



ESTABLISHING A PREMIER GLOBAL NEUTRAL HOST PROVIDER

Presented By

Dr Khalid Al-Mashouq
CEO ACES-NH



SMALLCELLS
WORLD SUMMIT



ACES-NH is a wholesale licensed digital infrastructure company owned **100%** by **ACES** a large telecom system integrator.



ACES operates as a **Neutral Host (NH)** Operator in Saudi Arabia with Wholesale infrastructure license from CST and India with **UL/VNO Category B license** from DoT.



NH business targets all digital infrastructure like **DAS, small cells, Fiber OSP, IoTs and Wi-Fi Systems.**



ACES-NH invests and owns the digital infrastructure and offers upgrades, **Field Maintenance, Network Operation Centers (NOC), Total Facility Management** and **Energy Management.**



ACES owns Strong Research and Development department to lead the evolving technologies like **O-RAN, 5G, Small Cell and smart Monitoring** from Front.

A Pioneer Neutral Host Company



STRONG TECHNICAL KNOWLEDGE

Over **30 years** experience in building operations and maintaining digital infrastructure



FINANCIAL CAPABILITIES

To **invest in own digital infrastructure**



FUTURE TECHS INVOLVEMENT

Involved in **R&D** and future technologies **5G, 6G, O-RAN**, predicting the future for sustainability



RELATIONS WITH MNOS AND CSPS

Extreme close **relations with telcos and mobile network operators** (MNO's)



INFRASTRUCTURE OPTIMIZATION FOR COST REDUCTION AND SUSTAINABLE PARTNERSHIP

Consolidate infrastructure to **reduce TCO** and **make sustainable partnerships** with stakeholders

ACES built its dominance and established a strong foothold across the **globe** by leveraging its **expertise** in the sector which has led to expanding its horizons and getting awarded of some of the largest projects



