PlughConnect SRV

ARCHITECTURE, PREREQUISITES & SECURITY

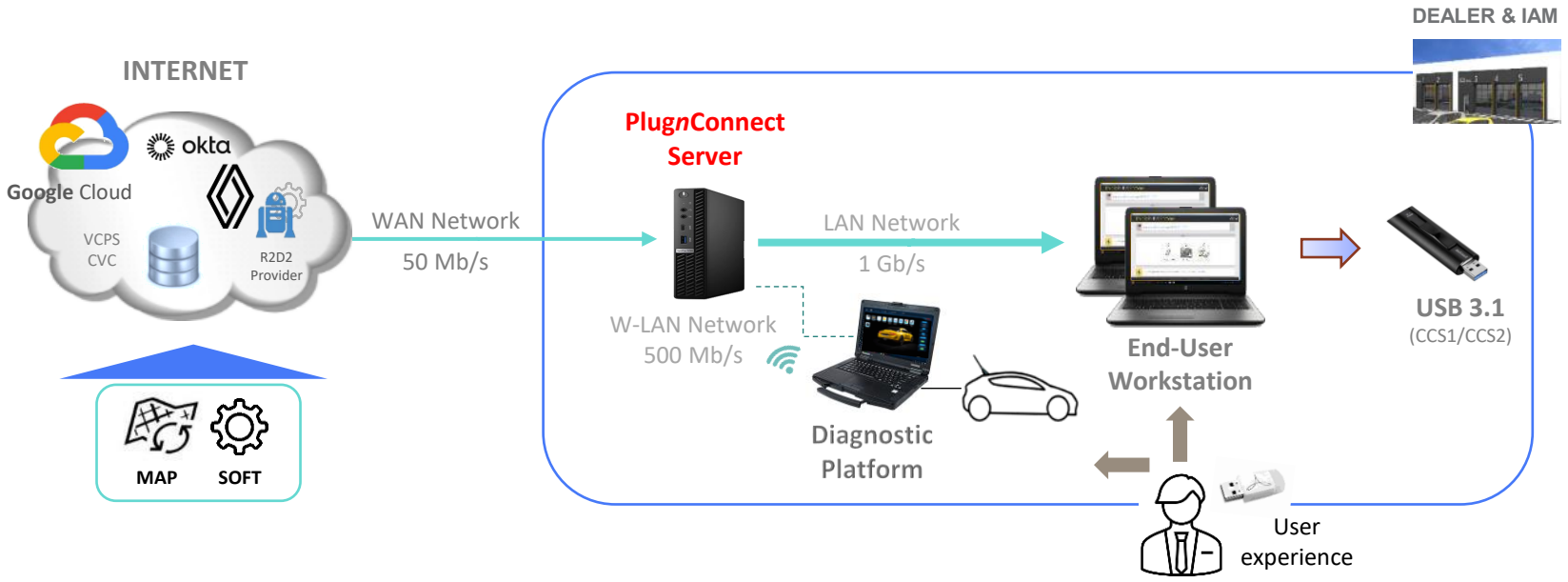
V2.1 – Dec 2025
DIR-AS

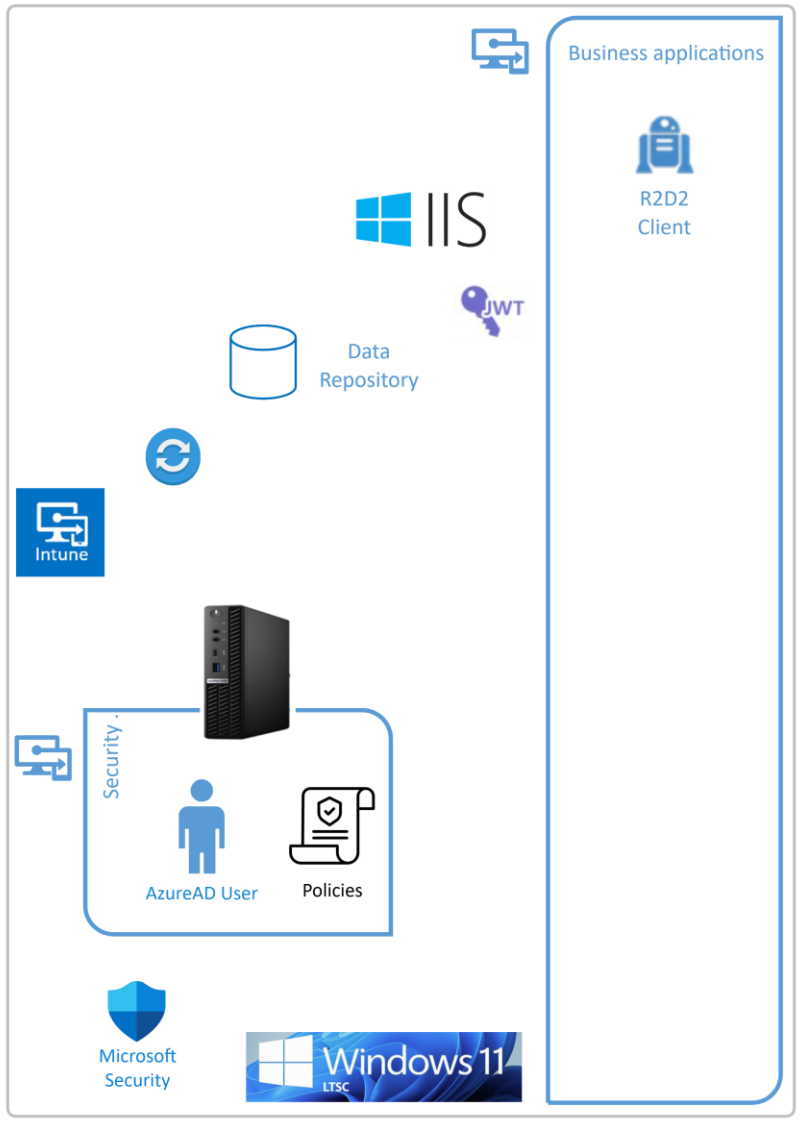
01

PLUG*n*CONNECT

KEY TAKEAWAYS & BENEFITS

- Plug'*n*Connect **automatically downloads** new product data during the night
- **Dealer Tool Box** applications installed on dealers' computers allow to check new update eligibility
- If a vehicle is eligible for update, then DTB (Alliance Update) will download data from Plug'nConnect via **local ethernet network**





Cybersecurity compliant

Standardized Platform

Best Reliability

Global unique assistance

