Ooredoo Myanmar Limited
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192 Kaba Aye Pagoda Rd.
Bahan Township
Yangon
Republic of the Union of Myanmar

October 17, 2019

Our Ref: Reg/PTD/2019(465)

Posts and Telecommunications Department
Ministry of Transport and Communications
Republic of the Union of Myanmar
Office No (2)
Nay Pyi Taw
Myanmar

Attention: Director General:

Dear Director General,

Subject: 5G Testing Report in Yangon

As promised in our previous submission reference **RegPTD2019(224)**, this letter serves to update PTD of our testing result from Yangon.

Attached with this letter, please find detailed report outlining senerio of the testing and results for testing items such as

i. User plane latency (One-way)
ii. Control plane latency
iii. Single user peak THP(DL)
iv. Single user peak THP(UL)

If you need any clarification with respect to this report or if you need further information, please contact us at your earliest convenience.

Yours truly,

Chris Peirce
Chief Legal & Regulatory Officer

First Live 5G Demonstrations in Myanmar

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5G Project

Highlight & Milestone

- **E2E** solution and equipments
  - Ran&Core&Tx&TUE
- **Both 2.6G(60M) and 3.5G(100M)** testing
- Different Expert teams
  - Planning team for 5G analysis
  - Solution team for 5G discussion
  - Expert team from HQ for 5G testing and Demo
  - CTO Group from HQ for 5G trend presentation
  - PR team for 5G demostration
- Shorten the maufacture time to only one month after spectrum confirmation

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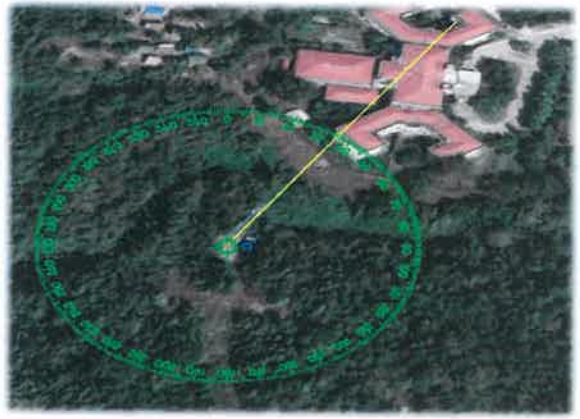
Site 1 -- Myanmar Plaza, YGN
Target -- OML branding presence

Site 2 -- PTD Office, NPT
Target -- Showing leading technology to PTD



15th.May
- 5G MoU Signing

7th.Jun
- Spectrum comfirmation in both 3.5G&2.6G

31th, July
- Equip. arrival Myanmar

25th,Sep
- First Live 5G Demostrations in YGN

Oct~Nov
- 5G Showcase in NPT

ZTE

Showcase in Yangon 25-Sept-2019

Basic Test Target and results for 5G Demo

Latency test items

Latency item	Latency/ms (Reference Value)	Test Result
User plane latency (One-way)	<4	3.5
Control plane latency	<20	15

