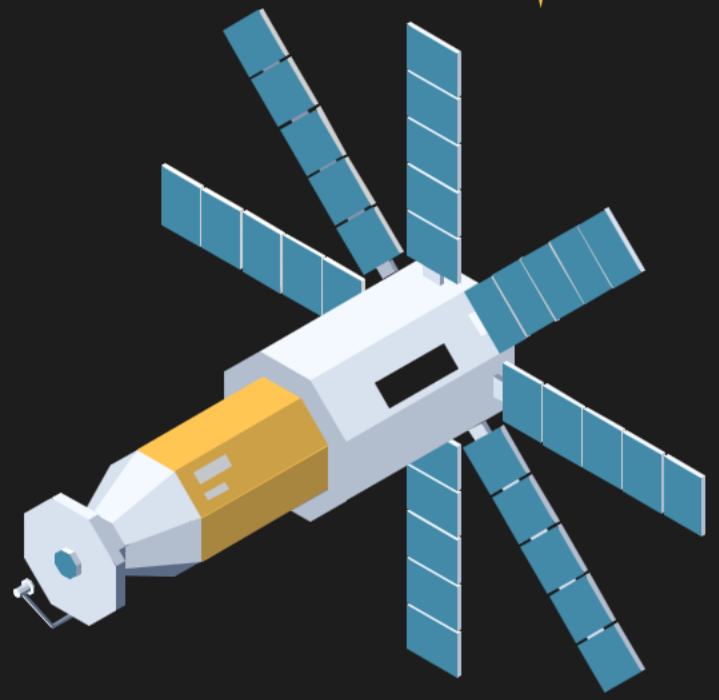
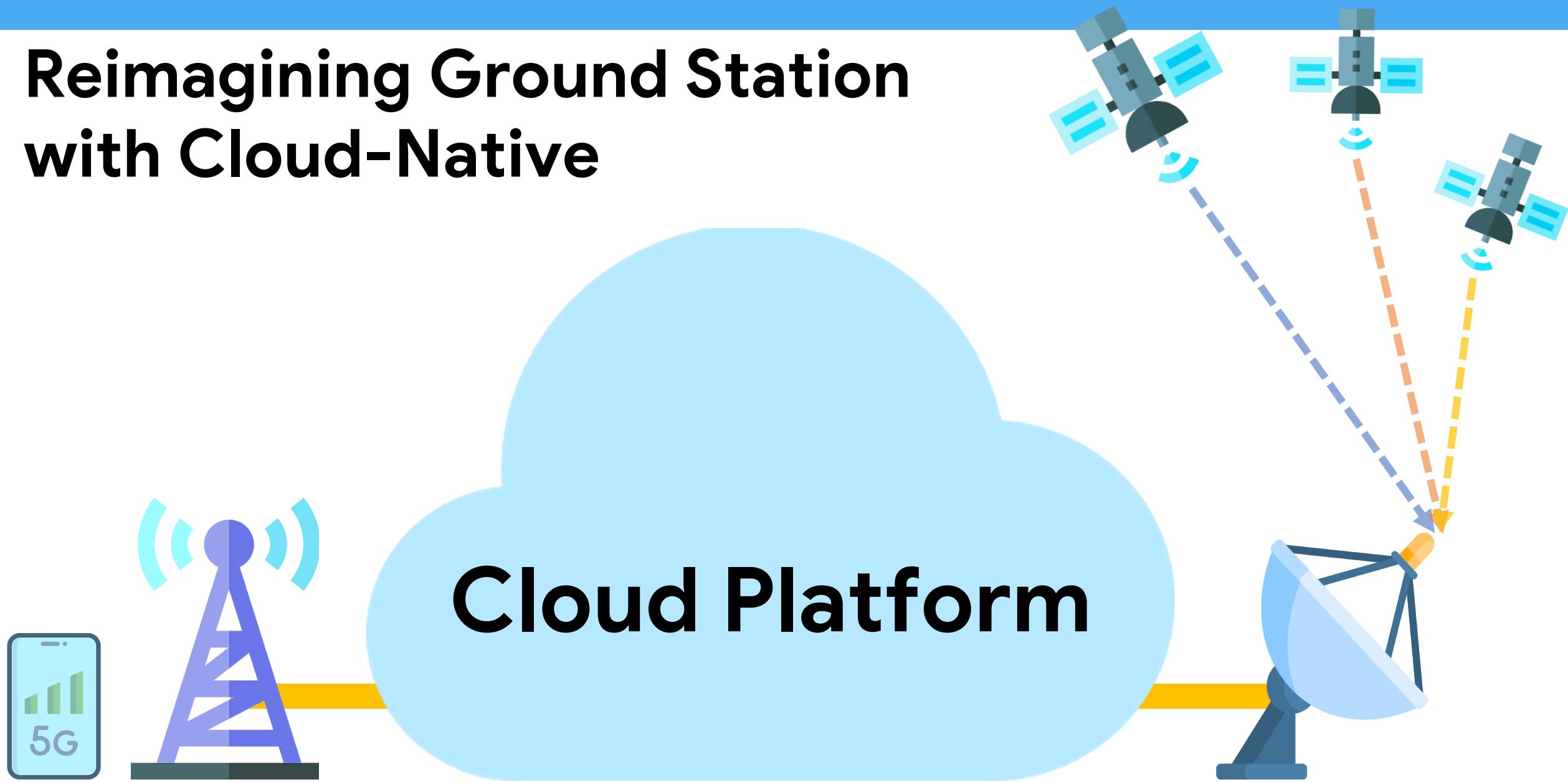
Cloud-Native Solution of Integrate Ground Station And 5G Station



