



# Satellite Industry Association

## Spectrum Priorities and Objectives May 19, 2009

### SIA MEMBER COMPANIES



## Satellite Manufacturing

- Spacecraft Manufacturing
- Component and Subsystem Manufacturing



## Ground Equipment

- Earth Stations & VSATs
- Network Equipment (Gateways, Control Stations)
- Consumer Equipment (DBS Dishes, DARS receivers, Handheld Phones)

## Launch Industry

- Launch Services
- Manufacturing (Vehicle, Component and Subsystem)

## Satellite Services

### FIXED SATELLITE SERVICES

- Wholesale Voice, Video, Data

### MOBILE SATELLITE SERVICE

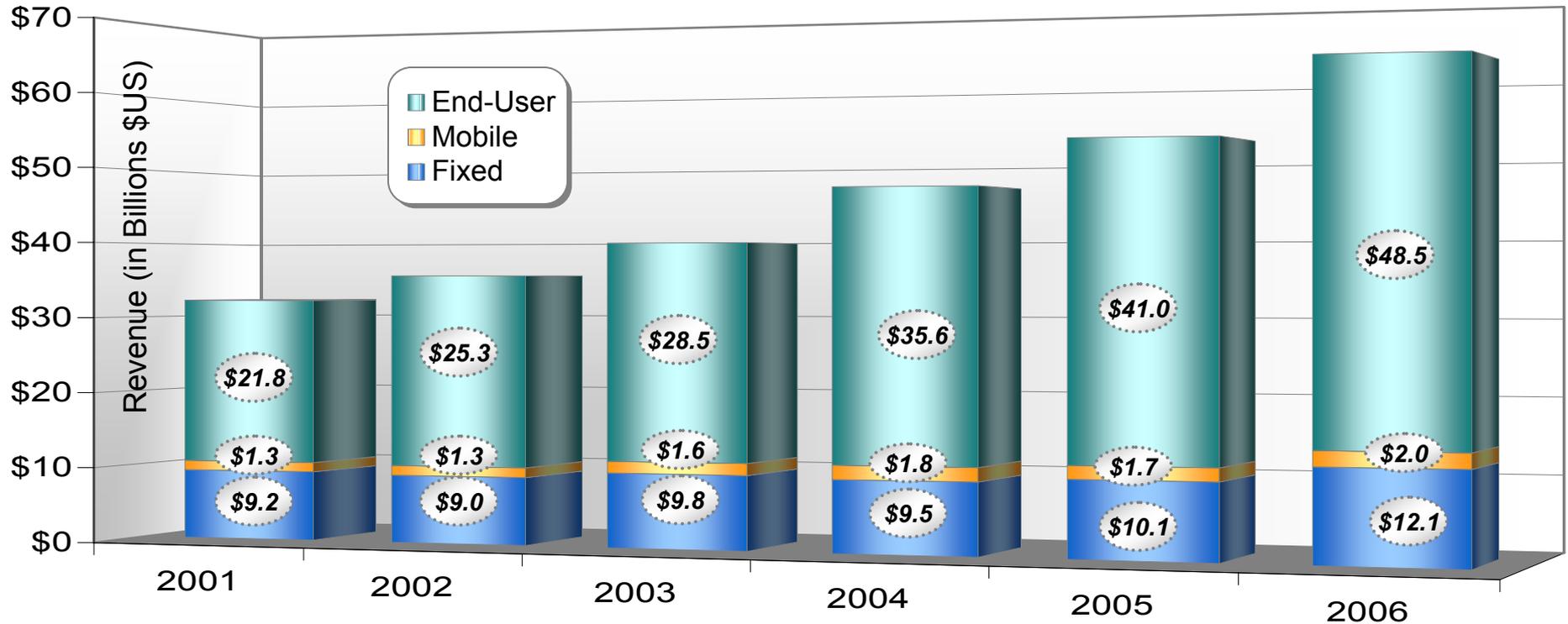
- Mobile Voice & Data

### CONSUMER SATELLITE SERVICES

- Satellite TV
- Satellite Radio
- Satellite Broadband

### REMOTE SENSING

# World Satellite Services Revenue



|                        | 2001          | 2002          | 2003          | 2004          | 2005          | 2006          |
|------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Broadcasting           | \$21.8        | \$25.3        | \$28.5        | \$35.6        | \$41.0        | \$48.5        |
| - Satellite Radio      | \$0.0         | \$0.0         | \$0.1         | \$0.3         | \$0.8         | \$1.6         |
| - Satellite Television | \$21.8        | \$25.3        | \$28.4        | \$35.3        | \$40.2        | \$46.9        |
| Mobile                 | \$1.3         | \$1.3         | \$1.6         | \$1.8         | \$1.7         | \$2.0         |
| Fixed                  | \$9.2         | \$9.0         | \$9.8         | \$9.5         | \$10.1        | \$12.1        |
| - End-User Broadband   | \$0.2         | \$0.2         | \$0.3         | \$0.2         | \$0.3         | \$0.3         |
| <b>Total</b>           | <b>\$32.3</b> | <b>\$35.6</b> | <b>\$39.8</b> | <b>\$46.9</b> | <b>\$52.8</b> | <b>\$62.6</b> |

