Star TECH

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Linux kernel

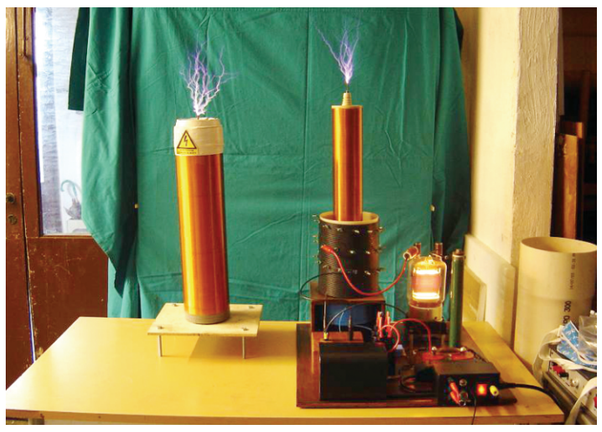
The Linux kernel is a Unix-like operating system kernel. It is the namesake of the Linux family of operating systems. Released under the GNU General Public License (GPL) and developed by contributors worldwide, Linux is one of the most prominent examples of free and open source software. Linux was created by Linus Torvalds in 1991. Early on, the Minix community contributed code and ideas to the Linux kernel. At the time, the GNU Project had created many of the components required for a free software operating system, but its own kernel, GNU Hurd, was incomplete and unavailable. Today the Linux kernel has received contributions from thousands of programmers.

TECHFOCUS

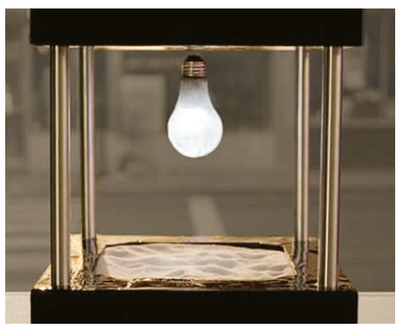
Wireless Power

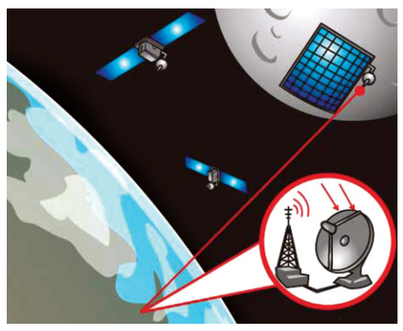
Hassle free transmission

EDWARD APURBA SINGHA



The unmanned plane, called the Stationary High Altitude Relay Platform (SHARP)





WOW! At last the power transmission goes wireless. Yes, it is not a rumour but an astonishing fact that will embellish the existing power distribution technology in your premise. Basically, this technology will give you freedom from wires and at the same time ensures safe power transmission.

I believe most of us are familiar with the terms alternative current (AC) and direct current (DC). AC changes direction over the time or its polarity changes. On the other hand DC does not change its polarity.

AC is suitable for long distance power transmission and for this reason in our households we get alternating current from power outlets. But all most all devices require direct current to conduct their functionalities. As a result, we need to convert the AC power into DC.

Naturally, when we need to run any device we connect its plug to the wall outlet. The device receives alternating current and a special arrangement inside the device converts the AC into DC. But the scenario is slightly different in case of wireless power technology.

Wireless power technology is based on the concept of a transformer. In a transformer current induce from one coil to another through magnetic field. When electrical current passes a wire it creates circular magnetic field around the wire. Bending the wire into coil amplifies the magnetic field. If a second coil of wire is placed in the magnetic field, the field can induce a current in the wire.

Nicola Tesla unveiled the idea of wireless power transmission in the late 1800s and early 1900s. The innovation was exciting but it did not initiated wide spread implementation of this technology.

The recent instance of wireless power transmission is electric toothbrush. This device follows the method of transformer to recharge the battery. The charger unit draw the electric current from the wall outlet and generates magnetic field. In a transformer, this coil is called the primary winding.

When the toothbrush is installed on its charger unit, the magnetic field induces a current in another coil, or secondary winding, which connects to the battery. In this way the current recharges the battery.

Nowadays there are several devices available in the market that are based on the same principle but recharge more devices at once. For example, the Splash Power recharging mat and Edison Electric's Power Desk both use coils to create magnetic field. Electronic devices use corresponding built-in or plug-in receivers to recharge while resting on the mat. These receivers contain compatible coils and the circuitry necessary to deliver electricity to the devices' batteries.