2023 RUNSPACE INNOVATION CHALLENGE

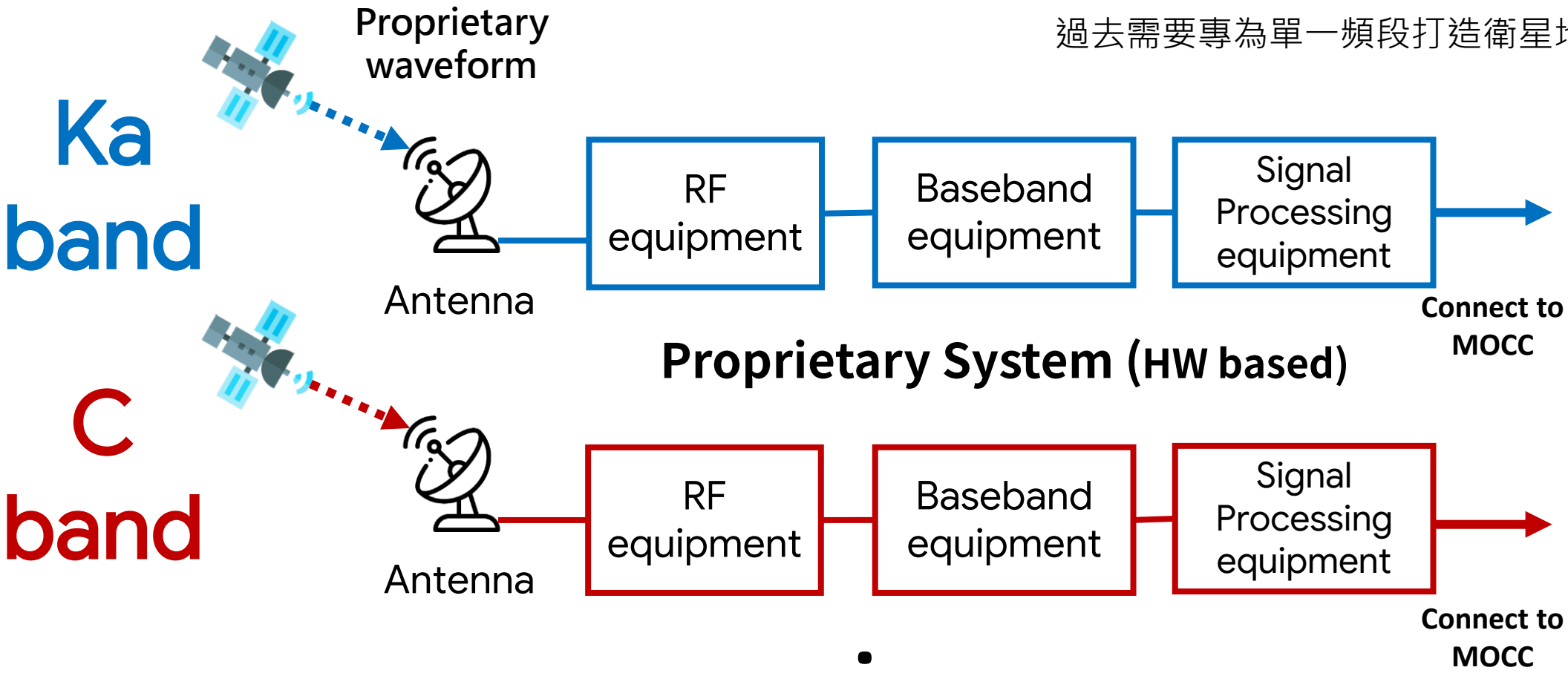
Reimagining Ground Station with Cloud-Native



Ground Station & 5G Station As a Service

Need to **Customize each Ground station** for **each Different Frequency Band**

過去需要專為單一頻段打造衛星地面站



-
-
- And other frequency bands...