**ACES
NHS**



**ACES
INDIA**



**ACES AERIAL
SOLUTIONS**



**ACES
CONSULTATIONS**



**ACES
R&D LABS**

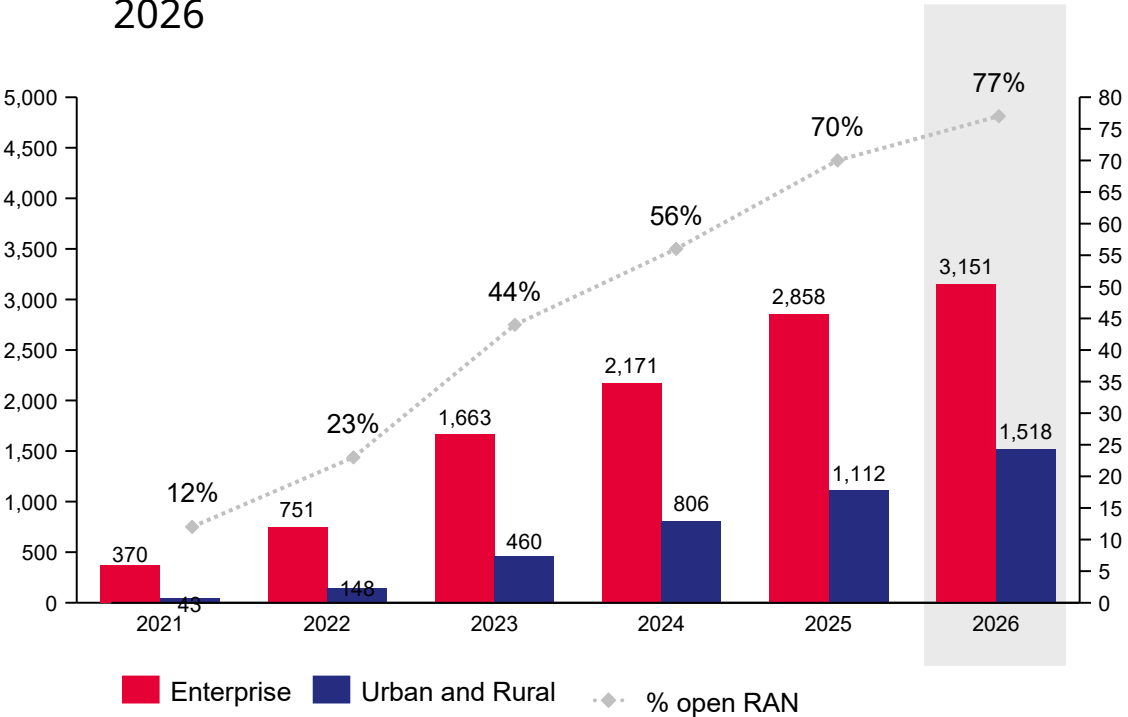


**ACES SMART
SOLUTIONS & AI**

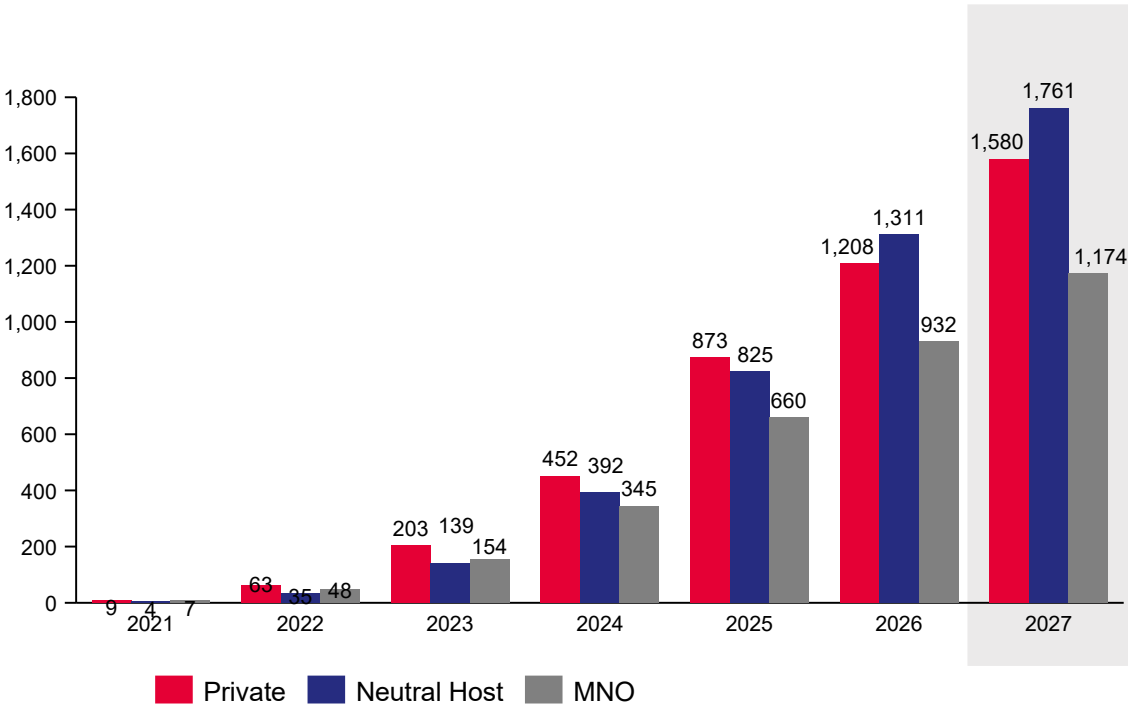
O-RAN COMPLIANT SMALL CELLS (FUTURE CASES)



Considering recent advancements, one can infer that **‘Open RAN’ will grow as fast with 5G small cell deployment and 80% deployment of small cell** in accordance with O-RAN will be completed by 2026



As per estimations, **most of Open RAN compliant small cells will be deployed by Neutral host by 2027**



ACES R&D FOR SMALL CELL DEVELOPMENT – 1/3



IN-HOUSE DEVELOPMENT OF SMALL CELL



ACES Is Developing **O-RAN Compliant Shareable 5G Small Cell**



Awarded **Saudi Ministry MCIT/NTDP Funding** For Local Small Cell Development



Project Under **Deep R&D Phase**, Tested **Multiple Prototypes** And Published Results

