

Speaker Technical Session-V



Prof Ved Prakash Sandlas

Brief Profile

Prof. Ved Prakash Sandlas, Director General, Amity Institute of Space Science & Technology (AISST), Noida retired from regular Govt. service in Feb 2005 after working in ISRO (1967-1986) and DRDO (1986-2005) in the areas of Electronics & Communications, Satellite Launch Vehicles and R&D Management.

He functioned as Distinguished Scientist and Chief Controller R & D, DRDO during 1996-2005. He had also been Director, Defence Electronics Applications Laboratory (DEAL), Dehradun (1986-96). Earlier he worked at the Vikram Sarabhai Space Centre (VSSC), Trivandrum and grew up to become the Group Director, Electronics (1984-86) and, the Mission Director/Project Director SLV-3 (1980-84).

He was awarded DRDO's 'Scientist of the Year' award (1988) for outstanding contributions to Electronics, and FIE Foundation National Award (1998) for Science & Technology. He has extensively lectured and published on Project Management, Satellite Launch Vehicle Systems, R&D Management, Informatics, Electronics, Communication Systems, Amateur Radio, EMI/EMC, Electromagnetic Radiation Hazards, Defence Space Systems and Cyber Security. He was Guest Editor of 'Special Issue on Military Communications' of the Defence Science Journal (DSJ – Jan 1993) and 'Golden Jubilee Special Issue on R & D in Electronics in India' of the Institution of Electronics and Telecommunications Engineers (IETE Technical Review – Jan-Feb 2003).

ABSTRACT

CYBER SPACE CHALLENGES

Computers and Internet are invading business, government, national defense and, in fact most aspects of our daily life at break-neck speed. More than one and a half billion people in the world have access to the Internet, with a quarter of them on broadband. All these activities now rely on an interdependent network of information technology infrastructures called Cyber Space.

In the past few years, threats in Cyber Space have risen dramatically. Securing Cyber Space is an extraordinarily difficult strategic challenge that requires a coordinated and focused effort from our entire society — the central government, state and local governments, the private sector, and the people. Cyber Space is increasingly exposing us to many dangers and risks. Among the common dangers are viruses erasing the entire computer record system, invading and altering files, stealing credit card information and making unauthorized purchases. Recent (Jan 30, 2008) optical fibre submarine cable cut in the Mediterranean and, earlier, east Asian cable break because of earth quake that hit southern coast of Taiwan (Dec 30, 2006) have demonstrated the vulnerability of existing networks. Unfortunately, there's no 100% guarantee that even with the best precautions some of these things won't happen, but there are steps one can take to minimize the chances of harmful intrusions and damage potentials. However, this type of disasters have woken up the entire high-tech networking and NGN community. Alternative routes will have to be automatically organised by optimally networking with other operators in the area. The days of captive networks are over; sharing of resources and cost effective utilization of the entire available infrastructure, irrespective of the ownership, will become essential. Also important will be the use of higher capacity satellite links. The endless debate about cost benefit analysis of satellite vs. cable links must give way to finding methods to compliment each other, particularly for critical communication networks.

Cost effective use of NGN, in productive or real useful ways, will also have to be kept in view. Internet use may soon become a, relatively, costly hobby – costing much money and time; rich or efficient people or countries using most of the resources. ITU's Digital Access Index and Digital Opportunity Index rank Korea, Japan, Singapore, Taiwan, Hong Kong and China at the top, much ahead of US, Canada, Germany and France in e-readiness and use of ICT for day-to-day business and governance. Reasons for this relate to generation of software and content in local languages, and English becoming less of an advantage in the Cyber Space. This is a silver-lining and an opportunity for India. Of course, desire and courage to leap frog to the top in the quickest possible way may be the most important reason. India is rated very low on this DOI (124 rank out of 181). Obviously, when a country does more online activities, its economy can become more transparent and efficient. There is no point in perpetually discussing Digital Divide and Brain Drains, which are concepts created by –ve minds; our objective should be to build Digital Bridges or Digital High Ways and create Brain Gains by using ICT and NGN tools and techniques in most optimum ways.