Traditional Ground Station Problem

廠商壟斷
(Vendor lock-in)

成本過高
(High Cost)

限制創新
(Limit Innovation)

佔用空間
(Occupied Space)

Slowdown Space Industry Development

5G Base Station

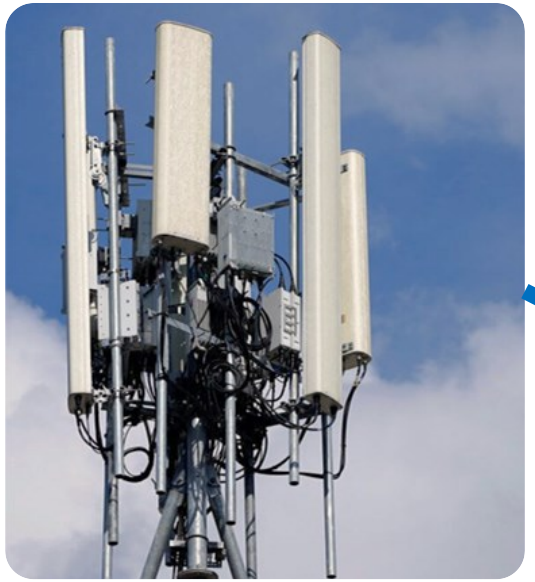
No Smooth Connection

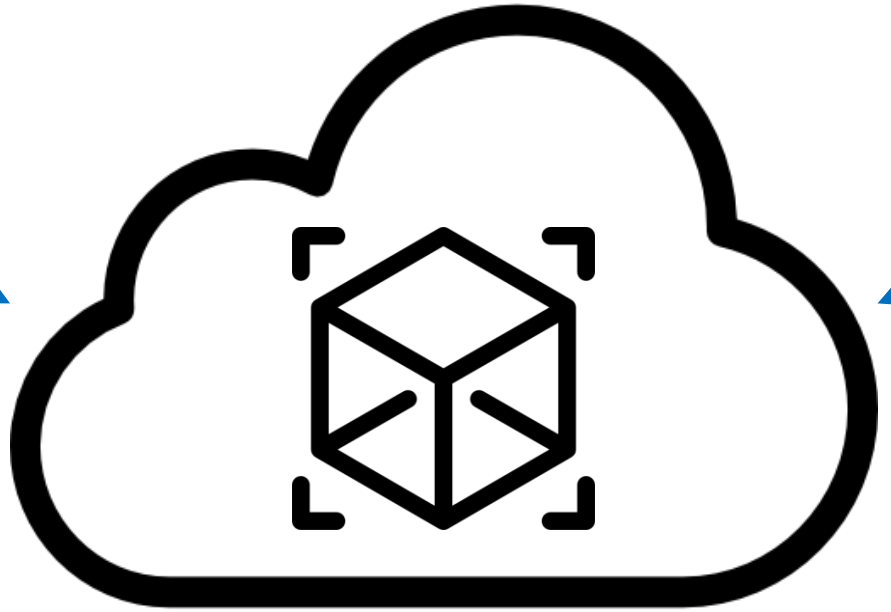
Satellite Ground Station

Solution

5G Base Station

Satellite Ground Station





