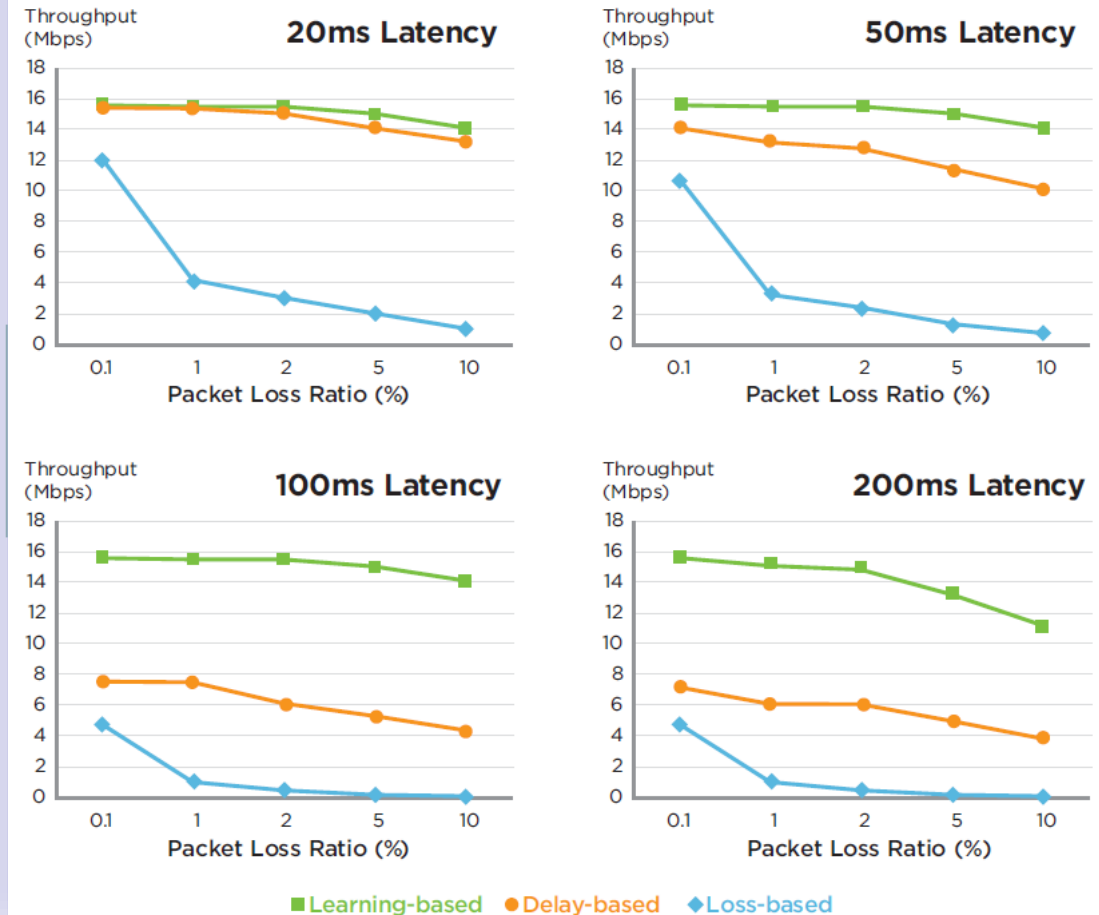
"SK's Readiness"

02 Overview

Learning-based TCP acceleration Technology

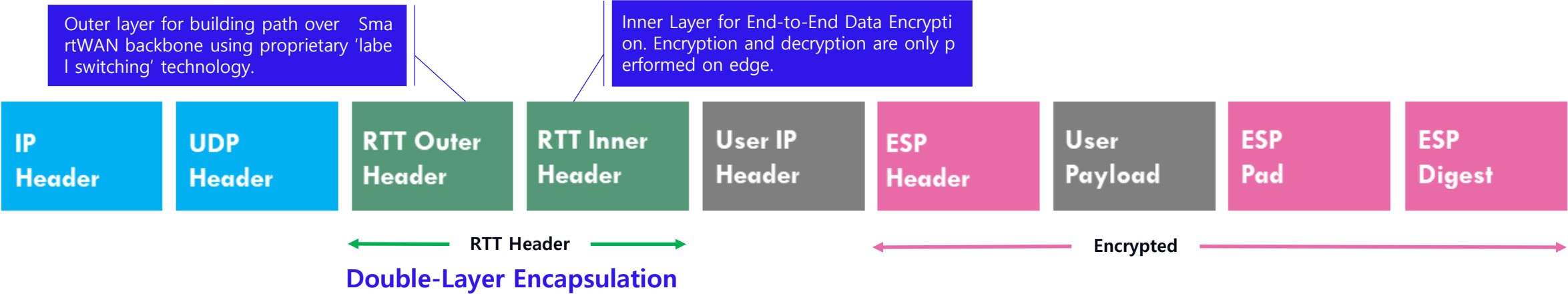
- ✓ **ZetaTCP™** is the leading learning-based TCP acceleration technology, widely used and/or licensed by large carriers worldwide.
- ✓ SmartWAN **RTT^{Real-Time TCP} tunnel** Integrates ZetaTCP™ algorithms and **significantly improves** transmission speed and stability of Smart WAN.
- ✓ RTT is further enhanced with algorithms that enable **seamless path switch** without affecting applications/user experiences.
- ✓ Additionally, RTT includes **end-to-end encryption to ensure user data remains secure** during transmission over backbone network. With End-to-End Encryption, data is encrypted and decrypted solely on the CPE device which is deployed at customer's site, and the backbone PoPs will only forward the encrypted data from one point to another

Third Party Comparison Tests



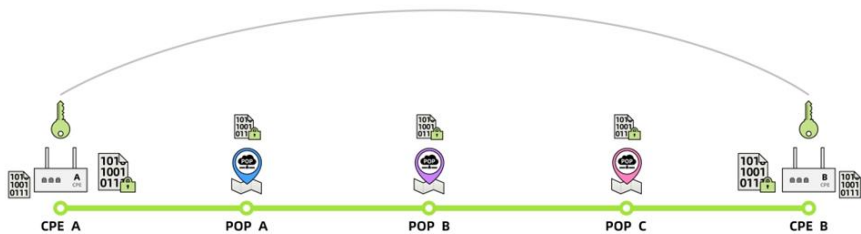
02 Overview

RTT Real-Time TCP - Security & Performance on a single stack



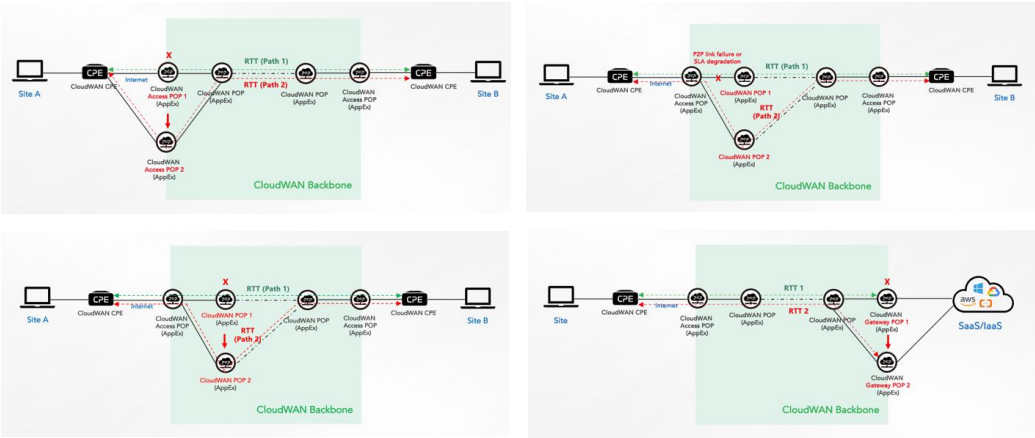
Transmission Security

End-to-End Encrypted Tunnel



Graceful Path Switchover

The Orchestrator keeps monitoring status/performance of tunnels and related resources and perform switchover when SLA is not met. The switchover is application agnostic.