At this moment, distance limitation is the major drawback of wireless power technology. For this reason, device and its charger unit maintained a minimum distance to induce a current, which can only happen if the coils are close together.

But researchers at Massachusetts Institute of Technology (MIT) subvert this setback and came out with an updated solution. In November 2006, the team, led by Marin Soljacic, theorised that by considering resonance it is possible to transmit power between coils separated by a few meters.

Resonance is a tendency of a system that usually means that, the system oscillate at maximum amplitude at a certain frequency. This frequency refers to the system's own resonant frequency. Resonant frequency is approximately equal to natural frequency of the system in the case of small dumping and it is the frequency of free vibrations.

If two coils resonate at the same frequency and located within a few meters of each other, the power moves from the transmitting coil to the receiving coil. According to the theory, one coil will be able to send energy to several receiving coils, as long as they all resonate at the same frequency. This kind of set up could power or recharge all the devices in a single room.

Beyond home accessories wireless power technology has also been employed to supply electricity to the aircraft. The unmanned plane, called the Stationary High Altitude Relay Platform (SHARP) is such a lucid example. Canada's Communications Research Centre created this small aircraft in 1980s and this plane could fly in circles two kilometres in diameter at an altitude of about 13 miles (21 kilometres).

This plane is powered from the ground and a massive microwave transmitter controls all functions. The SHARP's circular flight path kept it in range of this transmitter. Consequently, a disc-shaped on board antenna known as rectifying antenna located just behind the plane's wings and it receives microwave signal and converts it into direct current.

Another implementation of microwave based wireless power transmission is transmitting electricity to earth from solar power stations on the moon. Special antennas would capture the energy beam from moon and converts it into electricity.

Till now the idea of power stations on the moon has not come into practice. But it is apparent to us that, in near future we must discover the alternative source of energy to meet the uprising demands of fast growing population. In this regard, wireless power technology could emerge as a potential alternative for us.

Reference: howstuffworks.com

TECHNEWS

Lenovo unveils notebooks in Bangladesh

STARTECH DESK

LENOVO launched its 3000 series notebooks for the first time in the Bangladesh market on May 10 through a gala evening at a city hotel.

The introduction of the Lenovo 3000 product range will enable Lenovo to compete in the consumer segment of Bangladesh's PC market and provide SOHO (Small Office and Home Office) customers access to a superior range of technology rich products, says a press release.

Currently, Lenovo's Think range of PCs - ThinkPad notebooks and ThinkCentre desktops - is targeted at large and medium-to-large enterprises. With the launch of the Lenovo 3000 series, Lenovo will expand its product portfolio in Bangladesh and reach out to a larger section of the Bangladesh IT market.

"Lenovo has a strong focus on investing in emerging markets. The launch of the Lenovo 3000 series in Bangladesh is due to the potential we see in the consumer market here. The Lenovo 3000 series presents attractive options for consumers seeking innovative, stylish and worry-free PCs", said Neeraj Sharma, managing director, Lenovo South Asia.

Lenovo will engage directly with its distribution partner in Nepal, Thakral Brothers, which will in turn work with its resellers in tier-II cities. Thakral Brothers will also provide full-fledged service and support for the Lenovo 3000 series.

Lenovo 3000 C200

The Lenovo 3000 C200 notebook is perfect for home consumers wanting a simple, stylish and worry-free computing experience. It features an Intel Celeron M 420 processor, 60 GB hard disk, 256 MB memory and a 15-inch TFT screen. The C200 also offers complete connectivity features such as integrated 802.11 a/b/g wireless LAN, 10/100 Ethernet and an internal 56 kbps modem. Other features include a 5-in-1 multi-card reader for downloading digital pictures from multiple types of memory cards, four USB ports, 1394 and S-Video ports, integrated graphics and a DVDROM-CDRW Combo drive. The notebook has a pricetag of Taka 55,000.

Lenovo 3000 N100

N100

The Lenovo 3000 N100 notebook is ideal for home users seeking innovative, stylish and worry-free PCs with easy-to-use features and technology backed by comprehensive service and support. It is packed with rich multimedia features such as forward facing stereo speakers, an integrated microphone for playing and recording audio and an integrated DVD recordable dual layer drive. The price varies from Taka 72,000-99,000, depending or configuration.

TECHNEWS

NSN Village Connection brings affordable connectivity to rural areas

STARTECH DESK

NOKIA Siemens Networks (NSN) recently introduced its new solution, Village Connection, for affordable rural connectivity and coverage in new growth markets.

