Chapter 1 : Telecommunications Society of Australia - Wikipedia

A device intended to use these available channels is a "white-spaces device" WSD. Such devices are designed to detect the presence of existing but unused areas of airwaves, such as those reserved for analog television , and utilize these unused airwaves to transmit signals for Internet connectivity. Such technology is predicted to improve the availability of broadband Internet and Wi-Fi in rural areas. Additionally, these efforts may impact wireless microphones , medical telemetry , and other technologies that have historically relied on these open frequencies. This is also the timetable that the white space coalition has set to begin offering wireless broadband services to consumers. The delay allows time for the United States Federal Communications Commission FCC to test the technology and make sure that it does not interfere with existing television broadcasts. Similar technologies could be used worldwide as much of the core technology is already in place. However, the FCC rejected their arguments, saying enough testing has been done, and through new regulations, possible interference will be minimized. More of the broadcast spectrum was needed for wireless broadband Internet access, and in March , Massachusetts Senator John Kerry introduced a bill requiring a study of efficient use of the spectrum. The report concluded that the devices did not reliably sense the presence of television transmissions or other incumbent users, hence are not acceptable for use in their current state and no further testing was deemed necessary. At this meeting the Microsoft engineers showed results from their testing done with identical prototype devices and using identical testing methods that "detected DTV signals at a threshold of dBm in laboratory bench testing with percent accuracy, performing exactly as expected. It was also pointed out that the FCC was in possession of an identical backup prototype that was in perfect operating condition that they had not tested. The report concluded that these devices had met the burden of "proof of concept" in their ability to detect and avoid legacy transmissions, [17] although none of the tested devices adequately detected wireless microphone signals in the presence of a digital TV transmitter on an adjacent channel. On November 4, , the FCC voted to approve the unlicensed use of white space, [18] thereby silencing opposition from broadcasters. Devices must both consult an FCC-mandated database to determine which channels are available for use at a given location, and must also monitor the spectrum locally once every minute to confirm that no legacy wireless microphones , video assist devices or other emitters are present. On September 23, , the FCC released a Memorandum Opinion and Order that determined the final rules for the use of white space for unlicensed wireless devices. The final rules adopt a proposal from the White Spaces Coalition [21] for very strict emission rules that prevent the direct use of IEEE The plaintiffs allege that portable, unlicensed personal devices operating in the same band as TV broadcasts have been "proven" to cause interference despite FCC tests to the contrary. The deployment included experiments to test how much data could be sent before interference became audible to nearby wireless microphones. On February 24, , officials in Wilmington, North Carolina , which was the test market for the transition to digital television , unveiled a new municipal wireless network, after a month of testing. The network will use the white spaces made available by the end of analog TV. Spectrum Bridge will work to make sure TV stations in the market do not receive interference "no interference issues" have been reported , and the company hopes to do the same if similar service becomes nationwide. The " smart city " network will not compete with cell phone companies but will instead be used for "national purposes", including government and energy monitoring. TV Band Service, made up of private investors, has put up cameras in parks, and along highways to show traffic. Other uses include water level and quality, turning off lights in ball parks , and public Wi-Fi in certain areas. TV Band has an month experimental license. United Kingdom[edit] Ofcom, the licensing body of spectrum in the UK, has made white-space free to use. In the demonstration, the Adaptrum whitespace system provided the broadband IP connectivity allowing a client-side Microsoft Xbox to stream live HD videos from the Internet. This used commercial hardware from ip. The consultation closed on November 4, Submissions were received from a wide range of organisations from the telecoms and broadcast industries. There was an initial

trial that took place within 10 schools in order to deliver affordable internet to the selected schools in South Africa without TV interference, and to spread awareness about future TVWS technologies in South Africa. The trial took place over 10 months, from March 25, to September 25, No further trial details has been delivered yet.

Chapter 2 : Online Journal of Space Communication

The Online Journal of Space Communication is a cross-disciplinary scholarly publication designed to advance space communication as a profession and as an academic discipline. The Journal is distributed electronically without charge to users on a global basis.

