



Managing  
Connections Smarter

## GREENET SOLUTIONS

GreeNet is a leading provider of innovative network solutions for global service providers by both enhancing their offering value and reducing their cost when launching new solutions to their customers.

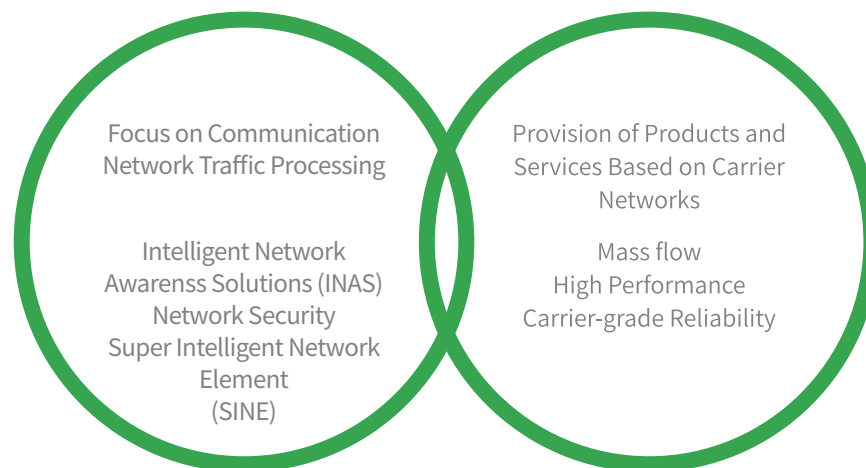
We specialize in network awareness, data and control plane analytics, as well as regulatory compliance's security solutions.



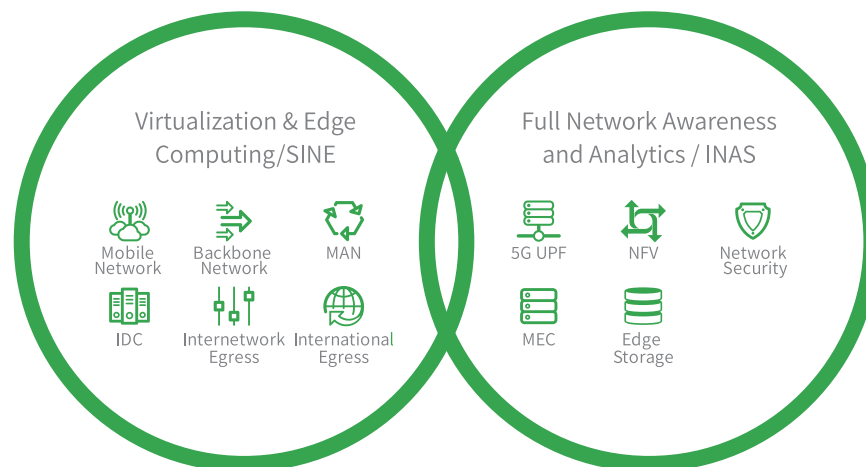
# GreeNet

We gain trust by our CSP customers to help them enhance their network value they bring to their users. With our 18 years of proven success in the market, we deploy more than 400 systems in 230 locations with our SINE and INAS solutions. We empower our customers with full visibility of their network elements, hence, enhancing their good QoS standing, while at the same time to improve the QoE rating to their users.

## Business Direction



## Product Positioning



# Where IS Our Customer

GreeNet is doing very successful in the China market since her inception. We are expanding globally by setting up international team in global locations, with direct in-country staff or through, local partners. Despite in China and in all global locations, our aim is to provide the best customer satisfaction services to our customers and their users.

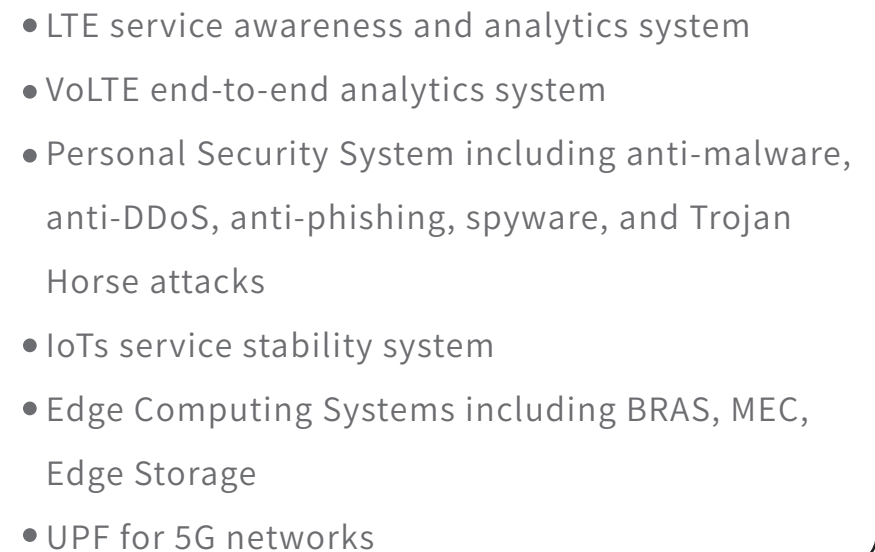
The products have covered 31 provinces and 230 cities in China, covering 400T+ links and 400+ machine rooms.



