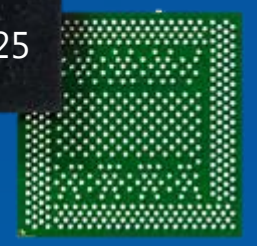




Sparq-2025



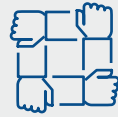
Revolutionary solution  
for 5G vertical markets

[www.runel.net](http://www.runel.net)

# The Private 5G Network for Vertical Market



Mission:  
Bring 5G globally with  
our superior Private 5G  
Network technology



Highly experienced team,  
with an impressive track-  
record



A business ready for  
commercialization with  
strong traction and  
secured revenue  
(€3M of secured contracts  
in 2022)



Best performance:  
flexibility, latency,  
reliability, accuracy

**Based on own  
developed  
Sparq-2025 SoC**

Low latency

Low Cost, Zero Touch

Accurate UE Location

# RunEL's achievements

- RunEL's multidisciplinary team has established a global center of excellence that invented the OFDMA technology, which became the basis for the 4G network (LTE and WiMAX) deployed today, and now for the new 5G.
- In 2016 introducing the 5G Distributed Architecture with RunEL disrupted the 5G ecosystem by Physical layer split (7.2) Currently adopted by the O-RAN Alliance..
- Current introduction of the Private 5G Network solution for Vertical markets
- Ready to scale up and commercialize with already €3M of secured revenues for 2022:
  - Petach Tikwa 5G Soccer Stadium
  - 5G Street Light Project in Poland ( includes ASIC Development)
  - 5G Home-Land-Security

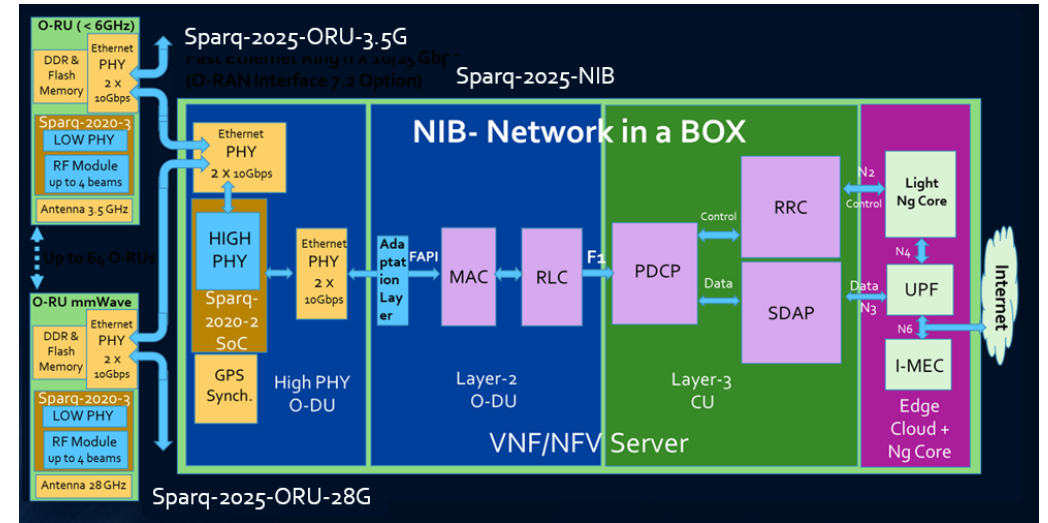
## Proven Team Background (Runcom)

- OFDMA Patents and Know-how
- Tier-1 Cellular partners
- €80M sales- Base stations & Users Chips (2007)
- Leading to 200+ employees





# Stadium Project



- 20,000 subscribers
- 20 GB/sec total capacity
- 1 msec latency
- 1 cm location accuracy
- Local Edge cloud with Core and Applications
- Commercial launch end of 2022
- Supported by the IIA and MOC



# Problem Statement

1

Cellular communication today doesn't meet:



the latency



the reliability



the location accuracy

...needed for of vast number of applications and services such as : AR/VR, Drones, Autonomous Cars, On-Line Gaming, Industry 4.0, etc.

2



Cellular Networks are complex closed networks operated by big organizations



Important costs of Cellular networks: massive CAPEX investment and high OPEX

# Competitive Advantages and Customer Benefits

- **Simple and low cost 5G private network based on own SoC**
- Increased Flexibility and Productivity with **Open API for any Application developers**
- Meets stringent latency, reliability and high-accuracy positioning requirements

- Flexible architecture, integrated backhaul (IAB) and ease to installation
- Plug & Play, scalable Zero Touch solution
- Low Fronthaul to Capacity throughput ratio

Reduced CAPEX (time saving in the initial development) and OPEX (continuous automatic network performance optimization)

Low End-to-End latency

Ability to support multiple latency sensitive verticals and applications (autonomous cars, automated factories, On-line gaming, Remote surgery...9

**Lan Type Connectivity**

No need to connect the network to the operators core network-applicable, mainly for vertical applications like smart factories

**Based on in-house own PHY, MAC Technology and IP (SoC)**

Flexibility to support different user requirements by adapting/modifying the SoC  
Continuous and remote automatic network performance optimization optimization

