

衛星インターネットマルチメディアワークショップ
講演資料韓国宇宙技術学会
(KOSST主催:2001年12月11日、ソウル市教育文化会館にて)

発表テーマ: 日本でのIPベース衛星通信サービスの動向
発表者: KDDI(株) 河合 宣行

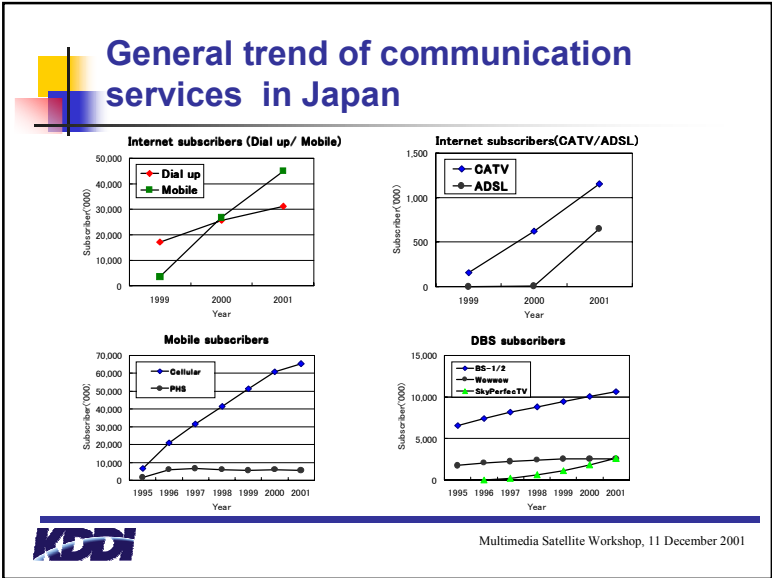
あらまし: 日本における衛星通信サービスをとりまく環境、KDDIが提供するKDDIスカイキャストサービスの提供事例を含むIP衛星通信サービスの動向、日本、欧州での衛星通信に関する取組みを紹介するとともに、今後のアジア地域での衛星サービスに向けたアプローチについても紹介している。




IP-based Satellite Communication Services in Japan

11 December 2001


Nobuyuki Kawai
KDDI Corporation



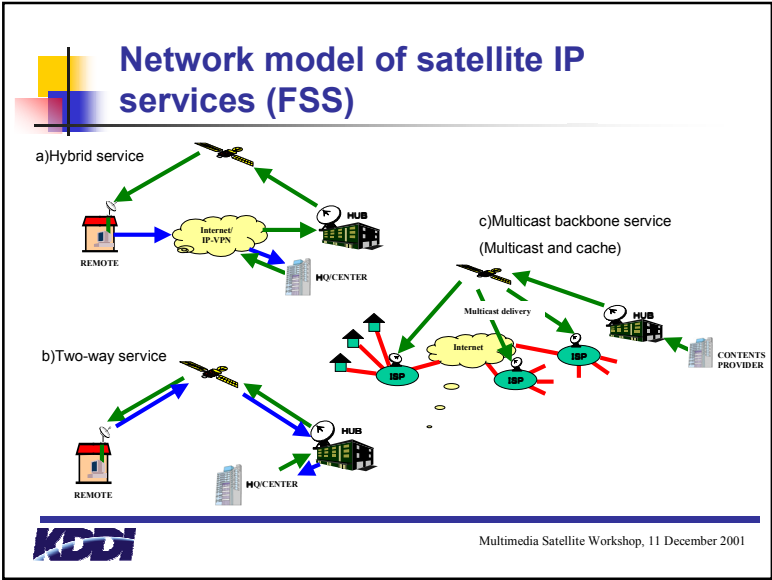


Perspective on the role of satellite IP services

- **Multicast oriented services**
 - Contents delivery to end users/ head ends of wired services
 - Intranet/Extranet for corporate users featuring “multicast”
- **Wide coverage services**
 - Broadband mobile satellite services
 - International services (regional)
 - Public infrastructure
- **Full IP transmission with advantages in flexible QOS control and highly secured transmission (Mesh/Star topology depending on the nature of traffic)**



