



Department for
Science, Innovation
& Technology

Open Networks Ecosystem (ONE) Competition - Pitching event



Department for
Science, Innovation
& Technology

Open Networks Ecosystem (ONE) Competition - Pitching event Introduction

Simon Rowell - Head of Market Development

The Open Networks Ecosystem (ONE) Competition

- Open RAN R&D fund strategic objectives:
 - **Accelerate open-interface products and solutions**
 - **Promote and incentivise supply chain diversification**
 - **Develop an internationally recognised telecoms ecosystem**
- Combined Consortium Bids
- Up To £80m in Funding Available For UK Registered Entities
- Bidding is open until 11:59pm 23rd May 2023





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Open Networks Ecosystem (ONE) Competition - Overview

William McKinnon - Diversification Lead - Future Network Programmes

The ONE Competition scope

- Projects applying to this competition are expected to address one or more of the competition objectives set out below:
 - Develop, demonstrate and test approaches to optimising Open RAN network performance in **High Demand Density (HDD) environments**.
 - Develop **open and interoperable software**, including RIC technologies.
 - Develop **hardware solutions** for open interface infrastructure and/or reduce/remove barriers to scaled market adoption.
- DSIT will take a portfolio approach in determining which applications to fund to ensure that we have a balance of projects which support the competition objectives.



Competition timeline

Event	Date/Deadline
Competition Opens	14th March 2023
DSIT Pitching session - today	18th April 2023
DSIT Commercial and Finance Teach-in	19th April 2023
Clarification questions receipt deadline	9th May 2023
Competition closes	11:59pm 23rd May 2023
Successful applicants notified	Late June 2023
Grant funding period. (Subject to successful applicants' satisfactory completion of pre-grant requirements and commercial agreements)	Estimated start: September 2023 - End date: 31 March 2025



Leading a bid

- The project lead must be an organisation that is receiving grant funding from DSIT as part of this competition.
- The project lead will be the single point of contact for DSIT - and accountable for all aspects of delivery. This includes:
 - Managing the consortium.
 - Distributing the funds to partners.
 - Subsidy control compliance for themselves and partners.
 - Reporting on the project
 - Ensuring provision by the whole consortium of all the relevant inputs and information prior to GFA to complete pre-GFA requirements.
 - Communicating and collaborating with DSIT.
 - Financial management

Leading a bid (2)

- This does not mean that the project lead needs to be the biggest entity or play the largest role in the project, it's only role could be managing the consortium
- While we encourage commercial entities to lead bids they can be lead by public sector bodies such as universities or local authorities

Leading a bid - Best practice

- Get your project manager and finance lead in place early - ideally at the bid stage so they have good sight of the piece in advance of the grant agreement process
- Make sure you're collaboration agreement is completed nice and early
- Agreeing ways of working at the bid stage with other consortia members will save significant time later in the process

Being a project partner

Any organisation participating in your project receiving grant funding from DSIT or any other public sector source. They will not be regularly speaking with DSIT but will have to respond to requests from the project lead. They are responsible for:

- Providing all necessary inputs and information prior to GFA.
- Subsidy control compliance for themselves.
- Delivering project outputs for which they are responsible.
- Communicating with the project lead.
- Providing relevant information to project lead for reporting, financial management and grants claims purposes.

ONE Competition - Collaboration list

- We are inviting any organisation looking to form or join consortia as part of the ONE (Open Networks Ecosystem) Competition to fill out the [google form](#) with up to 500 words on company information, what you can offer potential partners and what you are looking for in potential partners along with contact details. This information will be made publicly available on the competition gov.uk page and will be updated weekly. The first list will go live on Friday so please provide your responses by COP Thursday 20th to be on that list.
- The list will be removed once the competition closed. If you would like us to remove you from the list before the end of the competition or have any other questions please contact us on ONP@enquiries.gov.uk.

UKTIN Specialist Guidance Service

- Companies wanting direct and confidential advice including introductions to potential partners can contact the UKTIN Specialist Guidance Service at this email: specialistguidance@uktin.net.
- UKTIN advisors will be happy to provide assistance where they can.
- More information on UKTIN's Specialist Guidance Service can be found on the UKTIN site [here](#).

How to find out more

1. Learn more about the practicalities at an online teach-in

- Review the original briefing event
- Review the State aid & funding teach-in on UKTIN.
- Commercial and Finance teach-in. Wed 19 April, 13:00 [sign up](#) (this will also be uploaded to UKTIN)

2. Speak to us! ONP.enquiries@dcms.gov.uk or review the [FAQ](#)

1. Read the [Competition Guidance](#) and HDD [technical guidance](#) on GOV.UK, and watch the [video of the launch event](#)





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Open Networks Ecosystem (ONE) Competition - Pitches

Pitching Line-up

- | | | |
|---------------------------------------|---|------------------------------|
| 1. Airspan | 9. KATLAS | 17. NEC Europe Ltd. |
| 2. Staex | 10. Benetel | 18. Asset Market |
| 3. BlueHouse Technology | 11. Smart Wireless Innovation Facility
(SWIFt) Nottingham Trent University | 19. Wiwynn |
| 4. WM5G | 12. Cambridge Consultants | 20. Stoke City Football Club |
| 5. Sitenna | 13. Scotland 5G centre | 21. Purview Services |
| 6. Illuminate Technologies | 14. EnSilica plc | 22. Radisys |
| 7. XMG Ltd | 15. 3adesign | 23. Sam Botterill |
| 8. Dorset Council (5G
RuralDorset) | 16. Digital Catapult | 24. Saankhya Labs |

1. Airspan

AIRSPAN NETWORKS PRESENTATION

Airspan Pitch for OSIT ONE Competition

Airspan

Airspan Networks

5G Open RAN Solutions Provider

Airspan Networks Holdings Inc. is a provider of multi-award-winning 4G and 5G software and hardware that supports cloud-native open architectures and boasts over one million cells deployed in the most cutting-edge tier one networks and vertical applications across the globe.



~100 EMPLOYEES IN
UK OFFICE

700+ Employees in
15 locations worldwide



END-TO-END
SOLUTIONS

Multiple Generations of
Award-Winning Products



FULL PORTFOLIO
OF PRODUCTS

Disruptive Technologies
Backed by Patents




OVER 25 YEARS
OF EXPERIENCE

Developing RAN
Hardware and Software

Involved in Public and Private 5G Networks

Mobile Network Operators



Over 1,000,000
Base Stations Shipped Globally



Enterprise Private Networks



CBRS
Rural, Oil & Gas,
Education, Hospitals,
Enterprise, Industrial




Köln Bonn Airport
5G Air-To-Ground,
Airports




5G Industry 4.0




5G Transportation

Airspan 5G Open RAN Solutions for ONE Competition



AirSpeed 2700

- Outdoor Small Cell
- Split 7.2a
- 4T4R
- 4x2W



AirVelocity 2700

- Indoor Small Cell
- Split 7.2a
- 4T4R
- 4x250mW



OpenRANGE SW

- DU & CU CNFs
- Split 7.2a & Split 2
- Run on COTS Servers



Airspan Control Platform

- Complete Network Function Controller and Manager
- Alignment to MNO standards

For more information, please contact Gabriel Perez gperez@airspan.com



A MEMBER OF



2. Staex



DEEP
TECH
AWARD
2021
WINNER

T EXCUBATED FROM
DEUTSCHE TELEKOM
AG



staex

Your WEB3-READY
machine data infrastructure

Our unique value for customers

**0%****HIGHLY RESILIENT
AND SECURE****70%****ONE DAY SERVICE
INTEGRATION****50%****FASTER RESPONSE
ON LOSSY NETWORKS**

Expensive
& unreliable
web2

Secure &
reliable data
infrastructure
with Staex

Access
to web3
protocols

●
Yesterday

●
Today Staex

●
Tomorrow with Staex

**PATENTED
TECHNOLOGY**

✓ Fully
distributed

✓ End-to-end
encryption

✓ Zero-configuration installation

Staix is independent GmbH since 2020.
 Staix was born out of 3 years of development
 at Deutsche Telekom R&D.



Paksy



Alex



Alexandra

Staix executives have deep telco, software,
 and global business backgrounds:

100+ Developers scaling


\$10M Annual budget
 of delivering projects


★★★ Successful M&As, exits and IPO



ALEXANDRA MIKITYUK
Founder & CEO

 alexandra@staex.io

 @alexandrastaex

 dr-alexandra-mikityuk

3. BlueHouse Technology

Who are we?



Specialists in mission-critical software for high performance, massive scale and extreme availability

Bringing full stack capabilities to serve high-volume mobile telcos

We deliver software projects through senior-level architecture consulting and highly skilled development teams

20+ years' deep technical experience and understanding:

- Developed several mobile core network elements (AAA, PCRF, SCEF, SPR)
- Experience with all core network protocols including S1AP and RANAP
- Network provisioning/service mediation
- SIM/eSIM/iSIM subscriber data management
- IoT management
- Fraud prevention/revenue assurance
- Erlang/OTP pioneers – the same tech stack behind WhatsApp and other hyperscale services
- Experts in cloud native, highly concurrent systems

We are looking for...

