



NARAYANA ENGINEERING COLLEGE :: NELLORE

(AUTONOMOUS)



Permanently affiliated to JNTUA Ananthapuramu, Approved by AICTE, Accorded 'A' grade by Govt. of AP, Recognized by UGC 2(f) & 12(B), ISO 9001:2015 certified Institution, Approved with 'A+' Grade by NAAC

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

A Report of Online STTP on "Applications of Signal, Image And Video Processing in VLSI using Xilinx System Generator [Phase - III] "

Department of Electronics & Communication Engineering, Narayana Engineering College, Nellore, organized a "ONLINE STTP ON APPLICATIONS OF SIGNAL, IMAGE AND VIDEO PROCESSING IN VLSI USING XILINX SYSTEM GENERATOR". The STTP was conducted on the following dates: 02 – 11 – 2020 to 07 – 11 – 2020. The total number of participants attended the faculty development program is 69. The purpose of this STTP is to bring together researchers & PG students from Academia and Engineers & Scientists from industry and R&D institutes to have discussions on the recent advances in Applications of signal, image & Video processing in VLSI using Xilinx System generator. High end image or video processing applications are easy to solve in MATLAB.

OBJECTIVES OF STTP:

- Providing a clear & thorough understanding on fundamental and application areas of signal processing in VLSI.
- Providing an in-depth knowledge in use of Xilinx system generator for VLSI Signal Processing applications.
- Providing example of advantages of high level design tool such as System Generator for FPGA design.
- Hands on experience on signal and Image processing algorithm synthesis & implementation in FPGA.
- Awareness of industrial applications of FPGA implementation.

The following members are the resource persons for the programme.

1. **Dr. Farukh Hashmi**, NIT Warangal
2. **Nagendra Bandi**, CoreEL Technologies
3. **Dr. P. Srihari Rao**, NIT Warangal
4. **Dr. P. Muralidhar**, NIT Warangal
5. **Dr. K. Murali**, Narayana Engineering College, Nellore

The inaugural function of the workshop started with a welcome address by Dr. K Murali, HOD-ECE and he presented the theme of the STTP and said that applications of Signal, Image and Video processing in VLSI using Xilinx System Generator is playing an important role in various applications. Later, the Principal of NECN addressed the staff members and said that STTPs will help for the growth of the faculty in all facets of their professional lives. STTPs will provide resources which will help the faculty to develop as scholars, to publish and share at professional conferences, and to improve their performance in the class room.

Mr. Nagendra Bandi, CoreEL Technologies addressed the participants about the following topics using laboratory:

1. Introduction to High Level Synthesis
2. Generating IPs for System Generator
3. System Generator Design Flow
4. Signal Processing using System Generator
5. Image Threshold/Enhancement using System Generator



Figure: Resource Person explaining about Custom IP Design and Validation

Dr. Farukh Hashmi, NIT Warangal addressed the participants about the overview of Image Processing techniques and Image Enhancement Algorithms. Finally, she discussed about the different application of image processing techniques.



Figure: Resource Person explaining about DSP Architectures

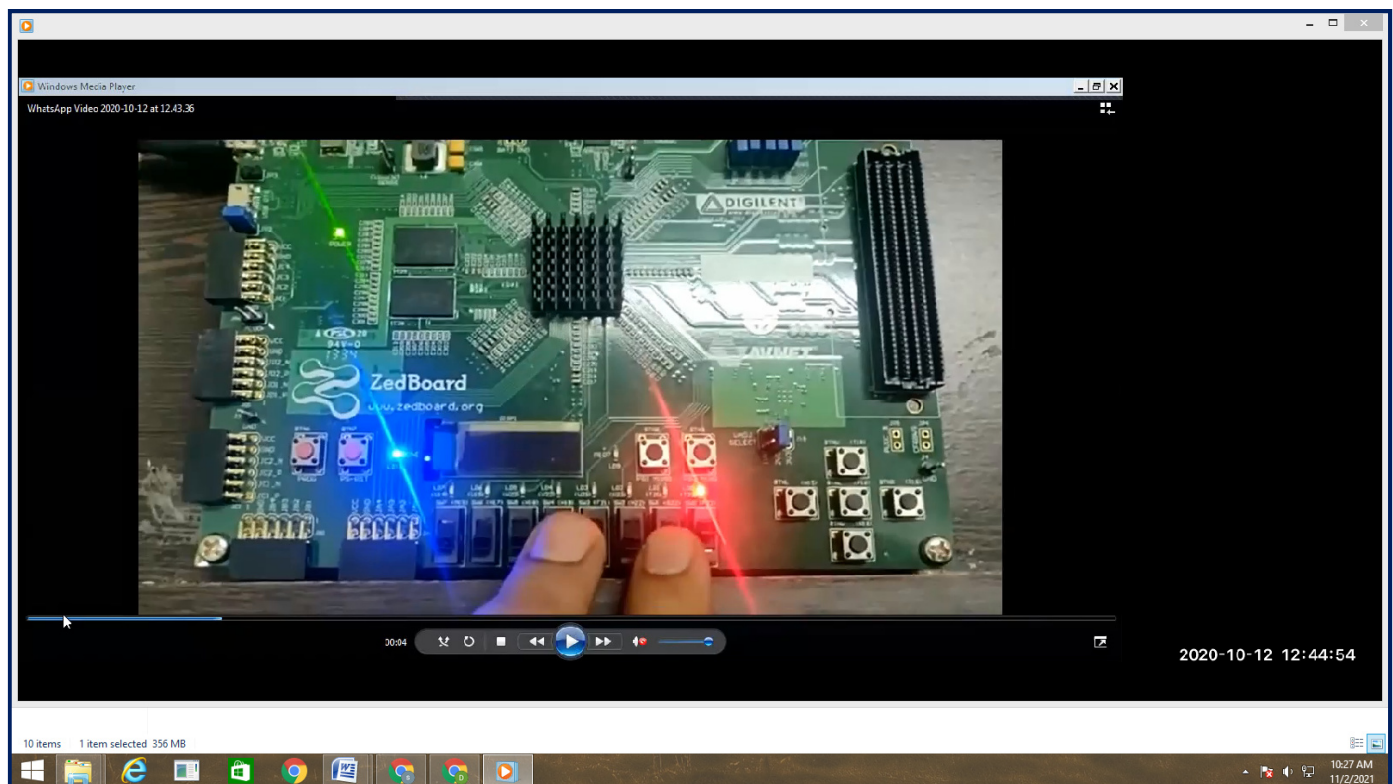


Figure: Resource Person explaining about FPGA Processor

Dr. P. Srihari Rao, NIT Warangal addressed the participants about the overview of SPIC I and II. He discusses about the applications of SPIC.

Dr. K. Murali, NECN, Nellore addressed the participants about the FPGA based Processor and discussed the various research problems in FPGA processor.

Dr. P. Muralidhar, NIT Warangal addressed the participants about the following topics: HDL Synthesis and Case Studies in Processor Design. He addressed the various research problems in the applications of processor design.

Expected outcomes:

- Opens new avenues for faculty members to pursue research in Application of signal, Image and Video Processing in VLSI using Xilinx System Generator.
- Detailed knowledge of FPGA Processor, SPIC, generating IPs for System Generator and Case studies in Processor Design.
- Importance of VLSI using Xilinx System Generator in today's trends of life.