To become global provider of software-defined 4G, 5G and beyond 5G mobile networks

supporting more users with better performance at lower cost

by applying cutting edge proprietary technologies
**Basics**

Hi-tech Company

Founded in 2006, based in Piaseczno

**Funding**

100% Polish capital

Cash from sale of early products, **H2020/HE, SNS projects**, NCBR and VC

**Offering**

4G/5G Networks

Primarily RAN but also Core and MANO compliant with SDN/OpenRAN/MEC

RAN Intelligent Controller (RIC)

**Markets**

MNOs, private operators

All players who need networks that are of high capacity, fast deployable and with low cost of [GB] delivery

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https://is-wireless.com/research
IS-Wireless recognized by **5 major operators** (18.11.2021)

### Table 3. Europe’s rating in RAN Software (Companies profiled in AM Study 2021)

<table>
<thead>
<tr>
<th>European Status</th>
<th>RAN Software (O-DU/O-CU)</th>
<th>Radio Intelligent Controller (RIC)</th>
<th>Management &amp; Orchestration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major vendor active in Open RAN</td>
<td>CapGemini, Nokia</td>
<td>CapGemini, Ericsson, Nokia,</td>
<td>Ericsson</td>
</tr>
<tr>
<td>SME active in Open RAN</td>
<td>Amarisoft, Cellnet, IS-Wireless, Node-H, SRS</td>
<td>Acceleran, IS-Wireless</td>
<td>Highstreet, Imanta, IS-Wireless, Zetta</td>
</tr>
<tr>
<td>Major Non-European player</td>
<td>AttioStar, JMA, Mavenir, Parallel Wireless, Radisys, Samsung</td>
<td>Cellwise, HCL, Juniper, Keysight Mavenir, NEC, VMWare</td>
<td>Amdocs, Atrinet, Ciena, DZS, Juniper, HCL, Samsung NEC/Netcracker</td>
</tr>
</tbody>
</table>

**DTelecom, Vodafone, Orange, TIM, Telefonica:**

IS-Wireless fully-virtualized 5G network

IS-Wireless solution is based on:

- **O-RAN** specifications (open if, RAN virtualization, SW/HW separation, COTS HW usage)
- **3GPP** specifications (LTE/NR standards, protocol stack)
- **ETSI** specifications (NFV concepts, VNF/CNF, MANO)
Fully virtualized, disaggregated network functionality

5G Open RAN **Wave 2**

Software is modular and broadly portable
Hardware is plentiful
Security mechanisms are imposed

Hardware including computing equipment or shared resources

Example realizations

One network functionality – multiple deployments

- **RIC**
- **H-PHY**
- **RLC**
- **RRC**
- **5GC**
- **L-PHY**
- **MAC**
- **PDCP**
- **EPC+**
- **O-RU**
- **O-DU**
- **O-CU**
- **Core**
- **MANO**
IS-Wireless research capabilities/interests for calls

- 6G Testbed
  - disaggregated, ORAN, CU, DU, xApps, RIC
  (member of 6G-BRICKS, SANDBOX-6G)

- Cell free / cellular
  Radio Resource Mng
  - algorithms (URLLC, eMBB), distributed CF mMIMO,
    AI/ML driven, + simulations

- Optimized RAN
  deployment and tuning
  - K8, workload placement, edge
    deployment, federated,
    automation, …

- Optical-Wireless
  resource mngmt
  - resource allocation algorithms,
    joint optimization of
    compute/comms, and more…

- Security
  - Zero Trust, holistic, Cyber
    Toolbox, and more…

- 5G NR PHY
  - Advanced MATLAB library (for
    further enhancements)
Our other R&D projects (extract)

Total: 18 R&D projects from 2012

- **Marsal**
  - Project addresses the need of network densification in the complex and dynamic network ecosystem of the future.
  - More details

- **Braine**
  - Big data Processing and Artificial Intelligence at the Network Edge
  - More details

- **Morphemic**
  - MORPHOMIC proposes a unique way of adapting and optimizing Cloud computing applications
  - More details

- **FP7 eWINE**
  - Elastic Wireless Networking Experimentation
  - More details

- **FP7 Solder**
  - Spectrum Overlay through aggregation of heterogeneous DisPERseed Bands
  - More details

- **5GNOW**
  - 5th Generation Non-Orthogonal Waveforms for Asynchronous Signaling
  - More details

- **ORCA**
  - More details

- **Fed4FIRE+**
  - LTE eNB Scheduler performance experiments
  - More details

- **Triangle**
  - Design space exploration and performance testing for PHY and scheduler
  - More details

- **5G ESSENCE**
  - Embedded Network Services for 5G Experiences
  - More details

- **EuWireless**
  - European Mobile Network Operator for Research
  - More details

- **TeamUp5G**
  - ETN in the frame of the Marie Skłodowska-Curie Innovative Training Networks
  - More details

**current running projects**

experimenting in online testbeds
6G-SANDBOX Stream-C project → started 01.01.2023

- **Technical**
  - adopt API for vRAN programmability
  - validate 6G KPI/KVIs

- **Research**
  - validate 6G advancements
  - ORAN vRAN, cognitive (DT)
  - Network intelligence
  - Edge computing

- **Deployment**
  - one of testbeds

Open-Calls opened April’23
6G-BRICKS - StreamC project

→ started 01.01.2023

6G-BRICKS will further translate Cell-Free to O-RAN architecture by extending E2 interface extensions to support full-fledged CF mMIMO xApp. We will offer CF experimenter xApps, allowing experimenters to configure the RAN elements (CU, DU, MAC scheduler) via the Near-RT RIC framework for the first time and provide multi-band CF MAC scheduler at the DU first time.

IS-Wireless focus

Breakthrough 6G platform with cell-free mMIMO enabled Near-RT-RIC

6GBRICKS will further translate Cell-Free to O-RAN architecture by extending E2 interface extensions to support full-fledged CF mMIMO xApp. We will offer CF experimenter xApps, allowing experimenters to configure the RAN elements (CU, DU, MAC scheduler) via the Near-RT RIC framework for the first time and provide multi-band CF MAC scheduler at the DU first time.
ISW Calls of interest (EU funded projects)

- **SNS Partnership calls**
  - Phase 2 - **Stream B,C**

- **Other interests**
  - **Horizon Europe**
  - **KDT**
  - ESA,
  - EDF,
  - MCSF - ITN
  - national projects (National Authority)
  - EDA
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