

VNPT



VINASAT-1 PROGRAM



HANOI, Dec 2008



Real life



Pham Long Tran
Chairman



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Vice President



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Vice President



Vu Tuan Hung
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Vice President



Ly Kiet
Vice President



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Vice President

Ha Minh Manh
Head of Commercial

Pham Mai Phuong
Deputy Director



Hoang Minh Thong
Program Director

Do Kim Dzung
Chief Accountant

Nguyen Hong Son
Head of Technical

Nguyen K. Hoan

Field Office

Kieu Nguyen



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Real life

Program overview

- Program Authorization To Proceed (ATP): April 27th, 2006
- Program Effective Date of Contract: May 12th, 2006
- Vinasat-1 In Orbit Test and Spacecraft Handover on May 22nd, 2008



Real life

Program overview

- Program Includes:
 - 24 Month Spacecraft Delivery In Orbit
 - Launch and Mission Operations
 - 2 Spacecraft Simulators
 - 2 Satellite Control Facilities (Primary/Backup)
 - Analyst/Operator Training



Real life

Specifications

- Orbit location: 132E
- Launch date: 18/4/2008
- Launcher: Ariane V - ECA
- Lifespan: 15 – 20 years
- Manufacturer: Lockheed Martin, A2100
- Stabilization: 3 Axis
- Ground Station location: Que Duong (PCF) and Binh Duong (BCF)



Real life

Specifications

- **PAYLOAD**

- 16-for-12 Ku Band transponders
- 11-for-8 Extended C Band transponders
- Payload power 3276 W (includes TT&C RF)
- Bus power 600 W (ave.)



Real life



Specifications

- **BUS**
 - **A2100 Core**
 - **Launched mass 2.6 tons**
 - **Two, 85” hybrid dual-grid reflectors**
 - **East reflector gimbal and west reflector hinge**



Real life

Specifications

- **Telemetry Tracking & Control**
 - C-Band TT&C RF
 - 4 Command Receivers
 - 2 Telemetry beacons
 - 16-bit dual OBC



