The bridge to possible

Getting Ready for Private 5G Deployments

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cisco Live!

BRKSPM-2386

Cisco Webex App

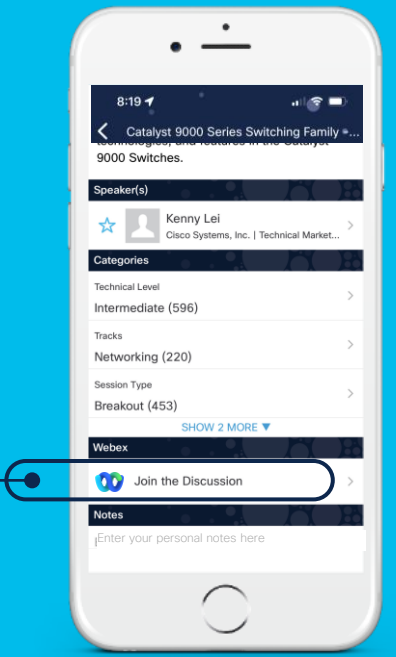
Questions?

Use Cisco Webex App to chat
with the speaker after the session

How

1. Find this session in the Cisco Live Mobile App
2. Click “Join the Discussion”
3. Install the Webex App or go directly to the Webex space
4. Enter messages/questions in the Webex space

Webex spaces will be moderated until February 24, 2023.



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Cisco Private 5G priority deployment scenarios

Manufacturing and Industrial IoT

- Robotics process automation and precision control
- Automated guided vehicles/seamless mobility
- High-speed software downloads
- AR/VR applications

Logistics/Distribution /Warehouse

- Distribution line/ workflow automation
- Automated guided vehicles/seamless mobility
- Asset tracking
- Push-to-talk applications

Higher Education/ R&D Campus

- R&D/high-volume data transfer
- Service/application experimentation
- Interactive video

Hospitality and Venues

- Ultra-fast mobile connectivity in dense environment
- Enhanced video streaming
- AR/VR immersive experience applications
- Digital signage
- Facility monitoring/ security

Energy and Utilities

- Enable end-to-end smart grid infrastructure management
- Fully automate smart meter reading
- Provide secure and reliable field worker communications

Mining, Oil, and Gas

- Reliable vehicle control over large areas
- Enhance worker safety
- Improve profitability through automated asset tracking and management

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Key Considerations

Technology

- Coverage (sqft)
  Wifi, P5G
- Spectrum
  Licensed, Unlicensed
- Operations
  Complexity for build out and ongoing

Purchasing/Procurement

- Device Ecosystem –
  4G, 5G device availability
- Spectrum
  GAA – No charge, PAL - Leased
- TCO / Business Outcome

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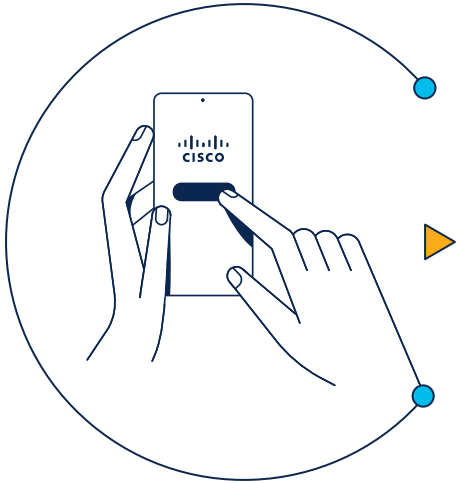
Private 5G solution components



Management
Cloud managed

Identity and policy
Intuitively integrated into existing enterprise systems

Security
Full stack end to end security

Mobility core
Industry-leading 4G/5G converged mobility core

Radios
Certified and validated Open RAN radio partners

Cisco software, delivered as a service

MSP Partner provides HW, spectrum, and onsite services

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Security Breakdown

Access
Account Review and Audit
Background Checks and full Credentials Policy

Network
3GPP and Protocol security
Interface Security

Incident Response
24x365 coverage to detect incidents
Manage the impact and resolution
Cisco PSIRT process

Change Management
Authorized, logged, tested, approved, and documented
Applicable to routine, emergency and configuration changes

Software Development
Cisco Secure Development
Lifecycle (CSDL) process

Cloud
DDoS and Man-in-the-Middle (MITM) Attack protection
IP Spoofing and port scanning protection

