SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

19ITT204 – MICROCONTROLLER & EMBEDDED SYSTEMS

III YEAR - V SEM

UNIT 4 – Processes and Operating Systems

Topic- How to choose an RTOS

RTOS

- RTOS is an operating system intended to severe real time application process data as it comes in, typically without buffering delays.
- Processing time-tenths of seconds or shorter

Parameters to check while choosing an RTOS

➢**Performance**

Memory requirements such as ROM, flash and RAM footprints need to be considered. RTOSes are powerful and with that power comes additional code and data needs. Second, processing speed such as interrupt latency and context switch times should be reviewed. A high quality RTOS will document these parameters for a variety of architectures and clock speeds.

Parameters to check while choosing an RTOS

➢Features

Every RTOS doesn’t have the exact same features or the features implemented in the most optimal manner. Developers need to evaluate which features are the most critical to the systems success and select an RTOS that has those features. Developers may want to consider scalability, safety certifications or even the efficiency of memory protection schemes

Parameters to check while choosing an RTOS

➢**Cost**

Undoubtedly one of the largest, if not only thought about RTOS characteristic is cost.

Despite the huge efforts required in labor to develop robust software, no one wants to pay for it! Developers need to get over it and probably evaluate what an RTOS may really cost

Parameters to check while choosing an RTOS

➢**Ecosystem**

Having the best performance, features and cost doesn’t mean a thing if there isn’t a large and vibrant community to support the RTOS.

A software products ecosystem is a critical piece of the selection process in order to ensure ease of integration, support and product lifetime

Parameters to check while choosing an RTOS

➢Middleware

Many RTOSes come with middleware components or have third parties who have developed components that integrate into the RTOS. Developers should evaluate their RTOSes middleware and determine what the integration effort might be. Sometimes the integration is seamless while other times it is an obvious nightmare.

Parameters to check while choosing an RTOS

➢**Vendor**

A good supplier with have meticulous documentation that answers many of the questions that would arise while integrating the RTOS into the system. No matter how good documentation gets, it will never be perfect. Testing how fast the vendor is to respond to question and support issues could be critical and save precious time and money getting the product out the door.

Parameters to check while choosing an RTOS

➢Engineering Team

The characteristic of RTOS selection that is probably the most common to overlook is the engineering team. The RTOS that is selected should minimize the labor intensity for the team and allow them to focus on product differentiators rather than increase it as they learn how to integrate and setup an RTOS.

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