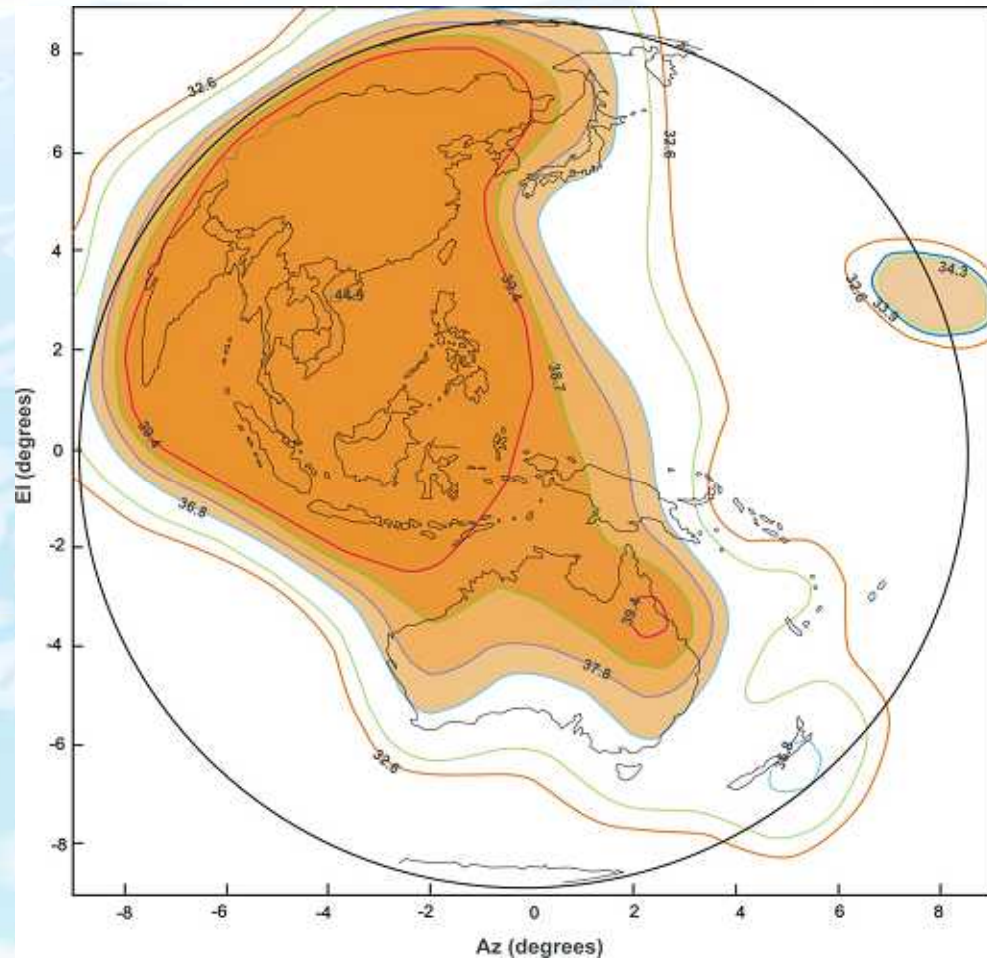
Real life



Coverage (C band)

EIRP C Band

City	EIRP (dBW)
Hanoi	45.3
Hochiminh	45.3
Bangkok	45.1
Yangon	44.6
Taipei	40.2
Hongkong	43.5
Jakarta	40.7
Shanghai	39.6
Karachi	38
Tokyo	35.8
Sydney	35.5
Honolulu	33.4