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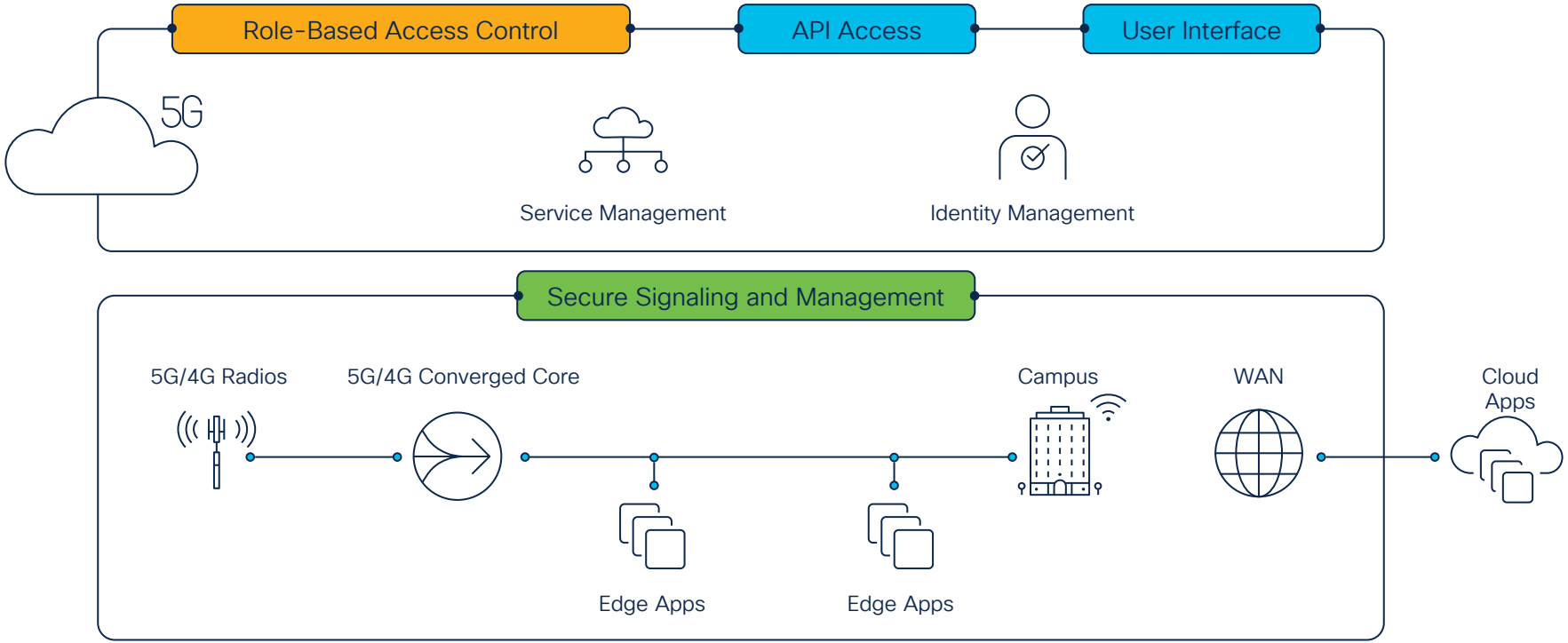
Simple and secure



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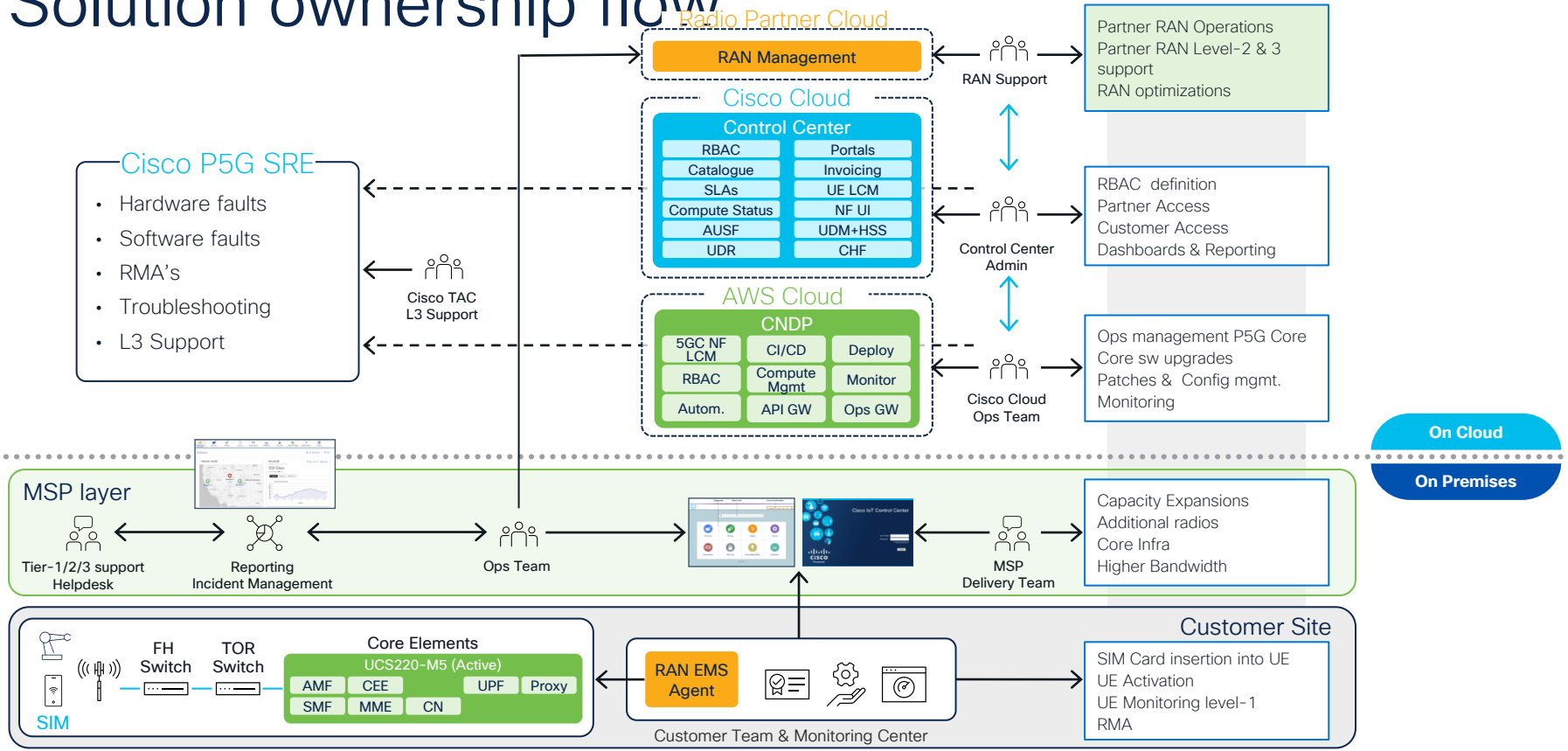
Solution ownership flow