البرنامج الوطني
لتنمية تقنية المعلومات
National Technology
Development Program



وزارة الاتصالات
وتقنية المعلومات
MINISTRY OF COMMUNICATIONS
AND INFORMATION TECHNOLOGY

techxpand
Beyond Boundaries



شور
SURE
SURE GLOBAL TECH
سور العالمية للتقنية



master
works



UNIFONIC

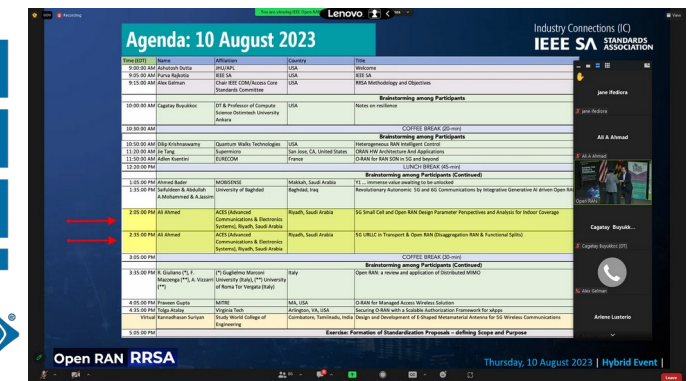
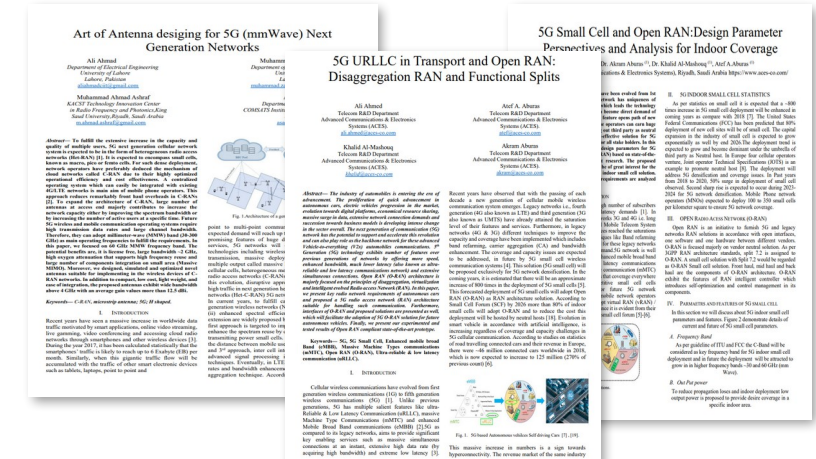


the new code lab

FOODICS

13 GROWTH COMPANIES TO EXPAND GLOBALLY

Active Participation In **OAI** And **SCF** Workshops



ACES R&D FOR SMALL CELL DEVELOPMENT – 3/3



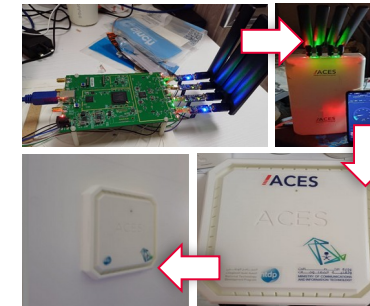
SMALL CELL PROTOTYPE TESTING



Tested Multiple Prototypes
For Product Development

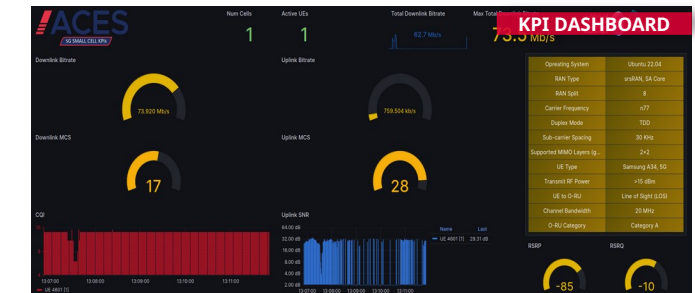


Enhanced In Sub-systems By
Software And Hardware
Implementation



Type	Date	Mbps	Mbps		Type	Date	Mbps	Mbps	
5G	20/02/24 14:07	110	15.9	>	5G	04/02/24 20:21	120	17.0	>
5G	19/02/24 10:35	57.8	15.9	>	5G	20/02/24 13:16	44.8	16.9	>
5G	19/02/24 10:39	30.2	15.7	>	5G	24/03/24 10:20	81.9	16.9	>
5G	26/03/24 15:59	42.9	15.6	>	5G	29/02/24 20:24	66.2	16.8	>
5G	20/03/24 10:45	36.8	15.6	>	5G	24/03/24 13:49	64.3	16.6	>
5G	19/02/24 10:47	64.1	15.5	>	5G	24/03/24 15:36	54.3	16.4	>
5G	20/02/24 14:37	26.4	15.5	>					
5G	20/02/24 14:37	15.1	15.1	>					