02 Overview

SmartWAN is the most complete enterprise secure networking platform

Reference

Numerous Global References



Compatibility

Compatible with all types of lines

CPE

Mobile CPEvCPE

vCPE

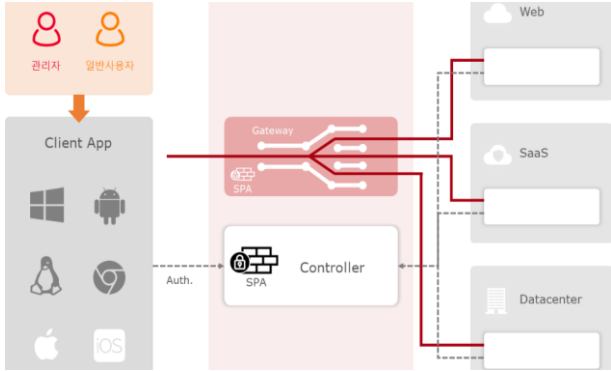
More than 100 species
Wired & Wireless Integrated CPE
(Wired and Wireless, 4/5G)

Personal/Business OS
All supported
Integrated Agent

Commercial Cloud and
All Compatible
Virtual CPE

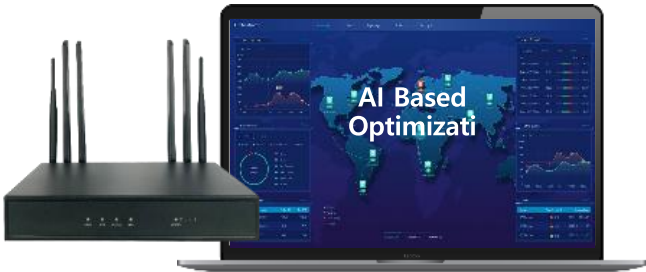
Security

Black Cloud based ZTNA



Manageability


The most advanced ZTP (Zero Touch Provision)



Enter CPE Activation URL,
Set up in 1 second!!


Quality

The Most Mature AI Quality/Path Management



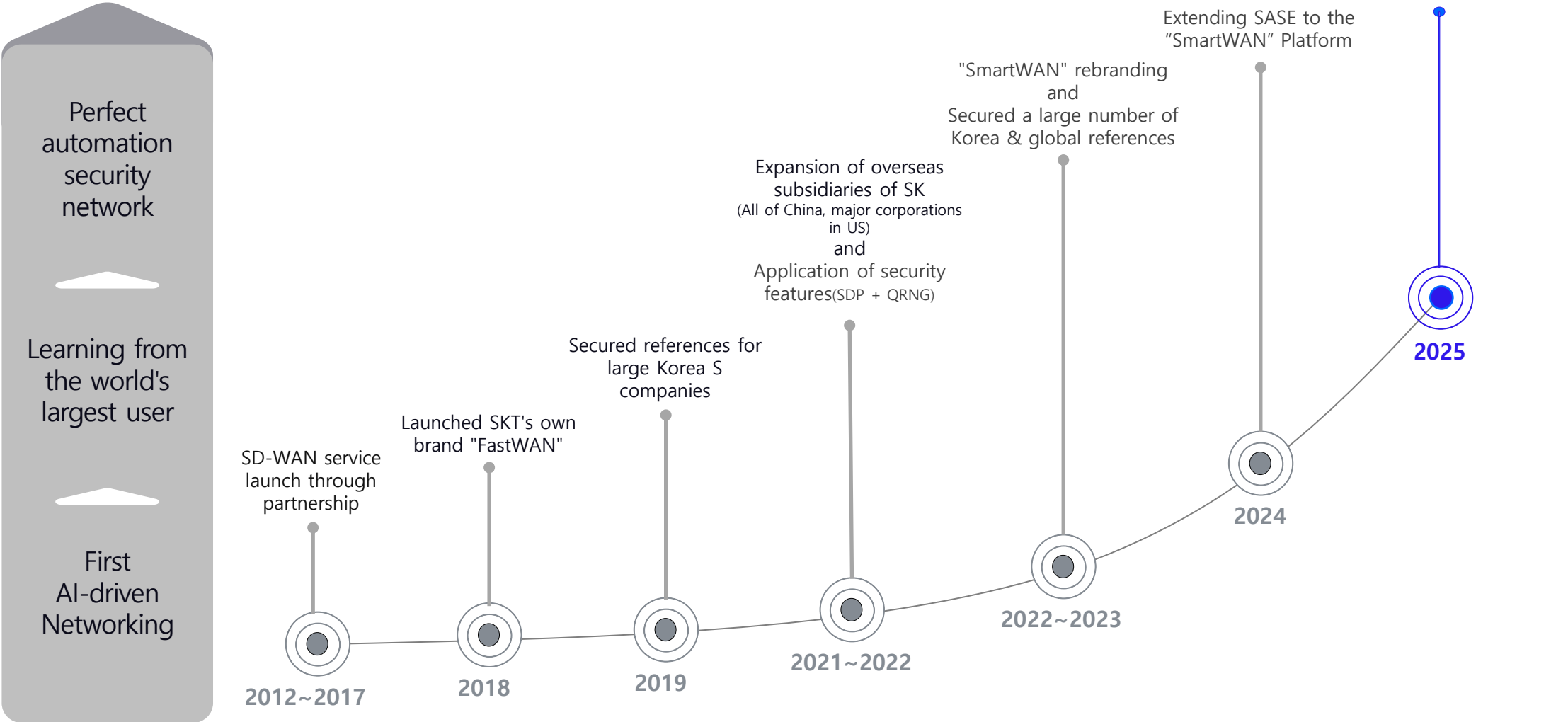
Quantum Security

Enforce secure quantum cryptography keys



02 Overview

SmartWAN History



03

Highlights

03 Highlights



Easy connection

Connect instantly to any environment

Widest network coverage

Top-level coverage with no shaded area

Perfect security

Korea's first ZTNA CC certification and quantum encryption QRNG

Innovative network performance

Eliminate existing network bottlenecks, dramatically improve speed

Network Integration

Integration of heterogeneous network environments

TCO Improvement

Lower TCO through network/security efficiencies

03 Highlights

Easy Connection : Connect instantly to any environment

Every Wire/Wireless Devices



Every Cloud & SaaS

All major Cloud and SaaS integrations
Providing SLA-based services



Real-Time Transparency



Applicable to all enterprise networks



- Integrate with equipment platform from all vendors
- Seamless connection of all types of lines
- Compatible with L2~L7 switches

