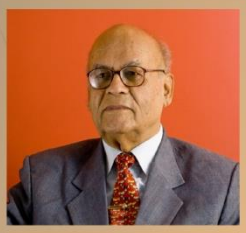
Electrikus...

Issue 1

March 2015

As the chiefs say



From an initiative 3 years back to a tradition now, The e-newsletter has explored all limits of knowledge. I extend my heartfelt greetings to all participants, authors, faculty staff and students associated in this endeavor.

Er. DC Jain
Chairman
(Gyan Ganga Group)

It is a matter of great happiness to me to know that the students have continued the e-newsletter for such a long time with great efficiency. Each edition comes out better than the previous and I have similar hopes from this one.

Mr. Rajneet Jain
Secretary
(Gyan Ganga Group)

I am very pleased to know that our college team is coming out with another issue of the e-newsletter. I heartily congratulate the editorial team. We expect to put a lot of technical knowledge to the readers from this e-newsletter.

Mr. Pankaj Goyal
Executive Director
(Gyan Ganga Group)

This effort of the students will be surely appreciated by one and all. Along with academics, the different activities in college are the keys that will unlock the hidden talents and thoughts in students.

Mr. Apurva Singhai
Executive Director
(Gyan Ganga Group)

It is joyous to know that the students are continuing the legacy of the e-newsletter as it shall help in spreading the activities being conducted by the institute to the public. I wish the team good luck.

Dr. Maneesh Choubey
Group Director
(Gyan Ganga Group)

It gives me immense pleasure to know that another edition of Electrikus is coming out. I wish all the success to the team of the EC branch involved and hope that this edition will also benefit the students in a great manner.

Dr. RK Ranjan
Principal
GGITS, Jabalpur

I am confident that this e-newsletter will provide relevant data about technology and latest happenings around the globe to all the budding engineers of our college. My best wishes to the team for future prospects.

Prof P.K. Jain
Head(Examination Cell)
GGITS, Jabalpur

This new edition of Electrikus has loads of exciting updates. Technology and time never stop and the updates here keep account of the latest developements.My warm wishes to the Gyan Ganga Group for the publication of this e-newsletter.

Prof. Vinod Kapse
Head (EC Department)
GGITS, Jabalpur

With already the so many incredible issues previously, I congratulate the editors on handling the pressure well and coming out with yet another brilliant edition of Electrikus. We truly are "Committed for Excellence".

Prof. Pankaj Sahu
Faculty Co-ordinator

From the editors

Mitul Chakraborty - 6th semester

Contributing to the department newsletter Electrikus has always been special.

Abhishree Chowdhary - 4th Semester

The experience of publishing the newsletter has been enriching to the core. Hope you all like it.

IN THIS EDITION:

The Department

Vision

To be centre of excellence in teaching-learning and employability in various fields of Electronics and Communication Engineering to produce globally competent, innovative and socially responsible citizen.

Mission

1. To offer high quality graduate and post graduate programs in Electronics and Communication with strong fundamental knowledge and to prepare students for professional career or higher studies
2. To discover and disseminate knowledge through learning, teaching, sharing, training, research, engagement and creative expression.
3. To foster spirit of innovation and creativity among students, faculty and staff, promote environment of growth, participation in conferences, technical and community services and lifelong learning for all.

GI-FI TECHNOLOGY

Wireless technology improvement has become follower in today's modern life. One of the greatest improvements made on wireless technology field was inventing a new Wireless Technology (Gi-Fi). Gi-Fi or Gigabit Wireless is the world's first transceiver integrated on a single chip that operates at 60GHz on the CMOS process.

Gi-Fi is a wireless transmission system which is ten times faster than Wi-Fi and it's chip delivers short-range multi-gigabit data transfer in an indoor environment. It will allow wireless transfer of audio and video data up to 5 gigabits per second, low power consumption, usually within a range of 10 meters .This technology providing low-cost, high broadband access, with very high speed large files exchange within seconds. It is required that Gi-Fi to be the preferred next generation wireless technology used in home and offices.

The GiFi chip is a good news for personal area networking because there is no internet infrastructure available to cop it with. The size of the Gi-Fi chip is 5×5 millimetre and can be placed in different devices such as mobile phones. The best part about this new technology Gi-Fi is its cost effectiveness and power consumption, it only consumes 2 watts of power for its operation with antenna (1mm) included and the development of Gi-Fi chip costs approximately $10 (Rs380) to manufacture.

Gi-Fi technology provides many features such as ease of deployment, small form factor, enabling the future of information management, high speed of data transfer, low power consumption etc. With growing consumer adoption of High- Definition (HD) television, low cost chip and other interesting features and benefits of this new technology it can be predicted that the anticipated worldwide market for this technology is vast.

Without doubt, Gi-Fi wireless technology represents a considerable improvement if compared to the existing technology. The new technology provides innumerable features that improve both the overall functionality as well as some specific security functions. Thus we conclude by all above gaining information that Gi-Fi wireless technology is advance in many matter by the existing wireless technology. Gi-Fi technology is defined that will allow wireless transfer of audio and video data up to 5 gigabits per second, ten times the current maximum wireless transfer rate, at one-tenth of the cost, usually within a range of 10 meters that operates at 60GHz on the CMOS process. This technology removes cables that for many years curled the world and provides high speed data transfer rate. Finally, I would like to state that even though Gi-Fi wireless network technology have a huge potential we will only get the best of them

SNIFFER

One of the most interesting things about cell phone is that it is really a radio an extremely sophisticated radio, which uses some band of frequency that has the basic working similar to the ordinary cordless phone. The mobile cellular communication has been appreciated since its birth in the early 70's and the advancement in the field of VLSI has helped in designing less power, smaller size but efficient transceiver for the purpose of communication. But however the technology has not yet answered the loss or misplacement of the lost mobile phone which is significantly increasing. The IMEI number is a unique number that is embedded in the mobile phone. The main purpose of which is the blocking of calls that is made by unauthorized person once the mobile is reported as stolen but here we use it effectively for the purpose of detection lost mobile.

Once we installed our application in the mobile, its starts to get the latitude and longitude value of the lost mobile by using the inbuilt GPS in mobile. The mobile traveling from one place to another place the value of the latitude and longitude is continuously changing and stored in the memory. But only the latest value is stored in the memory. Once the old SIM card is removed from the mobile it waits for the other SIM card to be inserted. If other SIM card is inserted then, our application will compare both the SIM card numbers. If both the SIM card number matches, it should be idle.

If both the SIM card number is mismatched, then the present latitude and longitude value of the mobile is sent as the SMS to the specified phone number.
The location tracking process is run as background process by using Android service and it automatically repeats sending this information in aspecific interval of time. The results from this process composed of position and Mobile's particular information: SIM code and IMEI (International Mobile Equipment Identity) are sent from the lost mobile to the recipient. The results are displayed in two interface modes which are text message and GUI on Google map.

Though the sniffer device for the mobile phones has it's own merits in terms for the of using the IMEI number for the detection of lost mobile, the frequency that it uses is high frequency in the range of 850-950 MHZ where there is a slight effect of the reflection of the signal from the ground, but however the effect is less pronounced and the other demerit here is that even though the directivity of the antenna is less the distance of the propagation should be restricted and the device is handheld and automated one. But however this new technique that provides a light for the detection of the lost mobile phones.