KEY TAKEAWAYS

Expectations:

- Cybersecurity management
- Central administration & worldwide standardization
- Reliability, no more manual updates and settings

Benefits for the network

- Annual productivity per platform by avoiding local administration and due to standardization and up to date platform
- Secure your platform with Windows LTSC support for 10 years (5 years currently)
- Compliance with cybersecurity regulation rules – master of hacking risk
- No needed IT skills locally
- Reduction of assistance calls

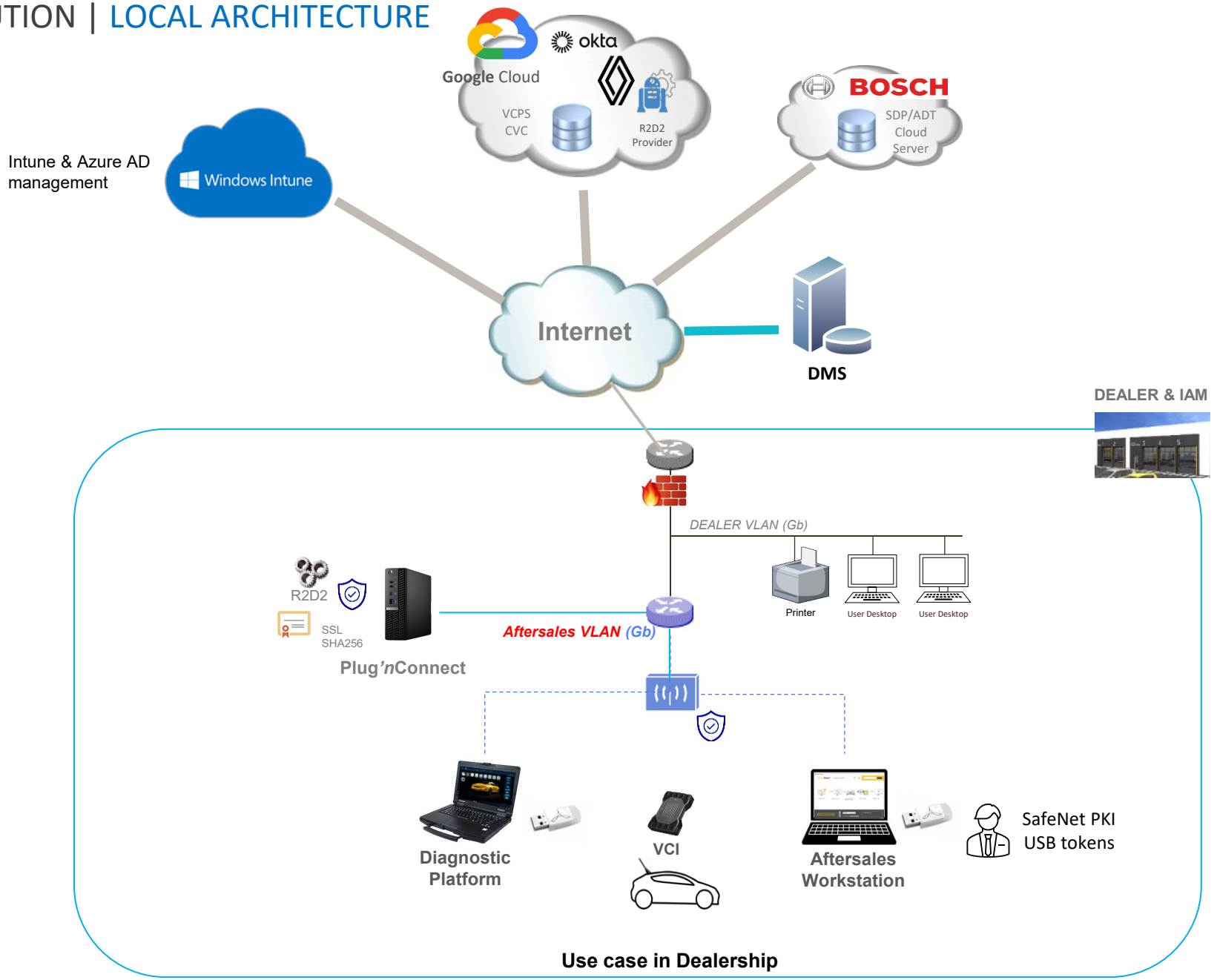
Opportunities

- Multi-brand proposal
- Repository for ECU Firmware (SDV)