- a bid leader who we can partner with
- Areas of interest
- High Demand Density (HDD) Use Cases
- RIC and other RAN Software Automation

We can offer

- established software development teams in the UK, Czech Republic and India
- cradle-to-grave support for all software we develop

Additional relevant info and contact details

- web: <https://bluehouse-technology.co.uk>
- email: chandru.mullaparthi@bluehouse-technology.co.uk
- tel: +447956100649

4. WM5G



DSIT ONE competition

WM5G **ASSETS & CAPABILITIES**

WEST MIDLANDS 5G CREATED TO DELIVER



BENEFITS

01 **Test, Prove & Scale**
new 5G services

5G Accelerators

Global hub for Technology innovation

5G Testbeds

02 **Accelerate 5G**
and fibre networks

The UK's most connected region

5G Infrastructure Acceleration

TEST, PROVE & SCALE 5G SERVICES

DELIVERED



TRANSPORT

- ✓ Road sensor network live – will roll out to 350 road junctions in region
- ✓ 1st 5G connected tram
- ✓ 14 projects developing new products to support infrastructure and traveller experience



MANUFACTURING

- ✓ 5G live in 1st SME trials
- ✓ 5G demo at MTC to support hundreds of SMEs



HEALTH & CARE

- ✓ Care home trial live in 18 settings
- ✓ Early cancer diagnosis trial now started
- ✓ UK's 1st 5G connected ambulance trial



SME GROWTH

- ✓ Helped over 750 organisations
- ✓ Programmes completed for – Green Innovation, Construction, Smart Cities, Manufacturing, Transport & Live Events challenges

WHAT WE ARE

LOOKING FOR



The West Midlands is the largest urban 5G testbed in the UK. WM5G have a proven track record of working in partnership with Operators, Towerco's, Vendors and Local Authorities

We can offer unparalleled access to dense urban assets including all categories listed by DSIT in major cities including Birmingham.

We can simplify the acquisition and planning processes and have deep expertise in the deployment of telecoms equipment and infrastructure.

DSIT/DCMS competitions won: 5G Tests & Trials, FRANC, DCIA & UKTIN.

We are looking to work with consortia on High Density Demand opportunities as a deployment partner or supplier.

Do get in contact, we're a friendly bunch!!



chris.hudson@wm5g.org.uk

Connectivity Director

WM5G



rhys.enfield@wm5g.org.uk

Infrastructure Acceleration Director

WM5G

THANK YOU

Connectivity Sector

@ **WM5G** delivering WAY MORE

chris.hudson@wm5g.org.uk

rhys.enfield@wm5g.org.uk



@WestMids5G



WM5G



www.WM5G.org.uk

5. Sitenna



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SITENNA 

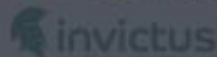
The logo for SITENNA, with the letters 'SI' in red and 'TENNA' in white. To the right of the text is a stylized icon consisting of a white circle with a red outline, containing a white antenna-like shape.

The Sitenna senior team has executed >\$150bn in c. 40 countries



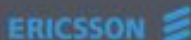
Daniel Campion
Co-founder & CEO

- 12 years international telecom M&A, Strategy. \$100bn in deals, 30 countries incl. 4G/5G spectrum auctions, towerco separation, M&A.



Brian Sexton
Co-founder & CTO

- 12 years technical consultant
- Ex-BAE Systems Applied Intel Division, Ericsson, Norkom.



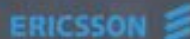
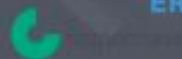
Kip Meek
Chair

- Ex-board member of Ofcom (UK's FCC), ex-chair the European Regulators Group. Current Competition Chair at UK's Competition & Markets Authority (Antitrust)



Richard Pain
Head of UK

- 15 years international telecom deployment, New sites, RAN Sharing, both with MNO's and Tower Co's



Why select the Sitenna Platform and the Sitenna Team...

- **Extensive experience** gained by delivering 50% (4 of 8) DSIT Pilots on DCIA
- **Positive working relationship** with DSIT (DCMS) built over the past 18 months on DCIA
- **c.1m Local Authority assets** on the platform today, ready to support a HDD bid
- **Unrivalled security** - successfully passed a DSIT PEN Test, plus SOC 2 accreditation
- **A partnership will save a lead party months** of front end activity with our proven Platform and Processes
- **All UK MNO's and major infrastructure providers** are currently on-board
- **Real credibility will be added** to any bid, based on the leading platform and relevant DSIT experience

Sitenna in the UK...

Current UK position



- Launched 1Q22
- 25 Local Government contracts, 1m sites
- 100% of telco market onboarding



UK Point of Contact

Richard Pain

richard.pain@sitenna.com

+44 (0)7949 358 444

6. Illuminate Technologies



Illuminate Technologies UK Ltd

Who are we?

Illuminate is a UK SME based in Edinburgh

Worked in the telecommunications sector for over 25 years

Software products are developed to monitor and protect telecommunication networks and are deployed in over 25 countries

Currently operating in 2G, 3G and 4G networks.

Specialized in the area of Lawful Intercept and our recent focus has been network security (roaming interconnect)

We are looking for a bid partner/consortium

Looking for a Bid Partner/Consortium to develop a 5G OpenRAN Security Solution which protects the telecommunication network from attacks through the 5G control plane, such as Denial of Service.

Capability developed could identify attacks on the network or identify irregularities on the network.

See our key contribution to the project as building on our current network security work by developing an xApp OpenRAN Security probe

We would like to be part of a Consortium that is part of the Software Ecosystem and has an interest in novel xApps in the security domain.

The benefits of this system would be:

- Through our AI/ML experience develop enhanced security of the 5G network

- Investigate 5G RAN vulnerabilities to deliver better security models

- Understand patterns of life within distributed networks to detect anomalous activities – with aim of identifying zero-day events

Contact Details

Please contact craig_renfrew@oneilluminate.com

Tel: +44 131 507 0318

<https://oneilluminate.com/>



7. XMG Ltd



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XMG LTD

Who are we?

XMG Ltd specializes in OpenRAN R&D and its applications in the space of 5G private networks, mobile cloud, and also wireless broadband. It has R&D and testing centre in London. XMG partners with Ericsson, Nokia, Viavi, BT, NTT, Rakuten, Fujitsu, Mavenir, Edgecore, Juniper and others for requirement specs, testing and also deployment.

XMG 5G Open RAN system consists of a 5G Core with a 5G Radio Access Network (RAN), as defined by 3GPP. XMG 5G Open RAN System Features:

- ① Affordable, No compromise
 - Using the standard hardware to deploy two gNBs in a single x86 server supports performance reaching **4.7Gbps (DL)** speed & **2Gbps (UL)** speed.
 - Significant cost savings using general purpose hardware.
 - Hardware procurement, maintenance, and upgrades is more convenient and flexible.
- ① Flexible, Reproducible, and Reliable
- ① Deploying Network Function Virtualisation Infrastructure (NFVI) in O-RAN based cloud.
- ① Enhances high availability and further provide flexible, fast, and customizable services for various application scenarios.

We looking for (bid partner)?

- We are building 5G OpenRAN Mobile Cloud for the financial markets.
- We are looking for partners on the OpenRAN CU/DU/RU on the hardware and software.
- For the containers we use Kubernetes and looking for companies specialize in Network Function Virtualisation Infrastructure (NFVI) in O-RAN based cloud environment.
- We are looking for a testing facility, which helps us to test the reliability, interoperability and security of the CU/DU/RU.
- Part of our research also focuses on LASER data transfer and we are looking for companies specialize in LASER Networks.
- For the use-case, we have ready customers with high demand density as it is financial markets with hundreds of terabytes data transfers every second and we are looking for CAN DO and RELIABLE partners as this is a high pressure, precise result, compress time, research and development environment where self discipline, reliable goals, high productivity and quality achievements are essential.

Additional relevant info and contact details

- We are based in Central London with data centres globally.
- The development environment is C++ and Linux, Agile Development, Atlassian toolset.
- Most of the research are done at our headquarters, 2 Devonshire Square and we have access to the rooftops for Antenna installation and maintenance in Central London and beyond.
- Contact information in case of interested parties:

XMG Ltd
2 Devonshire Square, 1st Floor
London, EC2M 4UJ
Phone: 07721488298 Email: info@thexmg.com

8. Dorset Council (5G RuralDorset)

Who are we?

- Dorset Council – digital ambitions, levelling up, planning/highways
- Core group that led the multi award-winning 5G RuralDorset project and Wessex DIA
- Track record of successful R&D and project delivery . . . with Government
- Highly experienced in communication and collaboration – we get noticed
- We have densely populated areas and huge events – Weymouth Beach, Camp Bestival



What are we looking to do?

- We already have a plan, some partners and a bid/project leader
 - But we are always open to new ideas
 - Interested in talking to **operators** and **vendors** who want to be part of a proven team
 - Must be willing to work within DSIT funding rules
- ... and do the admin on time!



Minister hails "incredible innovation" as he tours ground-breaking 5G research projects



Contact details

If you would like to work with us **now or in the future**, please get in touch:

- Colin Wood – colin.wood@dorsetcouncil.gov.uk and
- Dave Happy – MD@telint.biz

Please set out what you bring
and your funding expectations

Thank you



9. KATLAS Technology



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KATLAS Technology is a platform provider, dedicated to unlock Web 3.0 applications across industries.

KATLAS platform consists of 5 layers



Use case: Sector-agnostic platform allows platform deployment for healthcare, financial services, trading, agriculture, etc.



Solution integration: Technology can be integrated with existing apps via standard interfaces, delivered on-premises or as SaaS



Risk and Compliance: Strong risk and compliance framework, enabling third-party certifications



Proprietary software: Cybersecurity features enable sharing of verifiable credentials across a decentralized infrastructure



Hardware compatibility: Light-weight solution can be implemented on variety of systems such as wearable devices and experimental SoCs



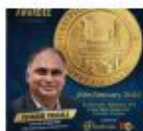
International Trade Council – Category IT: Enterprise Blockchain in recognition for their system for managing 'The Cardiovascular Health Patient Journey'.