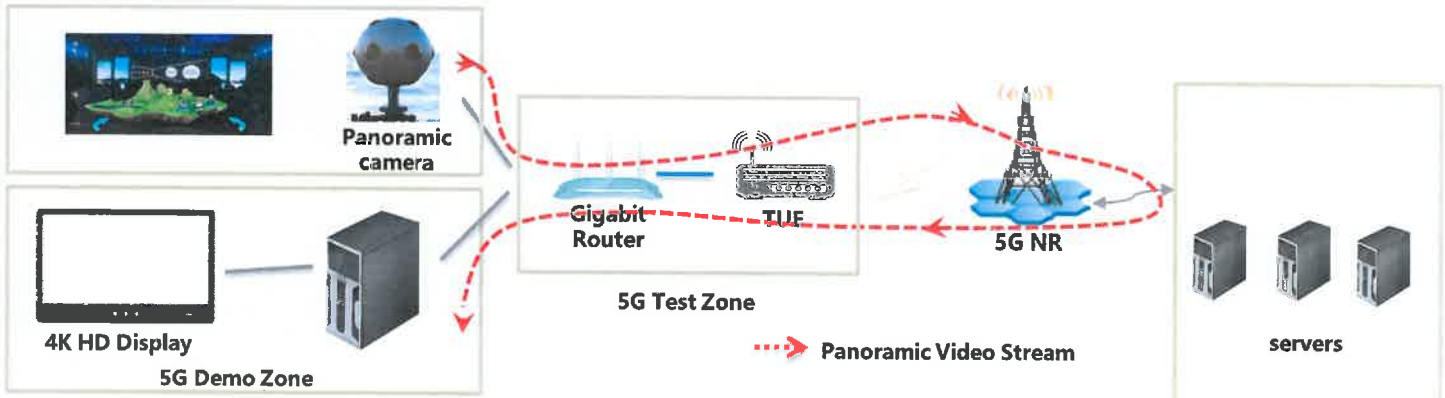
THP test items

THP item	Peak THP/Gbps (Reference Value)	Test Result
Single user Peak THP(DL)	1.4	1.775
Single user Peak THP(UL)	0.2	0.227

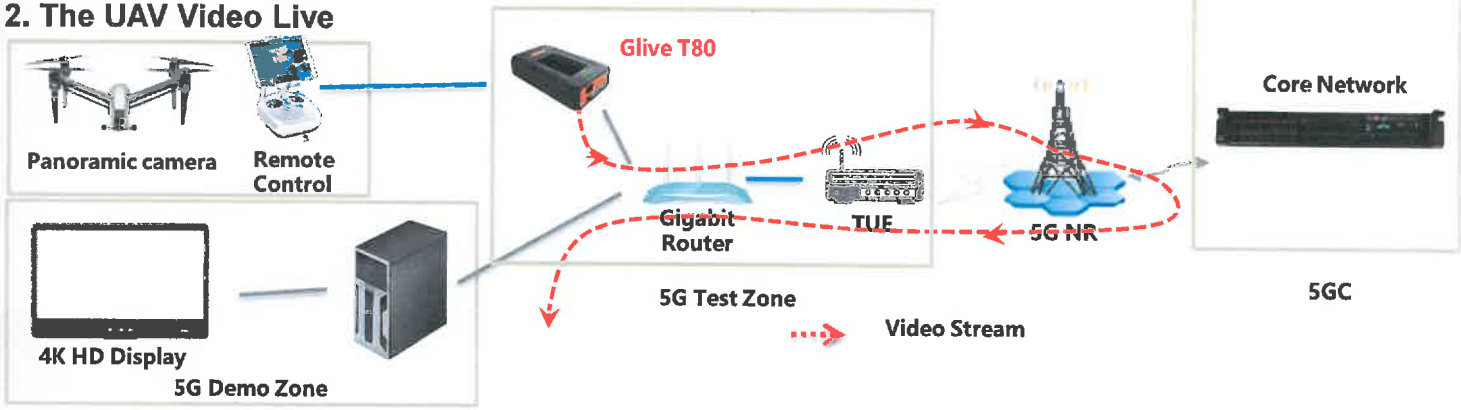
Note: 100MHz, DL THP, In DL 64.3%, 4streams,256QAM
100MHz, UL THP, In DL 64.3%, 2streams,64QAM