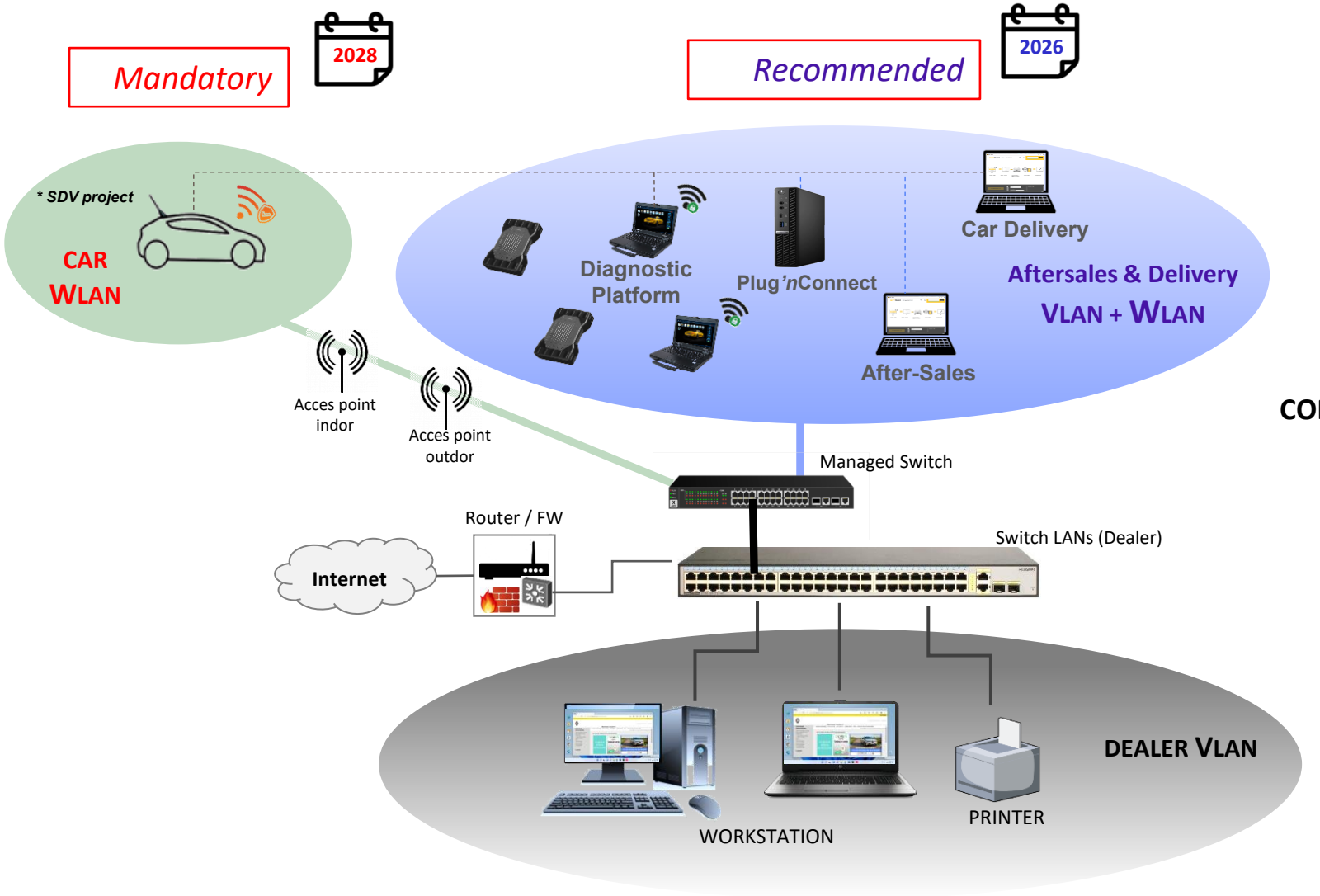
02

LOCAL INFRASTRUCTURE
in the Dealership

REPAIR TOOLS SOLUTION | LOCAL ARCHITECTURE



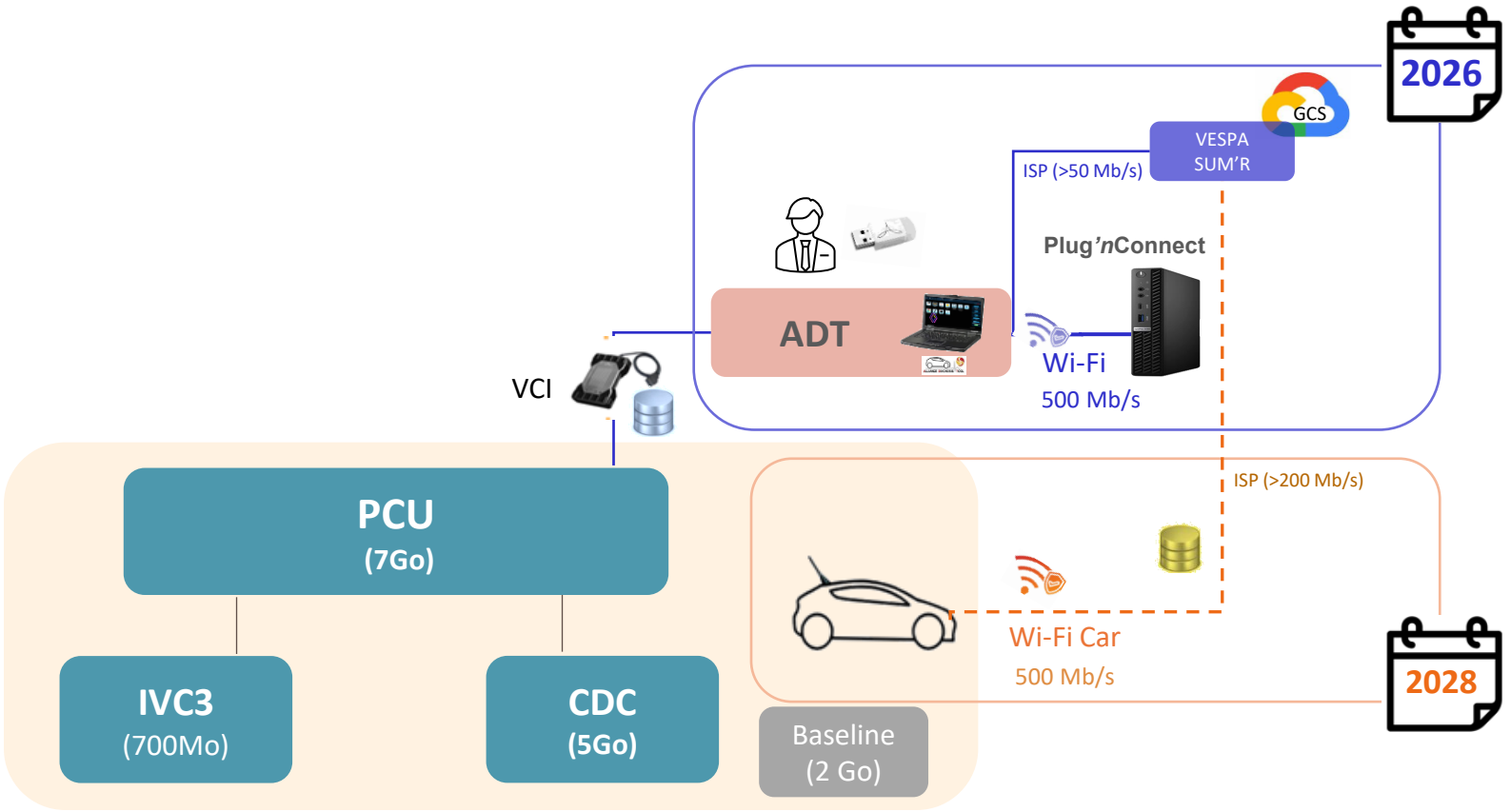
REPAIR TOOLS SOLUTION | CONNECTIVITY ON DEALER LAN



CONNECTIVITY IN WORKSHOP :

- A secure and efficient WI-FI network dedicated to the vehicle
- A connected network for after-sales tools and new vehicle delivery