Improved access quality to M365



- Secure access to Hop inside the Cloud
- Connecting Global SaaS through DNS Delegation
- Closed network and customizing

Powerful Data View in AI-Driven Portals

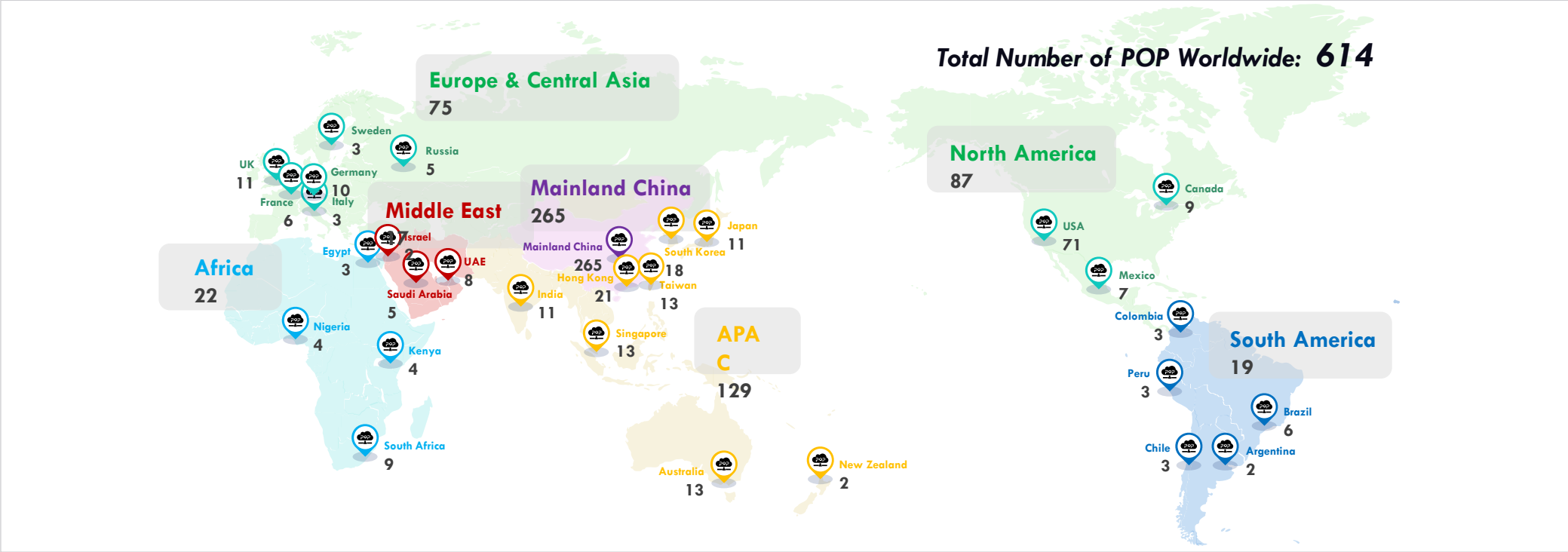


- All settings within the portal
- View all your data in less than 5 seconds
- Powerful operation conveniences

03 Highlights

Widest network coverage : More than 90% of the worldwide with low-latency access of less than 10ms

SmartWAN Global Backbone - 600+ POPs Worldwide as of now



Real Global Coverage
Less than 10ms to 90% of population

AI Global Map

Expand with easy
New POP set up on the same day

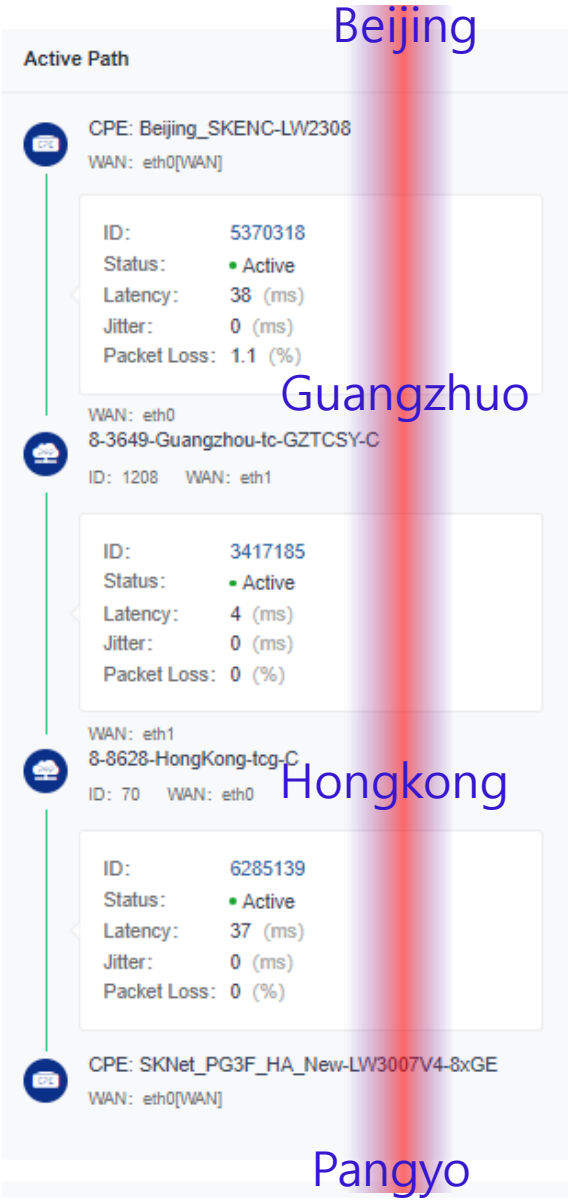
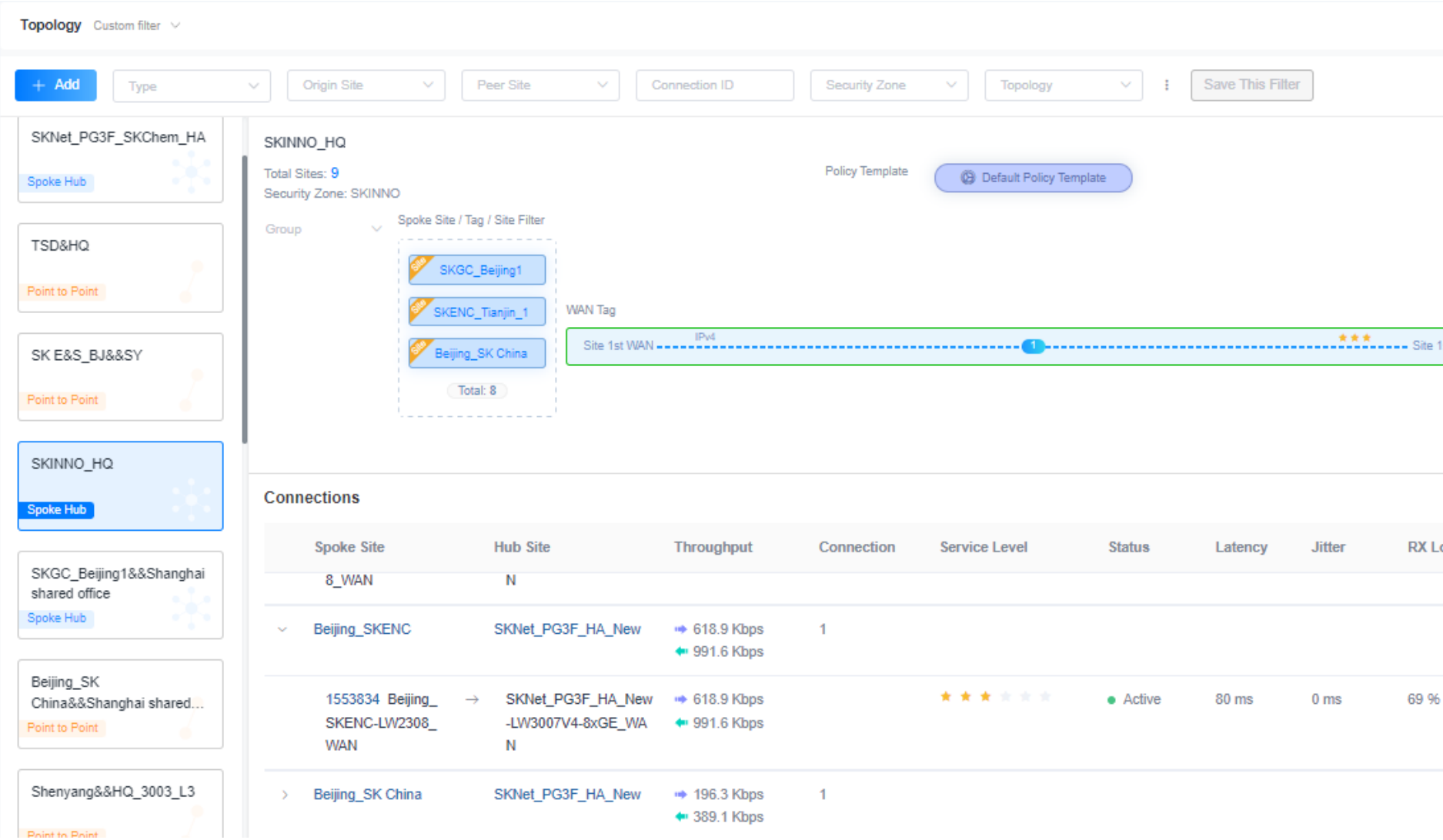
Realtime Expansion