The people behind KATLAS



Edward Cole (KATLAS CEO)

Team leadership, space insurance, innovation, markets risk management and reporting, automated trading & settlement platforms



Seshadri Vangale (Chairman & Group CEO)

Asian Excellence Awardee at House of Commons London, FORBES FORTUNE featured CEO of the year, International Partner WBAF, G20 Global Partnerships for Financial Inclusion(GPFI)



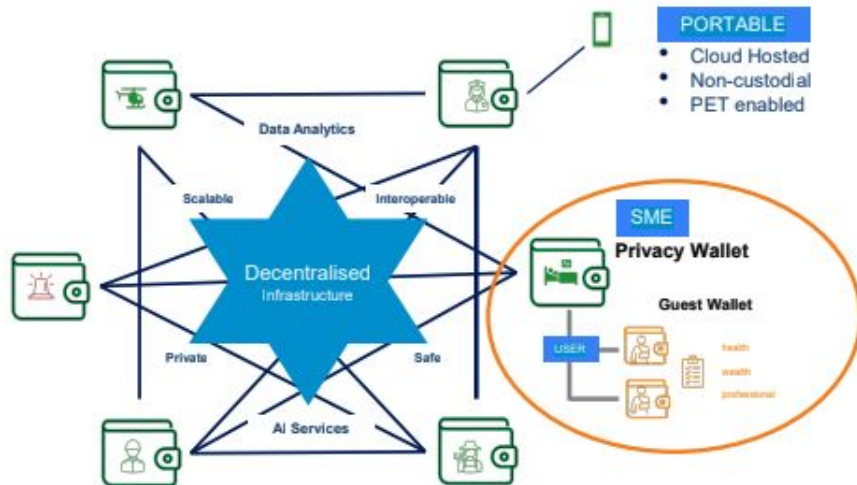
Marcos Mayorga (CTO & Lead Developer)

Computer cryptographic security, consensus and governance, Airbus simulation, engineering on hardware and network resilience



Tier 1 Partners Digital Security by Design, Digital Catapult, UK Research & Innovation

Value: As a bid partner KATLAS offers software to complement stakeholder data control



A layer of privacy and security

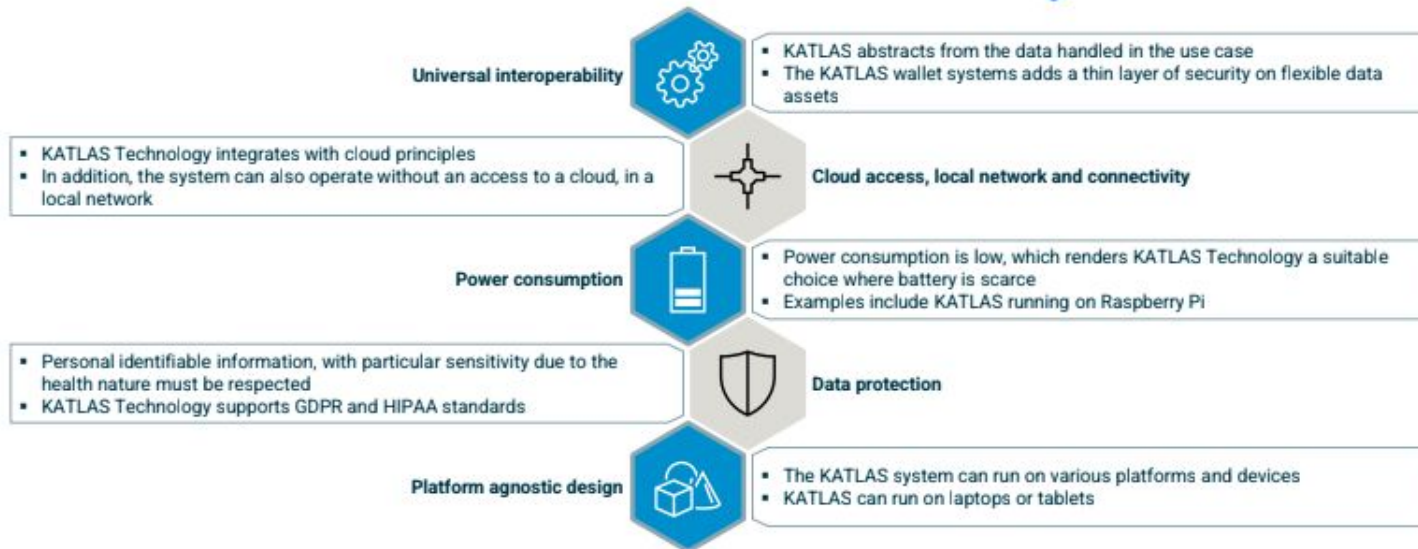


Quantify and monetise traffic



Protocols for intelligent KPI reporting

KATLAS Technology supports a unique set of non-functional requirements



Please contact Edward Cole, CEO of KATLAS Technology Ltd, London, UK to explore exciting application of this promising software
edward.cole@katlastechnology.io; M:+44 (0) 7738460812

10. Benetel



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Open Networks Ecosystem (ONE) Competition - Pitches

BENETEL INTRODUCTION



**6M+ BENETEL DESIGNED RADIOS
DEPLOYED AROUND THE WORLD**

INTRODUCTION

An Irish Telecom Company for 20+ years in Business,
with Extensive Experience in Design & Deployment of Small Cell Base Stations

LEADING-EDGE TECHNOLOGY

Delivering 5G O-RAN Split 7.2x Cat-A and Cat-B Radio Units (O-RUs),
Optimized to Meet Growing Industrial and Private Network Needs

AWARD WINNING CONTRIBUTIONS

Award-Winning Contributions to Open RAN Platforms and Ecosystems for
Outstanding Innovation and Development of Small Cells and Radios

COLLABORATION

ORAN Alliance, SONIC Lab, OTIC Labs, PlugFest

INNOVATION

Extending the Existing RU Platform with New Feature Sets Optimized for
Enhanced Performance, Security, Compliance with 3GPP & O-RAN Standards

STRATEGY

We Are Open & Deeply Engage with O-CU/O-DU Partners Around The World



● Live / Commercial networks

● POCs / Trials

5G O-RAN RUs GLOBAL DEPLOYMENT MAP

BENETEL OFFERS A DISRUPTIVE RADIO PLATFORM

Real time reporting KPIs to the SMO via M-Plane

- enables monitoring and optimization of cellular systems
- better quality of service to customers
- reduces OPEX & CAPEX

Modular, scalable, SWaP-optimized solutions

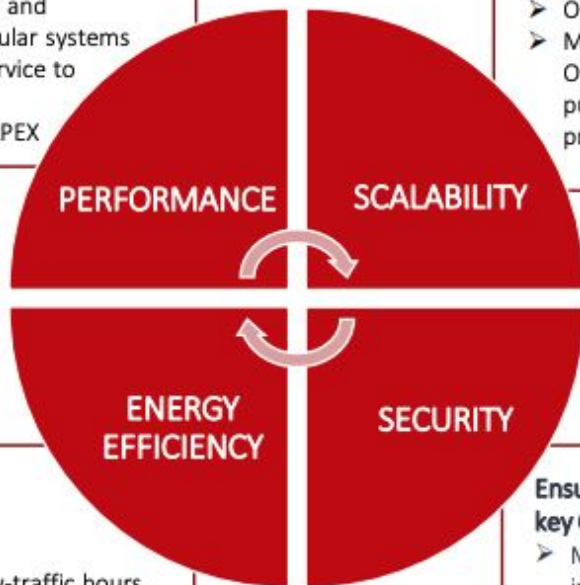
- Optimizing time-to-market
- Minimizing Total Cost of Ownership (TCO) for private and public sector communications providers and OEMs



Indoor RU-RAN550



Outdoor RU-RAN650



Energy saving

- reduce inefficient consumption in low-traffic hours.
- Smart sleep mode & RF off/on
- utilizing O-RAN Section types 0 & 2

Ensuring Zero Trust Security through key O-RU features such as

- MACsec L2 Security implementation
- Secure Firmware and SW images
- Secure boot
- IEEE 1588 TLV security profiles



Excellent 5G Gb performance

O-RAN Compliant

Fronthaul Split 7.2a/b
NR Bands: n77u, n78, n79, n48
Multiple partner integrations (L1, L2, L3)
4T4R MIMO
up to 100 MHz BW

BENETEL CONTACT

Benetel is keen to participate in the ONE competition and to become O-RU supplier to a consortium.

Our Primary
Integration
Partners

 MAVENIR

 Parallel
WIRELESS

 QCT

 ASOCS[®]
On-premise mobile clouds

 Acelleran

 SRS

 Radisys

 Capgemini

 is-wireless[™]

Benetel's Dublin HQ runs a state-of-the-art 5G laboratory for test, support, research and development. Our other global locations include offices in UK, USA and Japan as well as R&D center in Poland.

Address: BENETEL LTD.
GEC, Taylor's Lane,
D08 F9 FV, Ireland
Tel: +353 1 410 0890
Contact: sales@benetel.com
Website: www.benetel.com

Benetel[™]
OpenRAN Radio Units.
Opening Possibilities.

11. Smart Wireless Innovation Facility (SWIFt)



SWIFt - Smart Wireless Innovation Facility

Accelerating Wireless Innovation

April 2023



WHAT IS



A BRAND-NEW STATE OF THE ART 5G AND IOT ENABLED
SMART LAB AND TESTBED LOCATED IN NOTTINGHAM

Keen to join consortiums and offer the following:

What can we offer?

Testbed Access on a real-world campus with up to 7000 people attending daily. The SWIFT testbed offers access on a private 5G network internally and externally on a Non-Stand Alone (NSA) and Stand Alone (SA) basis.

NSA features:

- 5G NR on Band 78
- LTE anchor point on band 3
- NB-IoT Service
- Nokia NDAC 4G/5G core

SA Features:

- SWIFT can also provide access to:
- 5G NR on Band 78 3.6-3.8GHz for indoor
 - 5G NR on Band 77 3.8-4.2 for outdoor
 - Medical Technologies Innovation Facility
 - QMUL
 - Brackenhurst Campus (Working Farm)
 - ORAN architecture (Open RAN deployment)
 - QMUL City Campus (North London City Centre)



SWIFt - Smart Wireless Innovation Facility **Accelerating Wireless Innovation**

THANK YOU

Stuart Fenton

Managing Director

Stuart.Fenton@ntu.ac.uk

12. Cambridge Consultants



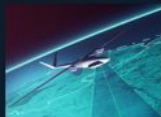
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Open Networks Ecosystem (ONE) Competition - Pitches

We are trusted to conceive and develop truly original products and services that re-define markets

- 800+ multidisciplinary engineers, technologists' designers, scientists and consultants
- 140+ Labs, more than 200,000 ft² of world-class design and development facilities
- 500+ projects per year across the fastest-moving technology areas
- 5000+ patents, creating intellectual property assets for clients
- 35+ countries, HQ in Cambridge UK
- 60+ experience in delivering world-changing innovation

Projects



Stratospheric Platforms Limited

We developed an antenna that sits proudly at the heart of a revolutionary high-altitude platform communication system in the stratosphere to deliver superfast 5G to every corner of the globe at breakthrough cost.



