The Generation-after-Next of Wireless: Barriers and Opportunities

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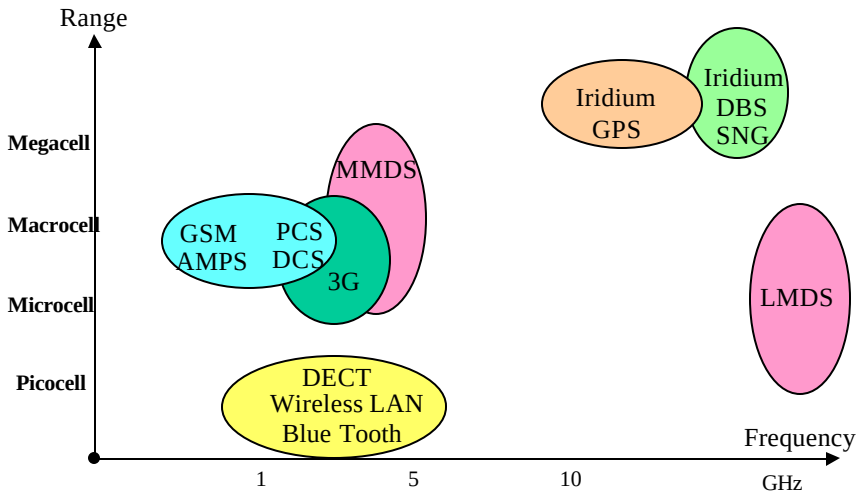
Interoperability of Wireless Standards



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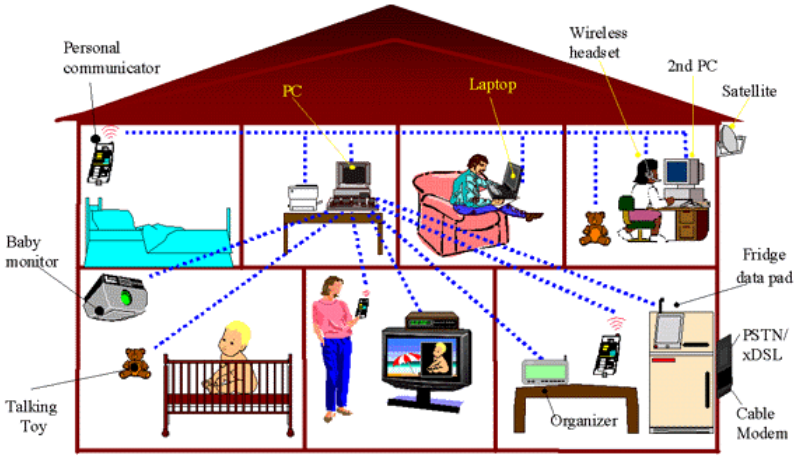
Wireless in the Home



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Characteristics of the Next Generation

- Small
- Low Power
- Operability in Mulitiple Standards
- High Datarate to the Mobile User

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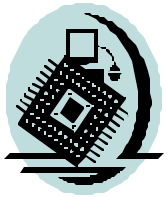
Technologies to Enable Next Generation

- Adaptive Antennas
  - DSP
- Software Radios
  - DSP
  - A/D Conversion
  - Widebandwidth designs
- Transmitter Development
  - Linerization (DSP)
  - High Peak to Average
- Integrated Filtering
  - Electronic Filtering
  - MEMs



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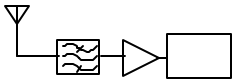
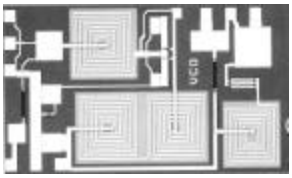
Quantum MMIC Technology

- Reduction of Passive Devices
- High Speed A/D Conversion
- Wide bandwidth topologies
- Low Noise Topologies
- Frequency Agile Active Filtering





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Role of NIST ATP for Small Companies

Product Lifetime	Level of Funding
Idea	
	Self-Funding
	Angel Investment
	Venture Capital
	Venture Capital
	Venture Capital
Manufactured Product	

ATP Funding

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Conclusion

- Serious Challenges to Implement Generation-after-Next Wireless
- Highly Integrated, Adaptible, Broadband
- NIST Provides Seeding for Small Company Development

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