Multimedia Satellite Workshop, 11 December 2001



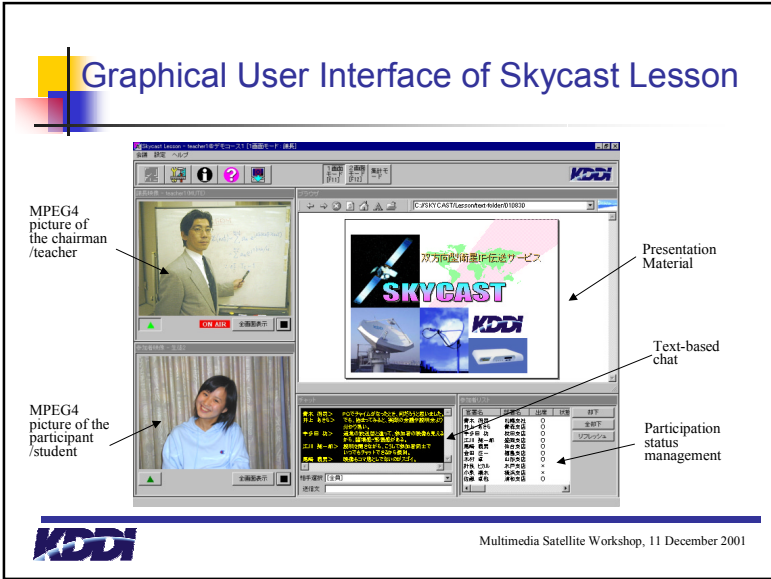
Satellite IP services in Japan

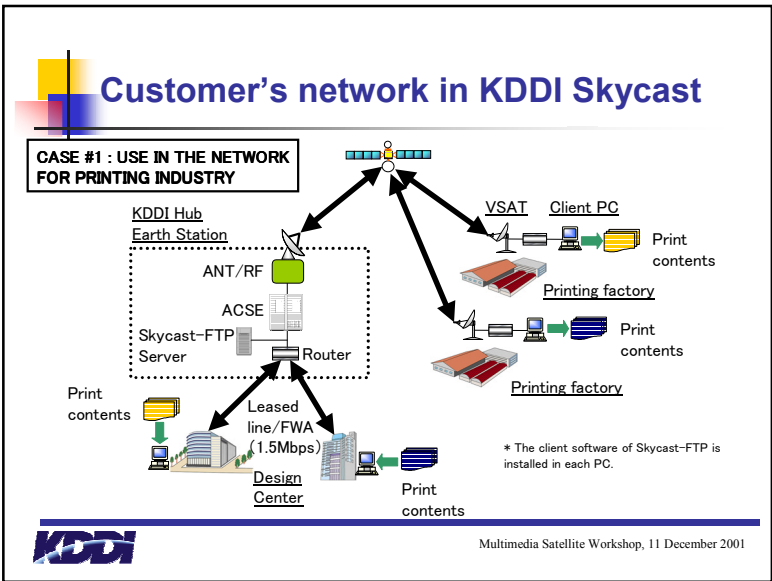
Service	Provider	Service started	Data rate	No. of customers
DirecPC	SCC	OCT/96	OUT:24Mbps (one-way)	36 corporation (20,000 terminals)
MegawavePro	NTT Satellite Communications	JUNE/99	OUT:30Mbps (one-way)	28 corporation (5,600 terminals)
Skycast	KDDI	DEC/00	OUT:1.5Mbps IN:128kbps	100 terminals (Two-way)
HitPops	HitPops (subsidiary of SCC)	MAY/01		40 sites (for CATV head-end)

KDDI

Multimedia Satellite Workshop, 11 December 2001

- ### KDDI Skycast service -Feature
- IP-based two-way satellite communication services via Superbird B2 satellite (162.5E)
 - VSAT with 75cm antenna (+1w ODU)
 - Data rate : 1.5Mbps/outbound; 128kbps/inbound
 - Original application software designed for two-way satellite IP service
 - Reliable multicast file delivery application(Skycast-FTP)
 - Multipoint interactive distant presentation/conference application(Skycast-Lesson)
- KDDI**
- Multimedia Satellite Workshop, 11 December 2001





Inmarsat – New and forthcoming services

Inmarsat M4 (GAN)