The only solution for
underdeveloped areas Africa,
China, South America, etc.

High Coverage

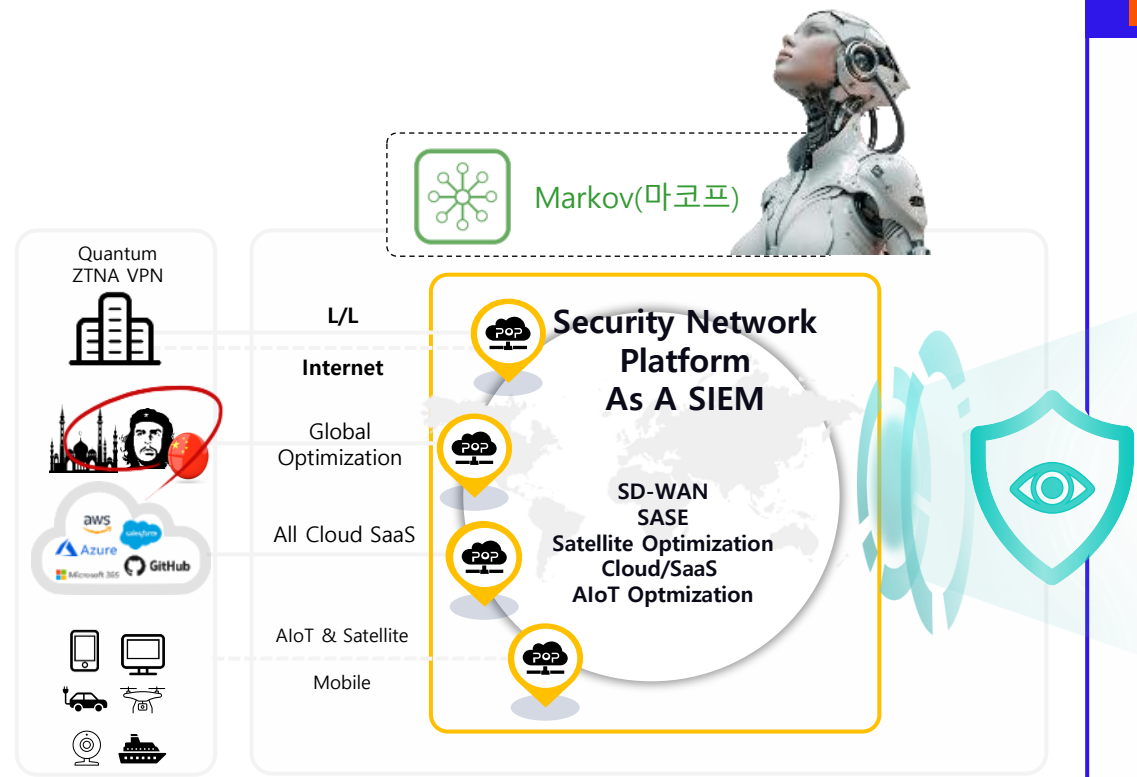
03 Highlights

Perfect security : Real-time Transparency & Visibility



03 Highlights

Perfect Security : Security and network visibility through a unified platform with AI