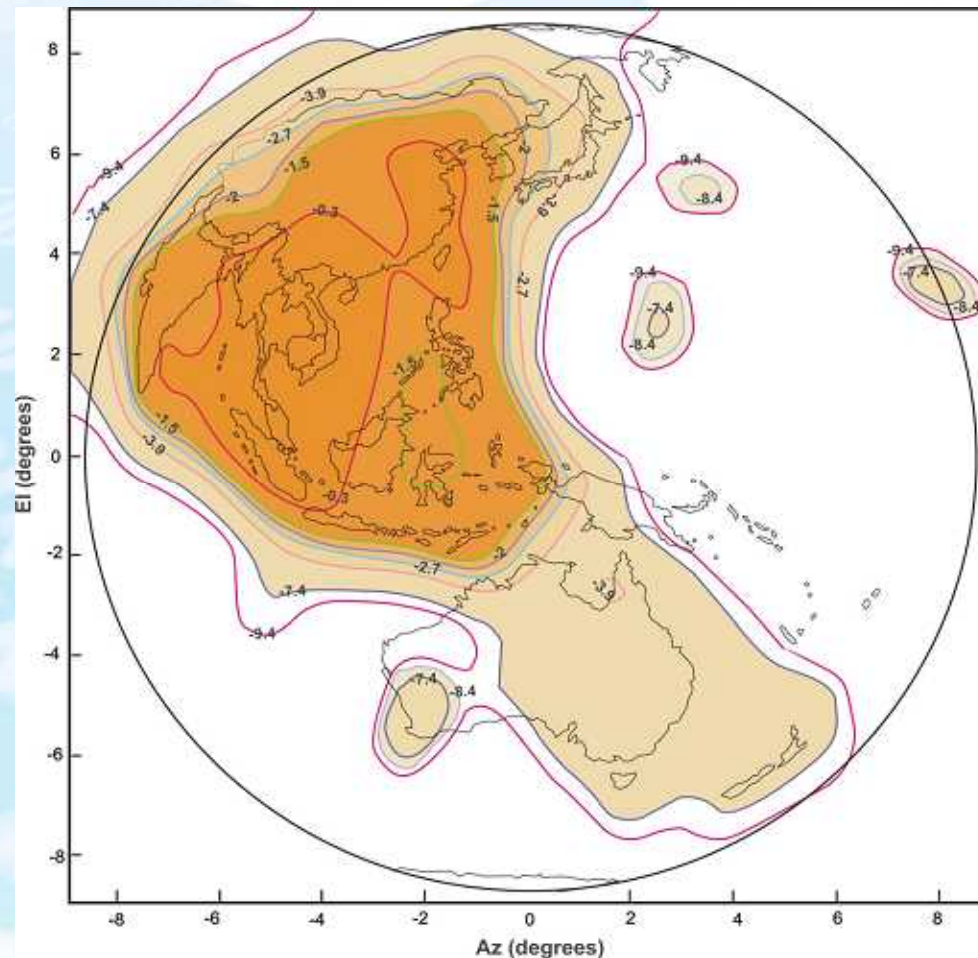
Real life



Coverage (C band)

C Band G/T

City	G/T (dB/K)
Hanoi	0.6
Hochiminh	1.5
Bangkok	0.9
Yangon	0.0
Taipei	-1.7
Hongkong	-1.6
Jakarta	-0.2
Shanghai	-1.6
Karachi	-1.5
Tokyo	-7.0
Sydney	-6.0
Honolulu	-8.7

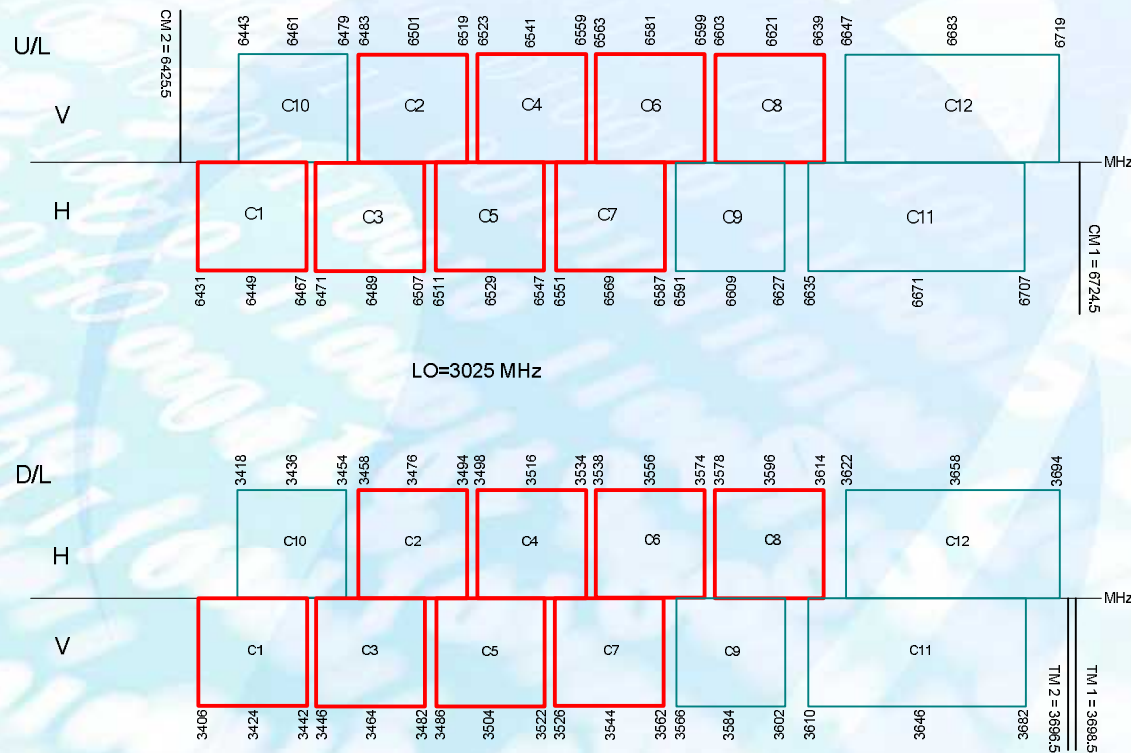


Real life

Coverage (C band)