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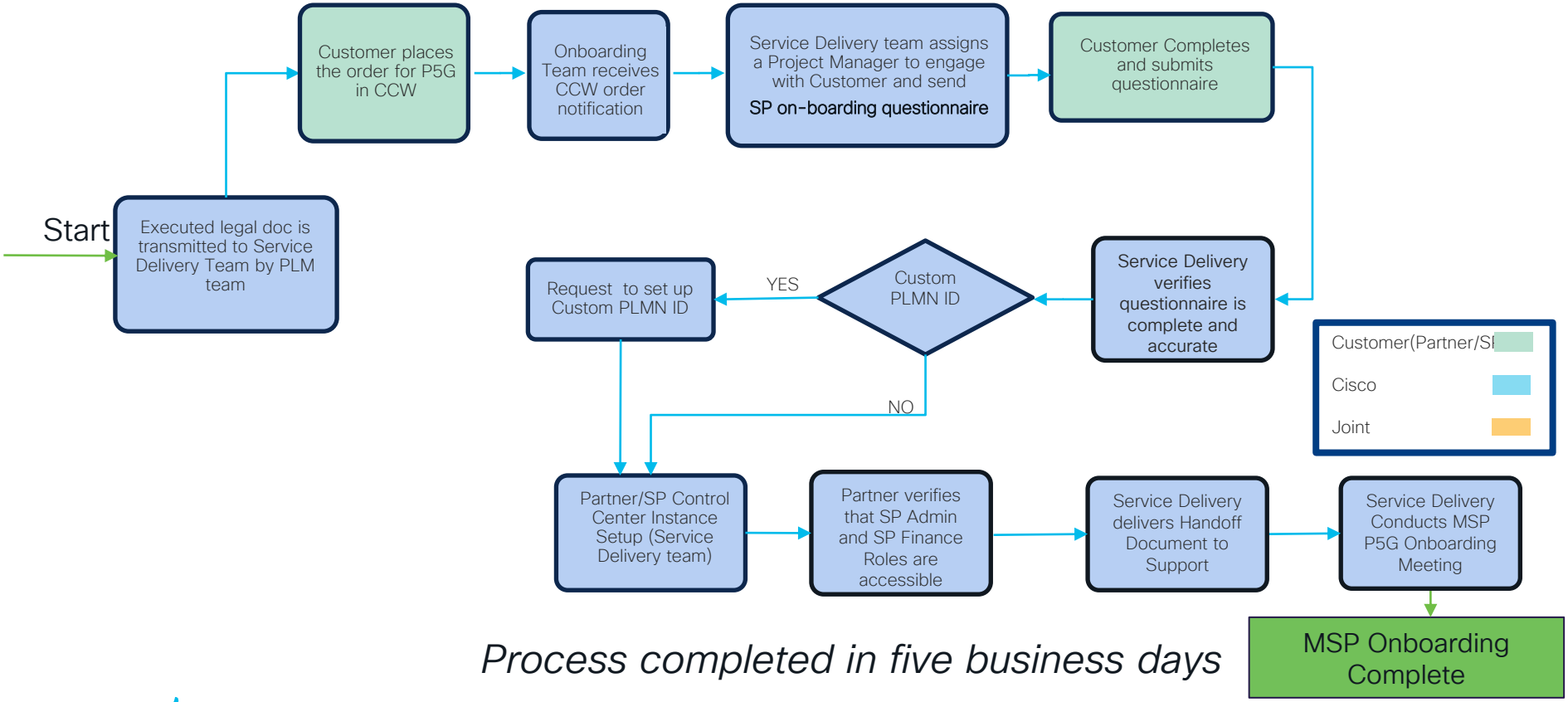
Partner Onboarding

P5G Partner/SP Onboarding Process



Process completed in five business days

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Cisco Private 5G
Simple. Intuitive. Trusted.

P5G Onboarding Questionnaire

Operator/Partner Name *

Desired Managed Service Provider Display Name *

Partner Project Manager Name *

Partner Project Manager Email Address *

Partner Project Manager Contact # *

Name of Service Provider Admin *

Email Address of Service Provider Admin *

Contact Phone # of Service Provider Admin *

Name of Person Authorized to Order SIMs *

Email Address of Person Authorized to Order SIMs *

Contact Phone # of Person Authorized to Order SIMs *

☐ Send me a copy of my responses

Submit

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SIM Ordering

- MSP has an Online SIM Ordering Form
- SIMs are ordered and shipped in lots of 50
- There is a maximum order of 6 lots (300 SIMs) per order
- All requests must be approved by
  - A designated SIM Ordering Point of Contact (MSP)
  - Cisco Product Management

