



EMBEDDED SECURITY FOR INTERNET OF THINGS

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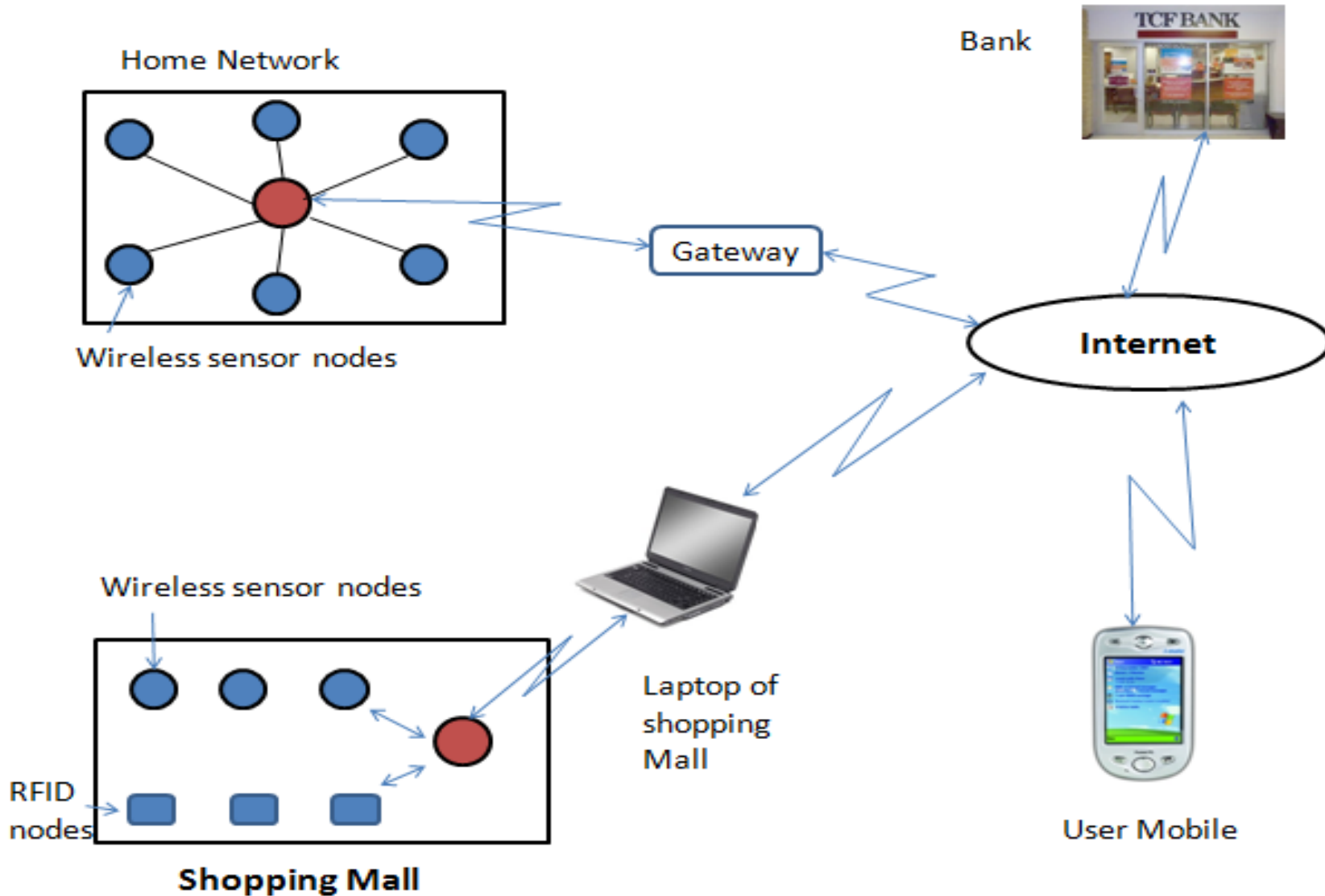
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Outline