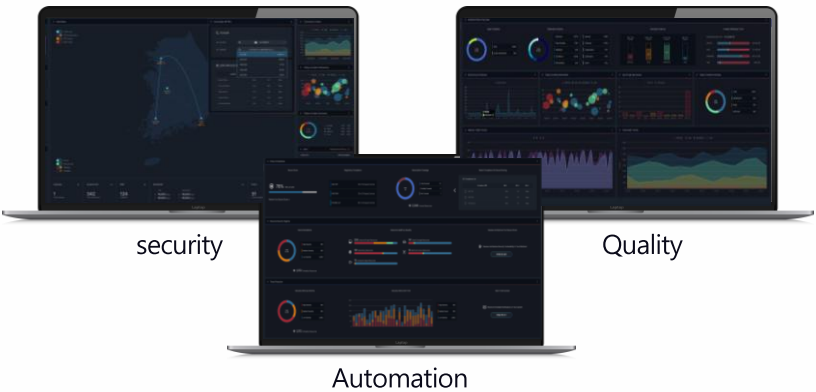


01

AI extensibility core values of the Markov platform

AI-Ready Foundation

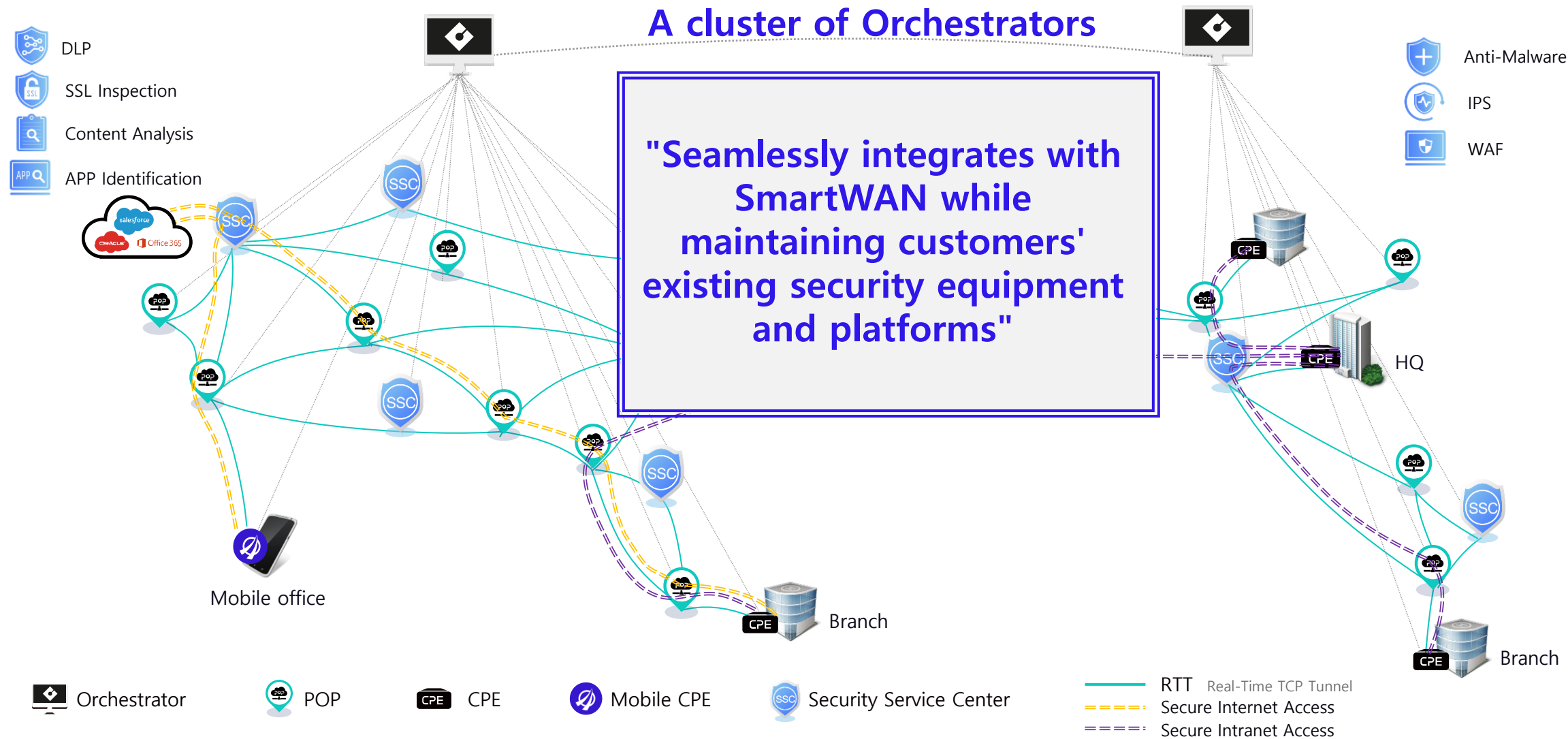
The foundation for data integration and analysis



1. Data integration platform for security and network
2. Centralize and manage all assets.
3. Readiness for AI

03 Highlights

Perfect Security : Open SASE for more Security

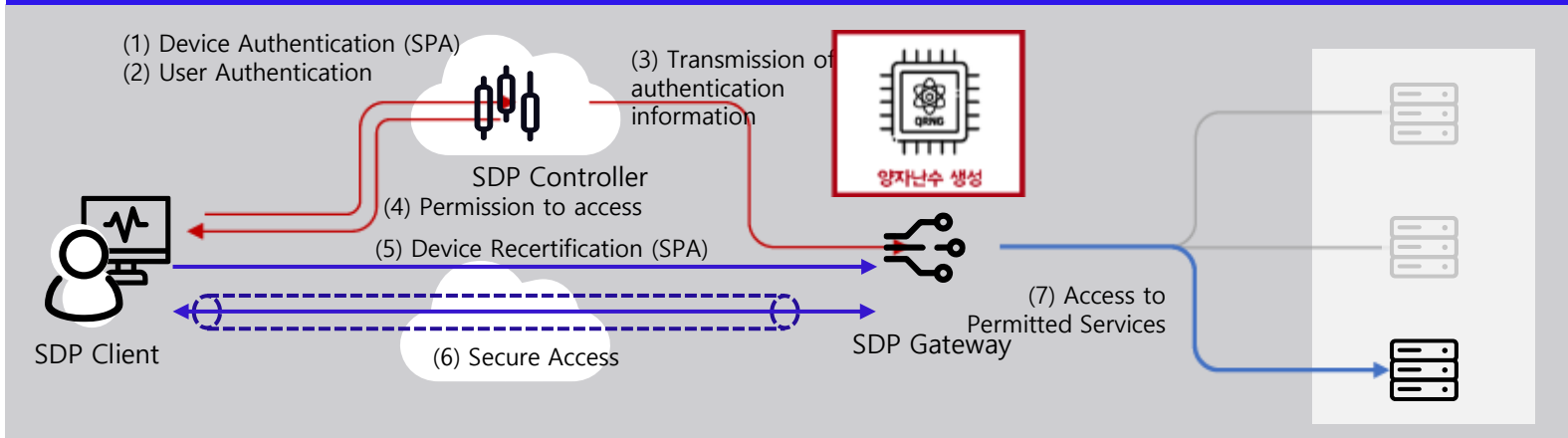


03 Highlights

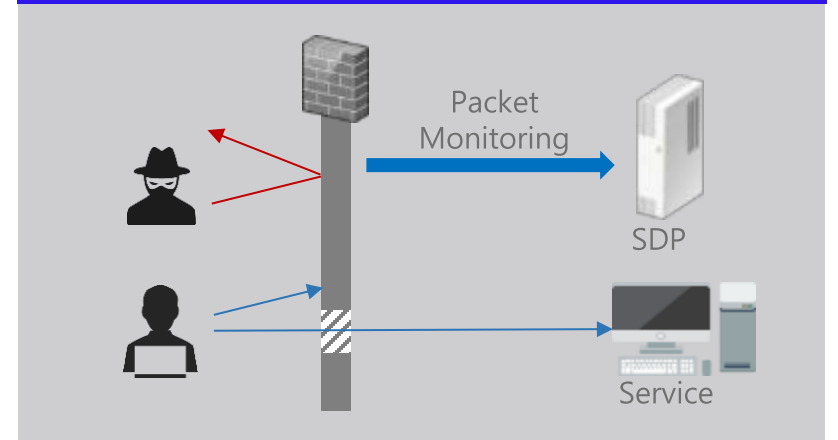
Perfect Security : Korea's first ZTNA CC certification and black cloud based ZTNA