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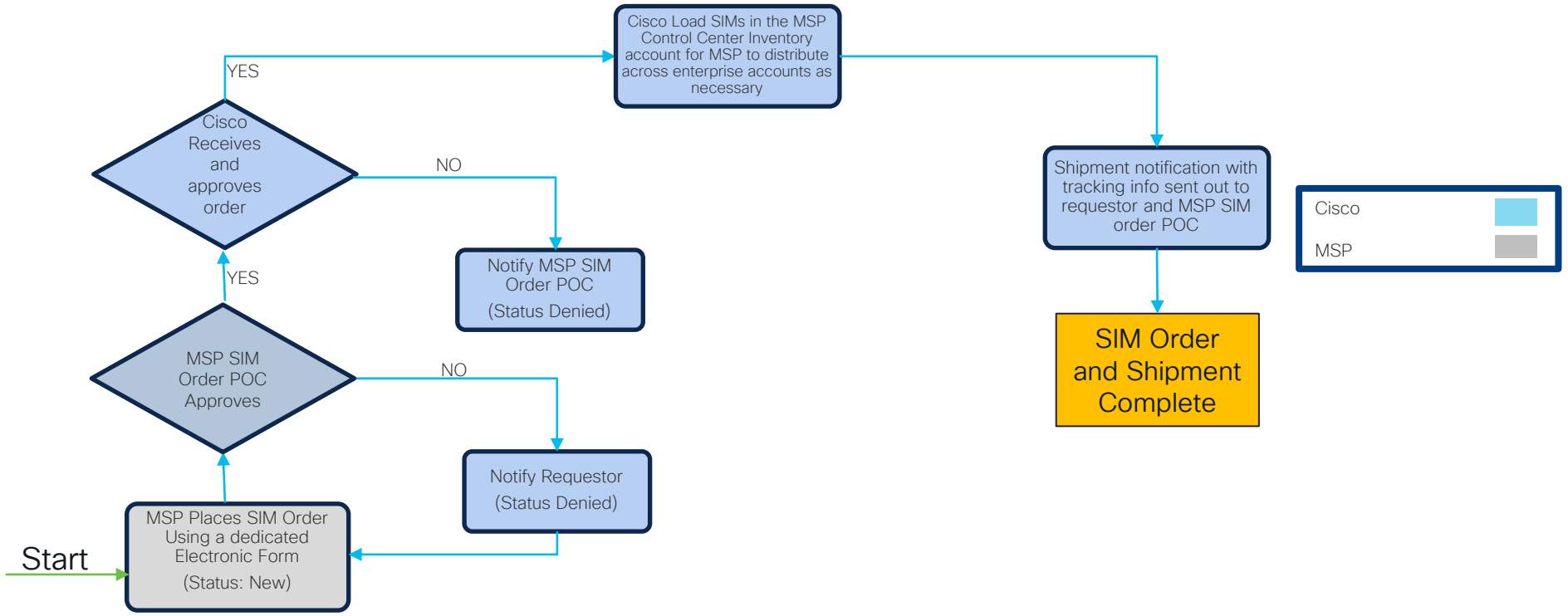
P5G MSP SIM Ordering and Fulfillment Process



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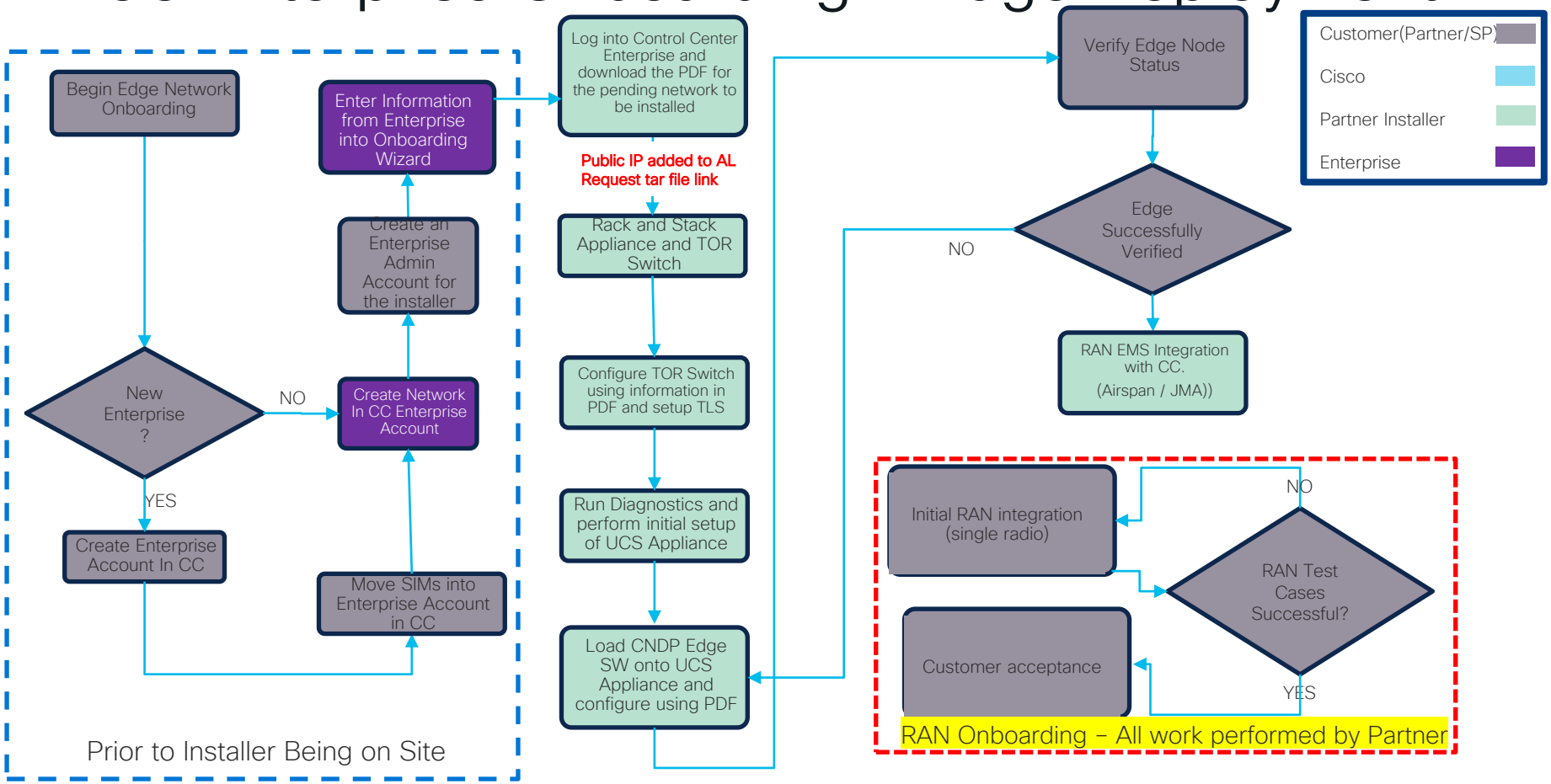
Enterprise Onboarding

P5G Enterprise Onboarding + Edge Deployment



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Service Delivery Portal

- MSP has a Private Portal for Cisco P5G Service Delivery Requests
- All requests must be approved by a designated MSP SP Admin
- MSP may use the portal to request
  - Public IP added to allow listing for a new edge
  - TAR file download links and
  - Cisco Project Manager for assisted onboarding
- This page also has a link to the SIM ordering page.