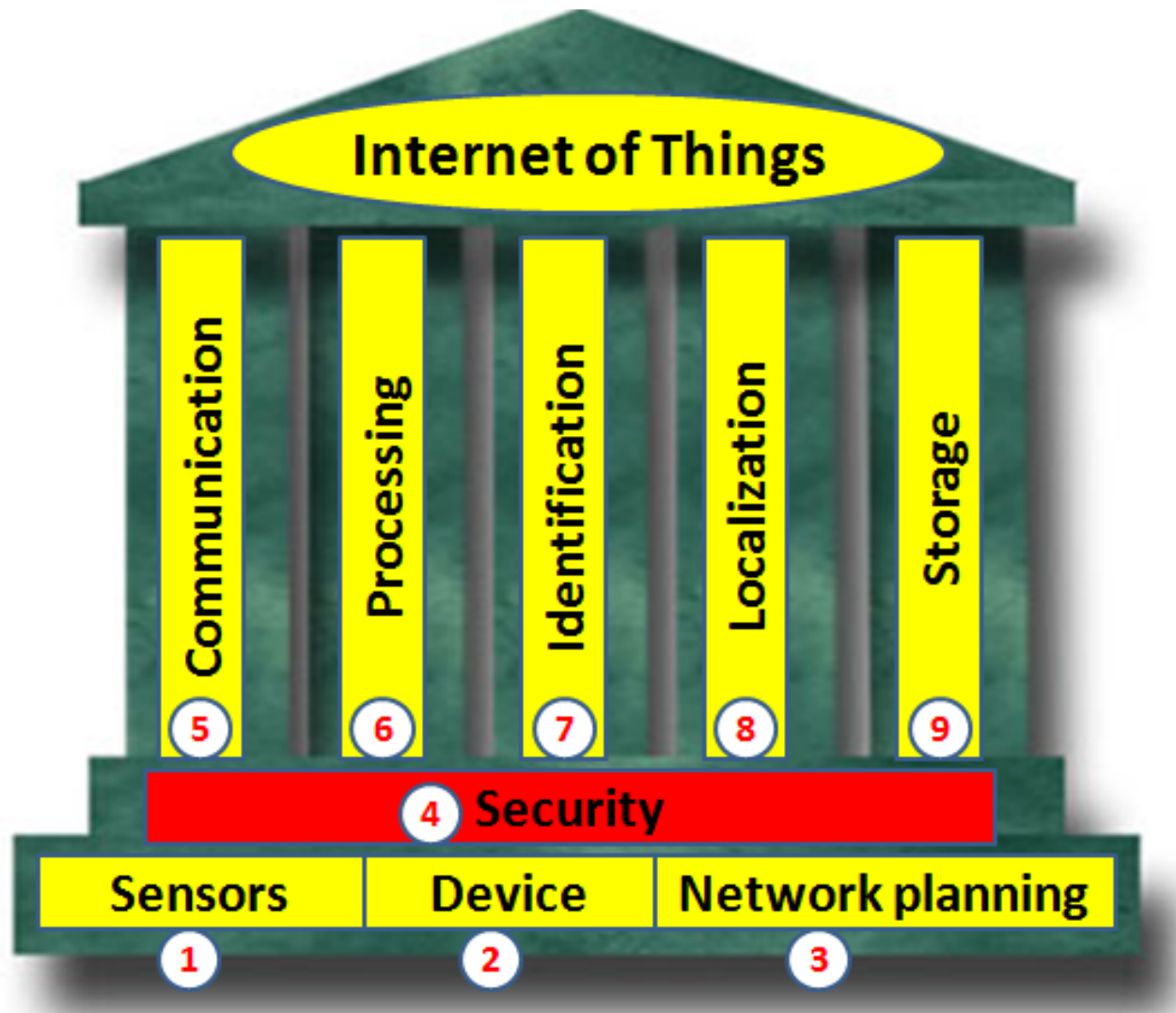
- Internet of Thing(IoT) Scenario
- Embedded security : Needs
- Issues : Attacks, Challenges
- Research Goals
- Proposed work
- Conclusion