C Band Channels

VINASAT-1 C band frequency plan

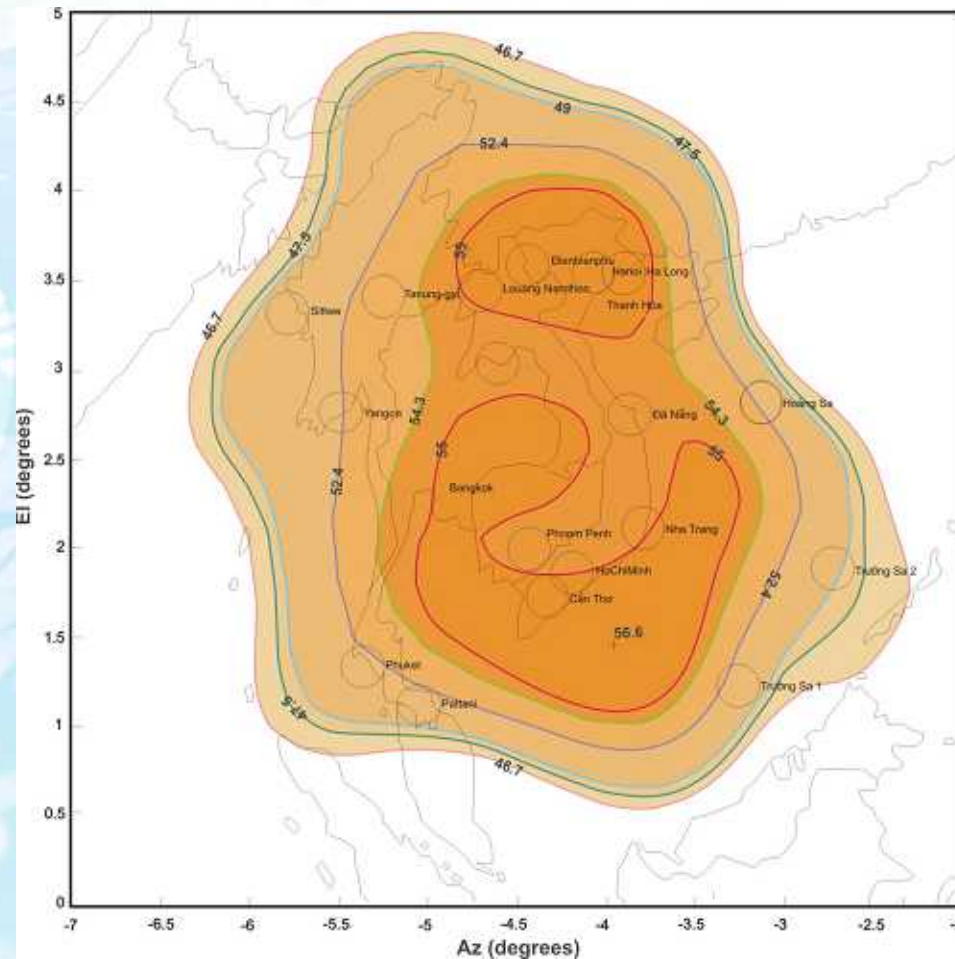




Coverage (Ku band)