About Deep Space Communications Every NASA mission has a communications system to receive commands and other information sent from Earth to the spacecraft, and to return scientific data from the spacecraft to Earth. The vast majority of deep space missions never return to Earth. In addition, any issues with the spacecraft can only be diagnosed, repaired, or mitigated via the communications system. Without a consistently effective and efficient communications system, a successful mission would be impossible. Increasing Demands and Extreme Challenges High communication rates are dictated by future science data requirements. The demands placed on deep space communications systems are continuously increasing. However, NASA estimates that the deep space communications capability will need to grow by nearly a factor of 10 each of the next three decades. This trend is in step with our increasing knowledge of the cosmos -- as more detailed scientific questions arise, the ability to answer them requires ever more sophisticated instruments that generate even more data. Even at its maximum data rate of 5. New high-resolution hyperspectral imagers put further demands on their communications system, requiring even higher data rates. The principal challenge to deep space communications systems is posed by the enormous distances to which our spacecraft travel. The two Voyager spacecraft, for example, are each more than 15 billion kilometers away, about astronomical units AU; 1 AU is the average distance between Earth and the Sun. Another important challenge for deep space communications systems is to maintain their extreme reliability and versatility, in order to accommodate the long system lifetimes of most planetary missions. These challenges must be met with a communications system that uses no more than a few kilograms of mass, and often, uses only about enough power to illuminate a refrigerator light bulb. The antenna on the right is a meter High Efficiency Antenna. The Deep Space Network DSN consists of antenna complexes at three locations around the world, and forms the ground segment of the communications system for deep space missions. These facilities, approximately longitude degrees apart on Earth, provide continuous coverage and tracking for deep space missions. Each complex includes one meter antenna and a number of meter antennas. A large portion of deep space communications research addresses communications system engineering, radios, antennas, transmitters, signal detectors, modulation techniques, channel coding theory, data compression, and simulation. This research also includes optical communications as well as related expertise in optical instruments, optics systems design, optical detectors, lasers, and fine-pointing systems. Deep space communications research facilities include a meter research and development antenna at the DSN complex at Goldstone, California , and the Optical Communications Telecommunications Laboratory with a 1-meter telescope at the Table Mountain Observatory in Wrightwood, California. These technologies have enabled every JPL space mission ever flown and contributed to the development of exciting new mission concepts. JPL researchers are investigating new methods that would allow current radio systems to accommodate the ever-increasing need to reliably move more bits between deep space and Earth. Areas of investigation include: During the same period, resolution of spacecraft angular tracking, a function performed by the telecom subsystems, has seen improved by a factor of , from 0. Continuous performance enhancements over the past five decades were necessitated by the ever-increasing demand for higher data rates, driven in part by more complex science payloads onboard spacecraft. Efficiency of the communications link, namely the transmitter and receiver antenna gain, are frequency dependent. JPL engineers have successfully enhanced data-rate delivery from planetary spacecraft by employing higher radio frequencies X-band and Ka-band. Stronger signal power density can be telivered to the ground receiver using even higher optical frequencies and taking advantage of the lower achievable beam divergence. These frequencies can serve both planetary links over interplanetary distances, as well as shorter-distance links near Earth or near planets. Areas of emphasis in optical communications research and development at JPL include: Similarly, optical proximity link systems

