Title: Digital Logic Workshop Sponsored by the FPGA Mission Assurance Center (FMAC)

Date/Time: Monday, July 28, 8:30 AM – 4:30 PM

Location: Renaissance Austin Hotel **Cost:** $160

Description: Technology exploration continues to be a challenging issue to implement at the pre-university level. Because of the technical skills and costs associated with certain technologies, many schools are unable to provide these education opportunities to their students. One such example involves the exposure to digital logic. Recent advancements in this area now allow a digital logic laboratory to be implemented in a quick, relevant, and cost-effective manner.

Field Programmable Gate Arrays (FPGAs) provide an excellent mechanism for schools at the high school level or above to begin introducing the concepts of digital logic. These state-of-the-art devices provide a mechanism for students to begin to understand the concepts of digital logic and programming in a hands-on environment. The method and mechanisms introduced in this workshop are tried and proven at both the high school and university levels.

The FPGA Mission Assurance Center (FMAC), in collaboration with the Xilinx University Program, will introduce this system. FPGA basics will be explained as well as the simplified design process. The FMAC will provide attendees with necessary tools, tutorials, and assistance to get educational programs up and running in limited time with limited resources. Attendees will be shown how to acquire the instructional software for their school for virtually free (software is a free download for students). The prototype boards that will be demonstrated can be purchased for less than $100 each. At these prices, it is easy for any educational institution to be able to implement this type of instruction.

The objectives of this workshop are to introduce the possibilities of creating and teaching digital logic at a school. The program that will be presented has been implemented to produce very positive results on a very limited budget for both high school and university level audiences.

Presenters:

Craig Kief is a Senior Systems Engineer at AEgis Technologies Group and is currently serving as the Deputy Director of the FPGA Mission Assurance Center (FMAC). He has over 20 years of experience in the electronics and communications arena. He is a member of a development team creating an FPGA-based laser scene generator under contract for the Air Force Research Laboratory. Craig has published numerous articles and taught courses in the areas of programmable logic and Verification, Validation and Accreditation of systems. He has a Masters Degree in Computer Engineering from the University of New Mexico.

Michael Nord has been teaching in the Albuquerque Public School District of New Mexico for 20 years. He is certified in mathematics and science. Michael has developed and written many courses over his 20 years of public education service. Some of those developed courses include Consumer Mathematics, Introduction to Programming, Webscripting, Electronics Engineering, Robotics I, and Robotics 2. Currently, Michael is teaching at an alternative high school called the Career Enrichment Center. The Engineering Electronics and Robotics course is a late-afternoon course attended by students from all the local public high schools, charter schools, home schools, and private schools. This particular program integrates local engineers and their professional knowledge into the working curriculum. Throughout his years of teaching, Michael has worked for several engineering companies in the Albuquerque area and has received numerous local awards for teaching, was a state runner up for the Sallie Mae First Year Teacher award, and a state runner-up for the National Presidential Teacher Award.