Smart Sky

The office in the sky has arrived. This is the story of an extraordinary business travel transformation – courtesy of office-grade, multi-Mbps inflight connectivity with minimal latency.



Ocado

We developed a unique, novel and highly robust radio system that helps orchestrate swarms of robots across highly automated warehouses. These 'bots' move across giant storage grids at up to 4m per second, with a clearance of just 5mm between them.

Expertise



ELECTRONICS & ASICS



RADIO SYSTEMS



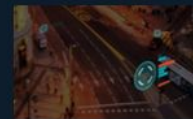
SIGNAL PROCESSING



EMBEDDED SOFTWARE



STRATEGIC ADVICE



AI & ML



SCALEABLE SYSTEMS



DIGITAL SERVICES



DIGITAL SECURITY



Looking for Bid Partnership

We deliver commercial grade high technology every day, and we have deep expertise across the 3 themes:

- ▷ Proven innovation track record
- ▷ World class project delivery capability
- ▷ Extensive UK facilities

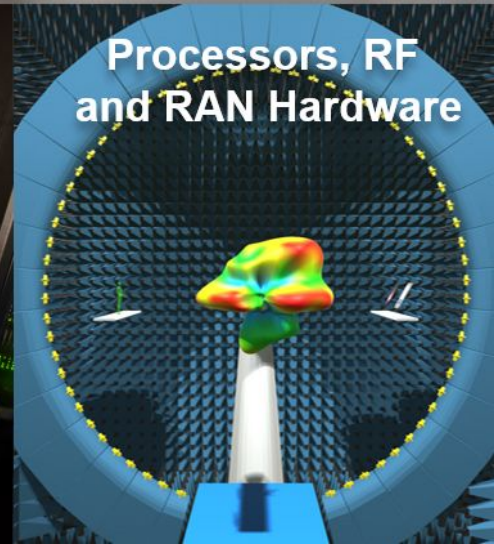
If you're a company or a consortium looking for a high value engineering partner, we're the right choice for you.



HDD Environments



**RIC and
RAN Automation**



**Processors, RF
and RAN Hardware**

Derek Long
Telecoms & Mobile Business development
Cambridge Science Park, Cambridge, UK
derek.long@cambridgeconsultants.com

Fadi Bousaleh
Telecoms & Mobile Business development
Cambridge Science Park, Cambridge, UK
fadi.bousaleh@cambridgeconsultants.com

Insights

- [RIC and roll: how to unlock the true value of O-RAN](#)
- [O-RAN and AI are set to transform service performance](#)
- [Mobilizing private 5G networks](#)

UK . USA . SINGAPORE . JAPAN
www.cambridgeconsultants.com

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13. Scotland 5G centre



Department for
Science, Innovation
& Technology

Open Networks Ecosystem (ONE) Competition - Pitches

The Scotland 5G Centre



- The national platform for accelerating 5G deployment and adoption, to realise its economic and social potential.

• Founding Partners



Scottish Government
Riaghaltas na h-Alba
gov.scot

SCOTTISH
FUTURES
TRUST



University
of Glasgow



University of
Strathclyde

4 Core Areas

1

Coverage

Enabling the development of new mobile solutions to improve coverage.

2

5G Support

Supporting organisations procure and deploy 5G networks.

3

Engagement

Demonstrating the value of 5G to businesses.

4

Investment

Supporting innovation and access to investment.



The
Scotland
5G Centre

National Presence, Regional Focus, UK-Wide Influence

In Scotland

- 6 Innovation hubs offer access to demonstration and development environments via on-site and pop-up Private 5G networks
- Connections with local ecosystems in key private and public sectors
- Currently working across 54+ projects on digitalisation via 5G
- Collaborations with national Innovation Centres, Tech Scaler & more

UK - Wide

- Leading PMO for DSIT FRANC 5G DU-Volution Programme
- UKTIN Nations & Regions Leadership for Scotland



DSIT ONE Competition

What We Can Offer:

- Established connections with key venues in Scotland: airports, ports, campuses and events facilities.
 - ⇒ Variety of deployment environments and use cases for High-Density Demand and Open RAN RIC
- Reliable and Trustworthy PMO services
- Marketing & Communications services

What We Are Looking For:

- Telecoms HW/SW suppliers
- Mobile Network Operators
- System Integrators



Thank You

Luca Campanalunga

Technical BD Manager

luca.campanalunga@scotland5gcentre.org



The
Scotland
5G Centre



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14. EnSilica



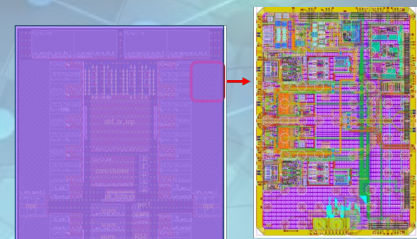
Intro to EnSilica and the Open RAN Chipset Architecture Development (ORCHARD) consortium



EnSilica plc
17 April 2023

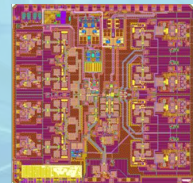
Who is EnSilica?

- EnSilica plc (LON:ENSI) is a UK fabless semiconductor supplier with world-class expertise in developing advanced node RF, mmWave communications ASIC/SoCs
 - 162 staff located in the UK(113), Germany (2), India (26) and Brazil (21)
 - Full fabless semiconductor end-to-end expertise from custom RF, communications systems design, silicon design, package design, test development and supply
 - Established, resilient semiconductor supply chain
- Relevant experience includes :
 - High performance RF from sub-GHz to 30GHz (FinFet , CMOS, FD-SOI, SiGe)
 - Baseband Digital processing, MIMO/Beamforming, Arm/GPU/NoC integration and implementation down to 6nm
 - Technologies know how including RRH (DSP/CFR/DPD), eCPRI, PCIe, JESD, SerDes
 - Low-power ASIC with 32-channel multi-band 5G RF transceivers, ADC/DAC/DPD and beamformer/ baseband processor with 32-channels of 56G SerDes
 - Ka-band transceivers and digital beamformer for satellite communications
 - 40Gb Ethernet Network processor

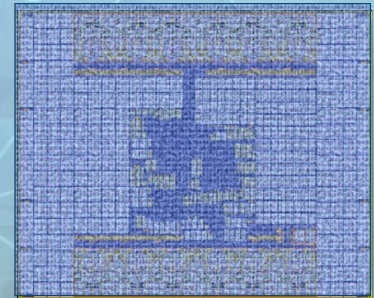


LTE RF Front-end
Hard-macro
with ADC/DAC/DPD

Baseband Processor with 32 Tx/Rc RF FE
, Arm R52 and 32x56Gb SerDes



Ka-band RF Beamformer



40Gb Ethernet Network Processor

We are seeking partners/participants for **ORCHARD** consortium

- Network operator and/or Network equipment providers requiring custom RF, digital or combined RF & digital chipsets
 - Define the chipset(s) and reference designs to address the global Open RAN market
 - Partners wanting to bring the advantages of ASIC to Open RAN equipment – energy efficiency, enhanced performance, , high security (PQC support), resilient supply chain and ability to implement new and novel functionality
- Motivation will include the following :
 - Replacing energy hungry FPGAs (RFSoc/UltraScale+) with option of integrating RF front-end.
 - Replace x86 platform with an optimized energy efficient Arm based processing ASICs with hardware accelerators and AI/GPU accelerator
 - Integrate your specialist hardware algorithm in the chipset, giving them a competitive advantage or licensing fees
- Low Phy IP provider(s) and other differentiated hardware / software 5G IP providers
- Security IP providers with post quantum cryptography (PQC) solutions

Provisional consortium partners/participants



AWTG



NEC

NEC (NTML) Non-funded (participant), subject to corporate approval

ORCHARD consortium problem statement and goal + contact details

The problem:

- Chipsets are high value and critical component in all network equipment
 - The UK has the expertise and heritage to be a key player in network infrastructure equipment and chipsets
 - ASIC are key to being able to differentiate your products but they come at a high cost of entry.
 - ASICs are key to delivering, energy efficient high-capacity Open RAN products, all the major equipment providers do their own chips.

Goal with the support of DSIT :

- Consortium goal would be to define and make a prototype chipset (MPW/TRL7) for Open RAN that delivers highest energy saving and retains the highest value with a resilient supply chain
- Market driven requirement around an Arm based high-capacity massive MIMO RU (6/7.2 split) using extensive hardware accelerators to deliver best-in-class power and spectral efficiency
- Contact point for EnSilica: ian.lankshear@ensilica.com

15. 3adesign



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Open Networks Ecosystem (ONE) Competition - Pitches



3adesign:

- Design Consultancy, specialising in telecoms and media, working with major network operators in telco and mobile, working in broadband, Wi-Fi, Mobile, Voice.

lcotest:

- Design and Manufacture of test equipment and systems for modular test systems used by major network operators to build fully automated test solutions for major network systems,

Bid Lead (co lead!)