** SDV Sweet 500 & next Sweet 400 : Next connected car generation 2027-2028*

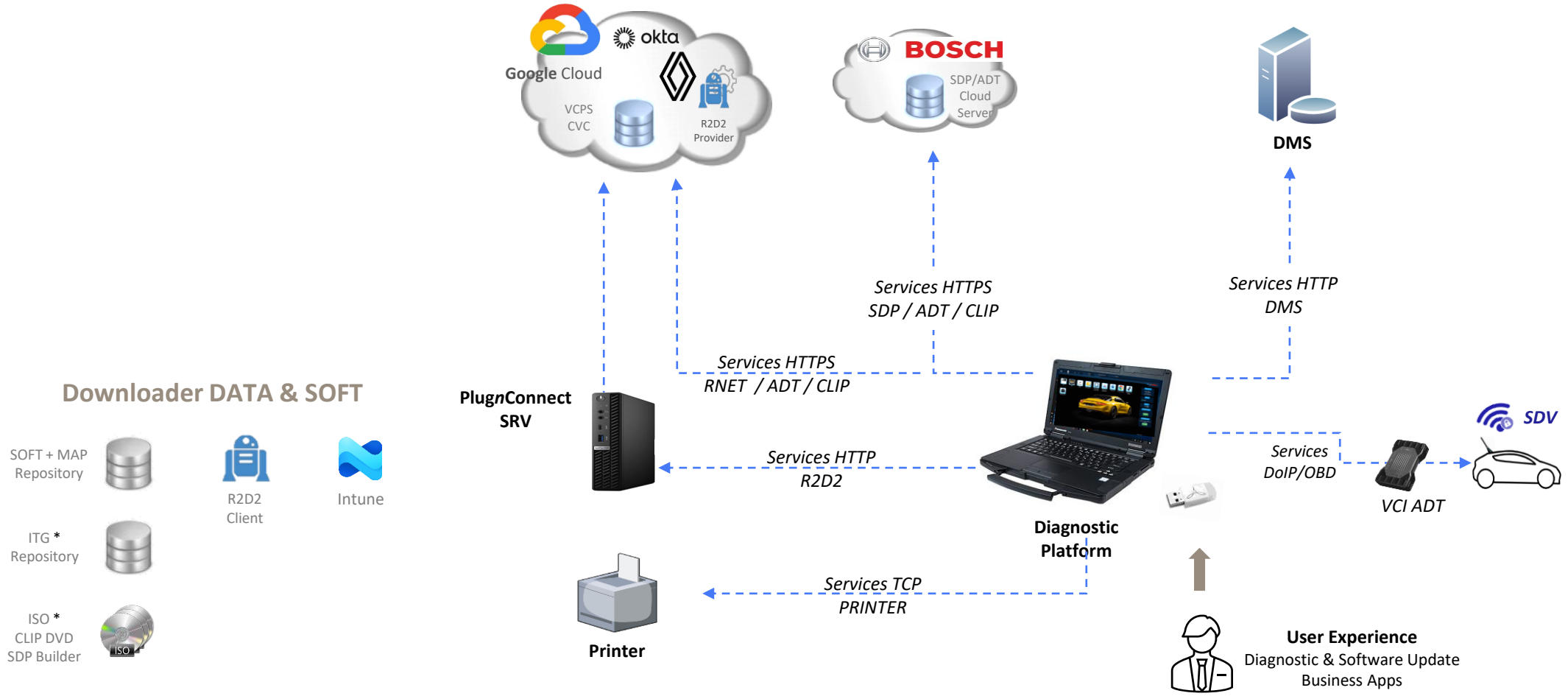


The ADT tool guides reprogramming of all the components (ECU, IVI-IVC)

03

OUTPUT & INPUT STREAM
in the Dealership

REPAIR TOOLS SOLUTION | OUTPUT and INPUT STREAMING



* *Renault retail only*

1. **Internet output Stream for Business to be allowed in port 443:**

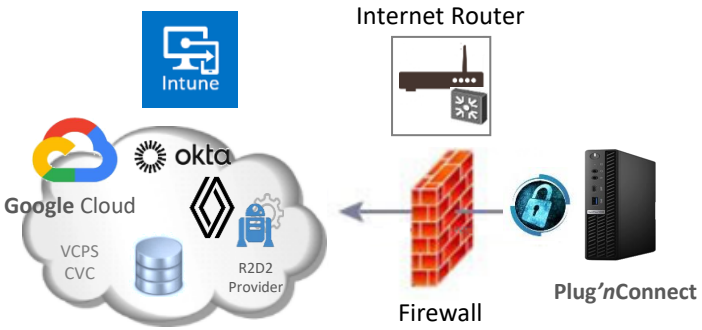
*.renault.com
*.vectury.com
storage.googleapis.com
blob.core.windows.net
*.renault-nissan.com
*.windows.net
checkip.amazonaws.com
www.renaultgroup.com

2. **Internet output Stream for management to be allowed in port 443 :**

login.microsoftonline.com
*.officeconfig.msocdn.com
graph.windows.net
*.manage.microsoft.com
*.do.dsp.mp.microsoft.com
*.emdl.ws.microsoft.com
*.wns.windows.com
*.teamviewer.com
time.windows.com
config.edge.skype.com
*.update.microsoft.com
ip-api.com
login.live.com
config.office.com
enterpriseregistration.windows.net
*.azureedge.net
*.dl.delivery.mp.microsoft.com
*.notify.windows.com
*.notify.live.net
slscr.update.microsoft.com
go.microsoft.com
*.windowsupdate.com
ipinfo.io
worldtimeapi.org

