



**THIRD POST GRADUATE COURSE
IN SATELLITE COMMUNICATIONS**
(August 1, 2001 - April 30, 2002)
MEMOIRS

KEEP YOURSELF ALWAYS UPDATED

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In any course, short or long, the participants have to look through the developments in that area and those, which are widespread and have future. One such, in modern communications, is the convergence of technologies.

Convergence of technology

Today communication enters our daily lives in so many different ways that it is not easy to overlook the multitude of its facets. The telephones at our hand, the radios and televisions in our living rooms, the computer terminals with access to the internet in our offices and homes and newspapers are all capable of providing rapid communications from every corner of the globe. Communication provides the ships on the high seas, aircraft in flights, rockets and satellites in space. The application involving the use of communications in one way or another is almost endless. These days our culture is to digest several new technologies at the same time. It has become a revolution. There is lot of future in this especially for the asia-pacific region. The aspirations of the region can be addressed by making available the appropriate technology that would help them for capacity building and direct social needs.

Over the past decade, we have seen a revolution in the ways we communicate. The internet has created the demand for extremely high information transfer rates, while other mobile wireless devices have fueled the desire for ubiquitous connectivity for a dense population of users.

As internet and telecommunications networks struggle to deploy new connectivity services, a wide gap is forming between wired and unwired users. Terrestrial networks



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are mainly limited to service deployment in developed, metro areas with many rural and remote users remaining wholly un-served. This trend is specially true in asia-pacific region where geography and the cost of universal wiring create barriers for terrestrial service providers. Satellite technology is the best option that promises the level playing field for internet and telecommunications services in Asia.

There is lot of future in this especially in the countries in this region. Communication technology has been growing at a pace faster than microchips both in reach and richness. Bandwidth is doubling every year. Today we have dense wavelength division multiplexing (DWDM).

Convergence of technology is the integration of information, computers and communications. In this context, satellite technology provides better solution. Satellite technology has advantage like lower costs, unlimited choice of content, location independent, distance is abolished, terrain independent etc.

Convergence of technology in today's context provide a great opportunity for capacity building and to bring in social integration that is necessary now a days. Convergence of technology has to be exploited for social purposes with haste, commensurate with the significant progress in science and technology.

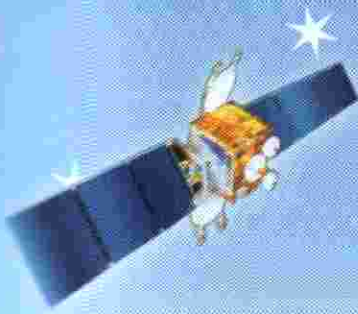
Our planet is experiencing natural disasters on a unprecedented scale. The trend for the last decade shows that the Asian continent is most frequently hit by disasters. There is a belief that poor disaster preparedness programs, lack of communication network/facilities followed by flawed management polices result in the high casualties. Actually convergence of technologies (like satellite data, GPS etc.) has to be explored for finding solution to such problems. The challenge lies in the realization of a total system involving near-real time data acquisition, assimilation and analysis, decision alternatives generation and communications.

Recent advancements in satellite technology have set up stage for implementing high quality and cost effective satellite communications solutions. The cellular coverage, spread of internet and its users, video conference, direct to home (DTH) television



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broadcasting from satellite etc., have been a boon in the overall distributions of communication.

Satellite communication services are the need of the hour especially in the asia-pacific region bringing rural and remote area into the main stream through satellite coverage. For this more cooperation in the region is needed. CSSTEAP as an institution is playing a major role in dissemination of the knowledge, technology and linking research institutions/organizations that helps in promoting perforation of the technology at grass root level.

Scientific innovations are for the future. While the future comes from the past it should not dictate. We have to develop the future.

We have to correspondingly improve the infrastructure to improve the educational base. Capacity building at all levels is of paramount importance not only to provide the man power but also to provide the self-esteem that is essential to enable them to become competitive in the present day scenario.

What does a 21st century engineers need to know? To attempt an answer, let's briefly examine some of the new capabilities that are shaping the future of engineering - terascale, nanoscale, complexity, cognition and holism. Because science and technology are transforming forces, it will be these emerging fields, the unpredicted territories, that will change and expand our capabilities as engineers and innovators.

I believe the hallmark of the modern engineer is the ability to see connections among seemingly disparate components and to integrate them in ways that exceed the sum of their respective capacities.

Progress in the above areas will lay out the capacity for an integrated design field far beyond what is imaginable with today's technology. Taken together this means that today engineers will need to be astute makers, trusted innovators, agents of change, master integrators, enterprise enablers, technology stewards and knowledge handlers.



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