PROTOTYPE-1



Strictly private and confidential

ACES SAUDI NEUTRAL HOST SUCCESS STORIES



GRAND MOSQUE EXPANSION IN MAKKAH



2G

LTE 4G



MIMO



4G 830

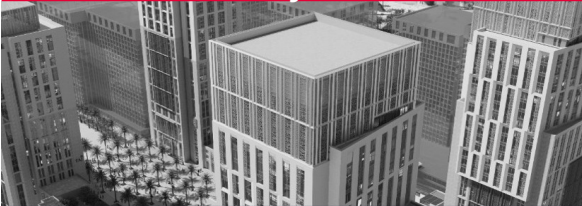


4G 225



4G 4165

MASAR 5G ICT INFRASTRUCTURE PROJECT



2G

LTE 4G

5G



MIMO



4G 134
5G 48



4G 114
5G 95



4G 1560
5G 125

JABAL OMAR



2G

LTE 4G



MIMO



4G 182

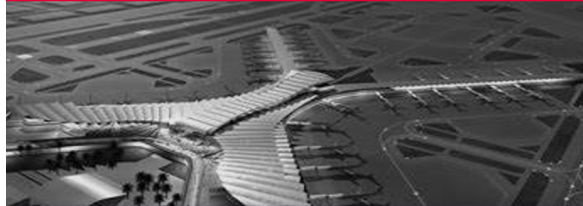


4G 24



4G 5592

KING ABDULAZIZ INTERNATIONAL AIRPORT



2G

LTE 4G



MIMO



4G 830

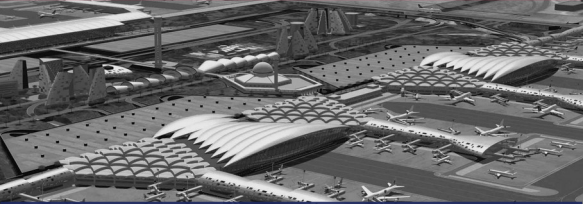


4G 225



4G 4165

KING KHALID INTERNATIONAL AIRPORT



LTE 4G

5G

WiFi



MIMO



4G 830



5G 63



5G 5334

RIYADH METRO PROJECT



2G

LTE 4G

5G

WiFi



MIMO



62



4G 115
5G 50



4G 5148+
5G 385

ALAWWAL PARK



2G

LTE 4G

5G



MIMO



68



4G 19
5G 29



4G 141
5G 66

KING Abdullah FINANCIAL DISTRICT (KAFFD)



MIMO



4G 830



4G 225



4G 4165



ACES is continuing to cement its presence globally, delivering state-of-the-art projects in **India**.

Mumbai Metro Project

MIMO

REMOTE UNITS

SECTORS
4G 120

ANTENNAS
5G 1850

Bangalore International Airport

MIMO

REMOTE UNITS

SECTORS
4G 44

ANTENNAS
4G 4106

Surat Diamond Bourse India

MIMO
2x2

REMOTE UNITS

SECTORS
4G 53

ANTENNAS
4G 2081

Riyadh Metro



King Abdullah Financial District (KAFD)