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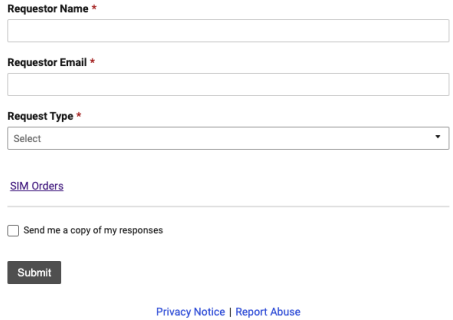
(Sample) Cisco P5G MSP Service Delivery Portal

https://app.smartsheet.com/b/form/75315d7fbcfe46f9b41feff208d13c5d



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Sample Use Case and Architecture

Use Case – Industrial Site

Deployment scenario

- Provide connectivity to end user tablets
- Distance of 1300+ meters
- Current Wifi spectrum unstable
- Interconnectivity between several sites

Cisco P5G offering includes

- 3 x Cisco UCS servers
- 1 x Cisco radio subscription
- 20 x Cisco client UE subscription
- 2 x Cisco TOR switches
- Additional ISE instances

Key Take Aways
Clean spectrum
Compounding subscription

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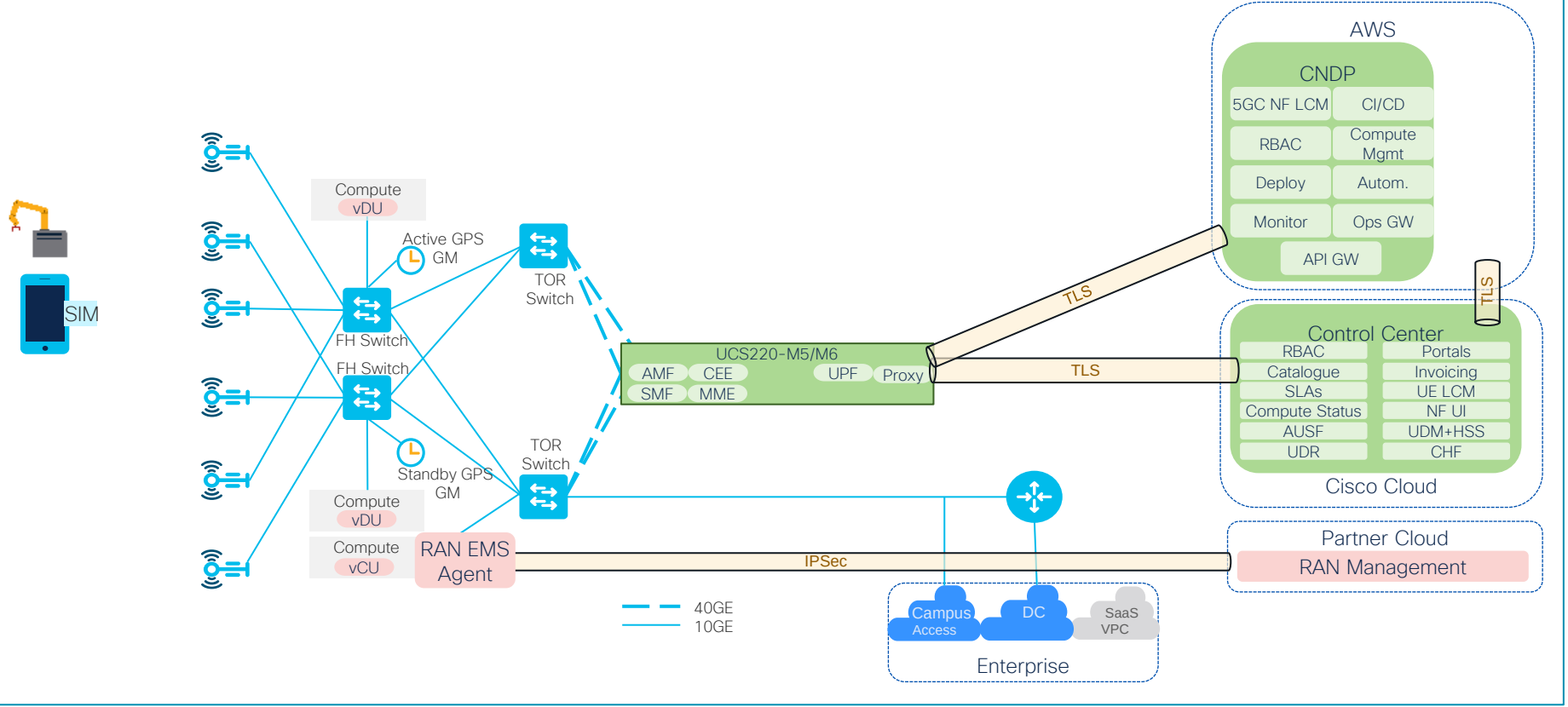
(Sample) Enterprise Site Architecture