- Sports stadium High-Density Deployment with local coverage on routes to the stadium
- Neutral Host platform looking for MNO's
- Develop a system based on Open RAN , integrate and deploy it with the cooperation of local authorities
- Seeking interested parties

Bid Partner

- Develop automated components test needed for CI/CD pipelines
- Provide Voice testing capabilities for both quality and capacity
- Emulated UE's for functional and performance testing

- Contacts
- Paul Graham, paul.graham@icotest.co.uk

27 Years in Mobility covering the progression from 2G to 5G

Experience in large scale deployments covering tier 1 and 2 mobile carriers

Pioneering work in 5G product development

Cloud Native, Core components, Greenfield 5G products

Involved in marquee 5G deployments

Dish US

Telefonica Germany

Telstra Australia

- David Atkins, david@3adesign.co.uk

37 Years in Media and Telecoms

Serial Entrepreneur, passionate about developing local skills and talent

Extensive knowledge of hardware and software at all levels

Many years integrating systems from multiple vendors

Practical networking SDN networking experience

16. Digital Catapult



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Open Networks Ecosystem (ONE) Competition - Pitches

Who are we

- Digital Catapult is the UK authority for Advanced Digital Technologies, we are an RTO (Research Technology Organisation).
- 9 years experience working on 5G Technologies and Future Open Networks from R&D to Innovation and Scale up support to industrial applications.

500+
organisations
engaged through
accelerator programmes
90+ partners
DC is a neutral partner working
across the ecosystem.

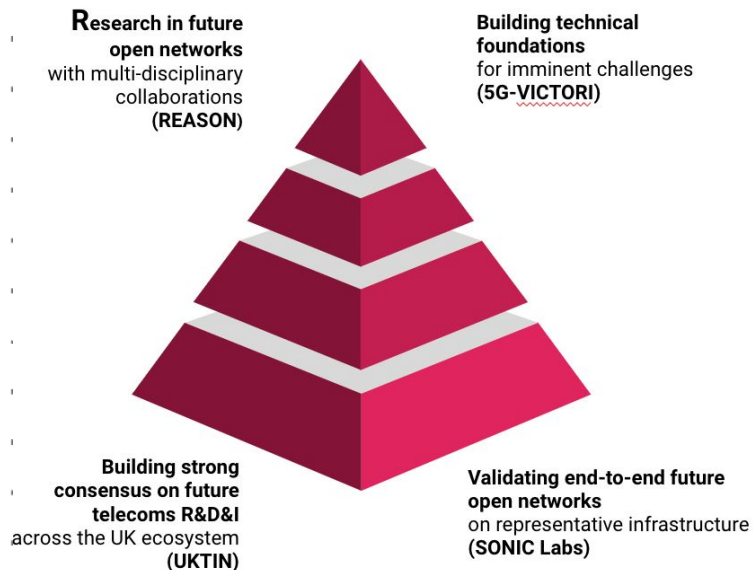
**Two nationally
recognised thought
leadership
initiatives**
'5G Nation' & 'Made in 5G'

25+ cutting
edge and award
winning projects
At the heart of the 5G
ecosystem since 2014

**Vendor & tech
neutral 5G testbeds**
Northern Ireland & NE England,
London

Creative Industries &
Manufacturing environments

DC Future Open Networks



Digital Catapult as a Consortium Partner (RTO/RO category)

RIC Expertise

- Design and test campaigns to validate RIC use cases such as QoE and TCO
- System Integration of RIC and x/rApps into deployed OpenRAN standalone 5G network
- Conduct trials to quantify merits of RIC use cases and x/rApps within a live HDD environment or with historical operator data
- Co develop RIC applications, focusing on:
 - Energy efficiency
 - Traffic steering
 - Private networks
 - AI/ML automation

5G Open RAN Innovation

- **Business analysis for TCO** : Primary research using publicly available data followed by secondary research around specific scenarios (e.g. RAN energy efficiency) providing insights into what Open RAN can do to the total cost of ownership. We foresee desk research, interviews and economic analysis as main activities.
- **Innovation ecosystem engagement and education**: This work will advance the engagement with the innovation community in the Open RAN space and increase the level of knowledge around technical challenges in mobile networks, RIC benefits and innovation opportunities whilst providing some examples of solutions tackling new use cases. We foresee online webinars, proactive outreach to the innovator ecosystem and production of educational materials as main activities.



SONIC Lab-as-a- Service

- Pre-staging in a live OpenRAN 5G network environment the ORAN chain in a High Density Demand network, focusing on eMBB (enhanced Mobile Broadband) and URLLC (Ultra-reliable low-latency communications) applications and services.
- OpenRAN integration, interoperability, performance testing across 5GC, CU, DU, RU, RIC ORAN chain.

Contact:

collaborativeresearch@digicatapult.org.uk

17. NEC Europe



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Open Networks Ecosystem (ONE)

NEC \ Orchestrating a brighter world

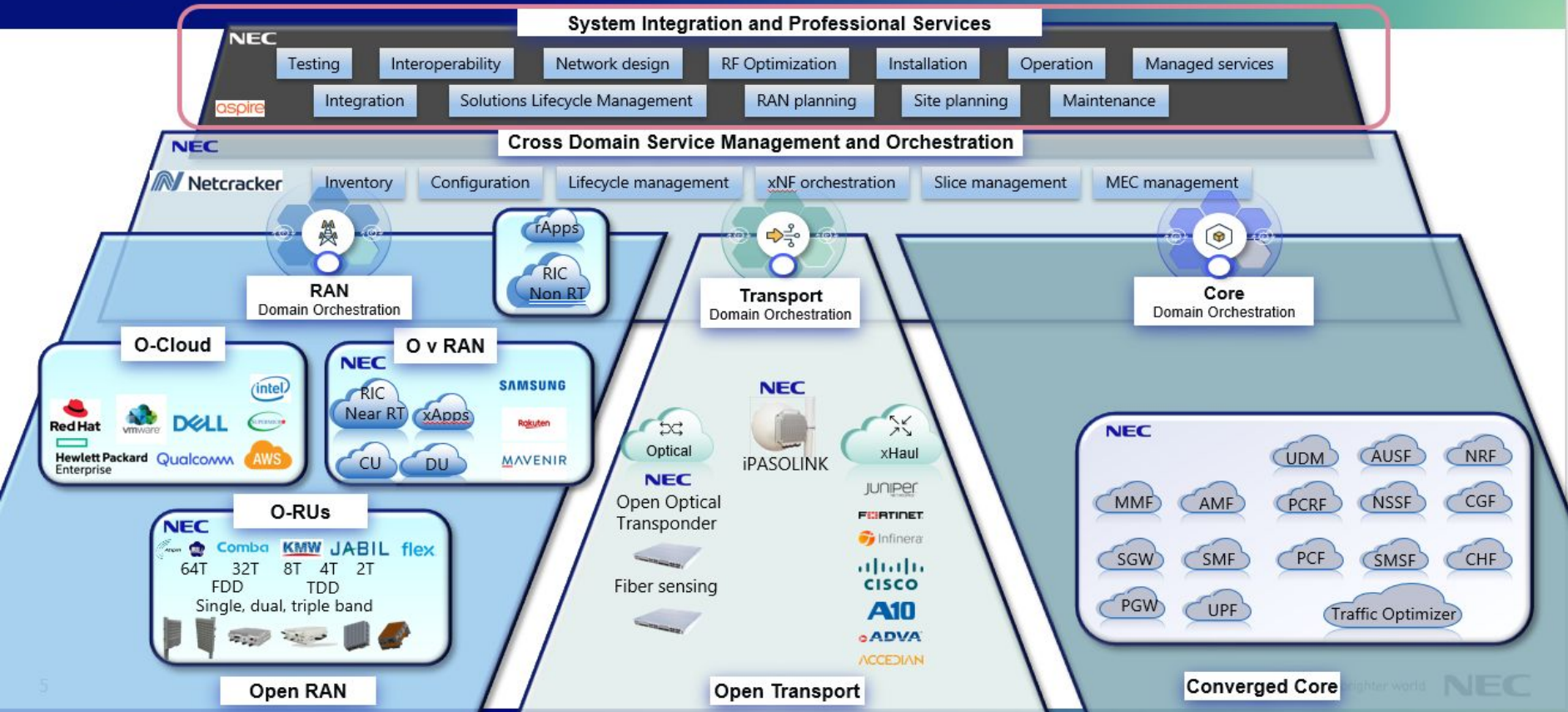
NEC Corporate Profile

Providing extensive value to customers in a range of fields worldwide



NEC in Open RAN

Neutral System Integrator + E2E Solution for Open RAN based Wireless Networks



NEC OvRAN vCU/vDU

NEC's vCU/vDU software architecture is designed with cloud-native principles in mind, using microservices architectures to enable flexibility, scalability, and easy deployment across a range of cloud environments.

Committed to Radically Open

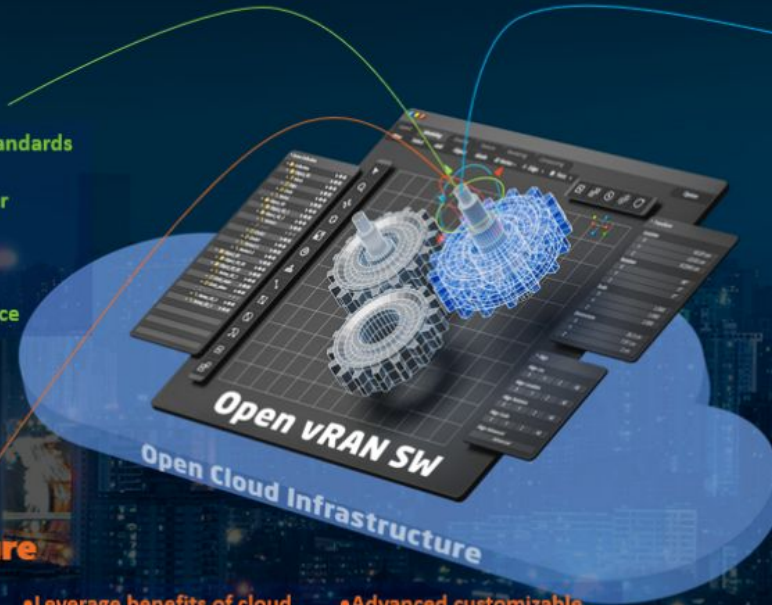
- Complies with 3GPP and O-RAN Standards for easy integration
- Cloud-native, fully containerized for versatility and flexibility
- Open for 3rd party RIC application ecosystem
- Extend customers' freedom of choice

Ready for System Integration

- NEC is the industry's most experienced Open RAN SI
- NEC CU/DU perfect component for customer blueprints
- Pre-integrated CU/DU with NEC components saves time and money
- Design Quality Assurance process ensures no compromise on quality or performance

Built for the future

- Pre-integrated automation for deployment
- AI/ML-based optimization and operations support
- Leverage benefits of cloud native architecture
- Architected for 5G Advanced, 6G and beyond
- Advanced customizable SMO feature-set with NEC RAN DO suite
- Native support of both non-RT and near-RT RIC



What NEC can offer?

