1   **04/02/2017 Extension Lecture Series on Embedded System Design Consideration talk by Mr. Shridhar Bindagi, Senior Architect, Embedded Software, Bangalore**

SEMINAR REPORT ON

EMBEDDED SYSTEM DESIGN CONSIDERATION

Date: 4th February 2017, Saturday **(11:00 AM TO 12:30 PM)**
Venue: IT CLASS ROOM 3, PG Block, BMSCE, Bangalore
No. of participants : 39
Faculty coordinator: Prof. Namratha S.N
Guest speaker: Mr. Shridhar Bindagi
Senior Archi tect , Embedded Sof tware

Guest speaker Mr Shridhar Bindagi is currently a Senior Architect, Embedded Software having industrial experience of around 18 years.
The session started with Overview of Embedded Systems followed by Design considerations – HW, SW etc. Explanations on how Embedded Systems are designed were discussed. An example of FemtoCell was considered for the talk.
The first slide was regarding What is Embedded system?. Then the different design requirements was analyzed for different aspects viz. What are the operating conditions. Who will use it. Media gateways, Femto cells etc are not operated like mobile phones, Memory restrictions, power restrictions. Hardware : Which SOC (APP based, Micro controller based, quad core, dual core?) , Software : Which OS? Real time? Applications? , Interfaces : GPS? USB? WiFi? SPI, PCI, UART ???.
An example of Femto Cell was considered. Femto Cell is a small, low-power cellular base station, designed for use in a home or small business. Femto-Cells are needed for two reasons
1. In countries like USA, area is large and number of towers are less.
2.In countries like Japan, density of mobile users for given area is more and towers hosted cannot serve all.
Its main functionality - Voice and Data service on mobile phone in low signal areas (home or business establishments), Helps user , Good coverage. Will not miss important calls ,Helps Service provider, Off loading traffic via broad-band so towers can support more capacity was explained.
In the Software Architecture part, Process Monitor - Monitors other processes and restarts process if they get killed. Reboots system when needed, Memory Monitor - Detects memory leaks and takes action to reboot if needed, Firmware Update management - If new SW has problem, facility to fallback to known good version, How update happens (new FW downloaded completely before updating Nand Flash), It connects to the service provider network via broadband (DSL or Cable) , Detecting hangs Stamper thread and Monitor threads, Parameters
sent by FemtoCell to Femto Server: Like neighbor cell details, GPS coordinates, previous reboot reason etc. was explained.
Finally the guest speaker concluded that, one should analyze requirements in different perspectives, think about problems that can happen, Take care of system stability (Process Monitor, Memory monitor, auto reboot), Backup plan (fall-back to previous version of SW if new SW has problems), Efficient SW update facility.
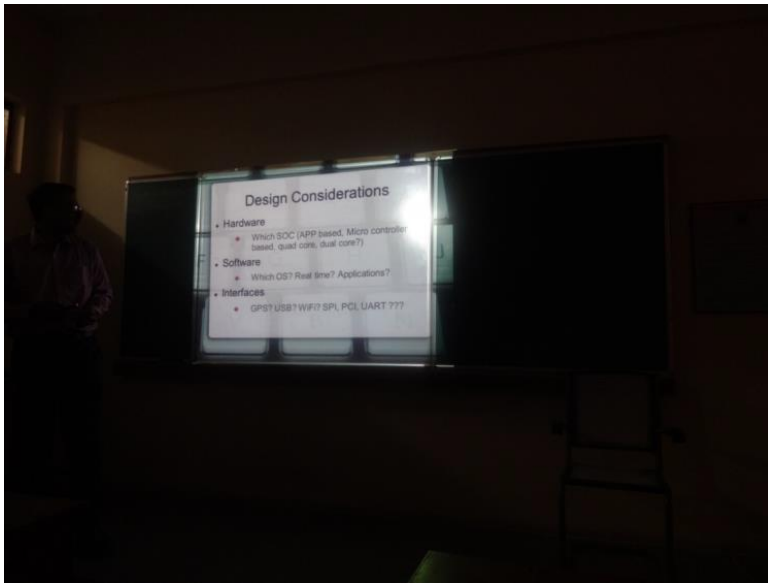   The seminar was finally concluded around 12:30 pm