5G Demo use Cases

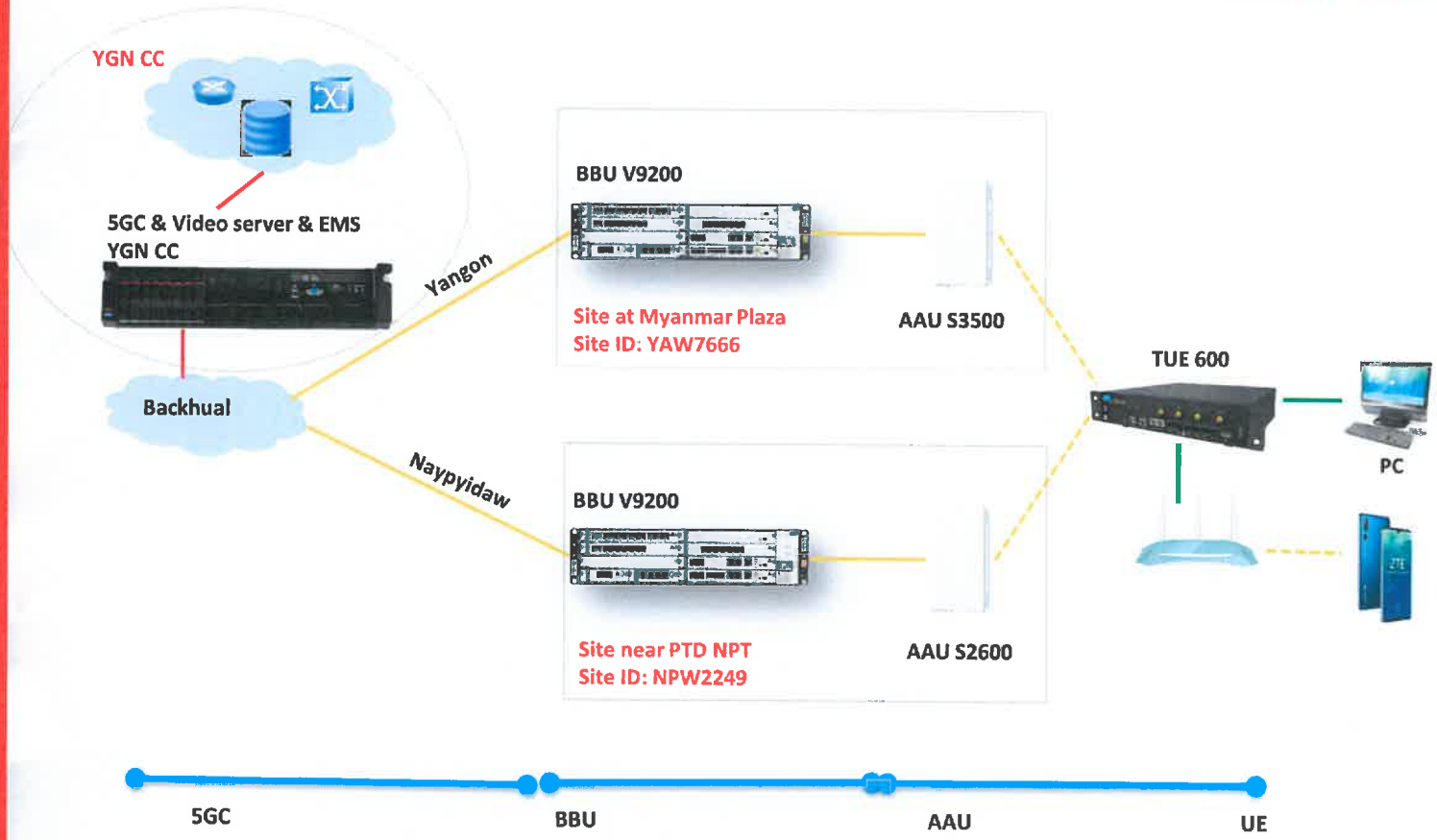
1. 360°Panoramic VR Live Broadcast



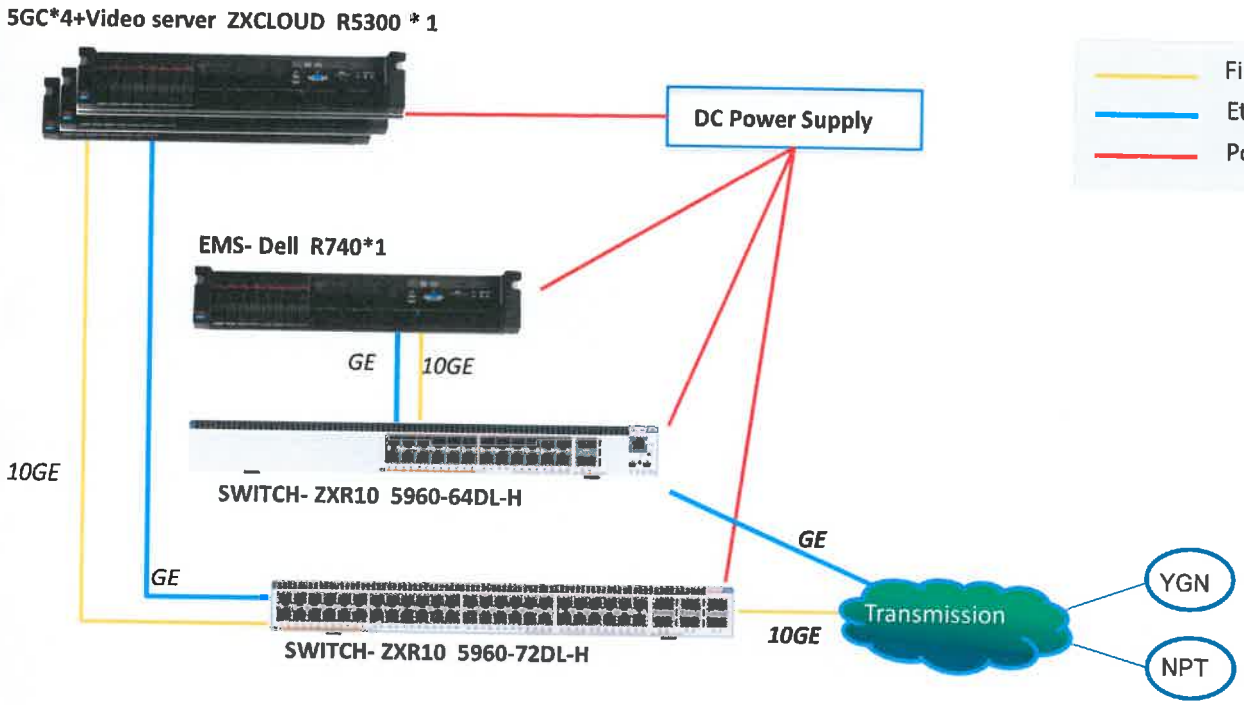
2. The UAV Video Live



5G Topology Overview

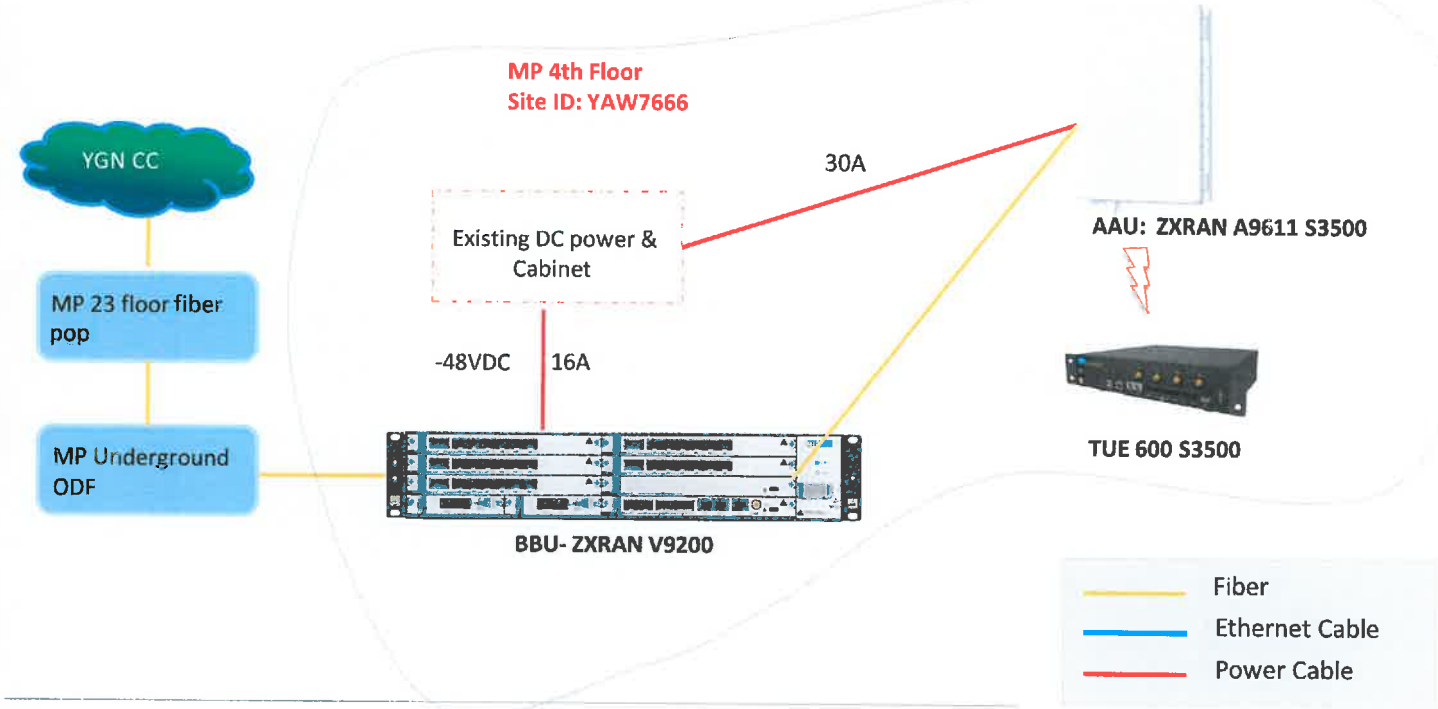


Yangon CC Connection