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IoT Scenario



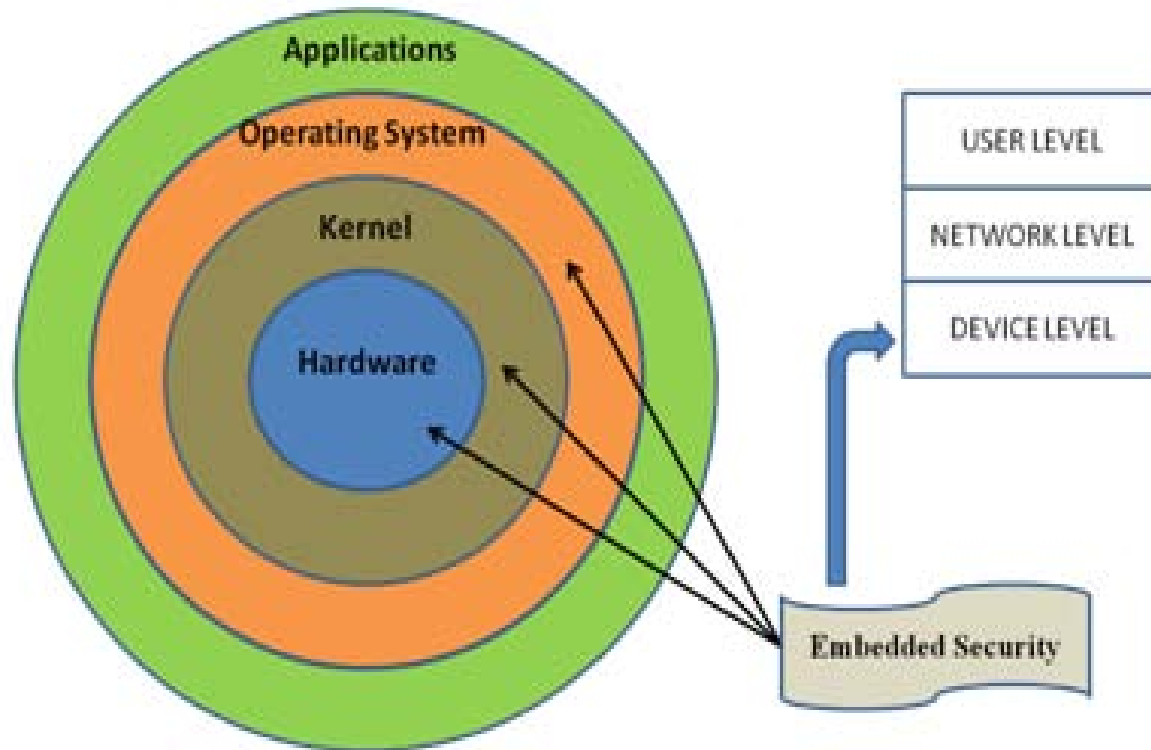
House of IoT



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Embedded Security

- Building security in from the start.



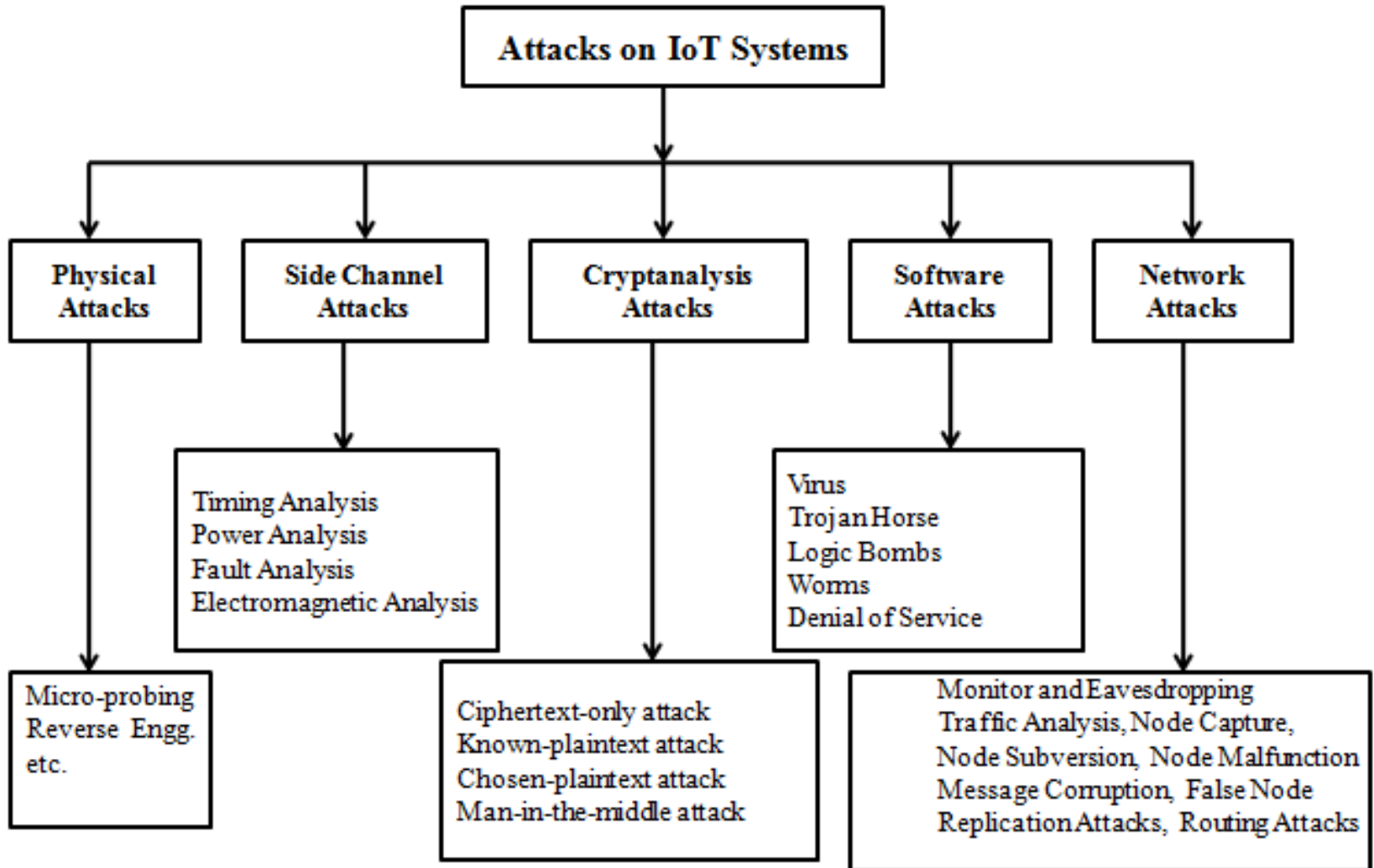
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Embedded Security : Need