Ku Band EIRP

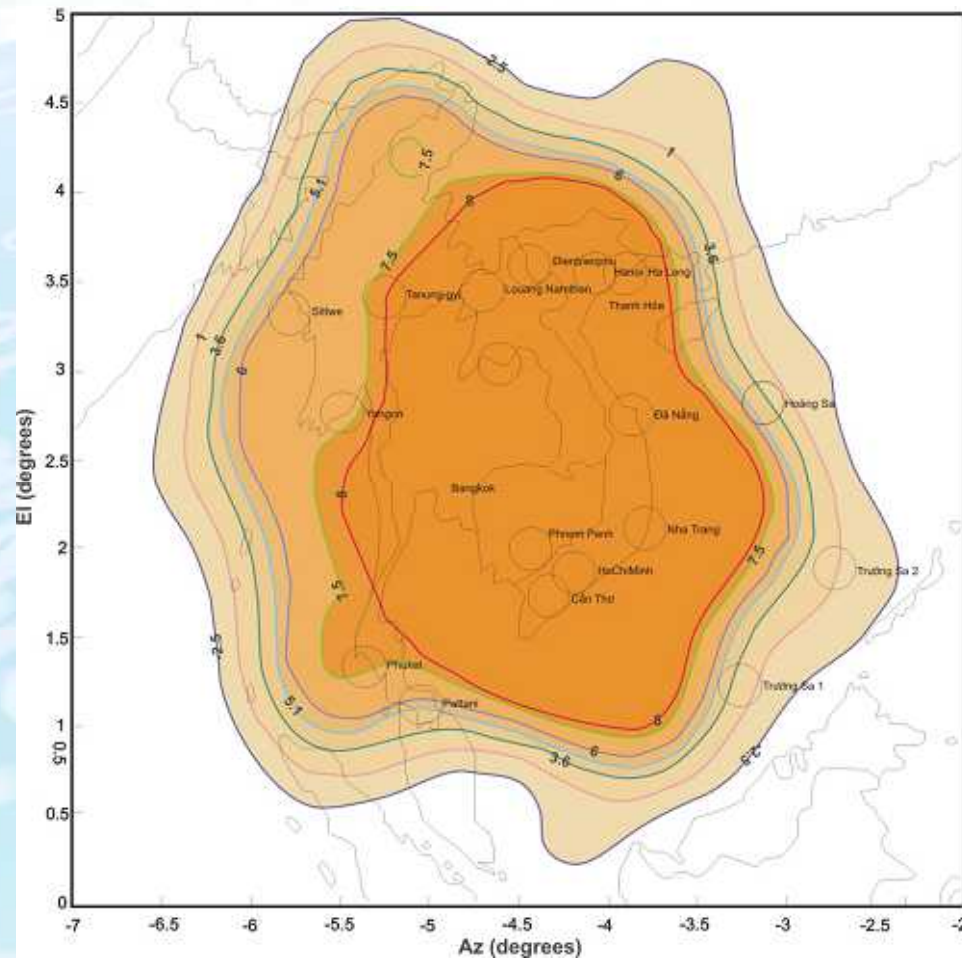
City	EIRP (dBW)
Hanoi	55.5
Danang	54.3
Hochiminh City	54.2
Phnom Penh	54.2
Vientiane	54.2
Bangkok	54.2
Hoang Sa	49.1
Truong Sa 1	48.3
Sittwe	48.6
Yangon	51.4
Pattani	48.6
Phuket	50.5
Louang Namthon	54.5



Coverage (Ku band)

Ku Band G/T

City	G/T (dB/K)
Hanoi	10.1
Danang	9.1
Hochiminh City	9.0
Phnom Penh	9.3
Vientiane	9.3
Bangkok	9.0
Hoang Sa	1.1
Truong Sa 1	-1.4
Sittwe	5.4
Yangon	6.8
Pattani	3.4
Phuket	6.7
Louang Namthon	9.4



Coverage (Ku band)

Ku Band Channels

VINASAT-1 KU band frequency plan



Real life

Vinasat-1 Launch Vehicle

- Vinasat-1 used the Ariane 5 ECA Launch Vehicle
- The Co-passenger: Star1 C2 a Brazilian satellite.
- Launched date: 18Apr, 08 from Kourou, French Guiana.