Photos Taken During Talk: Snap1: SESSION IN PROGRESS

Snap2: interaction with students during seminar
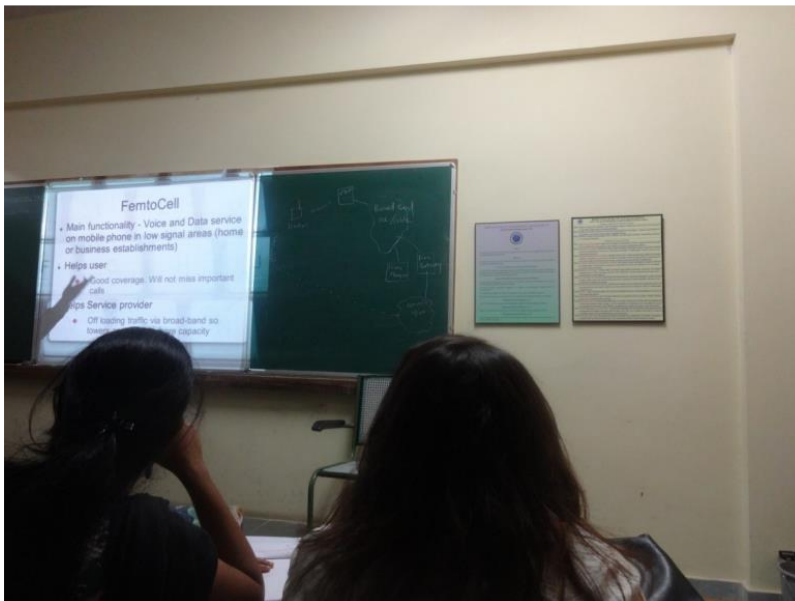
Snap3: Discussion on Design considerations

2. 11/02/2017   Leakage Detection System at Dr. Radhakrishna Seminar Hall

Pipeline **leak detection** is used to determine if and in some cases where a leak has occurred in systems which contain liquids and gases. Methods of detection include hydrostatic testing, infrared, and laser technology after pipeline erection and leak detection during service.

Pipeline networks are the most economic and safest mode of transportation for oil, gases and other fluid products. As a means of long-distance transport, pipelines have to fulfill high demands of safety, reliability and efficiency. If properly maintained, pipelines can last indefinitely without leaks. Most significant leaks that do occur are caused by damage from nearby excavation equipment, therefore it is critical to call authorities prior to excavation to assure that there are no buried pipelines in the vicinity. If a pipeline is not properly maintained, it can begin to corrode slowly, particularly at construction joints, low points where moisture collects, or locations with imperfections in the pipe. However, these defects can be identified by inspection tools and corrected before they progress to a leak. Other reasons for leaks include accidents, earth movement, or sabotage.[1]

The primary purpose of leak detection systems (LDS) is to assist pipeline controllers in detecting and localizing leaks. LDS provide an alarm and display other related data to the pipeline controllers in order to aid in decision-making. Pipeline leak detection systems are also beneficial because they can enhance productivity and system reliability thanks to reduced downtime and reduced inspection time. LDS are therefore an important aspect of pipeline technology.

According to the API document "RP 1130", LDS are divided into internally based LDS and externally based LDS. Internally based systems utilize field instrumentation (for example flow, pressure or fluid temperature sensors) to monitor internal pipeline parameters. Externally based systems also utilize field instrumentation (for example infrared radiometers or thermal cameras, vapor sensors, acoustic microphones or fiber-optic cables) to monitor external pipeline parameters.

3. 11/02/2017 Extension Lecture Series on Cloud Computing talk by Mr. Raja Deshpandey,

   Cisco Systems India Pvt. Ltd, Bangalore

<u>**SEMINAR REPORT ON:**</u> **CLOUD COMPUTING**

Visit organized by: **Electronics and Instrumentation Engineering**

DATE: 11th FEBRUARY 2017, Saturday **(11:30 AM TO 12:30 PM)**

Venue: IT CLASS ROOM 3, PG Block, BMSCE, Bangalore

No. of participants: 32

Faculty coordinator: Prof. Namratha S.N

Guest speaker: Mr. Raja Deshpandey

Technical Leader. Engineering,   Cisco Systems India pvt Ltd.

Guest speaker Mr Raja Deshpandey is currently working as Technical leader engineer, Cisco Systems India pvt Ltd. he is having industrial experience of around 17 years.