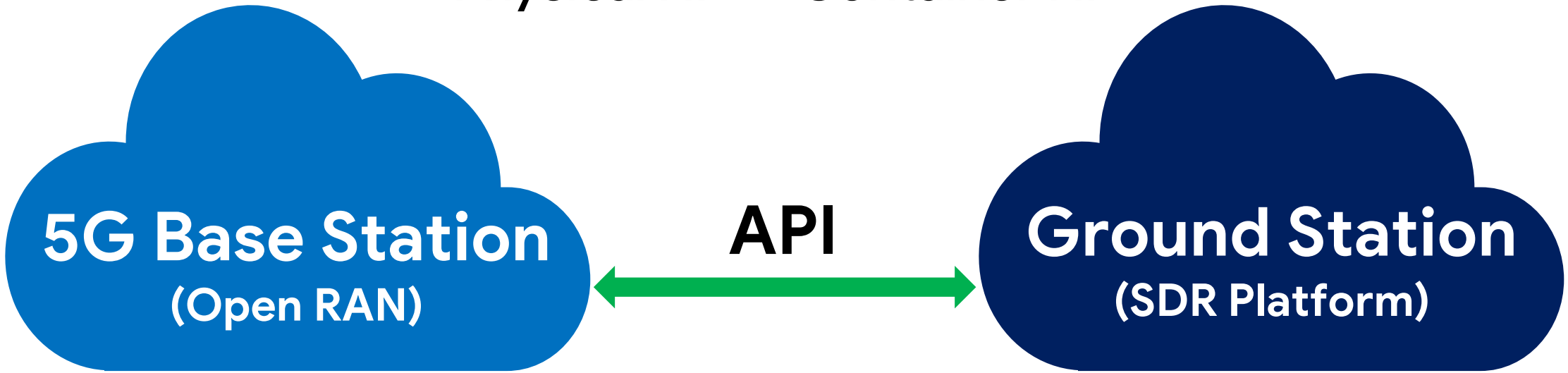
Network Functions Virtualization

Make Ground Station & 5G Station Cloud-Native

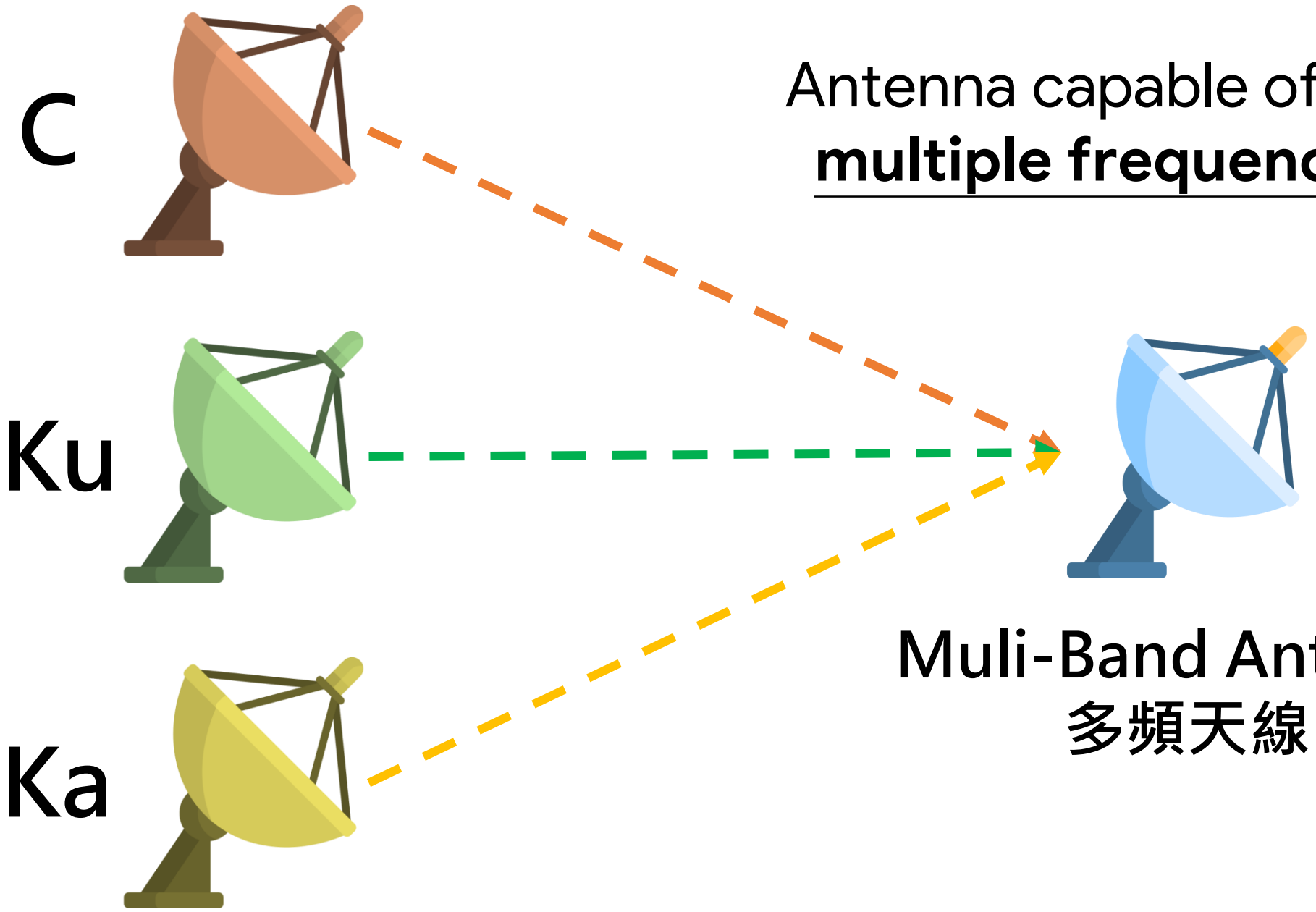
Cloud-Native Reduce

“OAM Cost” & “Space Occupied”

Physical NF -> Container NF



Smooth Connection via Open API


C
Ku
Ka
Antenna capable of receiving
multiple frequency bands
Muli-Band Antenna
多頻天線

