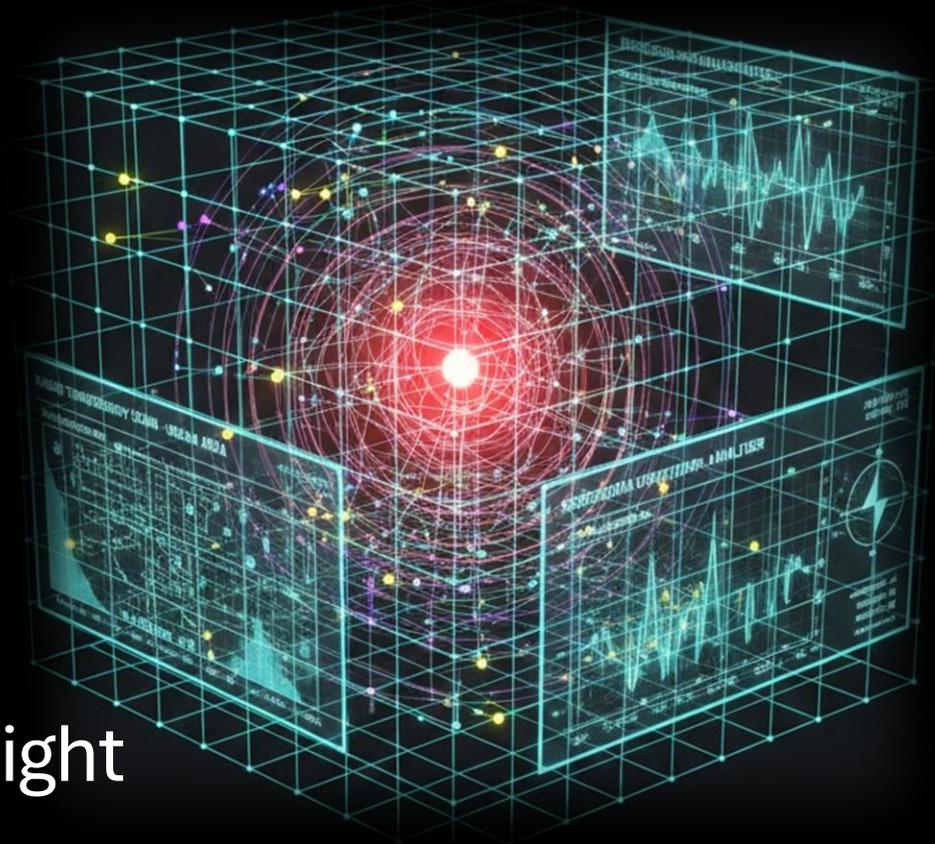# ICX Systems

Bringing invisible signal source into plain sight

AI Defined Spectrum Intelligence

From zero to full capability in one generation

FOUNDING TEAM

Rebecca Melakari
CEO and Founder @ Spatial Ray
Founder and COO @ Pixieray
Head of Partnership and Sourcing
@ Varjo
CEO @ SSCM Services
Sn Manager, Supply Chain
@ Murata
Global Process Owner, Supply Chain @ Nokia
New Business Development
@ Foxconn
Inventor for 10+ Patents in
Optoelectronics

Pertti Alapuranen
Founder and CEO @Florida R&D Associates LLC
xG Technology Inc.
Motorola Inc.
Nokia
Elektrobit Oy
State Technical Research Center, Finland
Inventor for 50+ patents in
wireless and AI technologies.

Klaus Melakari
CTO and Founder @ Spatial Ray
Founder and CTO @ Pixieray
Founder and CTO @ Varjo Technologies
Sn Program Director @ Microsoft
Technology Director @ Nokia
Researcher @ VTT
Inventor for 120+ Patents in
telecommunication, electronics and optics

Problem Statement

Modern missions outpace today's RF awareness. The spectrum remains invisible in real time, exposing forces to hidden emitters, spoofing, jamming, and sudden effects. Without real-time insight into RF activity, situational awareness, decision advantage, and mission survivability are severely compromised.