SDP as a
SASE

SDP Architecture (Quantum Random Number Authentication-Based User Access Control)



Black Cloud (port information hidden)



SDP vs. VPN

category	SDP(Software Defined Perimeter)	VPN(Virtual Private Network)
Trust Model	• Zero Trust model-based business network	• Trust-based model provides free access to assets
Access Control	• Whitelist-based access control	• Blacklist-based access control
Manage access rights	• Manage fine-grained access rights between users and branches	• Network-based access rights management
Vulnerability	• SPA-based resource exposure prevention • Separation of control and data channels ensures stability	• Exposing resources for VPN authentication • Seamless use of control and data channels
Cloud Access Security	• Flexible access control through user-centered policies	• Complex access control policy with IP-centered access control
Scalability and cost	• Public&Private Convenient network environment expansion support such as cloud and datacenter	• Scalability of distributed infrastructure is limited and costs are excessive

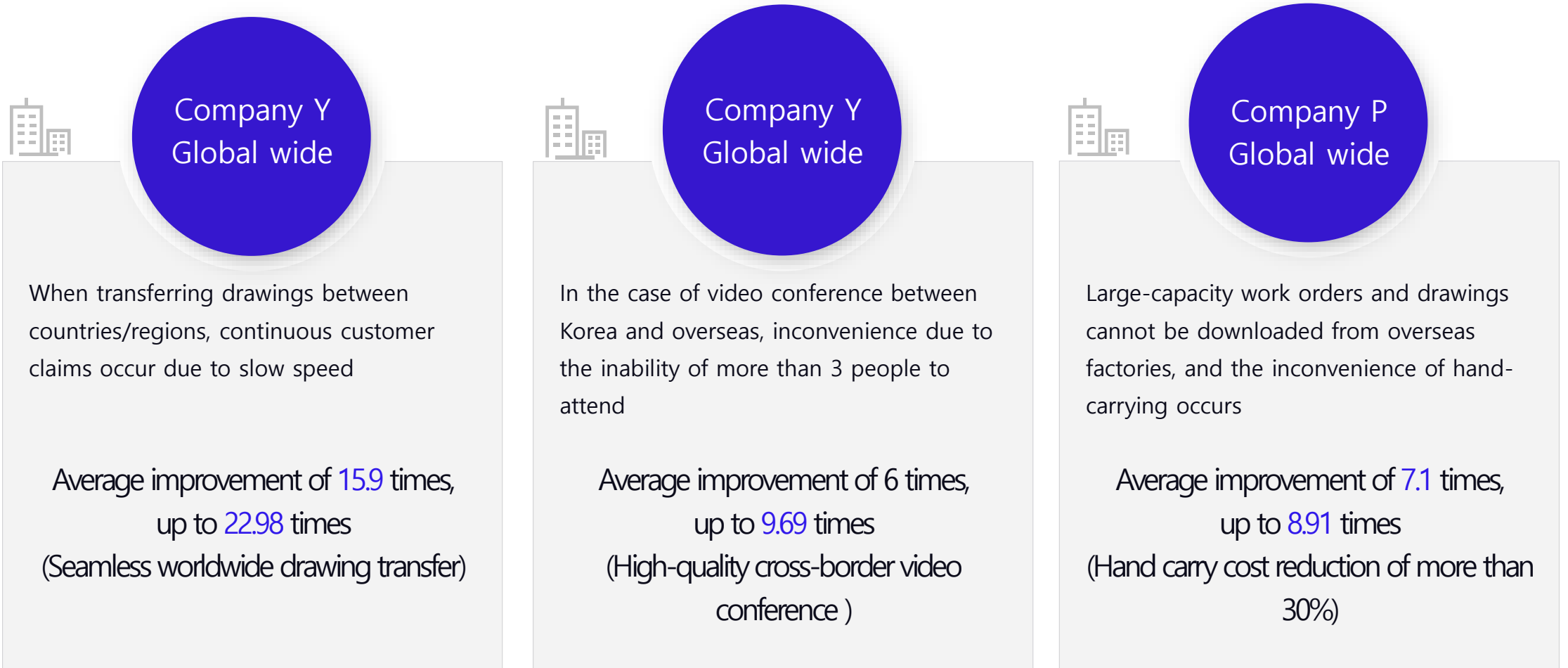
First SDP product CC certification (EAL4)

- 인증번호: NISS-1277-2023(한국시스템보증)
- 검증필암호모듈: COLib V1.2.0(이글로벌)



03 Highlights

Innovative network performance : Eliminate existing network bottlenecks, dramatically improve speed



