HISTORICAL OVERVIEW

- ISSUE OF NATIONAL SOVEREIGNTY/SECURITY
- REQUIRED INTERNATIONAL TREATIES TO DO CROSS-BORDER BILATERAL COMMUNICATIONS
- CREATION OF ITU
TREATY ISSUES

- Landing rights
- Right to suspend service
- Settlement procedures
- Quality of service
- Signaling standards
- Other technical standards required to effectuate good communications
RADIO ISSUES

• Safety of life at sea (Marconi case and Titanic)
• Harmful interference regulation
• Frequency regulation
SATELLITE ISSUES

- satellite footprint
- Geo-stationary orbital slot allocation (min 2 degrees apart)
- Global frequency allocation, etc.
- National Security still required bilateral agreements to be made between countries despite satellite footprint defying national borders
NEW ENVIRONMENT-smaller and smaller terminals

- Vsat is just an acronym for very small Aperture terminal

- Issues upon its uses, and if it is SCPC only or DAMA, Whether domestic only or international
NEW TECHNOLOGY

Satellite footprint issue and earth station

- size of earth stations decreasing rapidly today it is VSAT, to brief case size to most recently Japanese invention of PC in watch.

LEOs

MEOs
ITU AND
RADIOCOMMUNICATIONS

Article 1- Purposes of the Union.

(2) a) effect allocation of bands of the radio-frequency spectrum, the allotment of radio frequencies and registration of radio-frequency assignments and any associated orbital positions in the GEO-stationary satellite orbit in order to avoid harmful interference between radio stations of different countries;

b) coordinate efforts to eliminate harmful interference between radio stations of different countries and to improve the use made of the radio-frequency spectrum and Geostationary-satellite orbit for Radiocommunication services;
Special provisions for radio

- Annex of Constitution defines H.I.

"Interference which endangers the functioning of a radionavigation service or of other safety services or seriously degrades, obstructs or repeatedly interrupts a Radiocommunication service operating in accordance with the Radio Regulations"
Note:

- The ITU had traditionally allocated radio frequencies to terrestrial services. After the advent of satellites in the 1960s, the ITU expanded its jurisdiction over space activities.
- As GSO are limited resources, the regulation of GSOs became increasingly important.
This conference declared that both the GSO and radio frequency spectrum were "limited natural resources", thereby the ITU established jurisdiction over GSOs.

see Art 44 of Constitution today:

"2) In using frequency bands for radio services, Members shall bear in mind that radio frequencies and the Geostationary-satellite orbit are limited natural resources and that they must be used rationally, efficiently, and economically, in conformity with the provisions of the radio Regulations, so that countries...may have equitable access to both..."
To access the GSO

The Radio Regulations prescribe a three-step process:

Art 11 - Advance Publication
Art 11 - Coordination
Art 13 - Notification and Registration

A state which publishes, enters into coordination negotiations, notifies the RRB and then has its orbital assignment registered by RRB.
The ITU procedures are based on a first come first serve principle, which grew up in the ITU long before satellites. This rule for outer space was enshrined in ITU Radio Regulations adopted at the World Administrative Radio Conference in 1971, which as the force of law.
This rule is perceived as inequitable by many states. It lead to conflict within the ITU.

In 1973, new Convention referred to frequencies and GSOs as limited natural resources, and IFRB to maintain "equitable, effective and economical use of GSOs.

1977 World Administrative Radio Conference, did "a priori" assignments for broadcast-satellite services.
Abuse of monetary value of slots

Tonga case- Pursuant to the procedures of the ITU's Radio Regulations, the small kingdom of Tonga in 1992 filed for the remaining orbital slots over the Pacific, then proceeded to announce to the world that its satellite enterprise, TONGASAT, would be renting out its reserved orbital slots to any operator wishing to provide regional satellite communications.
NATIONAL SATELLITE ISSUES

- National sovereignty-Bilateral agreements
- Political and economic concerns of lack of control
- Recouping existing infrastructure investments
- Frequency coordination
- Satellite coordination and orbital slot issues
Main radio/broadcast regulations

- 1990 Radiocommunications Regulations
- 1990 Singapore Broadcasting Corporation Act
- 1992 TAS ACT
- 1994 Telecommunications Dealer’s Regs
- 1994 Radio-Communications Regs
- 1995 Singapore Broadcasting Authority Act

The Singapore Scene
Primarily enacted to separate the operation function of Singapore Telecom from the regulatory functions.