3. **Internet Output Stream for synchronising :**

NTP : UDP port 123

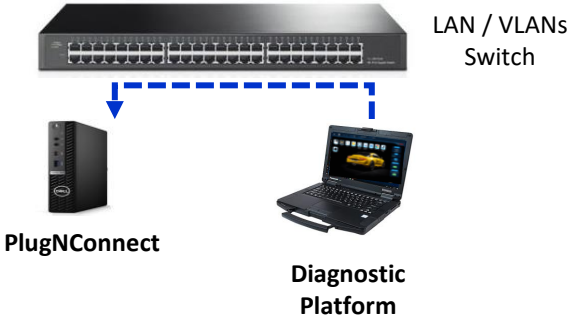


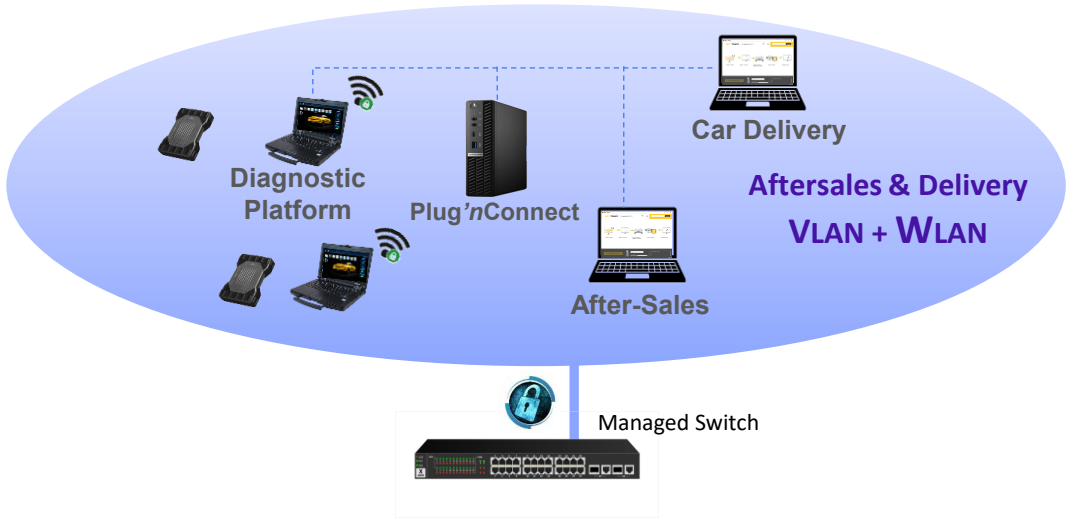
Important recommendation :

No SSL/TLS Interception
or
SSL/TLS Bridging
or
No SSL Forward Proxy.