with low complexity and burden can boost surface asset-to-orbiter performance by a factor of 20 dB over the current state of the art. This improvement would benefit planetary and lunar orbiters to communicate with assets such as landers or rovers. Interplanetary Optical Communications Interplanetary laser communications concept demonstrating links from a Mars orbiter to Earth, and proximity links from Mars surface assets to orbiters. Laser Communications lasercom could meet these needs for future missions to near-Earth space, the Solar System, and potentially, interstellar missions. Optical communication can provide mass, power, and volume allocation benefits over radio frequency RF systems, as well as bandwidth allocation restrictions. Key challenges facing deep space optical communications include maturity of efficient, robust and reliable space laser transmitters, and a lack of data on the operating lifetime of lasers in space. Efficient laserscom links from deep space require the detection of extremely faint signals. During daylight hours, the presence of additive optical background noise despite the use of narrow band-pass filters poses a challenge to their performance. These challenges can be overcome by use of atmospheric correction techniques, which have been demonstrated successfully on meter-class ground-receiving apertures. However, atmospheric correction techniques are not yet cost effective on the meter-diameter aperture ground receivers necessary for deep-space communications. The operation of lasercom links with sufficient availability in the presence of weather, clouds and atmospheric variability also requires cost-effective networks with site diversity. The objective of the Deep Space Optical Communications DSOC Project is to develop key technologies for the implementation of a deep-space optical transceiver and ground receiver that will enable data rates greater than 10 times the current state-of-the-art deep space RF system Ka-band for a spacecraft with similar mass and power. Although a deep-space optical transceiver with 10 times the RF capability could be built with existing technology, its mass and power performance would not be competitive against existing RF telecommunications systems. The four technologies are: Such a technology demonstration requires ground laser transmitters and single photon-counting sensitivity ground receivers. Lasers and detectors can be integrated with existing ground telescopes for cost-effective ground transmitters and receivers. Channel Coding A channel code enables reliable communications over unreliable channels. By adding specific types of redundancy, the transmitted message can be recovered perfectly with high probability, even in the face of enormous channel noise and data corruption. For five decades, JPL has used its expertise in information theory and channel coding theory to develop practical, power-efficient channel codes that achieve reliable transmission from deep space to Earth. In the last 15 years, the codes have improved sufficiently to achieve data rates close to a provable theoretical maximum known as the Shannon limit. For the higher data rate missions, a family of low-density parity-check LDPC codes, now an international standard, delivers the maximum data volume within a constrained spectral band. For the lower data rates of extremely distant missions, such as to the outer planets or beyond, JPL has designed turbo codes, which can operate effectively on channels in which the noise power is more than five times the signal power. To meet this challenge, JPL has developed channel interleavers and photon-efficient channel codes for use with direct detection systems. Image Compression Along with research in increasing the data rate, JPL is deeply involved finding ways to compress the data as much as possible prior to transmission. JPL developed the ICER image compression technique as a replacement â€" it achieves the same result with substantially less complexity. Both lossless and lossy compression were used, and for the imagers used by Spirit and Opportunity, excellent image quality was typically obtained with approximately a Hyperspectral imagers represent an emerging data demand for deep-space missions. These instruments take an image at hundreds or thousands of wavelengths simultaneously, revealing the mineral content or other scientific treasures that cannot be revealed in a single visible-wavelength image. This makes the image hundreds or thousands of times larger. New image compression technology has been developed to utilize both the spatial and spectral correlations present, and to operate within the limited constraints of spacecraft processors or FPGA resources. Both lossless and lossy versions of the hyperspectral image compressors have been developed. This work will address the challenge of processing high data rate telemetry 1 Gbps or higher , and is well-suited to firmware and software reconfigurability. Unlike other radios that can only process signals that are integrally related to their internal clocks, the RWGR uses specially developed noncommensurate sampling to accommodate data rates that are arbitrary with respect to its internal clock. Unlike the Internet, however,

whose protocols require latencies in the milliseconds, deep-space communications requires new protocols that can tolerant latencies or disruptions of up to several hours. For example, the roundtrip light time to the Voyager spacecraft and back is more than 24 hours. The disruption-tolerant network makes use of store-and-forward techniques within the network in order to compensate for intermittent link connectivity and delay. Many applications can benefit from the reliable delivery of messages in a disconnected network. It is also the element of the spacecraft that requires the most reliability and longevity. Existing flight transponders are approaching their performance limit and are not expected to meet projected requirements of future missions. Improvements to this technology would enable the higher data rates required, support multiple spacecraft communications, and improve precision in deep space navigation.