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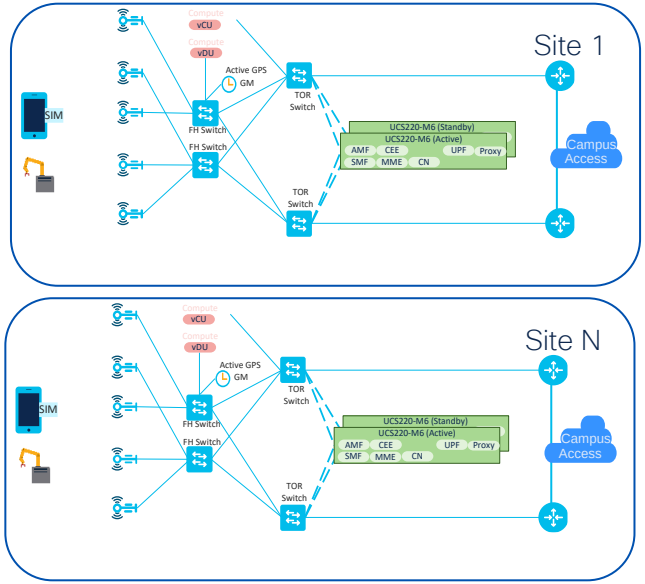
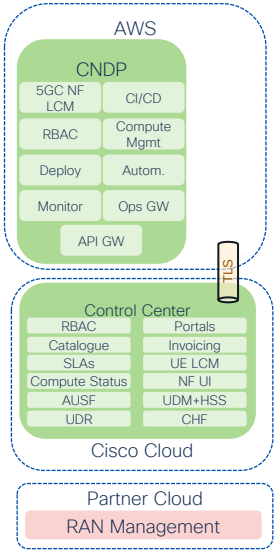
(Sample) Secure Multisite / Multi-Enterprise Model



- Secure proxy establishes a secure session and proxies the on-prem request to the Control Center
- Network functions on the edge to communicate with those on the Control Center Cloud in a secure manner
- Sessions keys are exchanged and are used to validate the session and create a session id that can be used by NFs to communicate

Secure Access (TLS, IPSec)

- Edge proxy initiates the communication to Control Center Cloud network function
- Cloud secure proxy is deployed in hardened docker container
- Keys use AES 256 encryption
- Edge data is tied to the account ID which ensures only the specific account can see that data



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On-going service monitoring

Diagnostics

Automated diagnostics make it easy for non-technical enterprise personnel to monitor, diagnose, and even correct common network connectivity problems.

Enterprise can resolve 85-90% of their support questions with this tool alone

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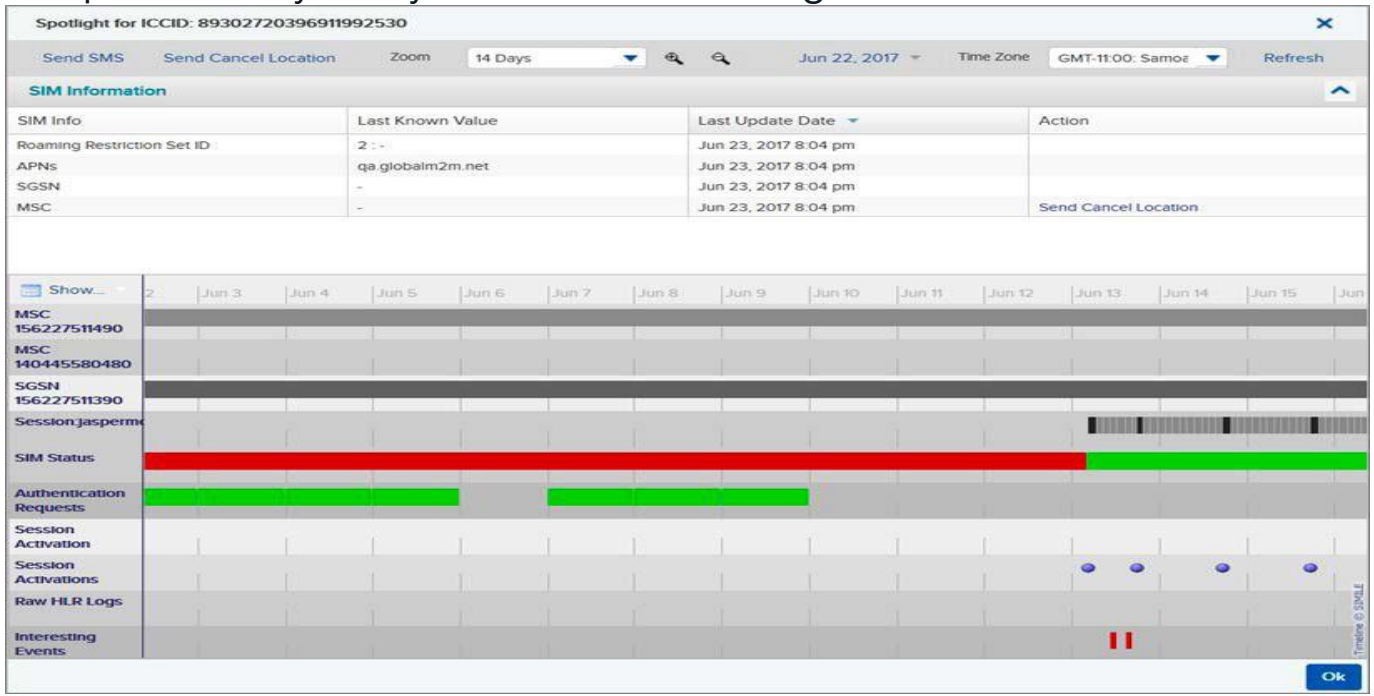
Spotlight