CHALLENGES

Current RF detection struggles with weak and hidden signals:
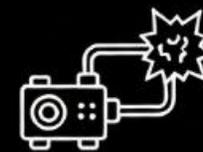

Low-power Drone links
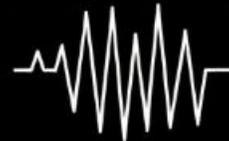
Handheld radios

Wi-Fi Hotspots

LTE repeaters

Improvised RF triggers

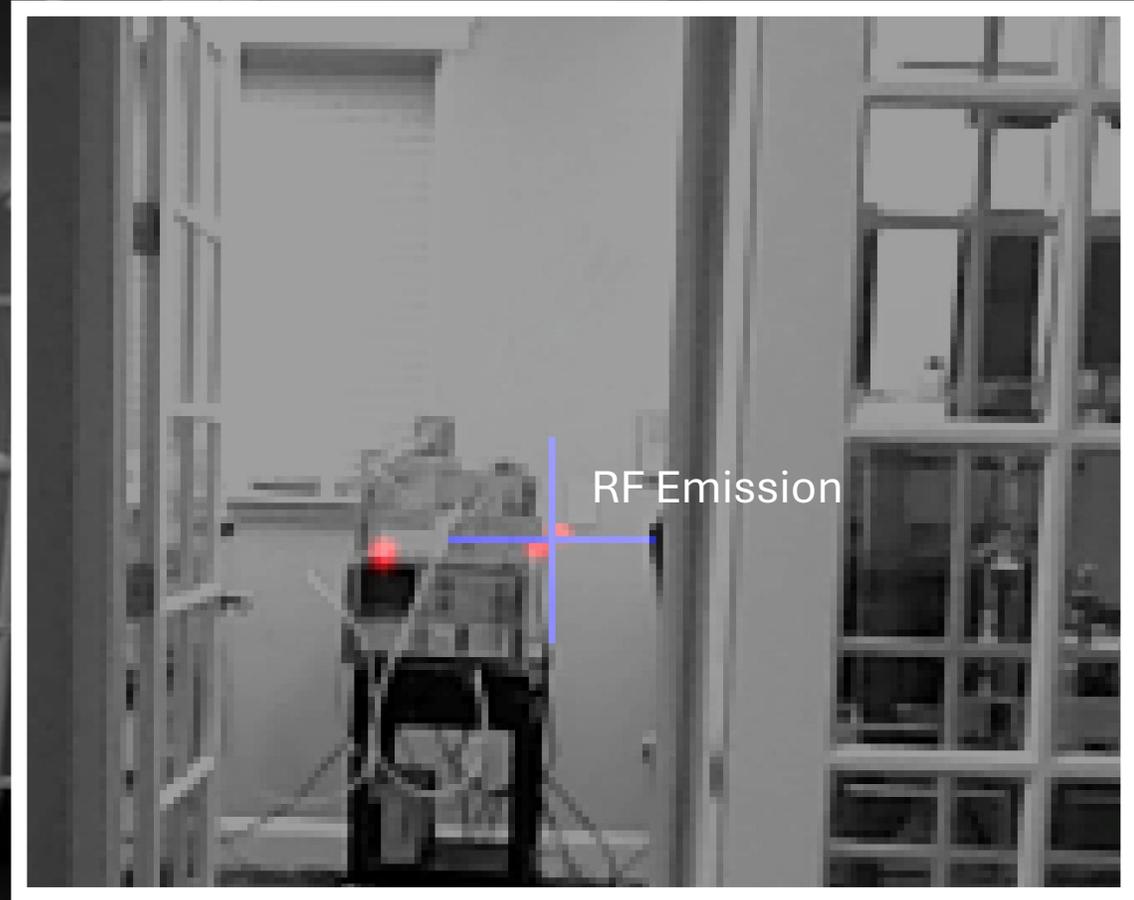Short-range digital bursts

Spread spectrum

Frequency hopping
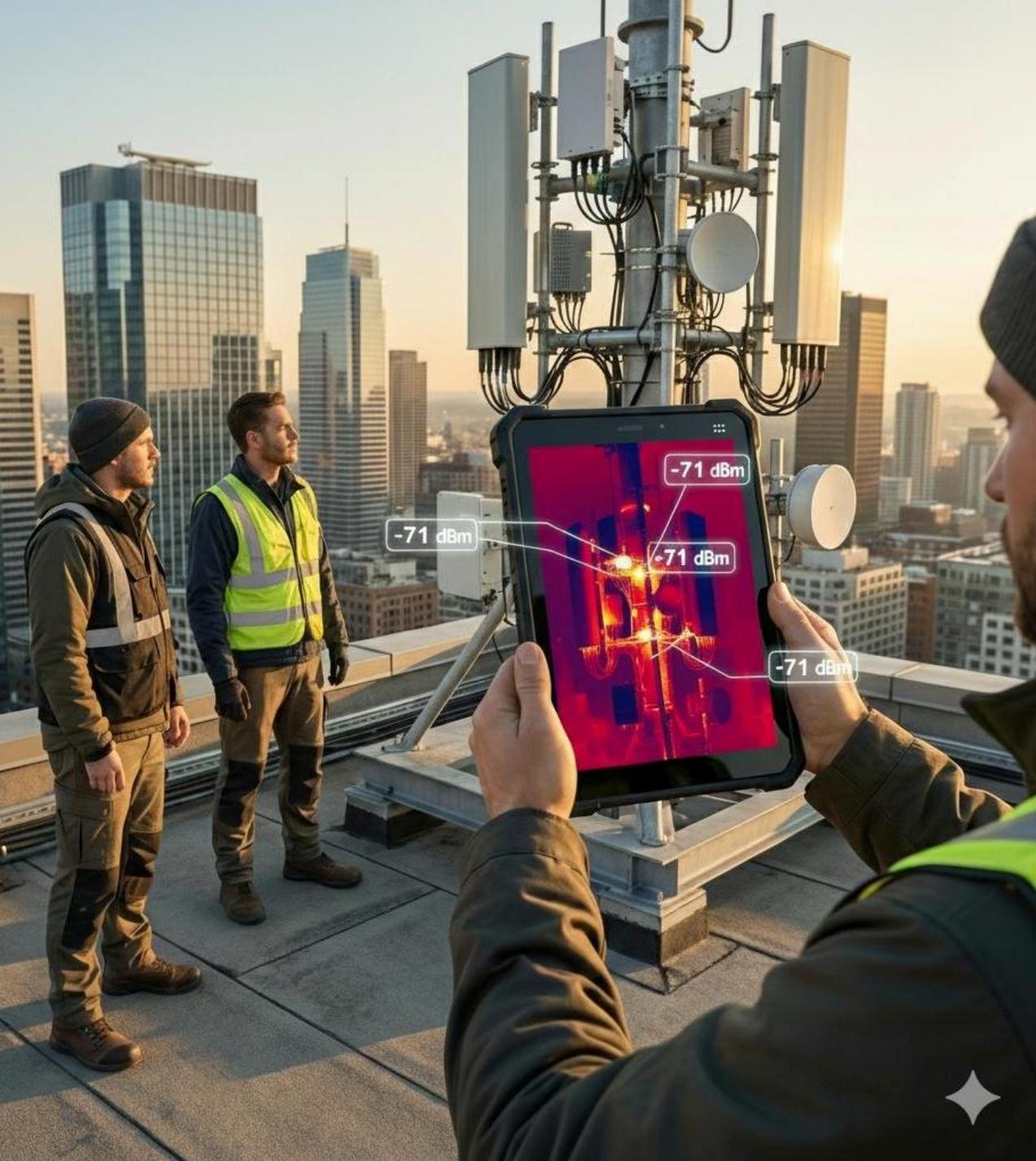
Civilian electronics

The Solution

RadionIQ® provides a new visual modality – Our **ultra-low-SWaP AI-defined radio** detects very weak, spread-spectrum and frequency-hopping signals, analyzes behaviors in real time, and reconstructs them as an intuitive **3D holographic** image.

Video Overlay

RF Emission

WIFI FIELD MAPPING

CELLPHONE

UNKNOWN RF DEVICE

Cellphones detected ahead.

Left panel labels: -71 dBm, -71 dBm, -71 dBm, -71 dBm

Right panel labels: Cell Phone, Fitness tracker, Call Phone *Calling*, Smartwatch

Rotating Antenna in 25 cm Ø radome

Detection Range : multiple kms

Passive scan: 300 MHz–10 GHz

3D Imaging : **Azimuth, Elevation, Range**

Accuracy : 0.1 degree

Tomographic Imaging

Real-time video overlay of radio sources

* Powered by one sensor unit.

Angle-of-arrival

ICX

Detect

Classify

Localize

Visualize

Every transmitter type exhibits a unique RF fingerprint

Low SWaP, High Portability

With app or custom integration

High interoperability

RadionIQ® the World 1st RF camera

Why now

- Spectrum Congestion and Contested Environments

- Rise of Autonomous and Connected Systems

- Geopolitical Instability and Demand for Real-Time Sensing

- Impact of AI on RF Classification and Detection

- Applied tomography to RF imaging

- Technological Shifts: Miniaturization and Edge Processing

- Regulatory Trends and Tightening Requirements

MARKET

Total Addressable Market:

100B+$

 Battlefield Frontline Operation

 Homeland Security, Search & Rescue

 Infrastructure and Equipment Healthcare

 Autonomous Systems & Robotics

TAM and SOM:

✓ Signal Intelligence. $30B in 2032

✓ RF detection, imaging and analysis, $100B in 2032

✓ ICX Mid-Term (5Y) Reach, $500M Revenue Est.