ST was formerly OTEC and in 1954 became the Singapore Telephone Board, and later in the 70s was called TAS. Now known as Singapore Telecom Pte Ltd.

(lost their trade mark over the acronym ST)
National Regulatory Body

The Telecommunications Authority of Singapore is the official regulator of telecommunications in Singapore.

The Director General of TAS, is approved by the Minister of Communications.
Scope of TAS Jurisdiction

Section 24 (1)
"As from the 1st April 1992 and subject to this Act, the Authority shall continue to have the exclusive privilege for the operation and provision of telecommunications systems and services in Singapore.".....

Section 26 (1)
"A license may, with the consent of, or in accordance with the terms of the general authority given by the Minister, be granted by the Authority either conditionally or subject to such conditions as the Authority may impose........for the running of such telecommunications systems and services falling within Section 24 as specified in the license."
Section 30 (1)  
"Any equipment to be used in connection to any telecommunications system or equipment belonging to a public telecommunications licensee shall be approved by the Authority before use."

Section 131(1)  
"The Authority may, with the approval of the Minister, make regulations for any purpose for which regulations are required to be made under this Act..."

(2).....with respect to...

(b) the control and regulation of...telecommunication equipment...

(c) The control and regulation of interference by radio-waves...
The SBA Act 1992

Primarily enacted to separate the operation function of SBC from the regulatory functions.

The Singapore Broadcasting Corporation in the 1990 SBC Act was given regulatory powers such as licensing. Now SBC was a corporatised entity, later renamed Television Corporation of Singapore, TCS.
National Regulatory Body

The Singapore Broadcasting Authority is the official regulator of broadcasting in Singapore. SBA, is run by a Chief Executive Officer, approved by the Minister of Information and the Arts (MITA).
6(1) The functions of the Authority shall be-

(a) to exercise licensing and regulatory functions in respect of broadcasting services and broadcasting apparatus;

(c) to encourage the development of broadcasting and related services;

(d) to re-assign, from electromagnetic spectrum and satellite orbits assigned to the Authority by the Telecommunication Authority of Singapore for the purpose of broadcasting, specific frequencies in such spectrum and satellite orbits to broadcasting licensees whose broadcasting services are to be transmitted on a frequency in such spectrum and satellite orbits; and

(e) to regulate broadcast by broadcasting licensees of public service broadcasting obligations
(2) The Authority shall have the following duties:
(c) to ensure that nothing is included in any broadcasting service which is against public interest or order, national harmony or which offends against good taste or decency.

35 (1) TAS shall, in consultation with the Authority, assign to the Authority specific frequencies in the electromagnetic spectrum and satellite orbits for the purpose of broadcasting having regard to the international allocation plans set by the ITU as national requirements.
Limitation on foreign influence

- 41(1) The Minister may make an order proscribing a foreign broadcasting service...
- (2) if...quality or content...is unacceptable
- (3)....content...which prejudices the public interest or order, national harmony or offends against good taste and decency..

- 44(1) The CEO of a broadcasting company and at least one-half of its directors must be citizens of Singapore
- (2)....the authority to approve if CEO not a citizen...etc

- Limitations on foreign funding ..need SBA approval and it has to be for bona fide commercial purposes
Liberalization in Singapore since 1989

- Customer premises equipment
- Value-added networks
- removal of VST for VANs
- resale of domestic telephone services
- resale of mobile telephone and radio paging airtime
- approval of licensed telecommunication dealers to bring in equipment through parallel import to apply for type approval
- licensing of second public mobile data and vehicle location tracking services operator
- shared use of PABX
Liberalization in Singapore since 1989

- Differential Global Positioning Services
- opening up of the 1-900 access audiotex information service operators
- licensing of satellite uplink/downlink operators
- licensing of VSAT service provision and operation
- resale of public switched telephone services
- licensing of one more public mobile telephone operator and three more public radio paging operators to compete with SingTel from 1 April 1997
MOST RECENT

bringing forward of SingTel's monopoly from the year 2007 to the year 2000!!!!

expected to tender for licenses by next year and awarded soon after. Operational by year 2000.