- Satellites provide spectrum-efficient and essential services around the world, including homeland security and critical infrastructure
- Sound spectrum allocation and management policies are fundamental for the commercial communications satellite industry
- SIA encourages spectrum policies that promote innovation, while respecting legacy investment and infrastructure
- Existing and planned spacecraft must be protected from in-orbit interference or alteration of assigned spectrum
- Interference to satellite services must be considered with any new terrestrial application or service, including unlicensed devices
- Blanket licensing makes sense for many satellite ground terminals, using flexible technical criteria so networks can evolve with technology advances
- The international nature of satellite technology makes spectrum auctions unsuitable

- Satellite services have seen increased encroachment from terrestrial devices being deployed in satellite bands
- Sharing arrangements often constrain satellite operators from being able to continue existing services and expand into new and innovative services
- Unlicensed devices cause particular concern for the satellite industry because:
  - Once widely adopted, there is no licensee to hold accountable for interference caused by user-owned devices (out of band or in-band IX)
  - Recalling interfering devices is impossible when widely sold to consumers.
- C-Band - inference issues continue due to sharing between FWA, BWA and IMT Systems in FSS bands
- Ku-Band - proposed sharing arrangement by Utilities Telecom Council

- ITU-R studies have concluded that protection distances of between 150 - 430 km are necessary to allow sharing between FWA, BWA or IMT systems and FSS receive earth stations
  - The FCC has reached a similar conclusion when defining conditions for use of the band 3650-3700 MHz by BWA
    - Uncoordinated fixed or mobile transmit stations can not be deployed within 150 km from existing (grandfathered) FSS earth stations
- Sharing between FWA, BWA or IMT systems and FSS-receive earth stations would impose severe constraints on all operators and is not realistic
- If not protected, government, strategic, and commercial FSS services in the C-band could experience:
  - Signal delays
  - Synchronization loss
  - Blackout periods
  - Blackout areas
  - Total loss of transmission

- SIA opposes the creation of a new secondary fixed services allocation in the of Ku-band (14.0-14.5 GHz).
- Public interest is not served by granting Utilities Telecom Council (UTC) access to spectrum for a commercial disguised as critical infrastructure industries (CII) services.
- Proposed allocation cannot fulfill CII's high performance requirements and the proposed interference mitigation techniques would not be effective even if they were to become more modest.
- UTC proposal would cause unacceptable interference to existing and future satellite services currently implemented in the Ku-band.

## *SIA Issue: Spectrum Auctions and Fees for Satellite Services*

- Administrations have increasingly been considering proposals to impose fees or grant auction authority for satellite spectrum. These proposals should be rejected due to flawed assumptions and a misunderstanding of the satellite services market.
- Satellite services require consistent spectrum allocations and policies.
- Spectrum fees and auctions would:
  - Increase regulatory uncertainty
  - Decrease spectrum efficiency
  - Deter service deployment and increase overall communications costs
- Due to the multi-national nature of satellite services, the introduction of satellite spectrum fees in one country could set a troubling international precedent that would curtail the ability of operators to raise capital for system development and operation
- SIA encourages satellite spectrum policies that recognize long-term investment and promote efficient use of spectrum

- Satellite services are poised to provide the ubiquity, survivability and advanced applications needed to support America's First Responders
- SIA believes that there is merit in designating spectrum for public safety requirements and supported FCC's previous proposals to require licensees to make available handsets with integrated mobile satellite solutions
- Any future decisions taken by FCC regarding plans for the D Block should ensure that satellite technologies can play an equal role in providing services

- WRC-2011 is the next important conference facing the satellite and spectrum community, and technical preparations are well underway in the US and internationally.
- The agenda includes several topics which address spectrum allocations to satisfy new satellite service requirements:
  - Mobile satellite
  - Radiodetermination satellite
  - Meteorological satellite
  - Broadcasting satellite
  - Space research services
- The WRC can be unpredictable - but the SIA and its Members are engaged and will remain a vocal advocate for the industry as issues emerge and positions become more clear.