4. LAN Stream to be allowed between Diagnostic Platform, Workstation and PlugnConnect :

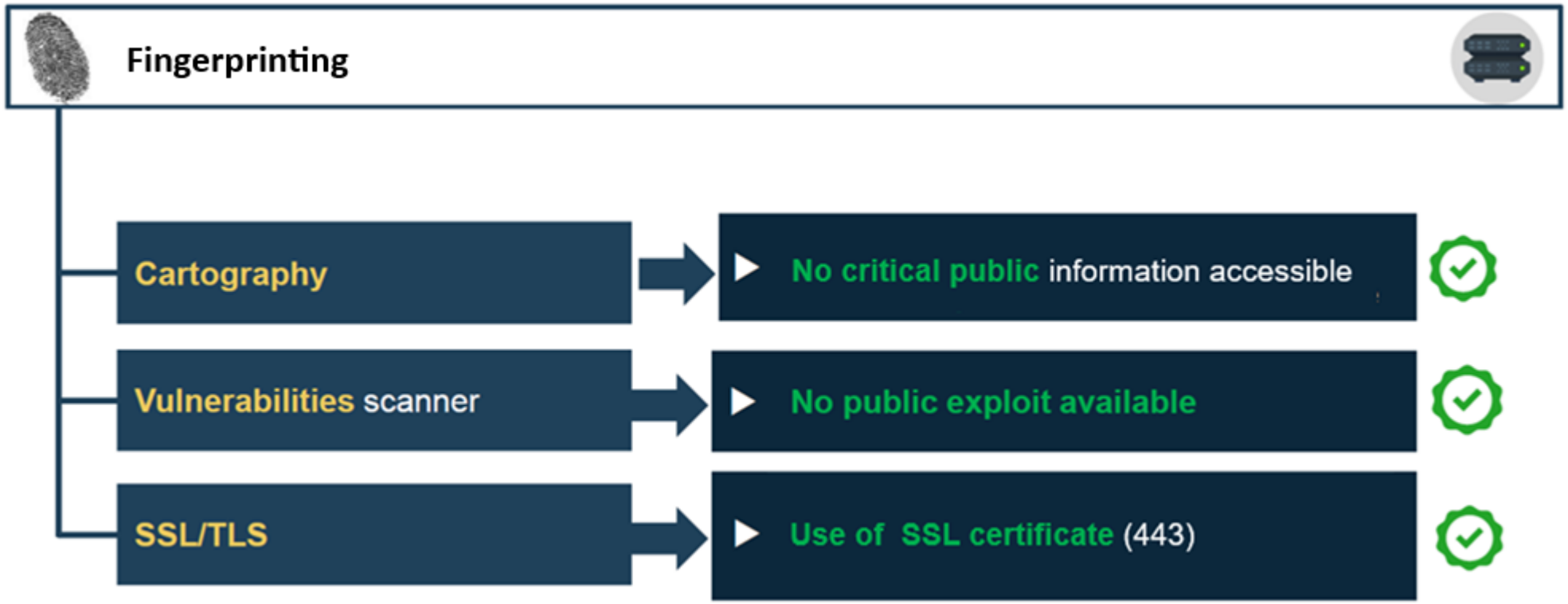
TCP port 8080 and 8443

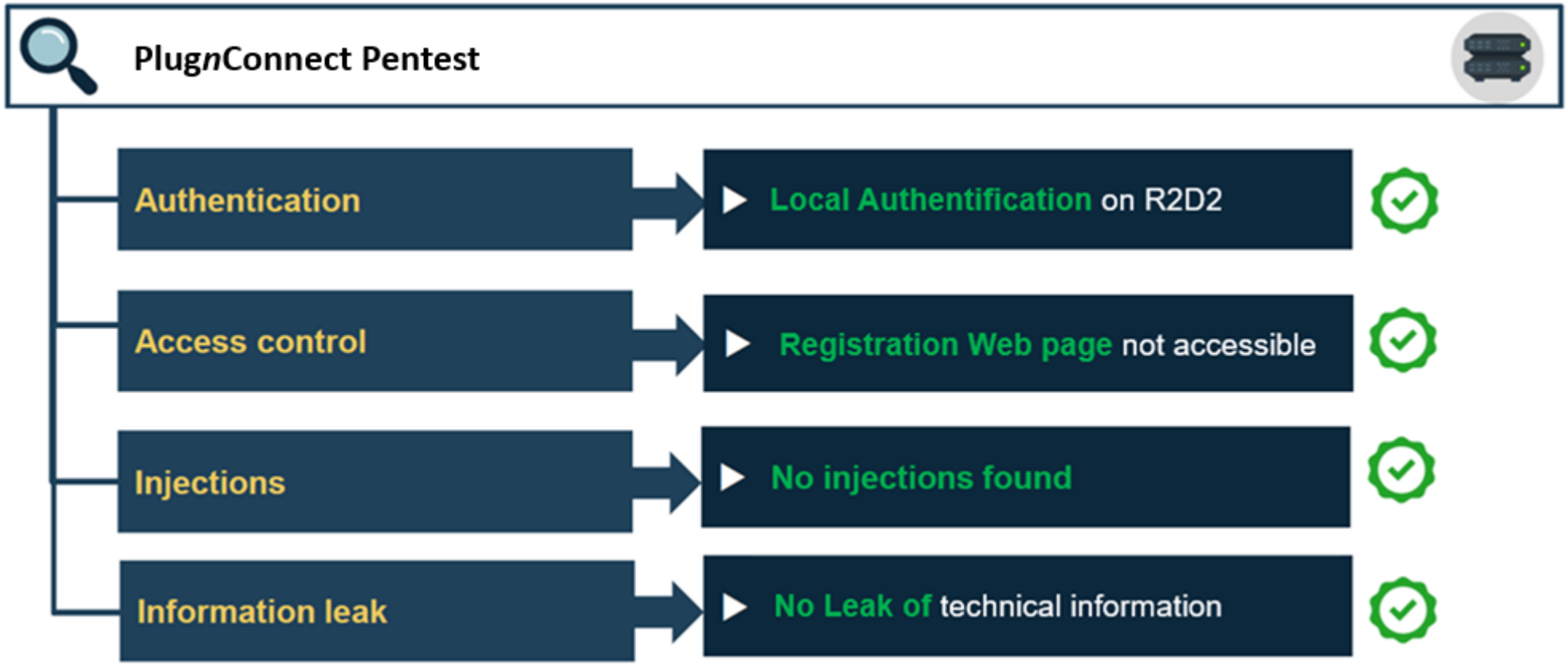




04

PLUG*n*CONNECT’ PENTEST Results


Fingerprinting
Cartography
No critical public information accessible
Vulnerabilities scanner
No public exploit available
SSL/TLS
Use of SSL certificate (443)


PlugnConnect Pentest
Authentication
Local Authentification on R2D2
Access control
Registration Web page not accessible
Injections
No injections found
Information leak
No Leak of technical information

05

Device Specification & Installation

1. Ventilation

- Leave at least **10.2 cm (4 inches)** of clearance on all ventilated sides of the chassis, to allow good air circulation and avoid overheating.
- If the device is installed in a corner, on or under a desk, leave at least **5.1 cm (2 inches)** between the back of the device and the wall/panel to ensure the necessary airflow.

2. Alimentation

- Use only the compatible **Dell AC adapter** (references E4 180 W) and respect the input range 100-240 V AC, 50-60 Hz.
- Respect the operating temperatures of the adapter:
  - In use : **0 °C à 40 °C**
  - In storage : **–40 °C à 70 °C**
    Operation outside these ranges can impact performance or damage certain components.
- Do not obstruct or force the **7.4 mm DC-in power connector** at the rear of the machine; Check that the cable is not pinched, twisted or under mechanical tension.

3. Positioning / mechanical support

- Respect the **dimensions and weight** of the chassis (micro format 1.2 L) and install the device on a stable, flat support capable of supporting at least the weight of the system and its cables.

4. Environment / conditions of use

- Respect the specified **operating and storage conditions** (temperature, humidity, contaminant levels) in order not to degrade the internal components. These values are detailed in the section *Operating and storage environment*.

- Avoid :
  - Direct exposure to heat sources (radiators, direct sunlight, industrial equipment).
  - Very dusty or particle-laden environments, which can obstruct ventilation grilles.
  - Repeated shocks and vibrations (even if the product is certified on a number of **MIL-STD-810H** tests).