03 Highlights

Network Integration : Integration of heterogeneous network environments

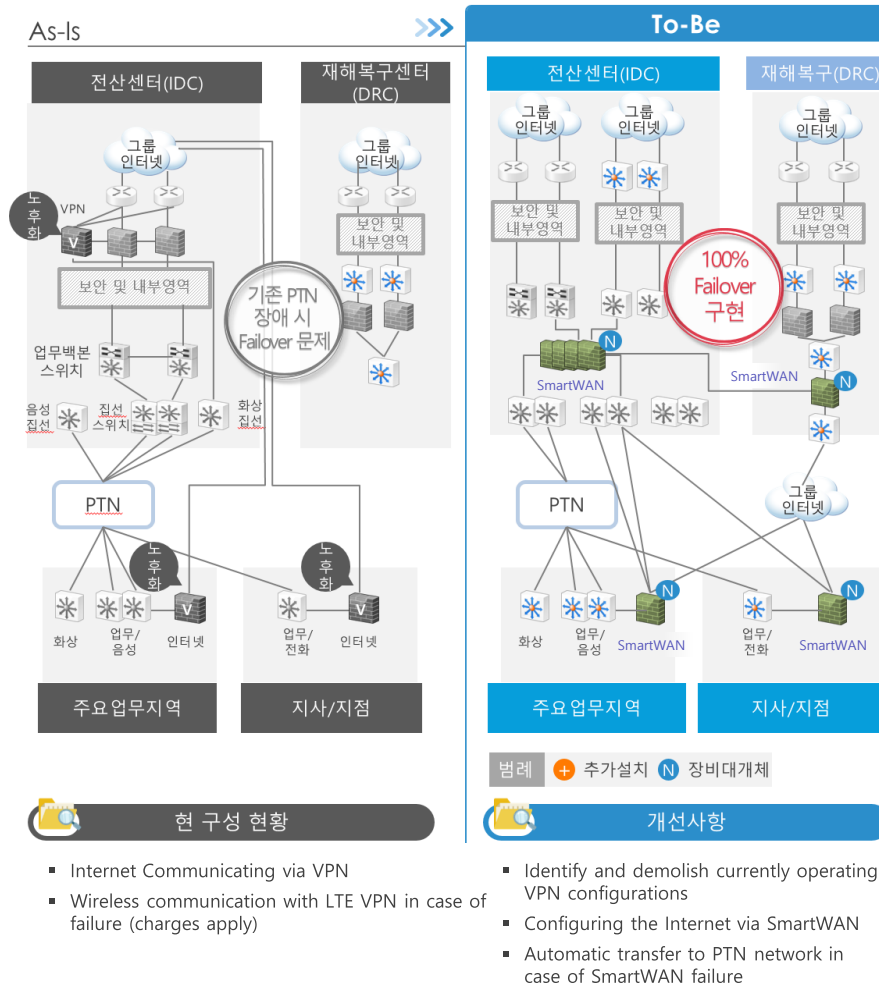
SmartWAN Configuration



Company K
Nationwide

Inconvenience of integrated management
of the network of more than 120 business
sites
After network separation, there is a
problem of distribution of leased lines and
Internet traffic.

Heterogeneous network integration
100% failover in case of failure
Applying policies for each site



03 Highlights

TCO Improvement : Lower TCO through network/security efficiencies

Network costs are increasing due to changes in the corporate environment

- Increasing network costs due to changes in the ICT environment such as **AI DC and Digital Transformation**
- Incurred **overhead costs** due to intrusion/infection caused by **vulnerabilities** in existing networks such as VPNs
- Increased **operating costs** due to the use of multi-type networks and **investment costs** due to network integration
- Increased **management costs** due to separate network and security management and the use of separate platforms
- Existing network speed limits lead to **work inefficiencies**

Improving TCO with SmartWAN

- **Lower TCO** with cost-effective SmartWAN
- **Reduced overhead costs** due to increased security
- **Reduced operation/investment costs** due to network consolidation
- **Increase management efficiency** by using a integrated network and security platform
- **Increased work efficiency** by improving network speed

04

Competitiveness
(NDA)

05

References

05 Reference (Overview)

SmartWAN is used by more than 1,500 customers and more than 15% of Fortune companies worldwide.
We secured numerous references in Korea including SK affiliates, and have completed verification of performance/security/stability.

Global & Korea

05 Reference

Due to the aging of existing network/security equipment at SK Telecom's nationwide agencies, there is a need for 1) stable equipment replacement, 2) enhanced security, and 3) cost reduction. Excellent reference of SKT-SKB-SKC&C cooperation that solved network and security issues through SD-WAN and ZTNA based on SK own technology to agencies nationwide.

Reliable replacement of
existing equipment

Enhanced security for
agencies(VPN->SASE)

Real-time monitoring/
response

Cost Savings(about 20%)

01 진보한 SASE Platform 적용



02 ZTNA+(SDP) Platform 적용



03 보라매 대덕 Client DR 구성



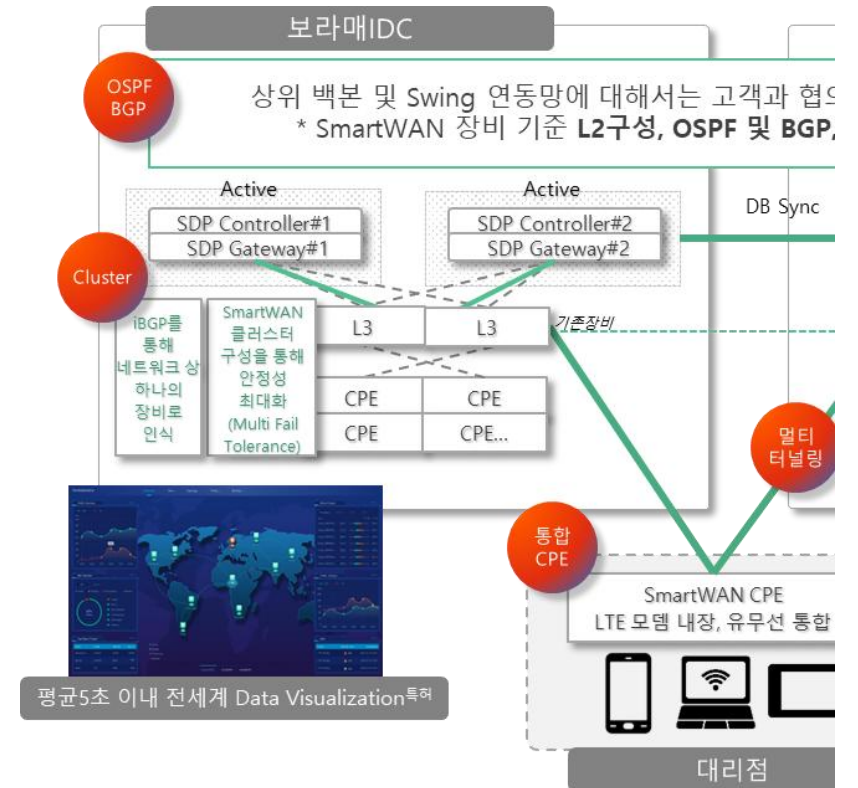
04 딥러닝 기반 Optimization



05 QoS & 사용자 컨트롤 (STuple 기반)



06 Full Customizable 프레임워크



05 Reference

Eliminate existing network bottlenecks, dramatically improve speed

Company A

Foundry



Slower drawing transfer speed compared to competitors
Continuous occurrence of customer claims

- Available for: 700 GB drawings
- Method: Standard Download Tool
- Condition: 100 times average
- Compared to the existing dedicated line

Worldwide Drawing Transfers

Company Y

Global wide



"Video conferences with Vietnam and Bangladesh are not allowed to have more than 3 people""Mr. Chairman, we held a meeting of factory managers around the world only with audio without video."

- For: Entire in-house system
- Method: Measure directly with employee browser tools
- Condition: More than 10,000 times in 2 months
- Compared to the existing leased line riverbed

High-quality video conferences are underway with the participation of factory managers around the world

Company P

Global wide



Large work orders and drawings are difficult to download from the factory in Myanmar, Vietnam. I'm carrying a USB every day in person

- Available for: 1G, 10G, 50G, 100G Design Drawings
- Method: Pacific C&T Standard Download Measurement Tool
- Condition: 500 average calculations
- Conventional: KT Dedicated Line, Riverbed

Reduced hand-carry costs by more than 30% and improved speed by 600%

area	San Antonio	California	Beijing	Faraday Shanghai	IBM Vermont
improvement effect	X 8.85	X 22.98	X 22.25	X 8.3	X 17.5
Max Improve	x22.98		Average	x15.9	