Chapter 3 : Aerospace Science and Technology - Journal - Elsevier

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This paper provides an overview of the EUROCONTROL activities and involvement in relation to using satellite communications to support the aviation requirements in the context of the work to define the future aeronautical communications infrastructure. In addition, the paper discusses the key issues that need to be addressed and describes a potential model that could contribute to the greater utilisation of satellite aeronautical communications in the future. Space Communications , vol. Satellite communications for air traffic management Authors: The Iris Programme aims to develop satellite communications for exchanges between aircraft and flight control centres, complementing existing and future systems in support of the growth in worldwide air â€¦traffic operations. Aeronautical mobile system, air traffic control, air traffic management, airspace, telecommunication, civil aviation, aircraft communication, satellite communication, data links, DVB-S2 DOI: Fazli, Eriza Hafid Article Type: Among others it provides a method to estimate the communication link capacity requirement for future ATM services. Nevertheless, the COCR document is written as a general guideline, without taking into account any technological implementation. In this work we present a methodology to estimate the capacity in terms of â€¦communication bit rate requirements for ATM services in a constellation of geostationary GEO satellites with spot beams. The complete approach is illustrated using concrete scenario elements and assumptions as well as numerical parameter values along the whole process. The bit rate requirement per spot beam is determined using a similar approach to the one in the COCR, with some parameters adjusted to fit in a satellite system scenario. Furthermore, the criticality of one particular service message, the A-EXEC, is verified by comparing the required bit rate when it is excluded from the computation. A condition when this criticality applies is also determined. Satellite air traffic management, traffic model, queuing theory DOI: Satellites systems are a promising solution to cope with the capacity limitations of current air traffic control ATC systems. It is necessary to evaluate and assess existing and upcoming satellite systems taking into account air traffic management ATM requirements. This paper reviews a representative set of satellite communications SatCom systems and presents a competitive analysis based on objective criteria, to assess their suitability to support aeronautical services. Key drivers that should be considered for future systems design are identified and discussed. These key drivers are finally grouped to fulfil three complementary objectives that may not be possible to achieve through â€¦a single solution: An efficient and sustainable network for aeronautical communications is required to enable the implementation of a range of operational improvements needed to support the expected growth in air transportation. NEWSKY focuses on the design of an IPv6 based network for air-ground communications by supplementing existing concepts to be applicable to aeronautics. The integration of satellite-based, ground-based and airport communication links is targeted. As a result, the modular and highly flexible architecture of the proposed NEWSKY approach helps to create a future aeronautical communication system which is viable well beyond A contribution to the definition of a future aeronautical communication system Authors: Such systems will offer accurate and safe global navigation while reducing avionics cost through the optimisation of the number and complexity of on board equipment. Research will also be made into higher bandwidth services, systems and airborne equipment to efficiently meet long term future aircraft communication requirements, including both ATM and passenger needs. The future needs of Surveillance will be consolidated with the requirements and key technology tests from Communications and Navigation. The main outcome of ANASTASIA will be recommendations for future civil aircraft operation and a set of evaluated technologies and avionics architectures achievable from that will enable more autonomous, satellite-based aircraft operation. After a general description of the rationale of the project and of its global CNS objectives, the focus is made in this paper on the communication side where more detailed objectives and initial results are presented. Gonzalez Perez, Hugo Article Type: Air traffic forecast projects an important increase of aeronautical communications

at the timeframe. The actual communication infrastructure which supports ATM Air Traffic Management cannot deal with this evolution of data volume exchanged in dense areas. Technical and economical viability â€¦have been studied during this activity.

Chapter 4 : Center for Air and Space Law | Journal of Space Law

The application of satellite technology to telecommunications is the only real example of space commercialization. The extent to which the advantages of communications via satellite have been exploitedâ€"and will be exploited in the futureâ€"is dependent on a range of economic, social and political factors.

Select this result for bulk action Scintillation modelling in troposphere using Multiple Phase Screen Authors: Microwaves propagation modelling in clear air troposphere i. Large scale variations of refractivity are computed from mesoscale meteorological modelling. Small scale variations are deduced from large scale considering that the inertial regime of Kolmogorov spectrum is established. The propagation effects are estimated applying launching ray to take into account large scale refractivity effects and resolution of Parabolic Wave Equation with Multiple Phase Screen technique for small scale. The proposed approach has been evaluated versus earth satellite measurements of log-amplitude scintillation measured at Louvain-la-Neuve. Space Communications , vol. To insure a favourable link budget in order to reach the required availabilities and to counteract severe propagation impairments, Fade Mitigation Techniques FMT, such as adaptive coding [8, 9] have to be implemented in the fixed satellites telecommunications systems. To develop, test and adjust the real-time algorithms of these adaptative FMTs, a good knowledge of the dynamics of the propagation channel is required and realistic attenuation time series are needed to feed system simulators. Unfortunately, the low number of available propagation experiments at Ka-band and above unavoidably leads to the use of channel models allowing synthetic total attenuation time series â€¦to be generated. The aim of this paper is first of all to present the justification of the parameterization used in Recommendation ITU-R P. Secondly, some limitations are highlighted before moving on an overview of a more simplified new channel model to synthesize total attenuation time series. Total attenuation time-series, integrated liquid water content, integrated water vapor content, satellite communication systems DOI: For the BSS scenario, which is the focus of this paper, the On Board Antenna Pattern Reconfiguration OBAPR PIMT is investigated, using as channel models the rain field generators able to provide the spatial â€¦distribution of rain across the service area on the basis of large-scale meteorological forecasts. Rain fields, radio wave propagation, satellite communications, reconfigurable antenna DOI: Propagation effects such as rain or clouds attenuation cause deeper fades in the Ka-band than at lower frequencies. In this collaborative paper, the main results of four long-term Ka-band propagation campaigns are presented. Attenuation statistics are derived from satellite beacon data collected over 6 years at Aveiro, 5 years at Ottawa and Madrid and 2 years at Toulouse. Multi-year measurements allow the production of more stable statistics reflecting the long-term behavior of propagation phenomena and to investigate its year-to-year variability. The beacon signal data was â€¦monitored and collected on a continuous basis over the whole measurement period. After a brief introduction of the experiments, rain rate and excess attenuation results are discussed, first for a common measurement period and later for the whole database available. Seasonal attenuation statistics for Ottawa and Aveiro are compared. Finally, fade duration and fade slope statistics derived at three locations are presented and discussed. Satellite communication, microwave propagation, rain, Ka band, attenuation measurement DOI: Reconfigurable on-board antenna systems are a potential solution to mitigate the effect of atmospheric fades in broadband SatCom. The on-board power is dynamically shared among the users according to the time and space-varying meteorological conditions in the service area by tuning the antenna radiation pattern. An efficient algorithm of dynamic on-board power allocation is presented here. Preliminary results show the superiority of the adaptive technique over a state-of-the-art fixed antenna system in terms of on-board power reduction to achieve a given service availability target. Propagation impairments, reconfigurable antenna, advanced satellite systems DOI: This paper reports on satellite beacon measurements at These sites operate at very low elevation angles 4. Measurements are on-going to achieve meaningful long term statistics, however there is value in comparing the results obtained at both sites over the common period of measurement data to date â€¦ approximately 20 months. A primary objective of this work is to assess the influence of tropospheric scintillation and consequently the paper will focus on this with the addition of some lesser material on rain