- Prime or partner offering following:
 - a. Industry leading ORAN Compliant M-MIMO Unit (32T32R or 64T64R)
 - b. OvRAN Software (DU/CU/EMS) + RIC
 - c. UK based SI services (IoT / DQA / Blueprint Validation, RCT etc.)
- Solution for all three areas of the ONE competition

What NEC is looking for?

- Prime or partner offering following:
 - a. MNO / Private Network (vertical market segment)
 - b. HDD venue
 - c. Neutral Host / Tower co. companies
 - d. Use cases / Application requiring 5G/6G network
- Non M-MIMO O-RU vendor (Indoor & outdoor small cells)

Contacts:

Gary Collins

GM, Regional Account & Service Sales

gary.collins@emea.nec.com

Mobile. 07899738677

Khurram Qayam

Technical Solution Sales Manager

Khurram.Qayam@emea.nec.com

Mobile. 07500994428

18. Asset Market



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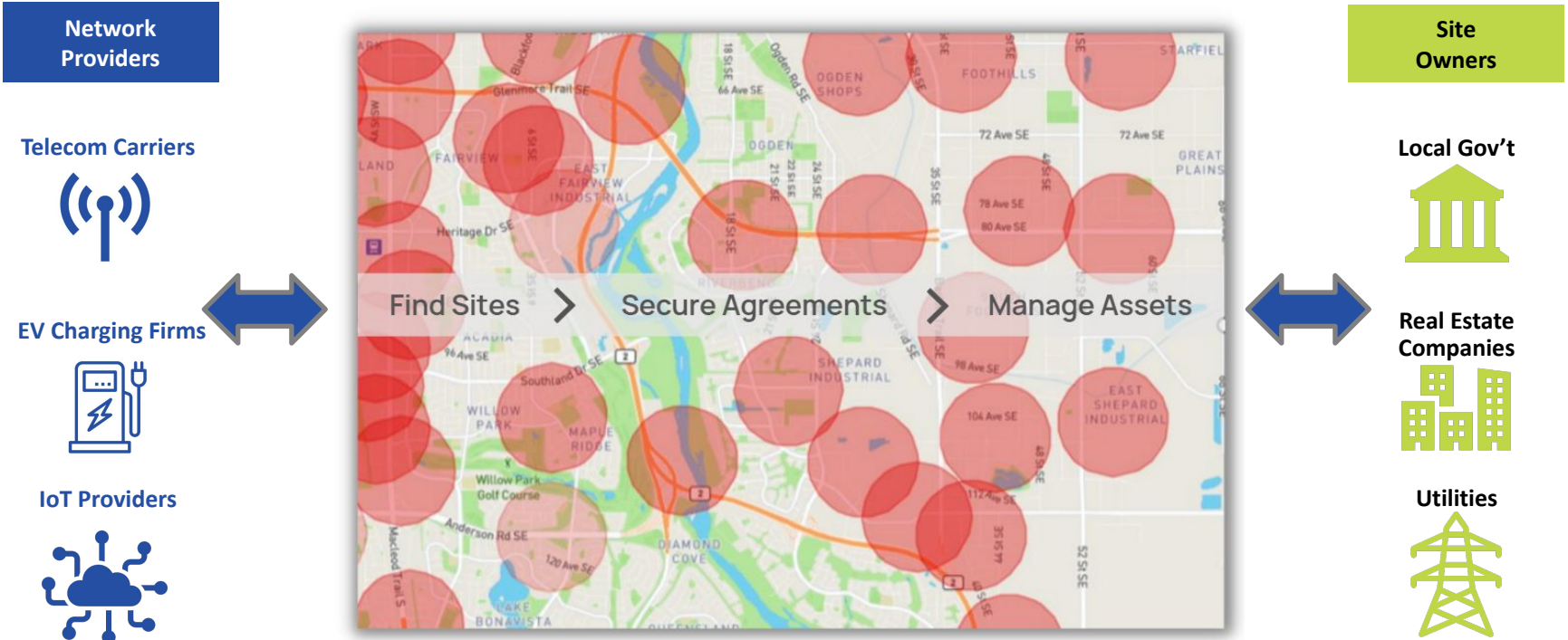
Open Networks Ecosystem (ONE) Competition - Pitches



Asset Market

Who Are We?

Connecting network providers to site owners through a location-based digital platform for site acquisition that leverages high quality data and analytics to make **device installation at scale faster and cheaper**.



We seek to support communities and network providers to choose the right locations and reduce deployment time and cost

Provide analytics and information to analyse 5G requirements in a visual, easily digestible way

Identify candidate locations to deploy network equipment

Streamline the cost and time to plan and track equipment deployment

Provide an easy way to track deployment progress and network performance

Additional relevant info and contact details

Jeff Davis, CEO

Jeff.davis@asset-market.com

+1 236 999-2975

Jay Patel, Head of Partnerships

Jay.patel@asset-market.com

+44 7856 702020

19. Wiwynn



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& Technology

Open Networks Ecosystem (ONE) Competition - Pitches



Who is Wiwynn

- Innovative IT Infrastructure Provider

- Aggressively invest in next generation technologies for optimized workloads and TCO
- One of the leading OCP solution providers and a long-time platinum member
- Providing hyper scale cloud infrastructure solutions to most of the mega cloud customers

- Global Manufacturing Capabilities

- Incorporated in Y2012; Headquartered in Taipei, Taiwan
- Y2022 Turn Over \$9.8 billion



Worldwide Headquarter @ Taipei Taiwan



Mother Board Automation in Taiwan



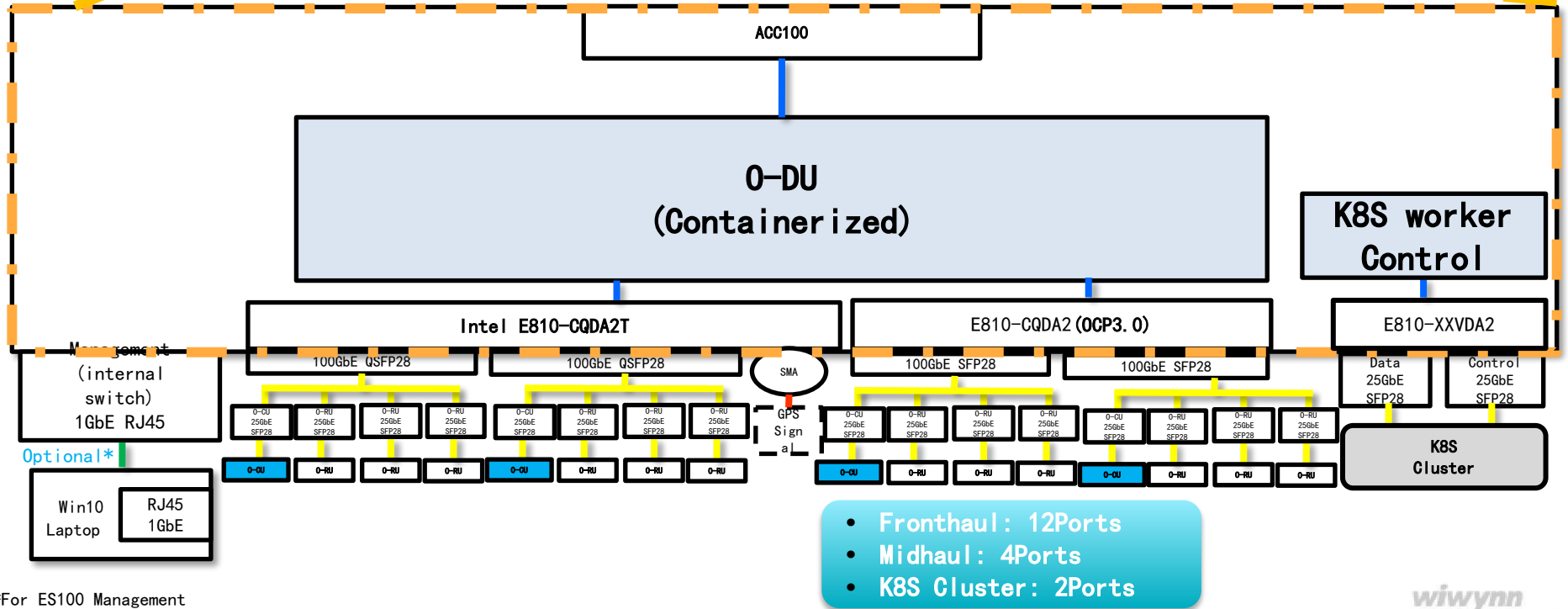
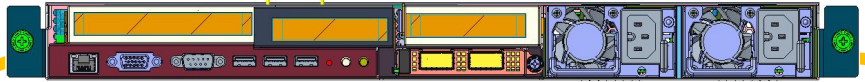
Rack Integration in Brno CZ Factory



Wiwynn is looking for bid partner

Legend:

- SFP28 DAC copper
- RJ45 CAT-6
- GPS antenna
- Logical Connection

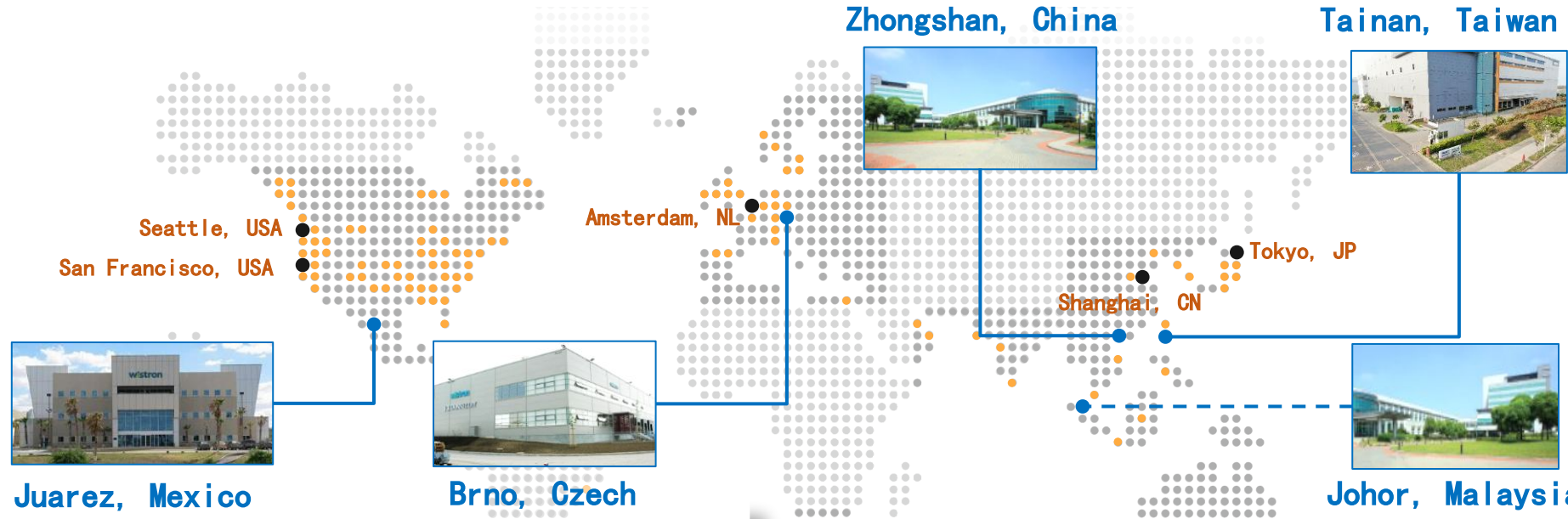


- Fronthaul: 12Ports
- Midhaul: 4Ports
- K8S Cluster: 2Ports

*For ES100 Management



william_wl_shih@wiwynn.com



367
 18
 5
 Continents
 Global Locations
 Data Centers in the World

20. Stoke City Football Club



Stoke City FC

5G Cellular Network Pitch



INTRODUCTION

- Stoke City are a professional football club currently participating within the EFL Championship; founded in 1863 and one of the twelve founding members of the Football League in 1888.
- In addition to hosting around 30 1st team matches per season, we host additional matches at the grounds including under 21's and ladies team.
- Fan attendance at 1st team match is on average around 20,000. Our stadium capacity is just over 30,500. During 2018 we saw an average of 29,000 fans attend a match.
- Our venue is utilised outside of match-days for events such as concerts, University graduation days, business events, shows, ceremonies and parties.
- The club has invested heavily in both facilities and equipment, with all of its suites and function rooms being recently renovated.
- Our IT team has overseen significant projects which include: fibre networks around the entire stadium bowl, hospitality WIFI services, meeting room technologies, turnstile access solutions, Microsoft 365 deployment and large scale EPOS solutions – making the venue fully contactless.



WHAT ARE OUR GOALS?

- To find a partner (or partners) with expertise and specialism in the area of cellular network deployments
- With that partner, seek funding to cover some of the costs associated with transitioning the current stadium based 3G solution to a more capable and reliable 5G solution
- In addition to the above, we would be looking for a partner to assist with:
 - Project Management
 - Installation and configuration
 - Ongoing Maintenance
 - Surveys
 - Benchmarks / KPIs



CONTACT DETAILS & ADDITIONAL INFO

- During events where there are thousands of attendees we find cellular service to be heavily congested – resulting in inability to make calls, send texts or access data services. Our current solution can't cope.
 - Even outside of large scale events, signal strength is low/poor for both 4G and 5G on certain networks
 - We would like to improve services at the venue to provide attendees connectivity where our WIFI currently doesn't cover.
-
- SCFC IT Dept: 01782 592108 (t) it@stokecityfc.com (e)
 - Technology Services Manager: Darren.Palmer@stokecityfc.com (e)

21. Purview Services



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Science, Innovation
& Technology

Open Networks Ecosystem (ONE) Competition - Pitches

Who we are?



2009

18+ COUNTRIES

HQ in Edinburgh & London (UK)
 Delivery Centers: Hyderabad, Bangalore, Chennai, Noida, Pune
 Global: Singapore, UAE, Oman, Poland, Germany, Finland, Ireland, Netherlands, Switzerland, Hong Kong, Australia, Japan, Malaysia, Canada, Mexico & USA

BUSINESS PROFILE

- ✓ UK 62%, Europe 18%, ROW 20%
- ✓ Average client relationship 7+ years
- ✓ Professional Services 35%, Technology Services 45%, Workforce Solutions 20%

CAPABILITY PROFILE

- ✓ 5 In-house Enterprise Solutions
- ✓ 25+ Strategic Technology Partnerships
- ✓ ISO 9001, ISO 14001, CMM Level3 (service)

Ethnic Minority Owned Business (EMB)

Industries

Banking & Financial Services, Insurance, Information & Entertainment, Manufacturing, Transportation, Logistics, Hospitality & Leisure, etc

Services

Digital Transformation, AI and Machine Learning, 5G, RPA, Blockchain, IOT, Cloud, Salesforce, MuleSoft, Service Management, Data Analytics, IT Security, Infrastructure, Outsourcing & Test Automation.

Purview is a leading challenger in Digital, Cloud, Data Analytics, Networking & Infra Solutions and Services including 5G enablers.

Technology Services	Professional Services	Operation Excellences
<ul style="list-style-type: none"> • Developing in-house solutions to meet market gaps using emerging technology • Gain a Competitive edge through technology-led innovation • Developing COE on niche technologies 	<ul style="list-style-type: none"> • Strong Partnerships with industry leading product companies to develop solutions and capabilities for our global clients • Providing fully managed services with our partners for implementations 	<ul style="list-style-type: none"> • Improve Cost / Income Ratio by reducing your Cost of Operations & Cost of Technology • Improve Revenue and Share of Wallet by delivering a highly differentiated millennial experience to clients

Purview Products



SustainOnline

EFUNDZZ

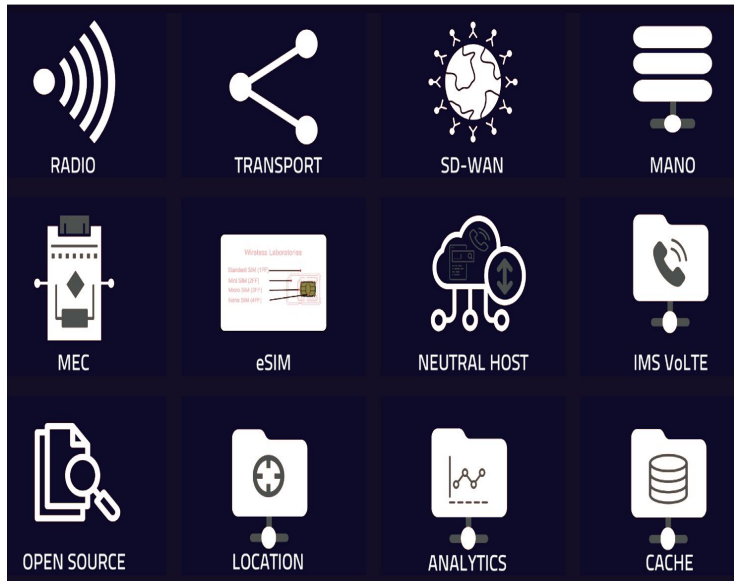


What are looking to do (bid leader) / we looking for (bid partner)?

- We are developing Future Ready Communication Platform for Train to Ground and Ground to Train Communication to support high bandwidth availability in high-speed mobility scenarios.
- The proposed solution includes 5G RU/DU/CUs placed inside compartments along with the Core Networks preferably in CBRS mode with on-Train computing to optimize and securitize the network traffic and for effective transmission during uplink and downlink communication.
- The solution also encompasses System Integration with various available vendors in the market to help diversify the sourcing and supply chain.
- Research funding for evaluation of 4x4, 4X2, 8X4, 8X2 MIMO, Core Network in the train, MIMO and CoMP, SDN stack for High-Speed Mobility

Additional relevant info and contact details

• Our Tech Stack



Bhaskarar Raju

- Chief Architect – 5G and Telecom
- 20+ years of industry experience in Telecom, 3GPP and related technologies
- bhaskarar@purviewservices.com

Sandeep Pamidiparthi

- Chief Technology Officer
- 20+ years of industry and research experience in Cloud, Data, AI and Enterprise Products
- sandeep.n@purviewservices.com