Real life



VINASAT-1 Ground Facility

- **Mission:**

- Tracking, Telemetry and Command
- Control and maintain the stable operation of Vinasat-1 in orbit
- Monitor the power of footprint
- Monitor the quality of customer carriers

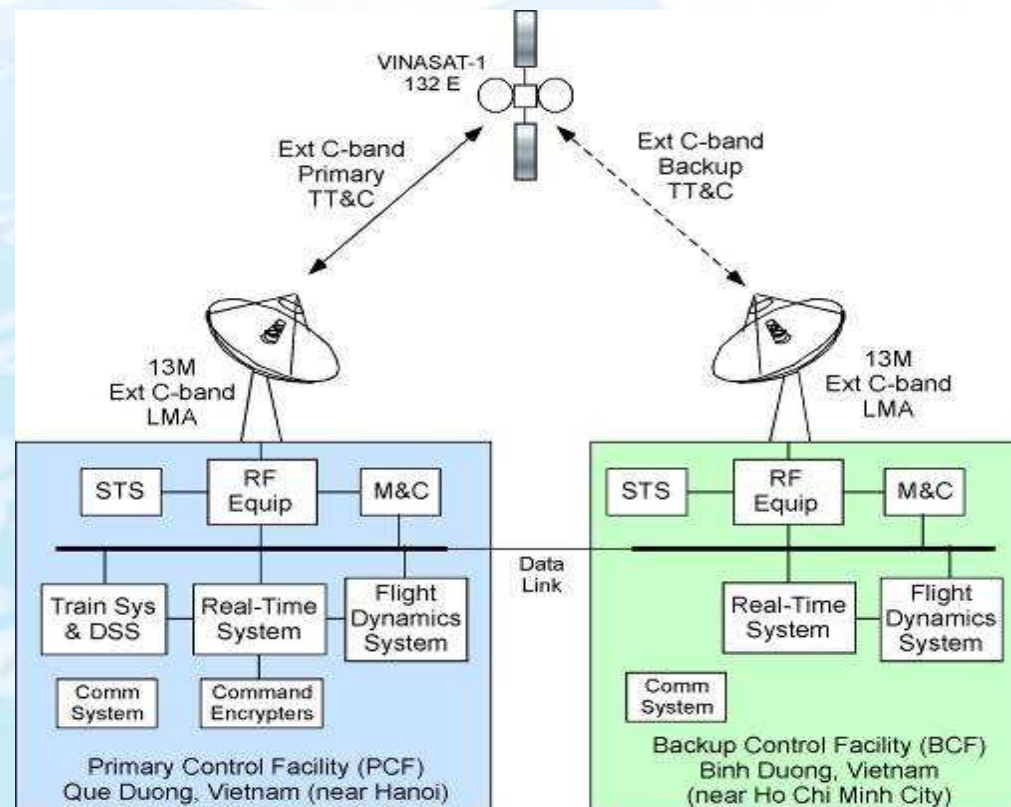


Real life



VINASAT-1 Ground Facility

- Facilities:
 - Real-Time System
 - Command Encryption
 - Flight Dynamics System
 - Monitor & Control System
 - Training System and Dynamic Spacecraft Simulator (in PCF)