 An introductory session to seminar covered some topics related to technology trends of cloud computing. Cloud delivery models, cloud services, goals and benefits, risks and challenges, cloud characteristics, cloud deployment models, cloud computing patterns, data center technology, virtualization technology, web technology, multitenant technology Cisco Expressway product and Manager of Performance assessment systems & System Validation, Iaas (information as a service), Paas (platform as a service), Saas (software as a service), Daas (desktop as a service) , thin net , thin client topics was discussed in detail.

Students from EIE Department learnt many things related to virtualization, Cisco Cloud Architecture for Collaboration, Cisco Virtualization Technologies, data handling and other new booming technologies.

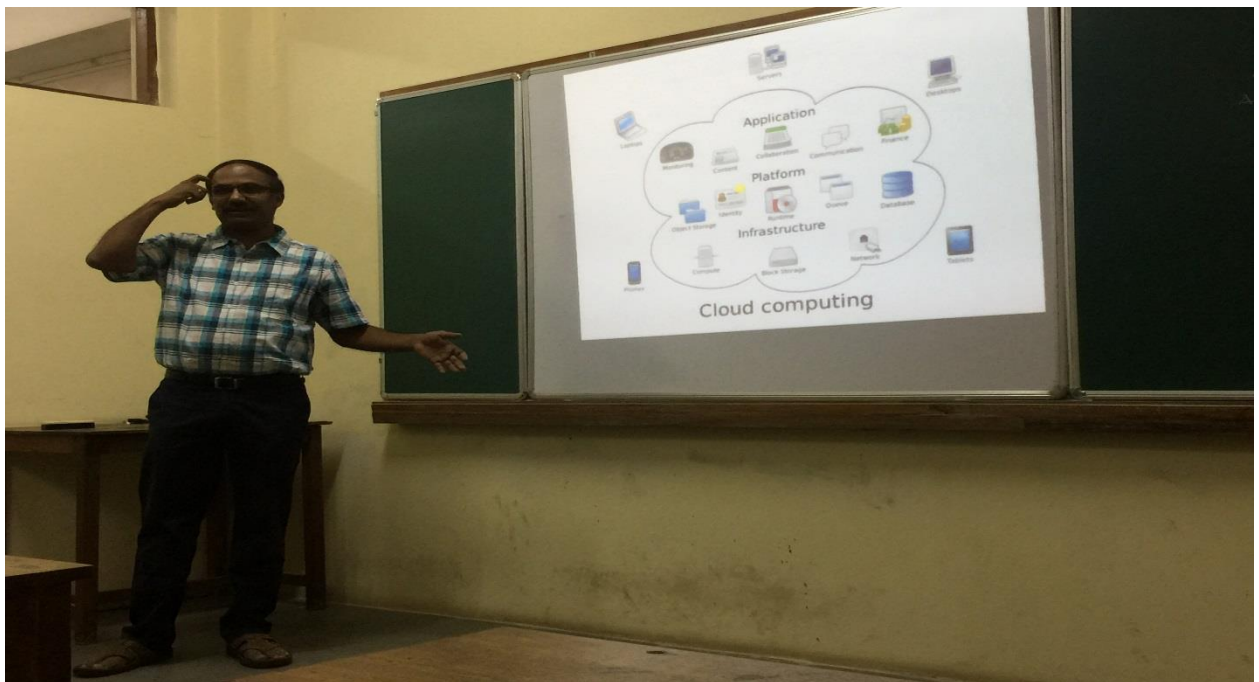The seminar was finally concluded around 12:30 pm

Photos Taken During Talk:

Snap1: SESSION IN PROGRESS

Snap2: interaction with students during seminar

Snap3: overview of cloud architecture

Snap4: cloud deployment models

30th January 2017.:Dr K.NARASIMHA RAO PROFESSOR IN ELECTRONICS & INSTRUMENTATION ENGINEERING attended for Mock NBA evaluation of **Electronics & Instrumentation Engineering** Programme as evaluator AT GSSS Institute of Engineering For Women, Mysuru.

17th to 19th Feb 2017. :Dr K.NARASIMHA RAO PROFESSOR IN ELECTRONICS & INSTRUMENTATION ENGINEERING attended as part of Expert Team to Vivekanand Education Society's Polytechnic, Sindhi Society, Chembur, Mumbai-400071, Maharashtra**,** to evaluate Diploma Engineering programs in Instrumentation Engineering for grant of NBA Accreditation.