22. Radisys



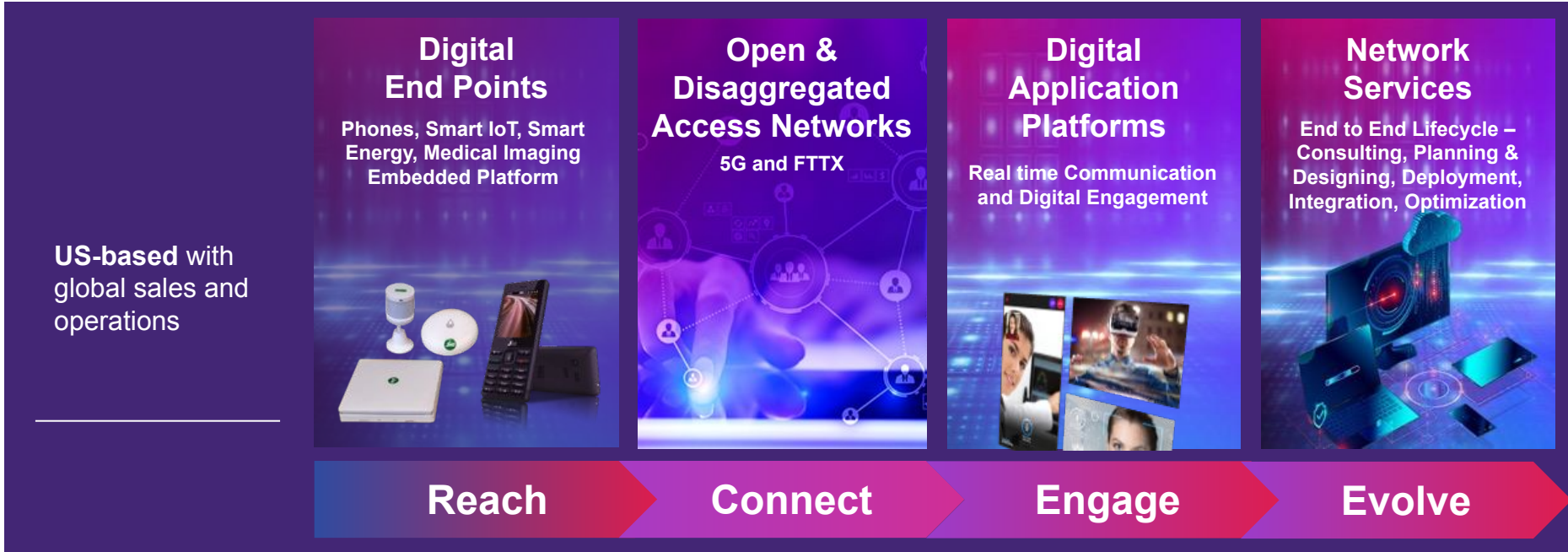
Radisys

Open Network Ecosystem Competition

18th April 2023



Enabling Service Providers to Become Digital Experience Providers



US-based with global sales and operations

Headquarters: Hillsboro, OR United States

Founded: 1987

Wholly owned subsidiary of Jio Platforms Limited (JPL)

Open: Our Vision for the Networks of Tomorrow

Creating new digital experiences

Disaggregated

Software / Hardware
Network Functions
Control / Media



Intelligent

Software Defined
Programmable
AI / ML

Open

Software, Hardware, Interfaces

Radisys' Complete Solution

Fully integrated, tested and validated

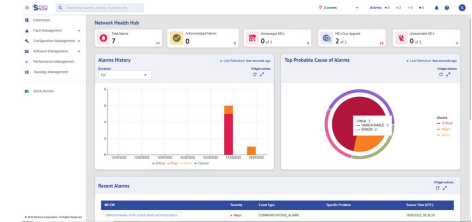
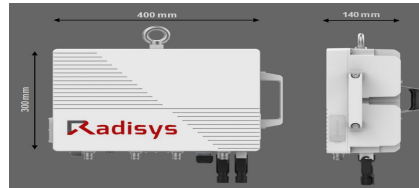
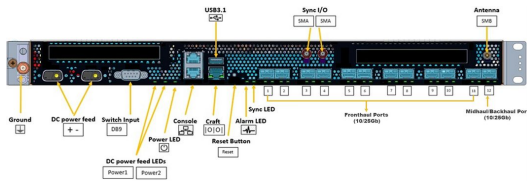


CU/DU server

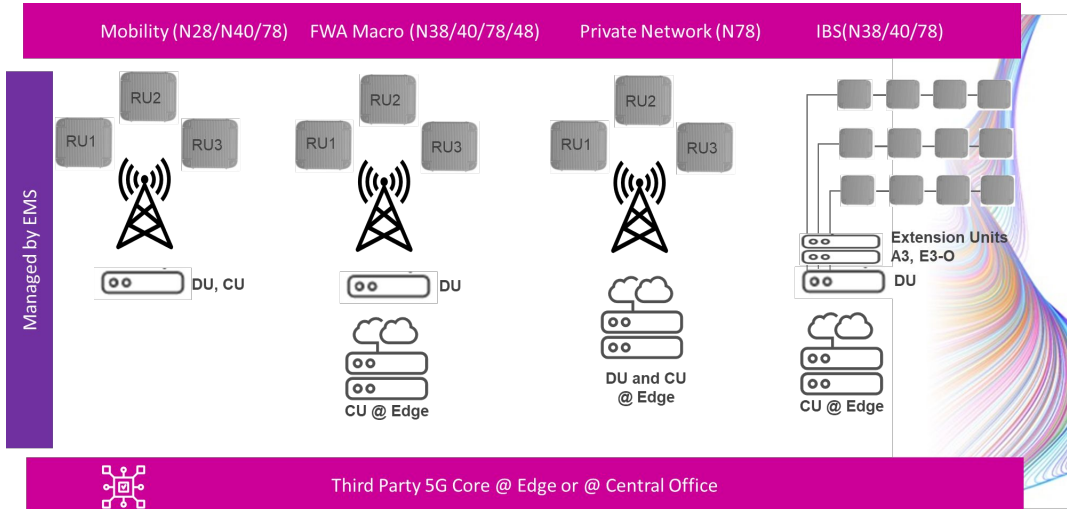
RU portfolio

N48 / N78 / N38 / N40 / N28 ORUs for different deployment scenarios

Centralized Management System



Deployment Flexibility



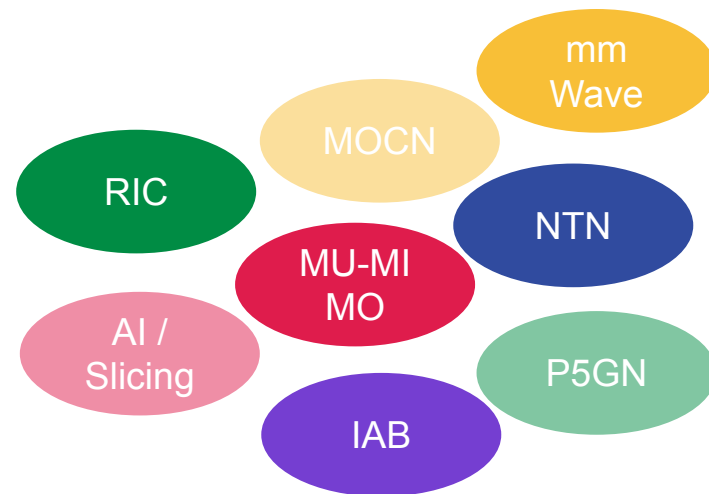
Partnerships / What we are looking for as supplier

Offering

Solution Vendor
Experience of DCMS – FRANCO
Member of Digital Catapult Lab
Software and Prof Services Expertise

Seeking

MNOs
System Integrators
Neutral Host Service Providers
University partners / Academia
5G Ecosystem Partners (RU / Antenna / Core / RIC / Cloud)





Thank you

Please direct any questions to:

Elias Patel

Sr. Sales Director
epatel@radisys.com
+44 7484 682903

Umit Ipek

Sr. Sales Engineer
uipek@radisys.com
+44 7703 829911

23. Sam Botterill

24. Saankhya Labs



Department for
Science, Innovation
& Technology



Open Networks Ecosystem (ONE) Competition - Pitches

Saankhya Labs Private Limited, INDIA
(Subsidiary of Tejas network)

Date: 18- Feb-2023



A Premier Semiconductor and Wireless Communication Solutions Company

- ❑ India's 1st Fabless Semiconductor Company
- ❑ World's 1st Production SDR
- ❑ 2 chips designed with first pass success and in volume production
- ❑ 500-man-years experience from "Antennae to Bits", from "Systems to Chips"
- ❑ ISRO's technology partner
- ❑ **70 International Patents** :- SEP pool of about 5 patents covering next-gen "6G" RAN and Convergence
- ❑ Field deployed Broadband and Sat-IoT Systems
- ❑ Global Customer Base Over \$20 M investments in R&D
- ❑ Growing at 25% Year on Year

Our Developed Products-True SDR Technology



*Coming Soon

Gen1 – Current ORAN based 5G RAN products



Single Band RU
4T4R
Band B1/N1



Single Band 8T8R or Dual
4T4R Band RU

8T8R
Bands N78

4T4R
Bands – N66, N70



Tri Band RU

4T4R
Bands – N71,N26,N29



Massive MIMO RU

32T32R

64T64R (Roadmap 2024)



To develop the below- products for Global Market

ORAN compliant 5G Radio Access Network (RAN) Products



CONFIDENTIAL

Open -
DU



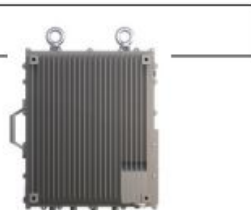
Products:

1. **ORAN DU** software running on COTS hardware
2. **RANWiser™**. A Portable RAN Framework for Vertical disaggregation of DU (2022) and Decoupling Hardware and Software
3. SDR based Open DU eRAN **Chipset and Hardware Platform**

USPs:

- Lower TCO
- Flexible and Elastic architecture

RU



Products:

- Multiband **5G RU** Equipment Hardware + Software
- Single, Dual, TriBand and Massive MIMO variants
- SDR based RU Hardware Platform

USP:

- Lower Capex and Opex
- Differentiated Feature to provide Network Automation

RIC



Products:

- Patented **Radio Mapping** technology for enhancing RIC Functionality

USP:

- Digitization of the Radio environment
- Dynamic AI Based Network Optimization through real time measurement and monitoring of network parameters