The Spotlight tool provides a detailed snapshot of a device's connectivity history over the past 30 days so you can observe long-term trends



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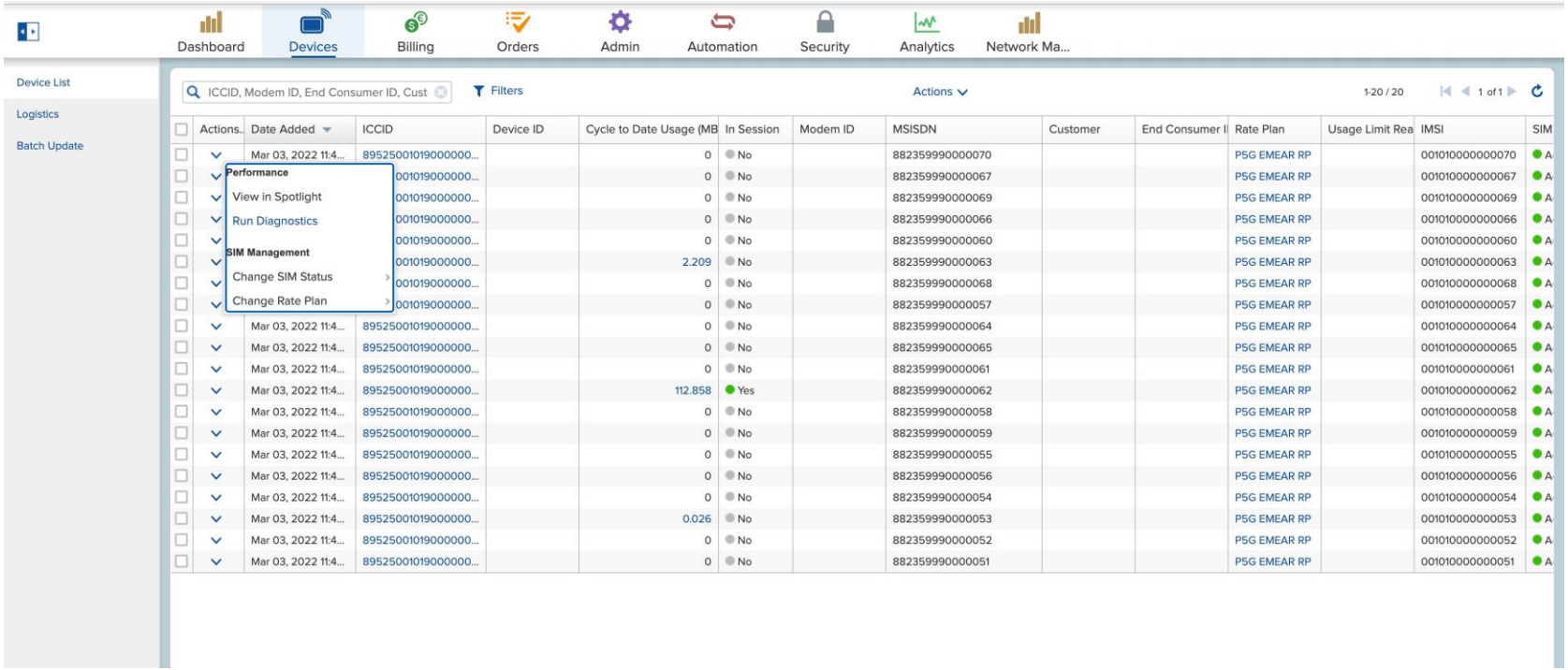
How to Run Spotlight and Diagnostics



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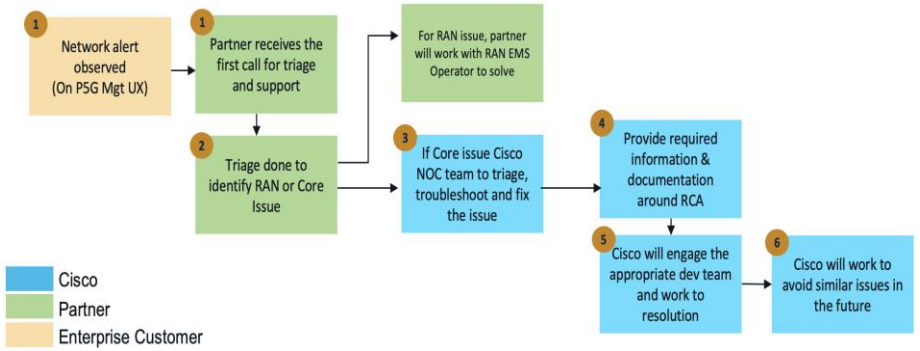
Summary – Operations & Support

Responsibility Matrix

#	Solution Blocks	Responsibility
1	Edge Appliance	Day 0/1: Partner; Day N: Cisco
2	Radio Units	Day 0/1/N: Partner
3	RAN Hardware	Day 0/1/N: Partner
4	Cloud Components	Day 0/1/N: Cisco
5	Networking	Day 0/1/N: Partner
6	SIM Cards	Cisco
7	Internet GW, Devices, App Server	Enterprise or Partner