- New Look
- Safety
- Risk potential
- Financial aspects
- New business models
- Privacy

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Issues : Attacks



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Device Challenges

- Computational Time
- Energy Consumption
- Memory limitations

Security Architectures

- Software based approach
 - make use of programmability of embedded general purpose processors
- Hardware based approach
 - makes use of ASICs
- Hybrid Approach
 - combination of the two previous approaches

Research Goal

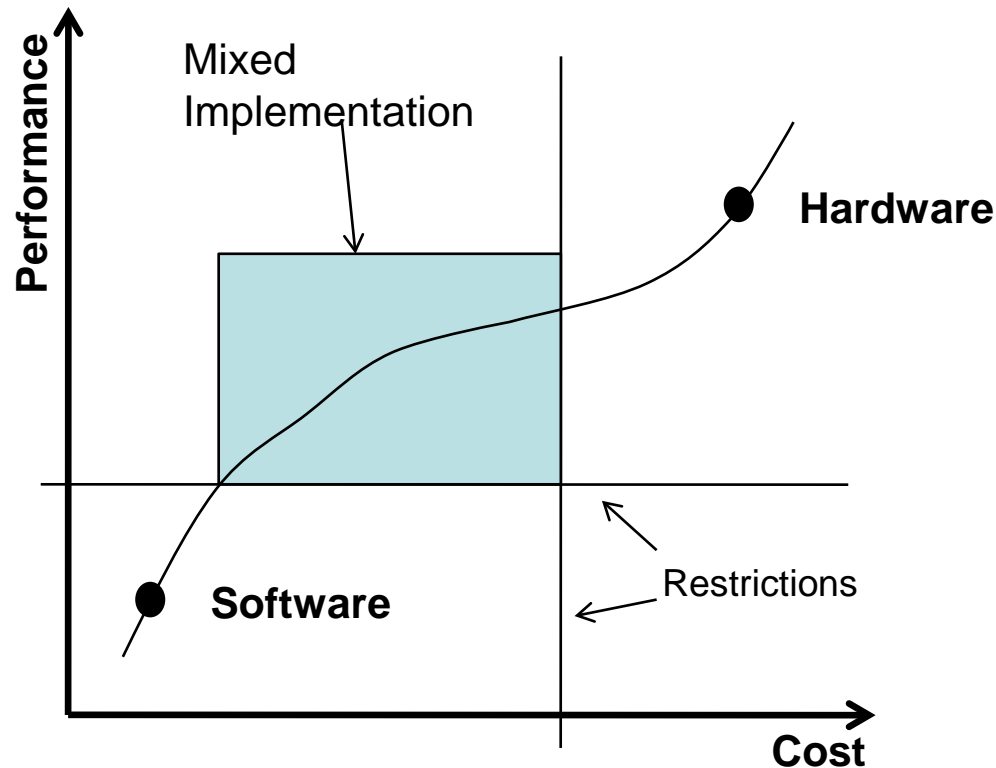
- To Design and implement embedded security **framework and architecture** for IoT.
- To specify and design **optimized crypto techniques** by proper hardware and software partitioning & optimization.
- To embed security features at **kernel level** for providing a **secure runtime environment**.
- To propose a **well defined design methodology** for achieving an efficient adequacy between the new algorithms/protocols and the heterogeneous hardware-Software development platform.