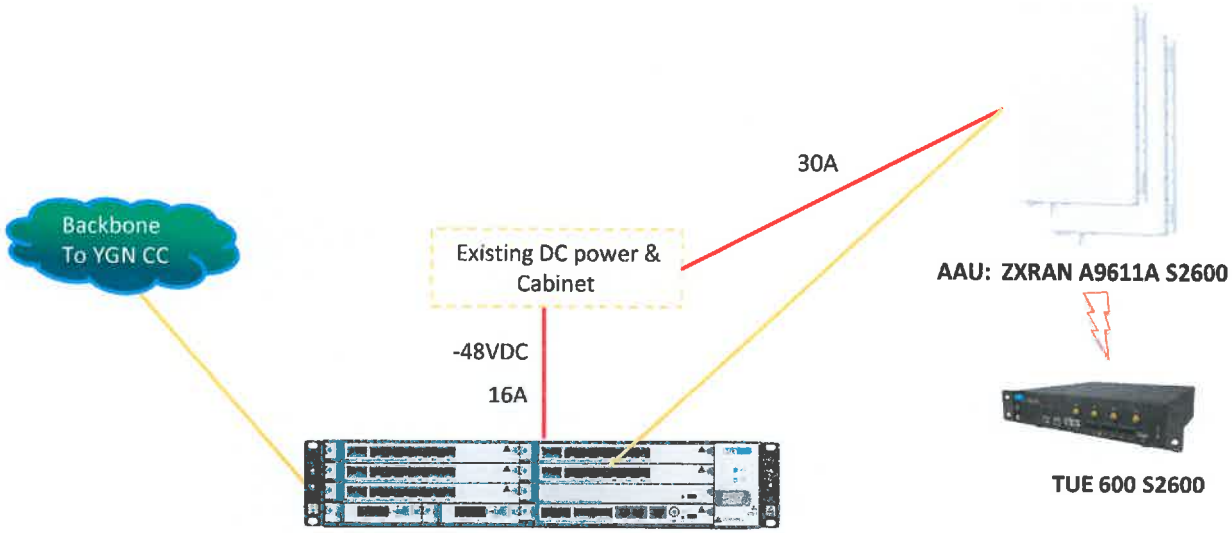
Central Room YGN CC	
Space	2200mm*600mm*1200mm (Cabinet)
Power Supply	6000W
Transmission Connection	Connection available between CC and YGN/NPT site

RAN Site @ Myanmar Plaza (YGN)



MP Site	
Pole	Install AAU pole on MP 4th floor
Power Supply	BBU(315W,DC,16A), AAU(1250W,DC,30A)
Power Backup	Power backup in case of power off during demo.
Fiber Connection	Lay fiber from 4th to IBS equipment room basement floor 2

RAN Site @ PTD Office (NPT)