# Competition

|        | Company           | Network In A Box | Low Latency<br>(< 0.5 MSec) | Positioning Accuracy<br>(1 cm) | Distributed<br>Architecture | Integrated MEC | Programmable<br>(FPGA Based) |
|--------|-------------------|------------------|-----------------------------|--------------------------------|-----------------------------|----------------|------------------------------|
| Tier 1 | RunEL             | ✓                | ✓                           | ✓                              | ✓                           | ✓              | ✓                            |
|        | Nokia             | ✗                | ✗                           | ✗                              | ✗                           | ✓              | ✗                            |
|        | Ericsson          | ✗                | ✗                           | ✗                              | ✗                           | ✓              | ✓                            |
|        | Huawei            | ✗                | ✗                           | ✗                              | ✗                           | ✓              | ✗                            |
|        | Samsung           | ✗                | ✗                           | ✗                              | ✗                           | ✓              | ✓                            |
|        | ZTE               | ✗                | ✗                           | ✗                              | ✗                           | ✓              | ✓                            |
| Tier 2 | Fujitsu           | ✗                | ✗                           | ✗                              | ✗                           | ✓              | ✗                            |
|        | NEC               | ✗                | ✗                           | ✗                              | ✗                           | ✗              | ✗                            |
|        | Mavenir           | ✗                | ✗                           | ✗                              | ✓                           | ✗              | ✗                            |
| Tier 3 | Airspan           | ✗                | ✗                           | ✗                              | ✗                           | ✗              | ✗                            |
|        | Baicells          | ✗                | ✗                           | ✗                              | ✓                           | ✗              | ✗                            |
|        | Parallel Wireless | ✗                | ✓                           | ✗                              | ✓                           | ✗              | ✗                            |
|        | Corning           | ✗                | ✗                           | ✗                              | ✓                           | ✗              | ✗                            |
|        | Acceleran         | ✗                | ✗                           | ✗                              | ✓                           | ✗              | ✓                            |
|        | Zyxel             | ✗                | ✗                           | ✗                              | ✓                           | ✗              | ✗                            |

# Current and future Investments

€6.66 M already raised from founders and non-dilutive government grants, enabling us to reach strong achievements with a cleaned cap table.

Recently closed a M1\$ SAFE Agreement

Fundraising targets - additional €8.5M for:



Technology testing and KPI POC



5G light gap coverage (IAB + ASIC)



5G-3GPP standard contributions



IP portfolio development

Advancing the Sparq2020P product to Commercialization and increase the €3M of revenues already secured for 2022

Join the round to enable RunEL to successfully penetrate the 5G vertical market, reaching ~€113M sales by 2027



# RunEL's Experienced team coupling technology and business experts



**Dr. Zion Hadad**  
CEO

- Inventor of the OFDMA technology, backed by tens of patents and significant contributions to ETSI/DVB, IEEE and 3GPP
- Founder of Runcom and former CEO and Chairman (1997 to 2012): 200+ employees, thousands of OFDMA Base-Stations and millions of UE chips sold; leading to €80M in revenue.



**MS-EE. Israel Koffman**  
EVP for BD & Sales,  
Co- Founder

- +30 years of experience in Business Development and sales
- Before joining RunEL, Israel developed Runcom's Marketing and sales department and managed an Eco-system collaboration with leading tier-1 and tier-2 companies.



**Dr. Eli Shasha**  
CTO and VP R&D

- Expert in 4G wireless OFDMA technology, WiMAX and LTE standards,
- +20 years of experience SoC technologies.
- Currently, Dr. Shasha is leading RunEL's 5G cellular technology research and development efforts.



**MS-EE. Baruch Globen**  
System Architect

- 35 years of experience in the High-tech industry including at leading companies in the wireless arena, such as Tadiran
- Experience in the wireless mobile OFDMA technology area



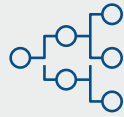
**BA. Pnina Levi**  
Operational Manager

- Professional Export/Import manager and is in charge of the supply chain and operation related activities in RunEL
- 20 years of experience in electronic design, integration and assembly

# Conclusions



Highly experienced team of professionals



A strong business model, ready to scale up and go-to-market



A strong pipeline of customers, with 3M revenues secured for 2022 (contracts signed)



Revolutionary solution for 5G vertical markets  
Based-on own SoC



Contributes to RunEL Leadership in 5G

Define &  
Order On-line


Easy  
Self-install

Enjoy High  
Quality 5G



*NGMT-Next Generation Mobile Technology*

THANK YOU



info@runel.net



www.runel.net



Dear EU-funded innovator(s),

We are writing to you as you are an official contact person for your organisation's participation in the **Affordable5G** project funded by the European Commission under Horizon 2020.

We are delighted to inform you that one of the innovations developed in the project has been analysed by the European Commission's Innovation Radar. Details of this innovation, and how it was categorised by the analysis, are as follows:

- **Innovation Title:** Implementation of new Time Sensitive Networking over 5G;
- **Market Maturity of the Innovation:** Exploring (more details on this categorisation are [provided here](#));
- **Market Creation Potential of the innovation:** High (more details on this categorisation are [provided here](#));

In this analysis Innovation Radar also identified the following project partner(s) - including your organisation - in the project as a 'Key Innovator' in the development of this innovation:

- RUNEL NGMT LTD
- ADVA OPTICAL NETWORKING ISRAEL LTD