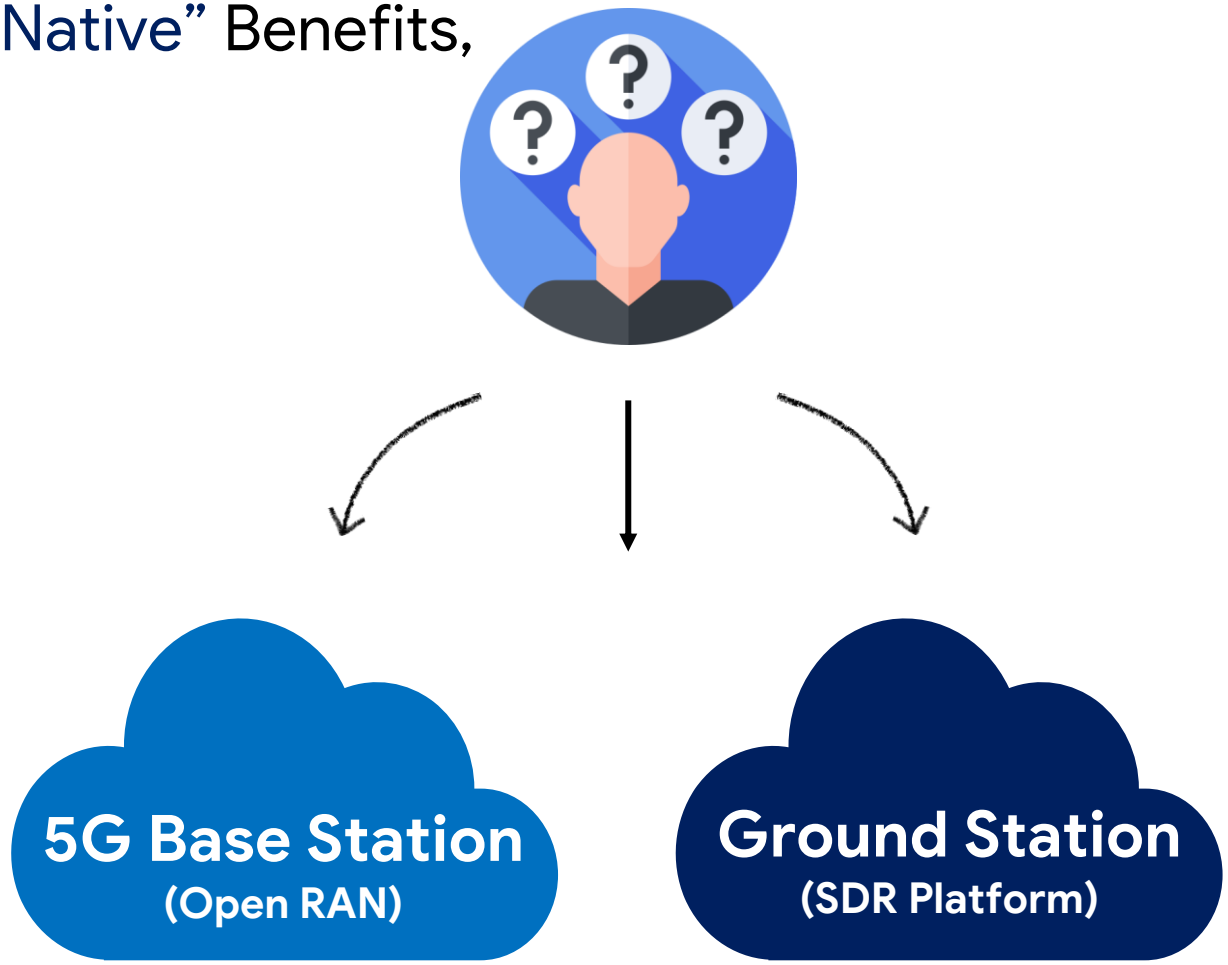
Challenge of Multi-Cloud Management

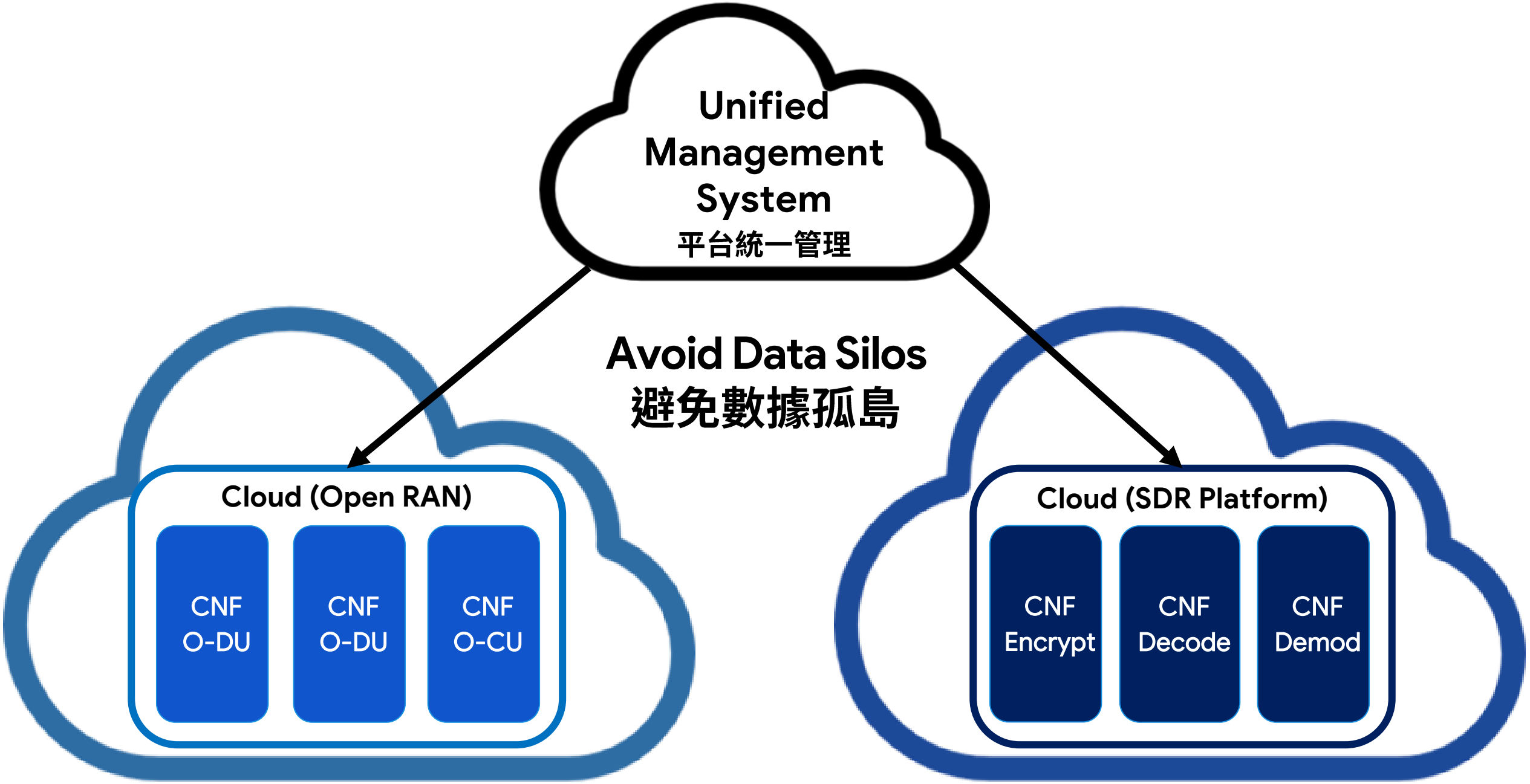
Company want to Effectively use “Cloud-Native” Benefits, but they got many problems:

Consistency（架構不一致）:
Architecture of each Cloud Platform is Different.
Requires More Time to Understand and Adapt to.