fade effects. The measurements and analysis have been performed as a collaborative effort between Arqiva and staff who work at the University of Surrey. It is emphasised that the primary objective of this work is to assess the influence of tropospheric scintillation and rain attenuation from an operational perspective and to a lesser extent from an academic viewpoint. Satellite communication, slant path propagation, tropospheric scintillation DOI: Multipaths are one of the major sources of errors for satellite navigation systems. The goal of this article is to present some advances on propagation channel modelling for GNSS mobile users and to show how GNSS receiving algorithms are sensitive to the modelling of the channel. Two channel characteristics are analysed in the paper: Particular focus is made on mitigation techniques using antenna arrays to reject multipath. In this paper we present an enhanced version of previous narrowband land mobile satellite, LMS, channel models. Some of the shortcomings of the previous models have been identified and corrections proposed. The model is well suited for generating synthetic time-series.

Chapter 5 : White spaces (radio) - Wikipedia

The growing trend toward deregulation in the telecommunications and space sectors is now forcing managers and policymakers to question traditional practices and to search for new responses including new management tools.

These processes include learning the acquisition of information and rules for using the information, reasoning using the rules to reach approximate or definite conclusions and self-correction. Particular applications of AI include expert systems, speech recognition and machine vision. Artificial Intelligence AI artificial intelligence is the simulation of human intelligence processes by machines, especially computer systems. These processes include learning the acquisition of information and rules for using the information , reasoning using the rules to reach approximate or definite conclusions and self-correction. The journal includes a wide range of fields in its discipline to create a platform for the authors to make their contribution towards the journal and the editorial office promises a peer review process for the submitted manuscripts for the quality of publishing. Telecommunications System is an Open Access journal and aims to publish most complete and reliable source of information on the discoveries and current developments in the mode of original articles, review articles, case reports, short communications, etc. The journal is using Editorial Manager System for quality in review process. Editorial Manager System is an online manuscript submission, review and tracking systems. Review processing is performed by the editorial board members of Telecommunications System or outside experts; at least two independent reviewers approval followed by editor approval is required for acceptance of any citable manuscript. Authors may submit manuscripts and track their progress through the system, hopefully to publication. Reviewers can download manuscripts and submit their opinions to the editor. Submit manuscript at http: Antenna is an object used to grab the signals from space. It is used for the operation of the wireless objects by receiving the waves and distributing them accordingly. Antenna design can range from virutally impossible to very simple. It is all about the situation and constraints. Hence, there is no general formula or checklist one can follow in order to reliably design an antenna. Cyber Security is the word which indicates the internet and the security to prevent the crimes due to the internet and leak of important data by internet is called cyber security. Computer security covers all the processes and mechanisms by which digital equipment, information and services are protected from unintended or unauthorized access, change or destruction and the process of applying security measures to ensure confidentiality, integrity, and availability of data both in transit and at rest. Embedded computers and networks monitor and control the physical processes, with feedback loops where physical processes affect computations and vice versa. It is a system of collaborating computational elements controlling physical entities. Datamining is the process of analysing data from different perspectives and summarizing it into useful information, which can be used to increase revenue, cuts costs, or both. The actual data mining task is the automatic or semi-automatic analysis of large quantities of data to extract previously unknown, interesting patterns such as groups of data records cluster analysis , unusual records anomaly detection , and dependencies association rule mining. Multimedia communications have become part of the standard set of functions supported by the corporate network infrastructure. About two years ago, the deployment issues surrounding multimedia conferencing technology we described by market research firm Forward Concepts as the convergence of "price, performance, and plumbing. The last two decades have witnessed unprecedented growth in the satellite-based Earth observation industry. Although the market is still strongly biased toward electro-optically derived imagery, a rising tide of acceptance and usage of satellite-derived synthetic aperture radar SAR data has occurred during the last few years. The use of artificial satellites to provide communication links between various points on Earth. Satellite communications play a vital role in the global telecommunications system. Approximately 2, artificial satellites orbiting Earth relay analog and digital signals carrying voice, video, and data to and from one or many locations worldwide. It is the numerical manipulation of signals, usually with the intention to measure, filter, produce or compress continuous analog signals. Digital signal processing Toolbox provides functions and apps to generate, measure, transform, filter, and visualize signals. The toolbox includes algorithms for resampling, smoothing, and synchronizing signals, designing and analyzing filters, estimating power spectra, and measuring peaks,

