

### C-band satellite service in the US\*

#### **C-band satellite service is an essential backbone of the national and global communications infrastructure**

- C-band satellite networks are integral to the US communications backbone
  - C-band plays an indispensable role in the delivery of video and audio programming to every state in the union
  - C-band supplies lifeline connectivity to rural areas
  - C-band helps distribute information that is critical in emergency situations
  - C-band is essential for restoring operability when terrestrial networks are damaged
  - C-band enables services for US Government
- C-band satellite service offers capabilities, performance, economic value, and geographic reach that cannot be replicated via other transmission methods
- Neither other satellite frequency bands nor the nation's fiber network has sufficient capacity and availability to substitute for the dozens of C-band satellites and thousands of ground terminals serving the US today
  - Cutting satellite access to C-band spectrum would result in loss of service to many users
  - The harm would be falling disproportionately on entities that heavily rely on C-band satellites, including broadcasters and cable systems in smaller communities, beyond the scope of fiber networks
- Today, C-band satellites are used for everything from providing basic, lifeline connectivity in remote Alaskan bush villages to ensuring that the World Series can be enjoyed by baseball fans wherever they live

#### **C-Band Supports Content Delivery to More Than 100 Million Television Households**

- C-band satellites enable the collection and subsequent distribution of the video and audio programming enjoyed by virtually every US resident
- Regardless of how the final link to a customer's television or radio is made, the vast majority of the underlying news, entertainment, sports, and weather content traverses a C-band satellite network at some point in its path to the end user
- Maintaining the performance and reliability of C-band satellite service is therefore crucial to the continued delivery of high quality video and audio services to US consumers

- As major content providers Disney, CBS, Scripps, Time Warner, Fox, and Viacom explain, they depend on C-band FSS “to ensure the reliable distribution of compelling programming to more than 100 million American television households.”
- The American Cable Association emphasizes that virtually all of the nation’s multichannel video programming distributors (“MVPDs”), including hundreds of small and mid-sized cable operators, use C-band FSS to obtain programming and distribute it to more than 90 million MVPD households.
- The National Association of Broadcasters agrees that “virtually every US television and radio household relies on C-band satellite operations for content distribution in some manner,” noting that “hundreds of broadcast television stations and thousands of radio stations in the US rely on C-band earth stations to receive network and other syndicated programming that these television and radio stations then transmit to viewers and listeners.”
- Origination of the diverse array of programming is made possible by C-band FSS networks as well
  - As the Content Companies explain, “the on-site newsgathering and live event audio and video essential to producing breaking news, sports, and other programming also depends upon the C-band, using temporary fixed uplinks to transport video from the field back to studios and on to viewers.”
  - NAB notes that “transportable FSS uplink and downlink systems are used for thousands of live events that are broadcast each year,” including live news and sports and entertainment events such as the Academy Awards.

### **Critical Services Depend on C-band Satellite Capacity**

- The unmatched reliability and ubiquitous coverage of C-band satellites make them ideal for vital offerings
  - C-band FSS bridges the digital divide for remote areas unserved or underserved by terrestrial alternatives
  - Supports US Government and civilian agencies with capacity for everything from defense to air traffic control
  - C-band is part of the essential distribution chain for emergency alerts
  - C-band enables connectivity for ships at sea

### *Examples of use cases*

- C-band FSS bridges the digital divide for remote areas
  - AT&T explains that in addition to video distribution for its DIRECTV and Uverse video services, C-band satellites play a significant role in the AT&T telecommunications plant
  - AT&T Alascom uses “a mix of 183 fixed and transportable earth stations to provide basic [public switched telephone network] telecommunications for remote villages in Alaska,”

interconnectivity that “is essential for the safety and well-being of residents at these locations because it is often the only communications infrastructure available to the local communities.”

- Another Alaskan service provider, General Communication, Inc., describes its use of C-band FSS to “serve customers residing in the most rural and remote areas of the country who rely exclusively on satellite technology for the provision of basic telephone service, medical service, and distance-learning.”
- GCI also works with the Federal Aviation Administration to “assist pilots in determining local weather conditions throughout the state.”
- Other parties note that the National Environmental Satellite, Data, and Information Service, which operates under the auspices of the National Oceanic and Atmospheric Administration, relies on C-band satellite capacity for distribution of weather data.
- C-band satellite service is used for a variety of government missions
  - NPR relies on the C-band capacity of its Public Radio Satellite System to distribute Emergency Alert System (“EAS”) warnings to its interconnected radio stations. Both Sirius XM Radio and iHeartMedia play a similar role, having partnered with the Federal Emergency Management Agency to provide a backup mechanism to distribute EAS alerts, including to state emergency operations centers, and to ensure full, national participation in the system.
- C-band satellites are essential to disaster recovery
  - SES provided temporary C-band operations in Puerto Rico that helped to restore Internet connectivity while repairs of the terrestrial infrastructure were taking place
  - AT&T similarly uses C-band FSS “for circuit restoration in natural disasters, such as efforts undertaken following Hurricanes Harvey and Irma [in 2017].”
- Vessels rely on C-band satellite communications services
  - The US Navy’s Commercial Broadband Satellite Program provides the sole source of wideband satellite communications for certain types of naval vessels
  - Cruise ships, ferries, container ships and other vessels rely on C-band satellite capacity for Internet, voice services for passengers and crew, and map and ship data distribution

\*Source: SES FCC filing from 15 November 2017