E2E Network visibility and operations



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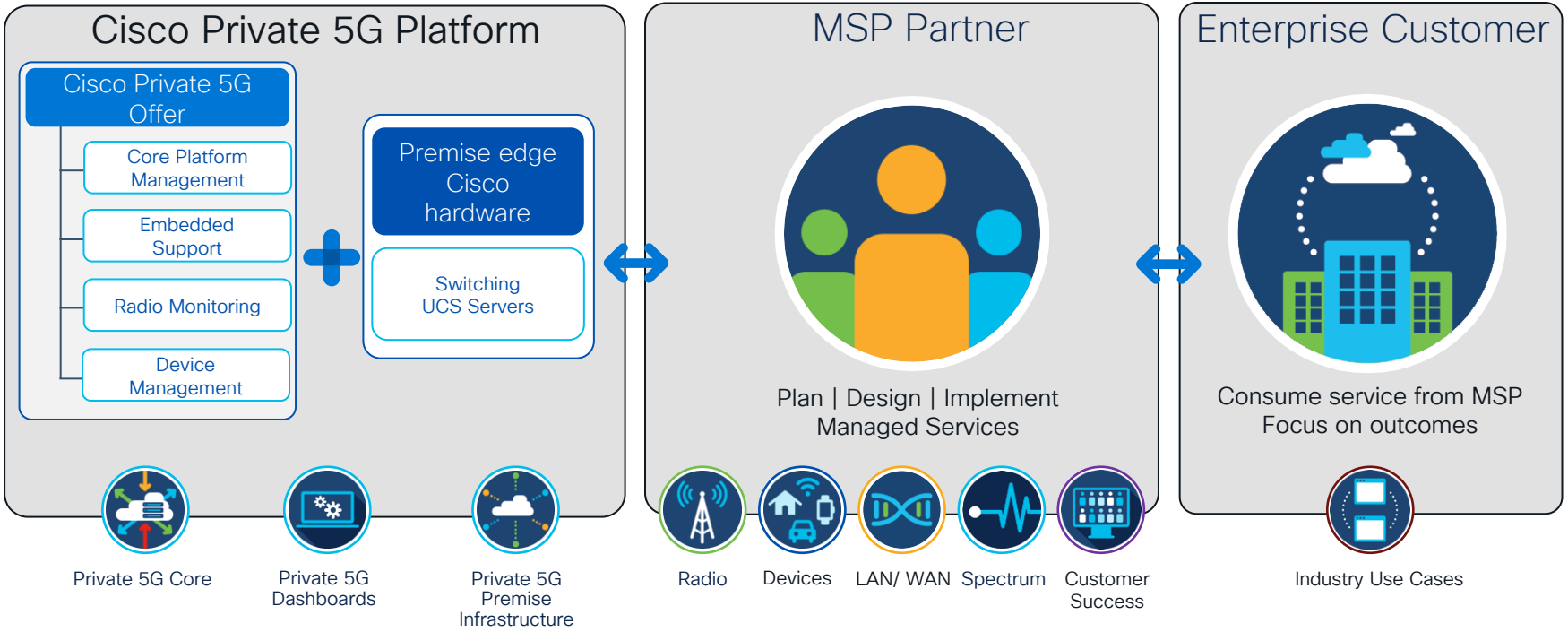
Procurement and Deployment

Private 5G-Enabled, E2E Solution by Partners



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The Cisco differentiator for Private 5G

Integrated enterprise architecture

- 5G becomes part of access architecture with Wi-Fi
- Consistent operations and management
- Intent-based policies across both Wi-Fi, 5G, and other access technologies (e.g., LoRA)
- Synergies with existing Enterprise network systems (e.g., Catalyst, ISE, etc.)

As-a-Service delivery

- Full-stack solution, tested and ready to integrate
- Operations and lifecycle management maintained by Cisco and its partners
- No need to worry about infrastructure management, operations, configuration

Built on proven technology

- Cisco IoT Control Center powers millions of SIM-based services
- Zero-touch provisioning
- Industry-leading network security (#1 in Industrial Security and Industrial IoT)
- The only vendor capable of offering one network that supports enterprise campus through edge and beyond

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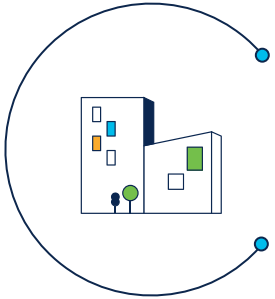
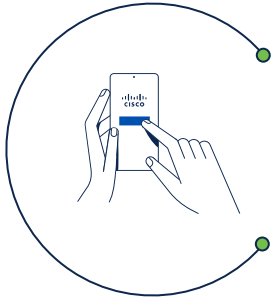
Summary

Cisco
Private 5G



Enterprise-ready private 5G network

Simple like Meraki Wi-Fi



Trusted by enterprises with unified identity and policy via ISE

Expertise delivering mission-critical use cases

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Additional Private 5G Sessions @ CL Live

Start

February 6 | 2:15 pm
TECSPG-2432
New Adventures in Wireless: The Journey of WiFi6 and Private 5G Networks for the Enterprise

February 6, | 5:20 pm
PSOSPG-1002
It's More Than Just a Connection: How Cisco makes 5G private networks simple to buy, employ, and operate

February 7 | 8:30 am
BRKXAR-1433
The New Era of LTE and 5G – Cisco Catalyst Cellular Gateways

February 7 | 11:30 am
BRKSPM-1006
The 5G System as a Spectrum Management Solution

February 7 | 3:45 pm
IBOSPG-2010
Getting Started with Enterprise Private 5G: An Interactive Design Workshop

February 8 | 10:30 am
BRKSPM-2672
Managing IoT Connectivity in a 5G World

February 9 | 10:10 am
BRKSPM-2917
Monolithic or Polylithic packet cores? The case for specialized use-case based Mobile Packet Cores

February 9 | 2:15 pm
BRKSPM-2386
Getting Ready for Private 5G Deployments

February 9 | 3:45 pm
BRKEWN-2030
WiFi6 and Private 5G for the Enterprise – a 'Better Together' Journey

Finish

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Thank you

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ALL IN