SingTel will be compensated by s$1.5 billion
New Players

- In 1994, TAS awarded a license to Pinpoint South East Asia Ptd Ltd to operate and provide the Differential Global Positioning System (DGPS) service in Singapore.

- Self-provisioning VSAT licenses for intra-corporate use (going through SingTel for satellite bandwidth)

- Direct access to INTELSAT allowed for broadcasters and satellite uplink/downlink operators (TAS to first approve them)
Local TV scene

Television Corporation of Singapore (Channel 5 and Channel 8)
Television Twelve Pte Ltd (TV12) operating 2 channels
Singapore Cable Vision (SCV) to provide cable television service
New broadcast scene

SingTel and ST Teleport compete for business

Companies can also get a separate uplink/downlink license from TAS and a broadcast license from SBA. To encourage Singapore as a broadcasting base, SBA assists them to setup, coordinates with censorship board etc, and exempt them from foreign ownership rules.

- Walt Disney
- Golden Eagle Communications Ltd
- MTV Asia
- Asia Business News
- Home Box Office
- ESPN
- Asia Television Network Ltd
- Sun Television
- Discovery Asia
New Players

Singapore has allowed 3 new service providers to come in using Vertical Blanking Interval (VBI) lines on Channels 12 and 24 to provide faster data and Internet services to TV consumers.

- Media Manager Pte Ltd
- Satlink Pte Ltd
- Circular Logic Pte Ltd
ST-1 Satellite

ST-1 Satellite System is jointly owned and operated by SingTel and Chunghwa Telecom Co Ltd of Taiwan...to be launched in 1998.

14 C-band covering Middle east to Japan and SEAsia, and 16 Ku-band in SEAsia and Indian subcontinent. Used for telephony, DTH, broadcasting, etc.
• Some say it has all converged to Telecom Law
• Others that it has all converged to Media/Broadcast law
• Yet others say it is computer law

What is it? and what rules apply?
DEFINITIONS

Annex of ITU Constitution

*Radiocommunication*: Telecommunication by means of radio waves.

*Telecommunication*: Any transmission, emission or reception of signs, signals, writing, images and sounds or intelligence of any nature by wire, radio, optical or other electromagnetic means.

*Broadcasting service*: A radiocommunication service in which the transmissions are intended for direct reception by the general public. This service may include sound transmissions, television transmissions or other types of transmissions.
broadcasting service: means a service whereby signs or signals transmitted, whether or not encrypted, comprise-(a) any program capable of being received, or received and displayed, as visual images, whether moving or still, (b) any sound program for reception, or © any program.
being a combination of both visual image (whether moving or still) and sound for reception or reception and display, by persons having equipment appropriate for receiving, or receiving and displaying, as the case may be, that service, irrespective of the means of delivery of that service;

"program", in relation to a broadcasting service, means- (a) any matter the primary purpose of which is to entertain, educate or inform all or part of the public; or (b) any advertising or sponsorship matter, whether or not of commercial kind, but does not include ....private, institutional, corporate, etc.
Definitions in age of convergence

In other words,
before telecom- point to point
broadcast- point to multipoint
or broadcast- use of radiowaves

or, distinction is reception or display to the public
versus private, intra-corporate, etc..
Convergence and new technology

SBA is pushing for Digital Broadcasting in Singapore. This marries traditional broadcasting with multimedia.

SBA, TAS and NCB keeping up with Convergence

SBA signed an MOU with Australian Broadcasting Authority to facilitate the exchange of information and experience.