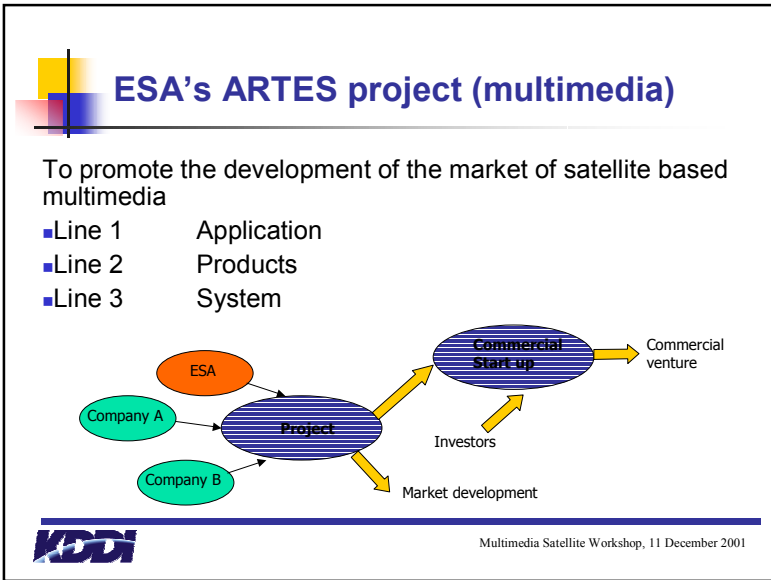
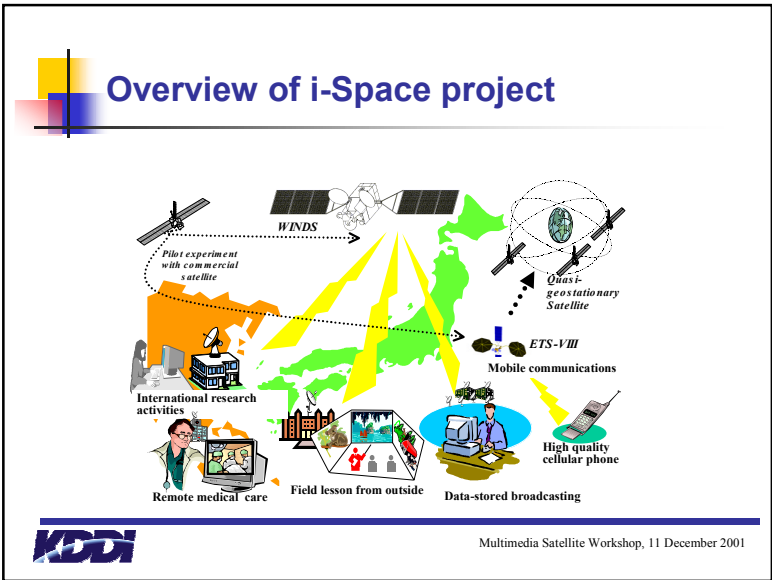
- Data rate :64kbps (two-way)
- Flat antenna (40 – 45cm, 3.5kg)
- Circuit mode/ Packet mode
- In service


Inmarsat Next Generation

- Inmarsat 4 satellite (200 spot beams array)
- Briefcase terminal (432kbps symmetric)
- Laptop terminal (Forward:384kbps, Return:144kbps)
- Service available in 2004

KDDI

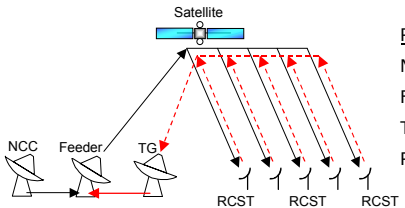
Multimedia Satellite Workshop, 11 December 2001





Standardization : DVB-RCS

Digital Video Broadcasting; Interaction channel for Satellite Distribution Systems (DVB-RCS001; released as ETSI standard ETSI EN 301 790 in December 2000)



Reference Network Model


NCC: Network Control Centre

Feeder: Feeder Station


TG: Traffic Gateway Station

RCST: Return Channel Satellite

Terminal




Multimedia Satellite Workshop, 11 December 2001




Toward full-fledged satellite IP services over Asian countries - Challenges

- **Business**
 - Low cost terminal and reasonable communication charge
 - Cooperation between telecoms toward new satellite business
 - Exploration of new applications/customers
- **Regulatory**
 - Cross-border operation (Access control on VSAT stations located in different countries; Licensing)
- **Technical**
 - Development of "user friendly" terminal in size and weight
 - Standardization of the satellite communication system (Physical/MAC layer; Protocol)
 - Development of application software specifically for the satellite communication




Multimedia Satellite Workshop, 11 December 2001



Toward full-fledged satellite IP services over Asian countries - Approach

- **Development of satellite application platform for collaboration in various business/experimental areas**
 - Independent from constraints due to variation of terrestrial infrastructures of countries
 - User friendly terminal with "All-in-One" package of user terminal (H/W: VSAT, PC; S/W: real time and non real time)=> Guaranteed inter-operability
 - Commercial service to be provided by telecoms



Multimedia Satellite Workshop, 11 December 2001