Nokia Siemens Networks Village Connection offers an easy concept to build rural connectivity village by village, enabling an innovative franchise-based business model between an operator and local village entrepreneurs, says a press release.

The Nokia Siemens Networks Village Connection solution supports GSM based voice and SMS services, including roaming and connection to the outside world. A range of value-added services can be added, such as cost-effective internet services in villages via the internet protocol link.

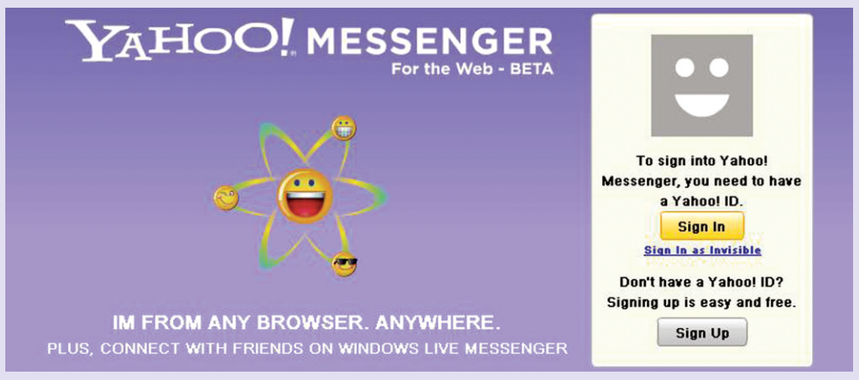
"The new Nokia Siemens Networks Village Connection benefits many people", says Ari Lehtoranta, head of Radio Access Networks, NSN. "Our solution brings connectivity, access to mobile services and economic activity to the villages, it enables operators to extend their network coverage cost-effectively in rural areas where rolling out and operating a traditional GSM network would be too cost-intensive."

Nokia Siemens Networks Village Connection comprises GSM access points located in villages and regional access centers. A village would typically host one access point module comprising GSM radio, power and IT hardware and software components. The access point only requires simple installation and powering can be done, for instance, by solar energy. Each access point connects to standard GSM mobile devices and autonomously handles calls within a village through local switching. Access points are connected via Internet Protocol links to a regional access center. The access center connects the villages to the main GSM core network and handles the calls between the villages.

The novel Nokia Siemens Networks Village Connection allows to transfer responsibility for network and business functions to a local level, building cost-effective connectivity village by village. It can employ local people to manage access within each village, or local entrepreneurs may license the mobile access rights for their surrounding area. The solution will be available in 2008.

TECHNEWS

Yahoo offers web-based instant messaging



AFP, *San Francisco*

YAHOO on Thursday launched a web-based version of its free instant messaging service for Internet users who want to stay connected while away from their home computers.

Yahoo Messenger for the Web lets people use the online search titan's service from any Internet-linked computer without needing to download or install software, as was the case previously.

The service is tailored for use by travelers, workers whose employers block software downloads to company machines, cyber-cafe dwellers and people who simply cannot afford their own computers.

"This really has great implications for the road warriors out there who are on the go," Yahoo senior vice president of communications Brad Garlinghouse told AFP.

"People have become quite accustomed to a non-stop accessible life."

Industry statistics indicate that nearly a quarter of US Internet users go online from places other than home or work.

The new service is introduced as Yahoo vies with rivals Google and Microsoft for the devotion of Internet users whose visits can be parlayed into online advertising revenue.

Users of Yahoo's instant messaging system can engage in exchanges with people using Microsoft's Windows Live Messenger.

Yahoo Messenger for the Web is available online at http://webmessenger.yahoo.com, according to the Sunnyvale, California-based Internet firm.

The service is initially launching in Brazil, India, Malaysia, Philippines, Vietnam and the United States. It is to be made available in other countries through the rest of the year.

PHOTOTECH

I-UNIT

Japanese Economy, Trade and Industry Minister Akira Amari enjoys driving Toyota's iUnit, a next generation personal vehicle at his ministry in Tokyo on May 10. The i-unit enables the passenger to move among other people in an upright position in low speed mode, and a low center of gravity that ensures stable handling when the vehicles reclines in high speed mode. The driver support system features Intelligent Transport System (ITS) technology, which Toyota hopes to utilize for an accident-free society. The system permits efficient and safe autopilot driving in specially equipped lanes.

PHOTO: AFP