



# **SNS COLLEGE OF TECHNOLOGY**

**Coimbatore-35**  
**An Autonomous Institution**



Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A+' Grade  
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

## **DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

### **19ITT204 – MICROCONTROLLER & EMBEDDED SYSTEMS**

III YEAR - V SEM

UNIT 5 – Embedded System Development

Topic- Design Issues and Techniques



# Embedded System Design



- Embedded system design is an important component and is rapidly evolving;
- however, certain challenges must be addressed, such as issues related to security & safety, updating system hardware and software, consumption of power, seamless integration, and verification & testing which plays a crucial part



# Embedded Design Limitations



The challenges in design of embedded software have always been in the same limiting requirements for decades:

**Small form factor;**

**Low energy;**

**Long-term stable performance without maintenance.**

The market demands from designers to pack more processing power and longer battery life into smaller spaces, which is often a tradeoff.

Depending on applications in IoT, there is a growing demand for manufacture of very scalable processor families ranging from cheap and ultra-low-power to maximum performance.



# Embedded Design Challenges



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# Embedded Design Challenges



## Stability

- Stability is of paramount importance.
- Unexpected behavior from an embedded software is inadmissible and poses serious risks.
- End users demand that embedded software must have uniform behavior under all circumstances and be able to operate durably without service.

## Safety

- Safety is a special feature of embedded software due to their primary application associated with lifesaving functionality in critical environments.



# Embedded Design Challenges



## Stability

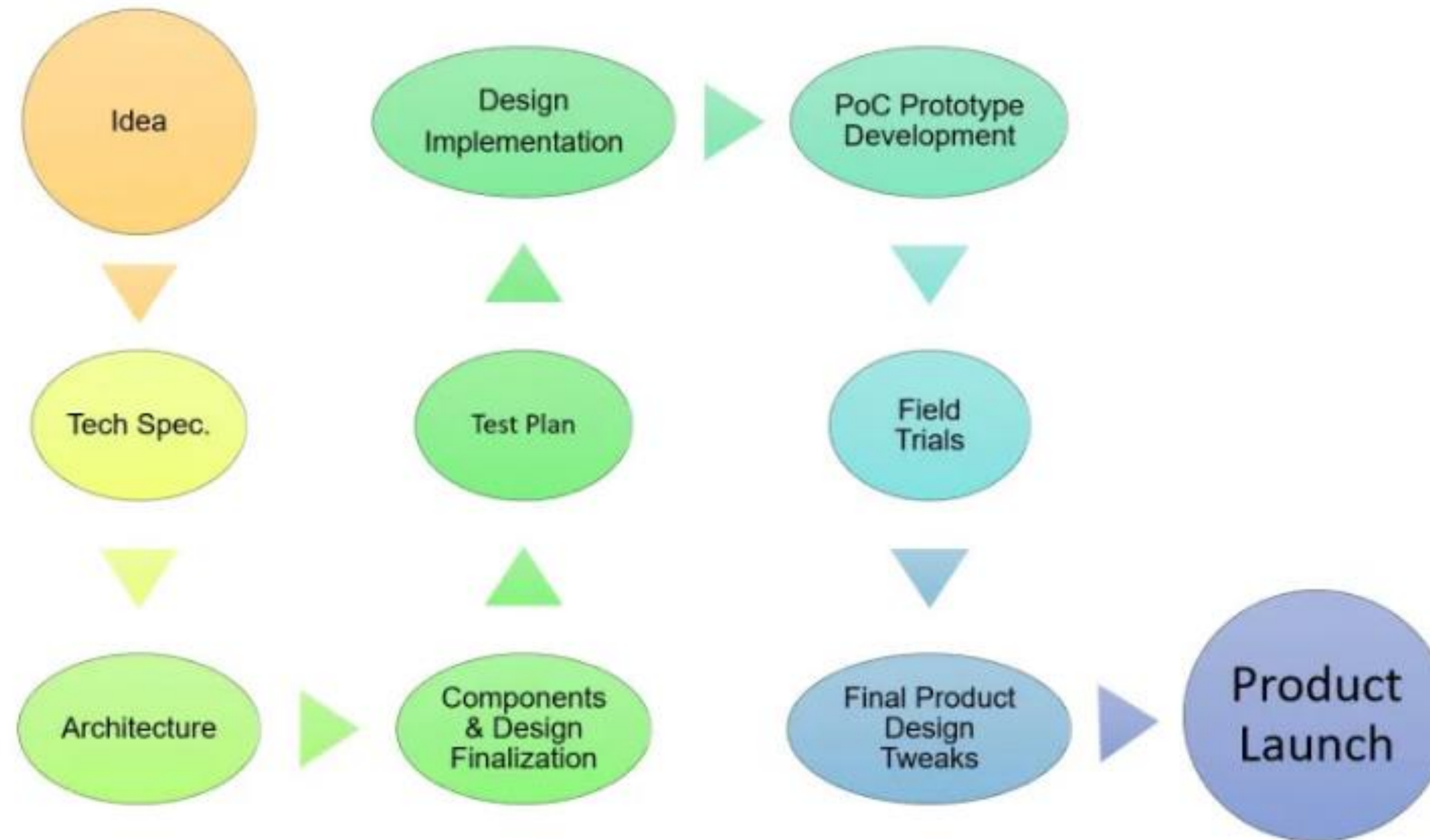
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# Techniques in Embedded system development





# References

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*Thank You*