



Designing and managing Wi-Fi 7, the 6GHz Band and P5G



Jussi Kiviniemi, Founder and CEO, Hamina Wireless





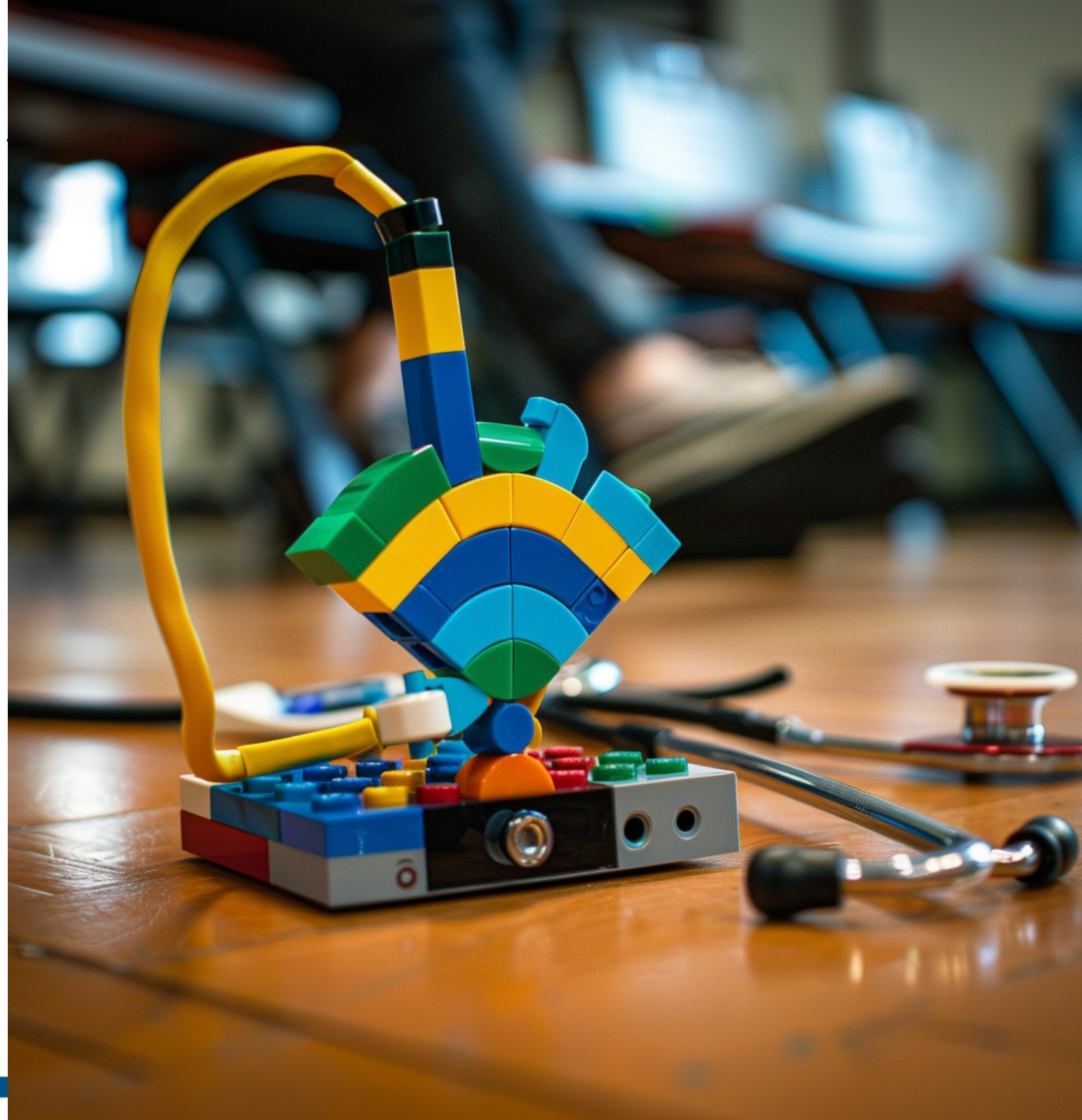
About the presenter



- Jussi Kiviniemi
- Wireless Janitor
- Founder & CEO | hamina.com
- Google "jussi wifi"



- Building blocks of design great modern wireless
- Managing wireless networks – on and off-site
- Top 7 best practices for selecting and deploying great Wi-Fi 7 and Private 5G





Building blocks

- Use case
- Environment
- Gear
- Coverage
- More than coverage
- Validation





Use cases vs technologies / gear

- Wi-Fi 2.4 GHz => IoT, nice-to-have Wi-Fi
- Wi-Fi 5 GHz => current high perf Wi-Fi
- Wi-Fi 6 GHz => clean, robust, high-perf
requires new clients and APs & WPA3
- Private 5G=> High reliability, wide coverage
requires specific clients and base stations



Demo: Coverage & capabilities of 2.4 / 5 /
6 GHz Wi-Fi and Private 5G



Environment considerations

- Scale
- Walls
- Objects
- Reflectivity (+diffractions, refractions)
- Potential radio locations
- User locations (allowed, not allowed, nice-to-haves)



Types of network validation

- Pre-deployment validation
 - Measure environment prior to deployment
 - Through site survey, or infrastructure –based check
 - Environment mapping (demo!)
- Post-deployment validation
 - Traditional site survey if time
 - If no time, potentially use just infrastructure measurements



Managing wireless

- Vendor dashboard 101
- RF analysis
- Avoiding Truck roll
- If all remote fails





RF Troubleshooting

Day 2 →

Level 1 support

Network engineer

Network architect

- Receive customer problem report
- Create ticket
- Check alerts, dashboard basics (checklist)
- Check dashboard details (advanced)
- Take Remote packet capture
- Take logs
- Analyze remote packet capture & logs
- Truck-roll on-site
 - RF site survey
 - On-site packet capture
- Get to the "bottom of it", even talk to Wi-Fi and device vendors, etc.