Real life



VINASAT-1 Ground Facility

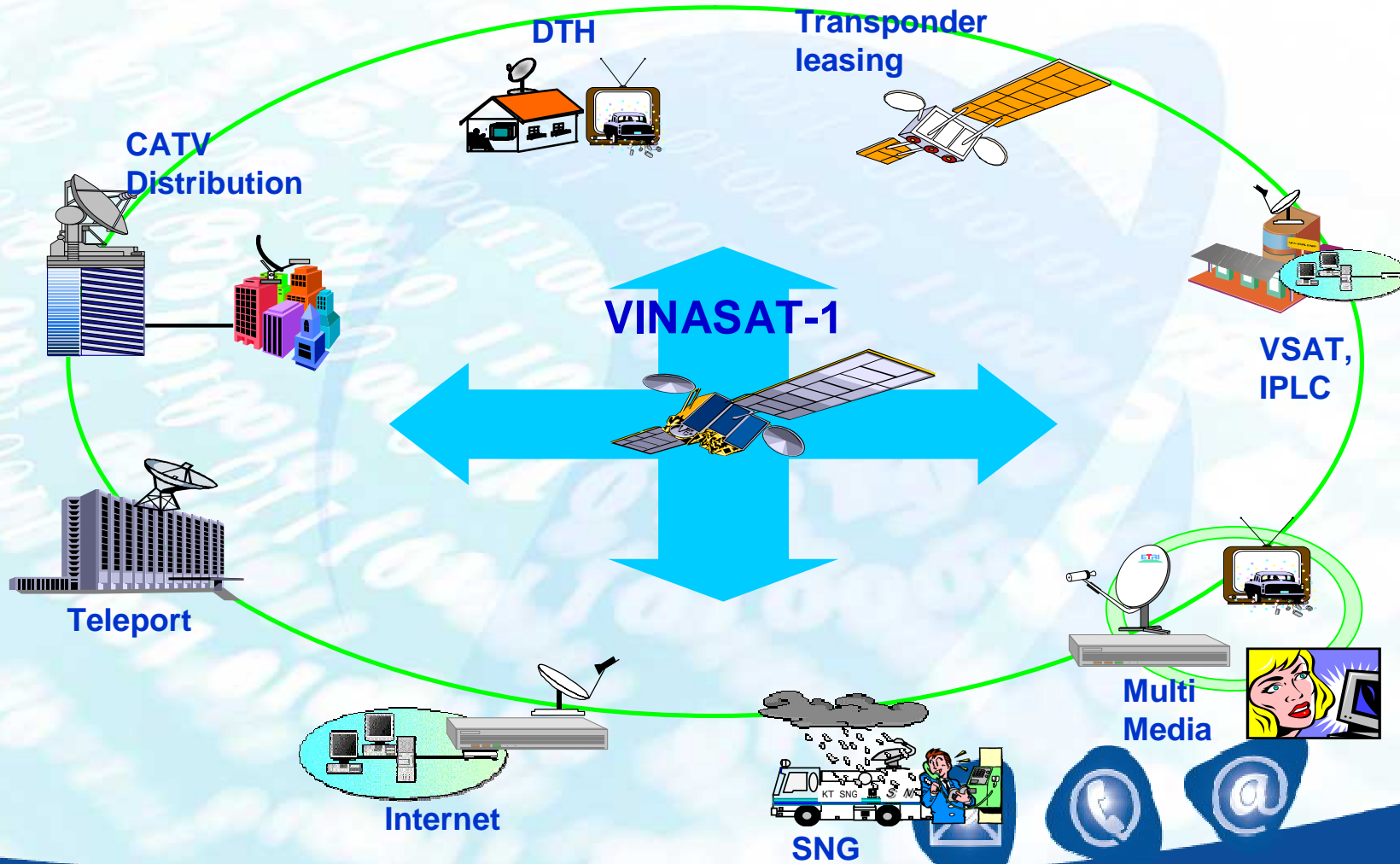
- Facilities:
 - Intercom System
 - Spacecraft Telemetry Simulator
 - RF Equipment
 - Limited-Motion Antenna
 - Test Equipment



Real life



Services and Applications



Real life



Services and Applications

- **Transponder Leasing**

Provide to customer for using DTH, CATV Distribution, VSAT, etc

- **VSAT (Very Small Aperture Terminal)**

Ideal for remote areas

Broadband internet access

GSM Trunking, PSTN

Private leased Circuits...



Real life

Services and Applications

- **Teleport Services**

Useful to send high quality TV signals to
Customer's branches using MPEG-2 streams
Private Leased Circuits...

- **SNG (Satellite News Gathering)**

News gathering, events show
Emergent TV broadcasting



Real life

Services and Applications

- **Contribution links**

Contribution links, Cable TV feeds (Program Provider → Multiple Station Operators)

- **Direct To Home (DTH)**

Direct broadcast high quality digital contents to subscribers with DBS antennas and receivers



Real life



Questions or Comments?

Delegation Questions/Comments ?

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Real life



Thank you

Thank for your paying attention!



Real life