Visibility（無法總覽狀態）:
Dashboard of each Cloud Platform is Independent,
Lack of One-Stop Platform for Info Visualization.

Complexity（維運管理複雜）:
Need to Management, Operation and Maintenance Multi-Cloud at the same time.




Unified
Management
System
平台統一管理
Avoid Data Silos
避免數據孤島
Cloud (Open RAN)
CNF
O-DU
CNF
O-DU
CNF
O-CU
Cloud (SDR Platform)
CNF
Encrypt
CNF
Decode
CNF
Demod

雲平台管理和編排系統

Management and Orchestration System

Cloud (O-RAN)

CNF O-DU

CNF O-DU

CNF O-CU

Cloud (SDR Platform)

CNF Encrypt

CNF Decode

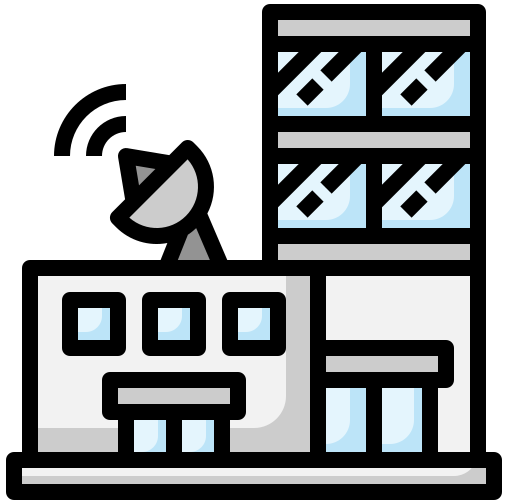
CNF Demod

Radio Unit

(COTS) Infrastructure

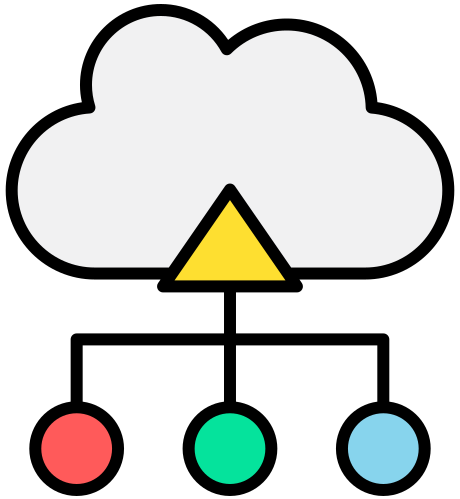
Antenna

Value Proposition



Ground Station