WIRELESS TOOLS

Network Planning

Site Survey

Check-up site survey
Packet capture

Day 0 | Day 1

Day 2 →

Deploy & Configure

Maintain / troubleshoot

WI-FI SYSTEMS





FUTURE: TOOLS + WI-FI SYSTEMS INTEGRATED APPROACH

Network Planning

On-Site Survey

Sync inventory

Auto-deploy

**Remote
RF check**

**Troubleshooting
& remediation**

Configure

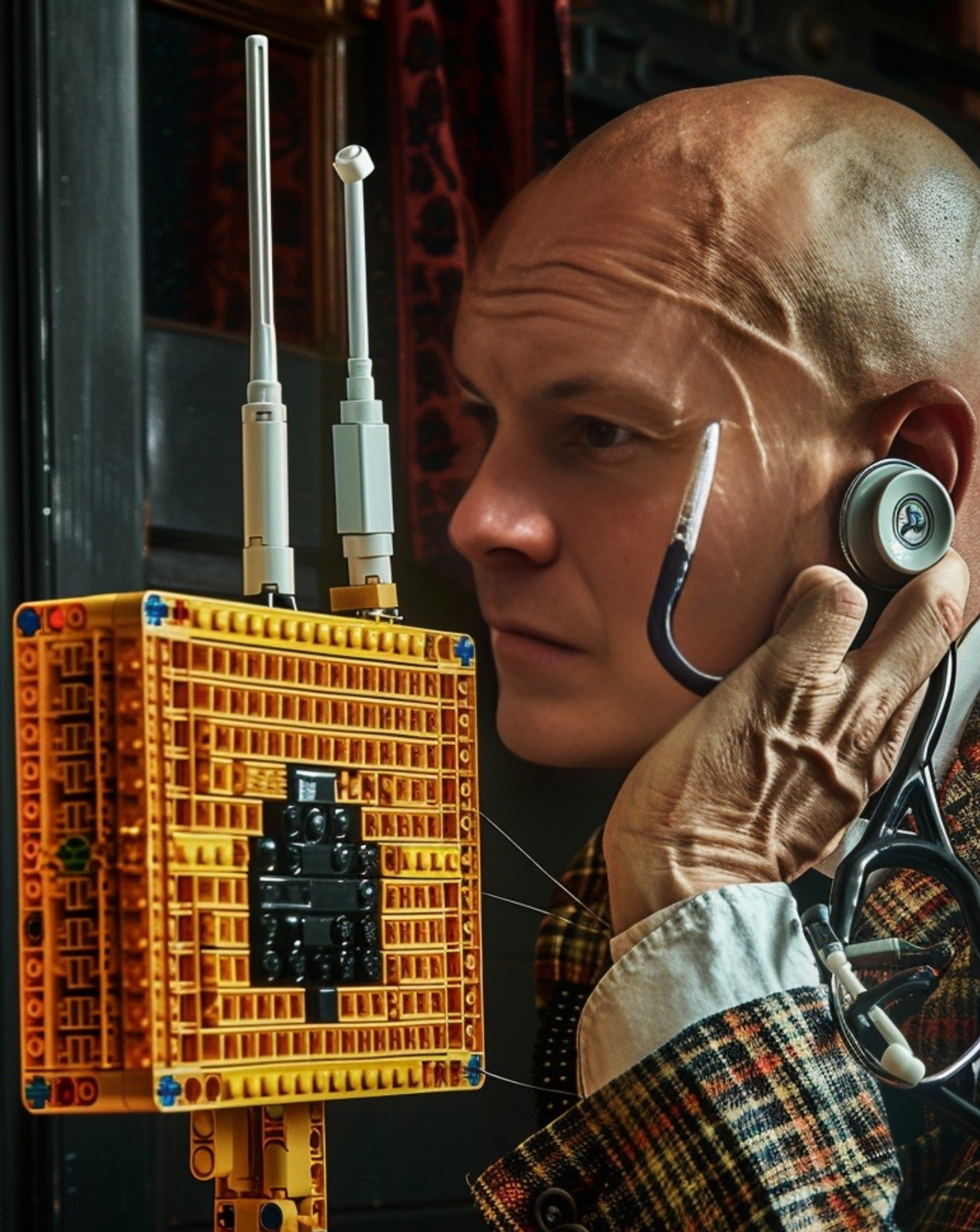
Maintain





Troubleshooting examples

- Coverage gap
- Roaming problem
- Interference issue
- Plan vs reality
 - Site survey done
 - No site survey done





Top 7 Best Practices

- Discuss with end users
- Explain needs for budget
- Consider environment
- Validate when you can
- Automate, but with care
- Truck roll only when you have to
- Educate yourself
and network with experts





Thank you! Connect =>



Jussi Kiviniemi, Founder and CEO, Hamina Wireless





Thank you

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