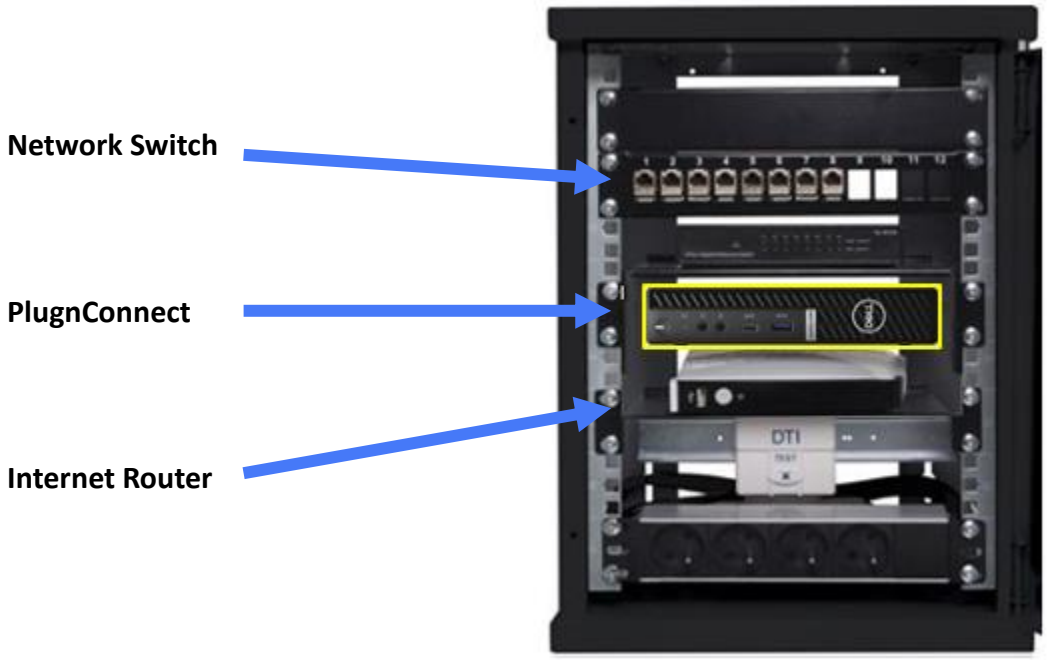
5. Physical Security

- Use **the Kensington slot** and/or **padlock ring** to physically secure the chassis if needed, especially in open environments or trading room/open space.

Computer environment		
DESCRIPTION	**OPERATING**	**STORAGE**
Temperature range	10°C to 35°C (50°F to 95°F)	-40°C to 65°C (-40°F to 149°F)
Relative humidity (maximum)	20% to 80% (non-condensing)	5% to 95% (non-condensing)
Vibration (maximum)*	0.26 GRMS	1.37 GRMS
Shock (maximum)	40 G†	105 G†
Altitude range	-15.2 m to 3048 m (-49.87 ft to 10,000 ft)	-15.2 m to 10,668 m (-49.87 ft to 35,000 ft)

It is recommended to install PlugnConnect in the **LOCAL NETWORK RACK**

PlugnConnect is a Server data (not a workstation)



06

WIFI RECOMMENDATION for Diagnostic Platform

Wi-Fi versions evolution

Wi-Fi 4 IEEE Standard: 802.11n	Wi-Fi 5 IEEE Standard: 802.11ac	Wi-Fi 6 IEEE Standard: 802.11ax	Wi-Fi 7 IEEE Standard: 802.11be
Bands: • 2.4 GHz, 5 GHz	**Bands:** • 5 GHz	**Bands:** • 2.4 GHz, 5 GHz • + 6 GHz on Wi-Fi 6 E	**Bands:** • 2.4 GHz, 5 GHz • 6Ghz ((if available and authorized by local regulation)
Channel bandwidth: • 20, 40 MHz 64 QAM	**Channel bandwidth:** • 20, 40, 80, 160 MHz 256 QAM	**Channel bandwidth:** • 20, 40, 80, 160 MHz 1024 QAM	**Channel bandwidth:** • 20, 40, 80, 160, 320 MHz 4096 QAM
Key improvements: • WPA2 Security • 4x4 MIMO • LDPC error correction	**Key improvements:** • 8x8 MIMO • DL MU-MIMO • Beamforming	**Key improvements:** • WPA3 Security • Target Wake Time (TWT) • MU-MIMO, OFDMA	**Key improvements:** • Multi-Link Operation (MLO) • Multi-RU • Enhanced QoS management
Speed: • 150 Mbps per user	**Speed:** • 866 Mbps per user	**Speed:** • 1,2 Gbps per user	**Speed:** • 5,8 Gbps per user
2009	**2013**	**2021**	**2024**

Forbidden	Agreed (to be modernized)	Recommended

Items	Main Recommendations
Wifi Technology	8 x 8 MIMO (new installation)
Standard	Norme 802.11 **ac** / **ax**
Authentication	Group centralized authentication infrastructure
Security Standard	**WPA 3** Enterprise (backward compatibility WPA2)
Security Method	EAP-TLS (certificate) EAP-PEAP MSCHAP-V2 (Radius)
Management	Managed WiFi controller at Group level Solution Cloud-managed
Architecture	Unique multi SSID WiFi architecture: Business SSID / Local SSID / HotSpot SSID
SSID	Unique SSID on business LAN + Digital SSID + HotSpot SSID + Group SSID (for roaming)
IP addressing for WIFI Laptop	Unique DHCP managed by the controller

Items	Main recommendations
Wiring category	Cat 6a with 4 wired pairs
Brewing type	Direct link to a manageable switch in a computer rack
Power supply	POE if long <100m
Connection switch	1 Gb/ s managed with POE
Installation height	Between 2m50 and 3m
Type of installation	mural
Frequency	Dual frequency diffusion (2.4 GHz and 5 GHz)
Channel	Use channel available (recommended channel scan)
Recommended SNR (Signal to noise ratio)	> 25 dB
Signal strength in defined coverage area	-55 dBm
Wi-Fi Bandwidth	500 Mb/s (per User) – required for SDV project


THANKS