bandwidth, and distortion. These systems are made possible by two-way communication technology and computer processing that has been used for decades in other industries. It is a system which includes a variety of operational and energy measures including smart meters, smart appliances, renewable energy resources, and energy efficiency resources. Soft Computing is dedicated to system solutions based on soft computing techniques. It provides rapid dissemination of important results in soft computing technologies, a fusion of research in evolutionary algorithms and genetic programming, neural science and neural net systems, fuzzy set theory and fuzzy systems, and chaos theory and chaotic systems. It is the use of inexact solutions to computationally hard tasks such as the solution of NP-complete problems, for which there is no known algorithm that can compute an exact solution in polynomial time. It is a database that is optimized to store and query data that represents objects defined in a geometric space. A spatial database is a database that defines special data types for geometric objects andallows you to store geometric data usually of a geographic nature in regular database tables. It provides special functions and indexes for querying and manipulating that data using something like Structured Query Language SQL. A web developer is a programmer who specializes in, or is specifically engaged in, the development of World Wide Web applications, or distributed network applications that are run over HTTP from a web server to a web browser. This web developer sample job description can assist in your creating a job application that will attract job candidates who are qualified for the job. Feel free to revise this job description to meet your specific job duties and job requirements. Wireless is a term used to describe telecommunications in which electromagnetic waves rather than some form of wire carry the signal over part or the entire communication path. The realisation of wireless connectivity is bringing fundamental changes to telecommunications and computing and profoundly affects the way we compute, communicate, and interact. Radio waves have the longest wavelengths in the electromagnetic spectrum. They range from the length of a football to larger than our planet. Radio waves are generated by radio transmitters and received by radio receivers. Wavelength is the distancebetween identical points in the adjacent cycles of a waveform signal propogated in space or along a wire, as shown in the illustration. Wavelength is a measure of the distance between repetitions of a shape feature such as peaks, valleys, or zero-crossings, not a measure of how far any given particle moves. Wavelength depends on the medium for example, vacuum, air, or water that a wave travels through. Information science should not be confused with information theory or library science. Information theory is the study of a particular mathematical concept of information. In common life cordless phones are seen. The term cordless is generally used to refer to electrical or electronic devices that are powered by a battery or battery pack and can operate without a power cord or cable attached to a fixed electricity supply such as an outlet, generator, or other centralized power source, allowing greater mobility. Telecommunications Journal Telecommunications Journal: Telecommunications, also called telecommunication, is the exchange of information over significant distances by electronic means.

Chapter 6 : WPI using International Space Station to test clearer Earth-to-space communications | calendri

The on-board power is dynamically shared among the users according to the time and space-varying meteorological conditions in the service area by tuning the antenna radiation pattern. An efficient algorithm of dynamic on-board power allocation is presented here.

Chapter 7 : SFâ€™s Solstar pioneers space-to-Earth communications | Albuquerque Journal

Journal of Telecommunications System and Management discusses the latest research innovations and important developments in this field.

Chapter 8 : Space Junk: Emerging Global Risk Threatens Satellite Communications â€" Opinion

Telecommunications Policy is concerned with the impact of digitalization in the economy and society. The journal is multidisciplinary, encompassing conceptual, theoretical and empirical studies, quantitative as well as qualitative.

Chapter 9 : Deep Space Communications | Science and Technology

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