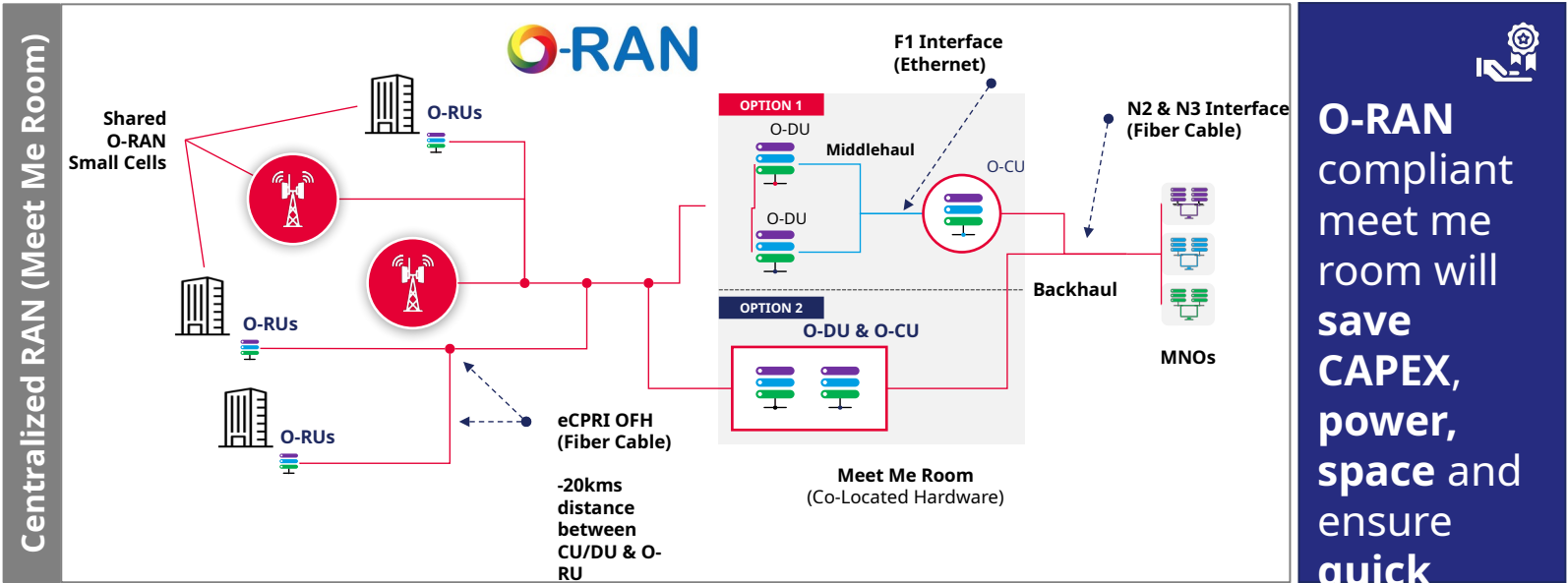
Strictly private and confidential

SITE NAME

KAFD – 4.06

COMPARISON			
KPIs	Traditional RAN	O-RAN Compliant C-RAN	% Savings
Power	2,000 Amperes	400 Amperes	80%
Space	300 meter Square	75 meter Square	75%
Number of Meet me Room	5	1	80 %
Average Integration Time	8 Months	1 Month	87.5 %

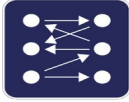



Variables	Fronthaul DU & RU	Mid haul CU & DU	Backhaul CU & 5G Core
Range	<20 KM	<80 KM	<200 KM
Connecti on Interface Type	CPRI, eCPRI, O-RAN Interface	F1 Interface (Ether net)	S1 interface (Fiber or MW)



RIYADH METRO NEUTRAL HOST USE CASE



RIYADH METRO PROJECT

MIMO	REMOTE UNITS	SECTORS	ANTENNAS
			
MIMO	62	4G 115 5G 50	4G 5148+ 5G 385

i Project Information:

3.6 million per day (forecasted), will save trips up to **250k** per day

i NH DAS information:

- 1 Sharable active **DAS SISO** and **Massive MIMO**
- 2 Supports **Penta-bands**
- 3 The Bands are **700, 800, 900, 1800, 2100** and **3500 MHz**
- 4 **Typical and Iconic Stations**



ICONIC STATIONS



OLAYA STATION



KAFD STATION



WESTERN STATION



QASR AL HOKM STATION

 Technology	 Typical Station	 Iconic Stations	 Antennas	 No Of Sites	 No Of Sectors	 Neutral Host
  	87	4	~12K	32	113	 Yes

INSERT IMAGE