Business Model:

✓ B2G - Sell directly to defense ministries, homeland security, and emergency response agencies.

✓ B2B – Infrastructure & Equipment, Airport & Transportation Hub, Autonomous Systems & Robotics

✓ HW + SW licensing model. Additional Data Monetization via Embedded Analytics

DEPLOYMENT

RF utilization has exploded. RF camera is next - on the cusp of immediate adoption.

Ukraine-scale tactical grid requires **~ 80K ICX units** across squads, vehicles, ISR drones, and fixed infrastructure

NATO + Partners : Peacetime ICX demands **~ 350K ICX units**
A fully modernized NATO force requires **~700K ICX units**
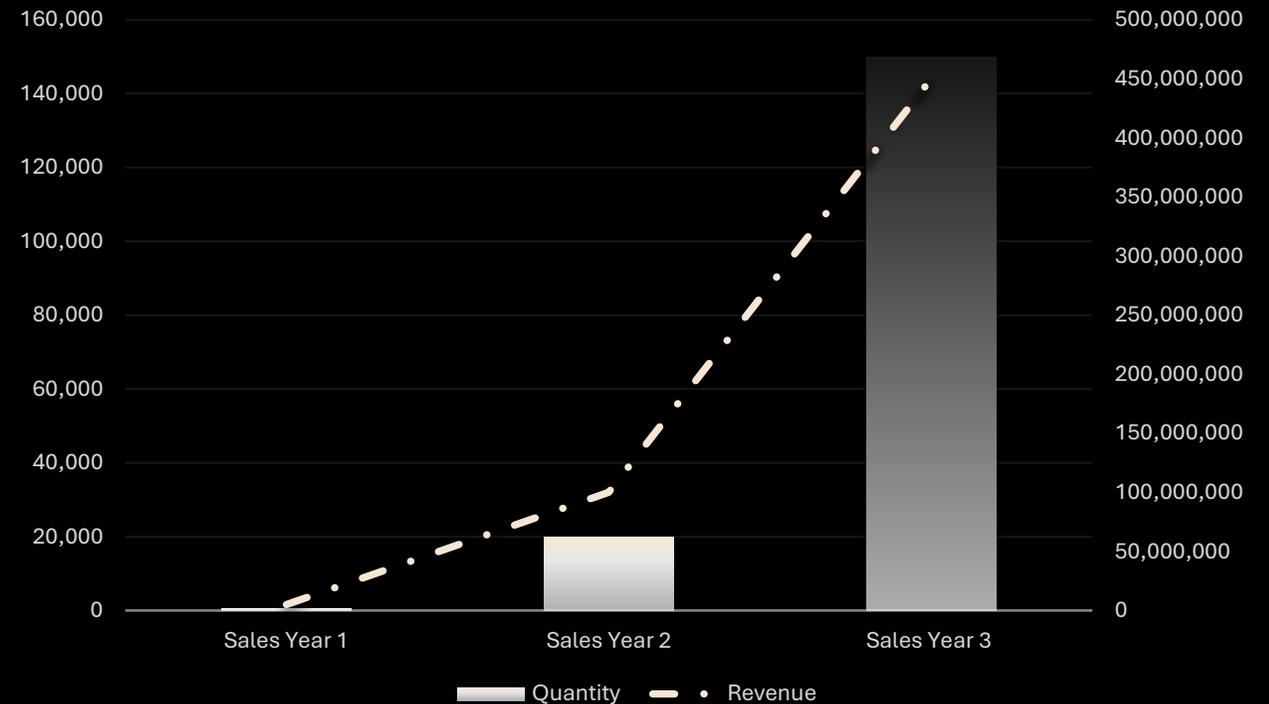
Commercial Applications

Annual Estimate in **Units:**
Autonomous Systems & Robotics: **120K ICX units**
Telecom & Network Operators : **50K ICX units**
Critical Infrastructure : **50K ICX units**

Est. Sales Quantity and Revenue $

Sales Year 1 — Sales Year 2 — Sales Year 3

Quantity ---•--- Revenue

RadionIQ® - the only system that turns raw RF into real-time intelligence.

TEAM CONTACT: REBECCA@ICXSYSTEMS.COM

To date, we have submitted provisional IP packages to the USPTO encompassing multiple innovations.