As a Service



Satellite Communication

Integrated services

Systems Engineering

Consulting Services

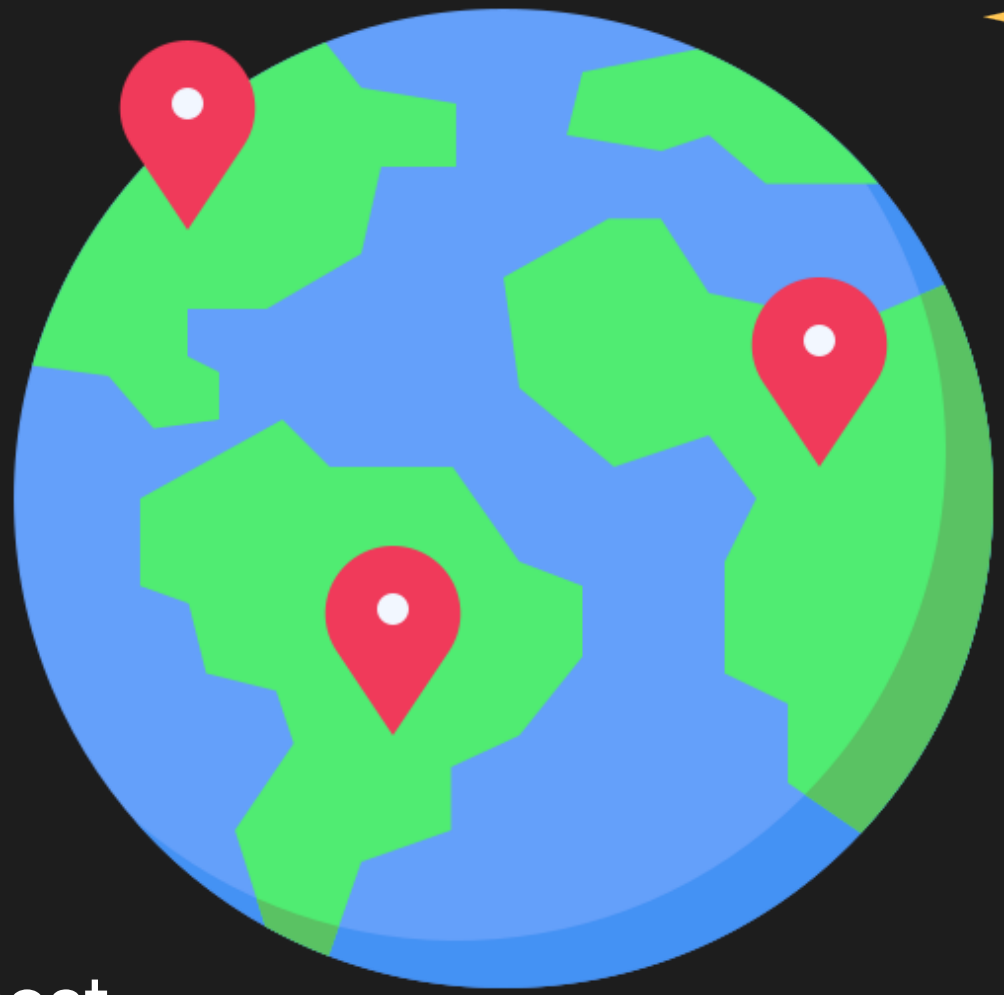
Target Audience

Multinational Corporation：

- TSMC（台積電）
- Advantech（研華）
- Foxconn （鴻海）
- Quanta（廣達）

Solution Reduce Cost :

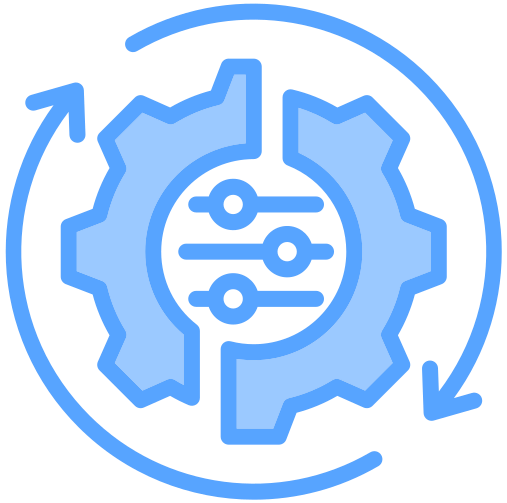
- Academic Research
- Companies who want to reduce cost



Competency Partners

RF Module Manufacturer

RF 模組廠商



System Integrator

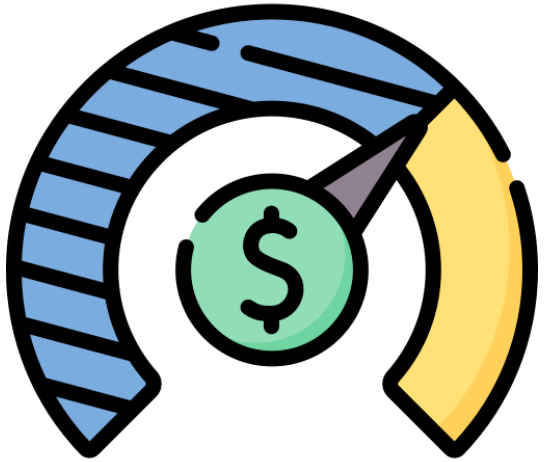
系統整合商

Server Manufacturer

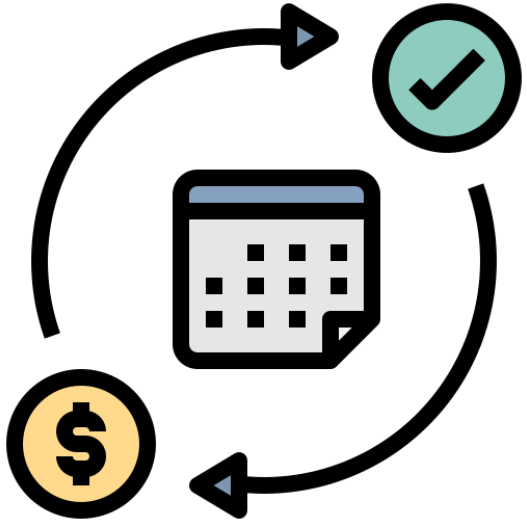
伺服器廠商

Charging Methods

收入方式



按使用量計費
(Pay-as-you-go)



按訂閱計費
(Subscription)

感謝聆聽

-- Thank You for Your Attention --