PTD Site	
Space	Need space for BBU in existing cabinet
Power Supply	BBU(315W,DC,16A), AAU(1250W,DC,30A)
Fiber to Site	Change backhaul from MW to fiber with 10Gbps
AAU Pole	Install AAU pole on tower

ZTE 5G RAN Product

5G BBU- ZXRAN V9200

64T64R AAU--A9611 S3500&
64T64R AAU--A9611A S2600

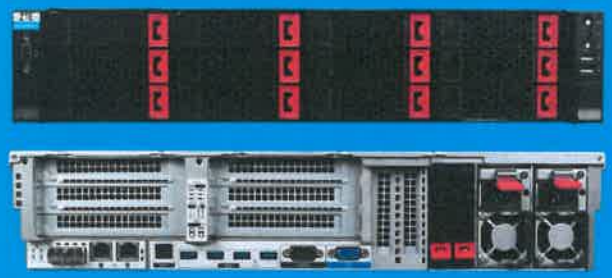
ZXRAN TUE 600 S3500 &S2600

Specification (for 5G)	
Capacity	5G: 15 64T64R/16T16R 100 MHz Cells (SUB6G)
Typical Power Consumption	315 W (5G/1VSWc2 + 1VBPc5)
Power Supply	-48V DC
S1/X2 interface	2*25GE Optical + 2*100GE Optical+ 1 GE Electrical/VSWc2
BBU to AAU interface	6 eCPRI interfaces per VBPc5
Weight	18 kg (full configuration)

Frequency Band	3.4 - 3.6 GHz	2496 - 2690 MHz
Channels	64T64R	64T64R
Output Power	200 W	240 W
IBW	200 MHz	194 MHz
OBW	100 MHz	160 MHz

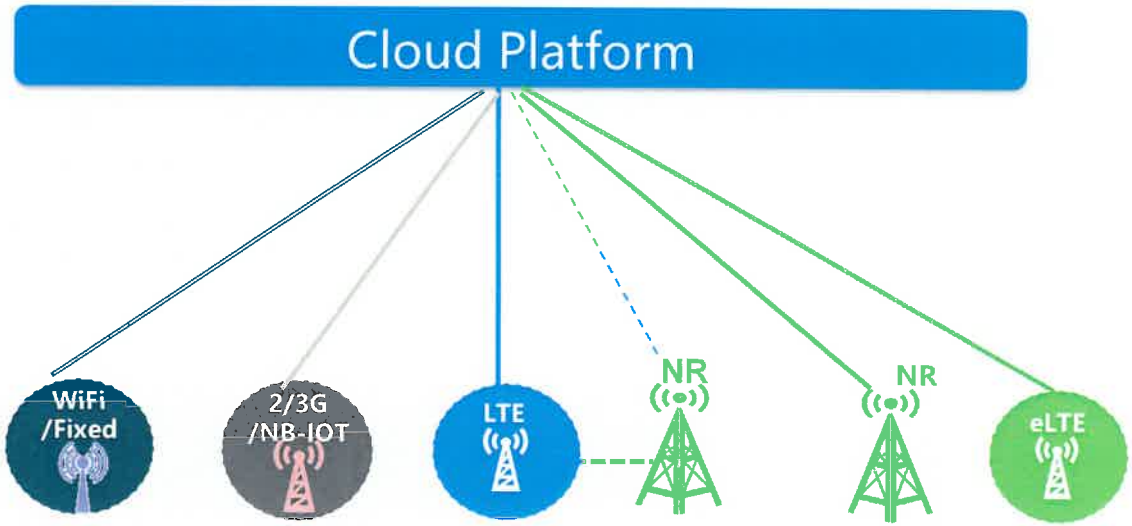
ZTE 5G Core Product

Hardware: ZXCLOUD R5300 G4



Specification		
CPU	6138	20 Core*2 2.0GHz
Memory	DDR4-2666	32G*12
Cache Hard Disk	SATA 2.5	480G*1
Data Disk and System Disk	SAS 2.5	1.2T*5

Software: ZTE Common Core



- **Based on Cloud-Native**
- **Realizing services of multiple service scenarios via network slicing**
- **Supporting 2/3/4/5G/NB/non-3gpp access**

Thank You