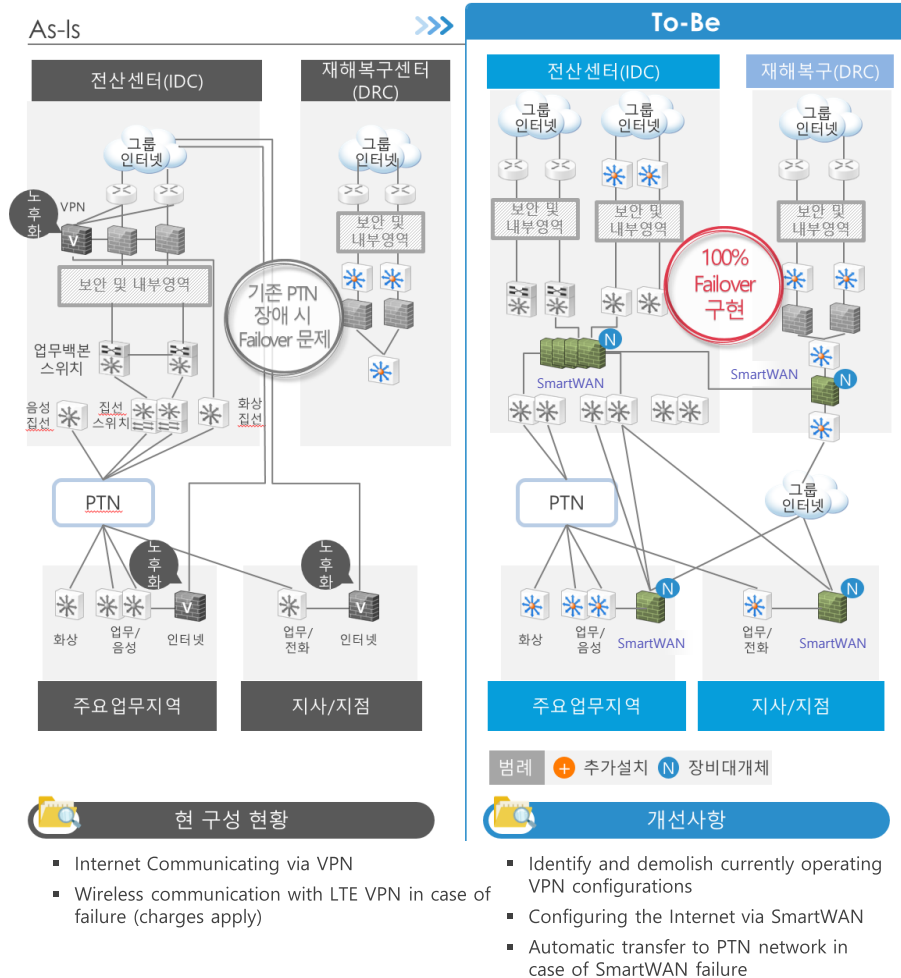
area	Vietnam		Bangladesh	
improvement effect	Average Throughput	475%	Average Throughput	682%
Max Improve	869%		Average	502%

area	Myanmar		Vietnam	
improvement effect	Average Throughput	732%	Average Throughput	577%
Max Improve	791%		Average	613%

05 Reference

Integrated leased line/Internet, switch/router/L4/VPN/firewall, etc., all into one network

SmartWAN Config



Company K

Customer Requirements

- Problems with the distribution of dedicated lines and Internet traffic after network separation
- Integrated management of more than 120 business sites nationwide
- 100% Failover in the event of a problem ...

Customer Benefits

- SmartWAN acts as the core backbone router
- Unified management of all dedicated/Internet lines
- 5Tuple-based QoS to apply policies for each business site

05 Reference

Improved speed and services access between Korea and China

Korea S Bank : China Case Study

"Even though it is a leased line, it keeps cutting off and the quality is poor."

"It's very inconvenient to block certain sites."

"It's like auditing and blocking data."

"The delay M365 is too bad while using ."

Improved speed by an average of more than 20%

Average 7Mbps



The stuttering is gone, and I can work seamlessly in Word or PowerPoint."
"It's really convenient to be able to Google and access the web hard of the headquarters."

06

Why SKT?

06 Why SKT?

① Superior Network Technology

- Secured 6 U.S. patents related to AI acceleration and path optimization
- A number of contracts such as the Presidential Security Service based on superior technology

② Innovative Security Technology

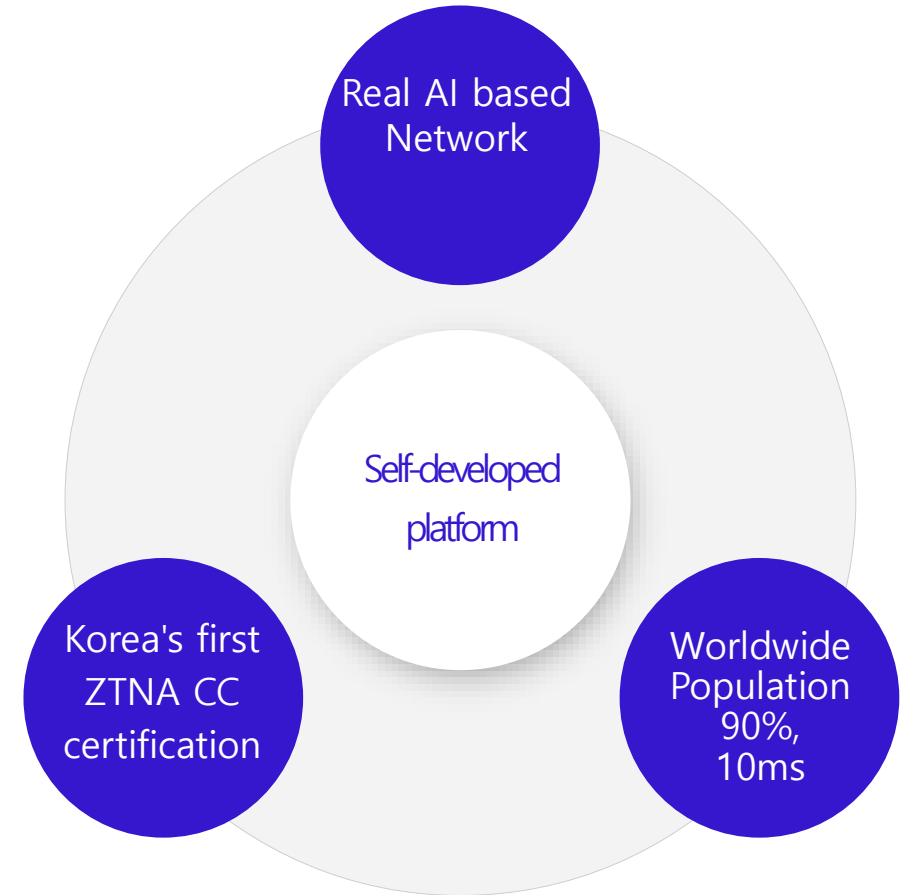
- The most impenetrable SDP method of ZTNA (Korea's first ZTNA CC certification)
- Readiness for Quantum cryptography QRNG

③ Global Top-level Network Coverage

- Great Firewall of China Risk Free (Acquired Tier1 business in China)
- Specialized in remote areas, overseas business trips, wireless environment

④ Self-developed platform and Business Scalability

- Many examples of on-premise implementation
- Full-customizable configurations to meet service requirements



Thank you.