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Proposed work

Features

- Flexible
- Cost
- Heterogeneous
- Scalable
- Tamper resistance



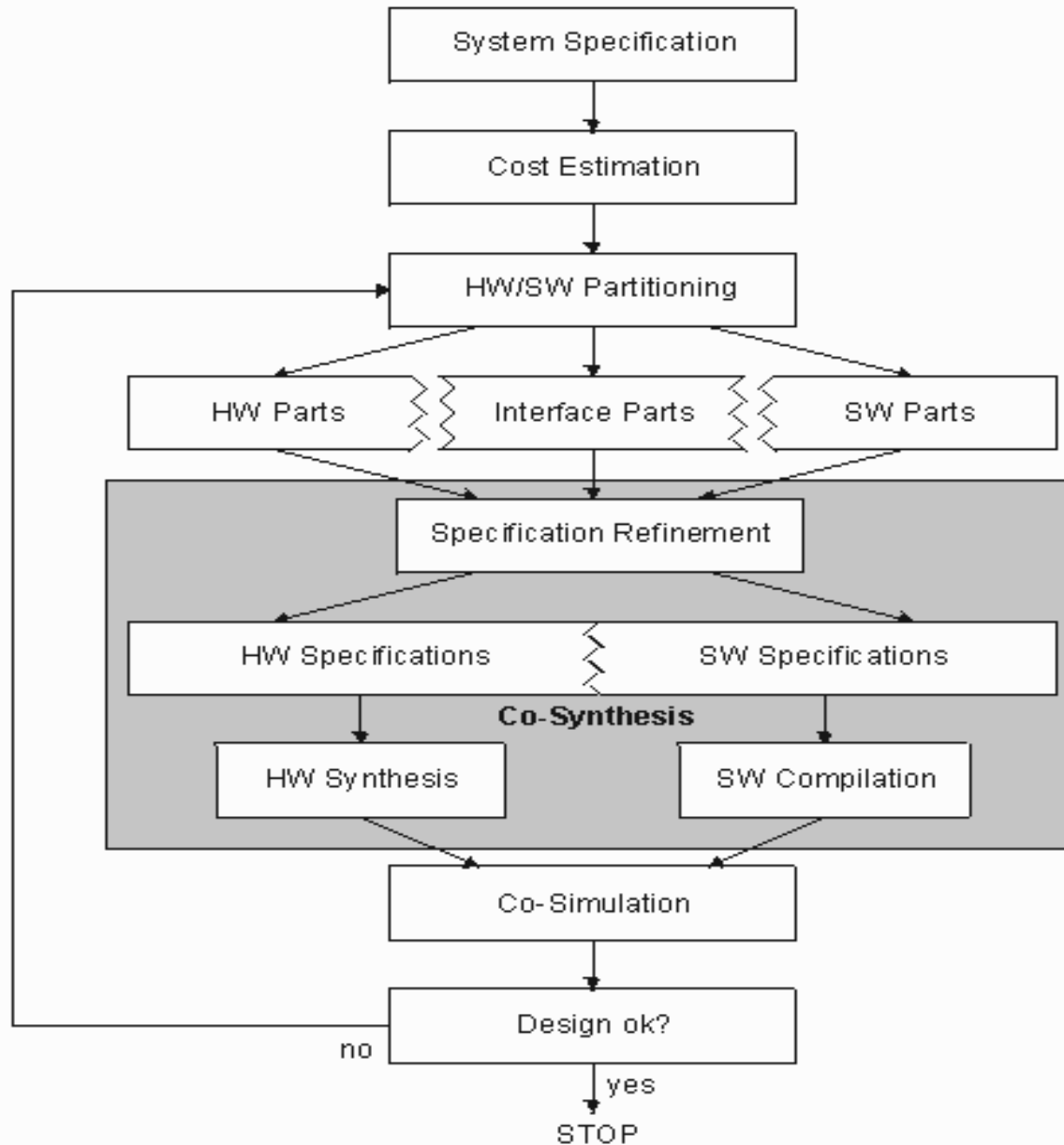
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Conclusion

- Embedded security “connects” a device to the system.
- Treat Security as an integral part of System design.
- Hybrid approach for security is the best trade-off between efficiency and flexibility

Thank you

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