# Super Intelligent Network Element

## Product Profile

Super Intelligent Network Elements (SINE) and Intelligent Network Awareness Solutions (INAS) are developed by GreeNet to offer a rich portfolio of innovative solutions covering applications used in edge to core networks for CSPs for fixed, mobile and new network operators. The software system runs on industrial standard commercial off-the-shelf x86 architecture, to give flexibility and scalability for expansion, and to allow deployment with network function virtualization.

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- LTE service awareness and analytics system
  - VoLTE end-to-end analytics system
  - Personal Security System including anti-malware, anti-DDoS, anti-phishing, spyware, and Trojan Horse attacks
  - IoTs service stability system
  - Edge Computing Systems including BRAS, MEC, Edge Storage
  - UPF for 5G networks

# By taking advantage of the universal x86 architecture and the IETF CUPS models

SINE can be deployed in many parts of the network, from edge or core, for various objectives, by just altering the SINE functions with different configurations. Because of this flexibility, CSPs can roll out new business applications promptly and cost-effectively. Other than the core functions provided, SINE also supports the integration of other advanced services such as broadband management, cache optimization, traffic shaping, and anti-DDOS near-source suppression. SINE supports various of open standard external interfaces.

## Fixed network deployment

Deploy on the MAN egress, IDC egress, and between access networks

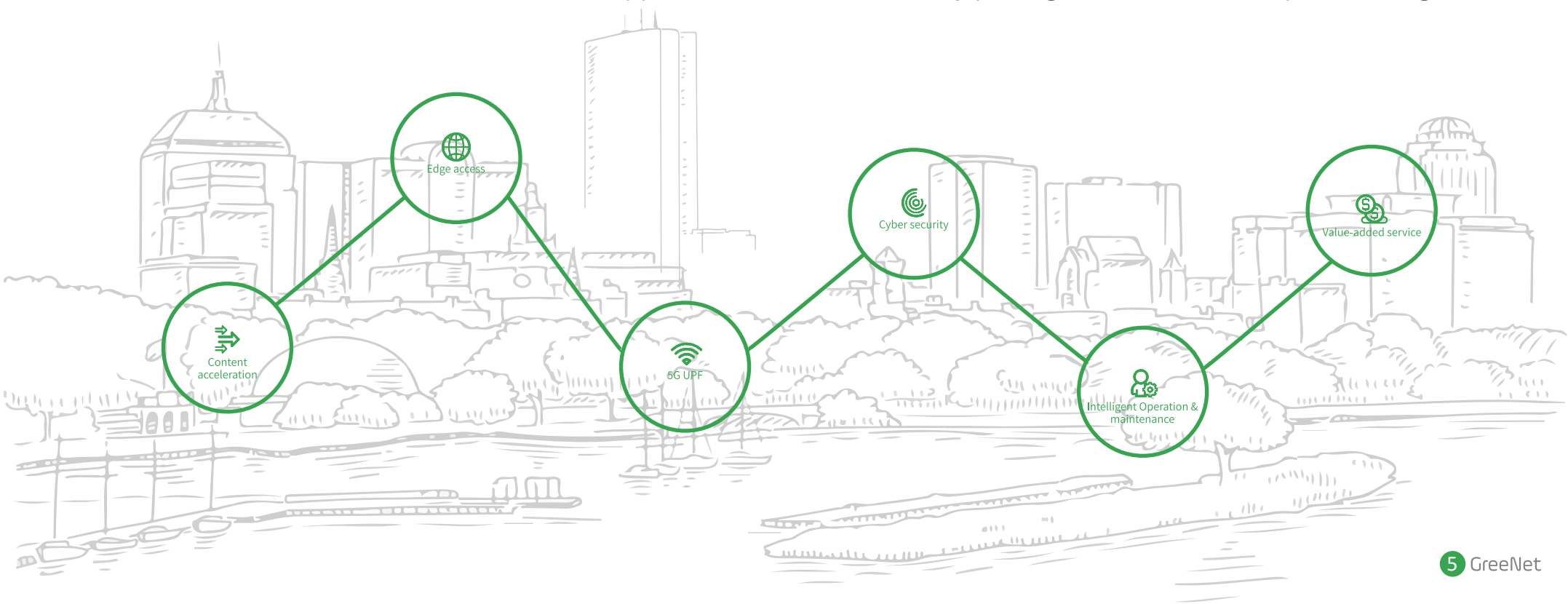
Act as the BRAS, DPI, or EU network element

## 5G deployment

⊕ Deploy on the 5G access network

⊕ Act as the UPF or MEC network element

- Edge access: when using in the BRAS/BNG environment, SINE provides functions of authentication, authorization, accounting, network access, routing, and VPN.
- 5G UPF: function as UPF in 5G core network.
- Cybersecurity: support FW, DDoS near-source suppression
- Content acceleration: integrate as cache function CDN cache sinking.
- Intelligent OA&M: support DPI function to realize network awareness, intelligent operation, administration & maintenance, and other services.
- Value-added services: supports edge computing to quickly respond value-added services, such as application acceleration, daily package, user self-service provisioning.



# Intelligent Network Awareness Solutions (INAS)

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Providing traffic analysis of the whole network and various dimensions



Supporting distribution analysis of traffic in various dimensions



Providing speed limit and blocking functions in dimensions of URL domain name and IP address



Providing analysis on user/user group behaviors



Providing network terminal analysis and corresponding control for all network users



Supporting VOIP recognition and parsing to provide detailed XDRs

## INAS – advanced DPI Solution for CSPs

Intelligent Network Awareness Solutions (INAS) from GreeNet is recognized as one of the most advanced software-based DPI technologies for all network environments, including fixed, mobile, and IoT. Innovated and developed by our 300 in-house R&D expertise on IP traffic identification, classification, and data packet analysis, INAS provides end-to-end IP network visibility, data analytics, and network security for CSPs to optimize their network, protect their customers and increase their overall business efficiency.

# Benefits

- Granular visibility of all IP network traffic, providing real-time network analytics, traffic management, and network security
- Identification of all major applications, users and context in all network environments
- Support fixed, mobile and IoT network solutions
- Superior in performance on a single or cluster universal x86 platforms
- Highly reliability
- Ease of use. Faster time to adapt and twist to new use cases

In the fixed network environment, INAS collects and stores granular IP traffic and outputs XDRs for analysis. The solution supports multi-dimensional data analysis from users, applications, and usage contexts. The result gives CSPs with excellent visibility of the network behavior for their users, including illegal access, VoIP detection, and information security, that drives to the following focus:

- Network Visibility
- Traffic Analysis
- Service Awareness
- User Behavior Analysis



# INAS Awareness Solutions

In the mobile environment, INAS' service-awareness provides full visibility of all IP traffic using the network. This capability gives the CSPs the ability to collect granular data from mobile core network links, generate xDRs, correlate wireless OMC data, and then provide end-to-end data analysis on network performance, user behavior, and quality of service.

## INAS For IoT Analytics

VoLTE brings many benefits to both users and CSPs. However, it is with a lot of challenges from call setup, routing, and acquiring the proper network resource for ensuring the quality and the service meets the user expectation. INAS' VoLTE End-to-End Analytics solution derives the VoLTE awareness and analysis model, with data collected from many different modes of networks, including operation and maintenance center (OMC), and end-to-end bearers from devices, eNodeB, S-GW, P-GW and so on.

## INAS for VoLTE Analytics

INAS' IoT Analytics is a solution for CSPs to collect data from the IoT edge and to uncover actionable insight. Our IoT Analytics gives CSPs and their customers more insight into their network with data, and the analytics result is generated to help them make smart decisions for better business outcomes. The solution deploys in the mobile network-side. Support most wireless networks, 2G, 3G, LTE, NB-IoT, VPDN and more.

# Network Traffic Analysis System (NTA)

NTA is the process of continued analyzing network traffics, flows and connections by using both smart analytics model and rule-based detection techniques to review granular-level details and statistical information in the network traffic.



# Value Proposition

NTA provides a complete set of traffic monitoring and management solution, includes defining specific policies to ensure the bandwidth demands for key customers, determining data flows priorities for routing to different networks, and allowing customers to conduct self-provisioning based on their needs.

NTA can also set network traffic speed by slowing down some or all flows to minimize and delay prolong the upgrade requirement. By doing so it can temporarily increase number of users to use the network without upgrading.

# Product Features

## ■ Intelligent

Support rich protocols & applications, support rules editing online. Efficient data analysis and rich data mining algorithms. Integrated AI module and deep learning.

## ■ Customized

• Provide rich northbound interfaces and support third-party platformms. Provide rich data formats. Full data loading, customzied servcies on demand.

## ■ Scalable

Strong modular and plug-in scalability Support virtualization and physical machine deployment, deploy according to resource requirements, and support cloud deployment. Support NFV/SDN architecture, separation of forwarding and control.

GreeNet empowers Communications Service Providers to have a deep visibility of their networks with our solutions. We provide the leading network visibility, data analytics and OA&M solutions to help CSPs have a deep knowledge of their network data, and yet to make smarter decision to optimize their networks.

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