Transformative Infrastructures to Support Digital Transformation

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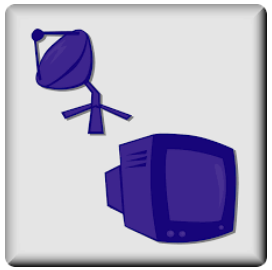
November 5, 2018

Satellites Provide Worldwide Connectivity

FCC-defined broadband at home



Satellite TV and Radio

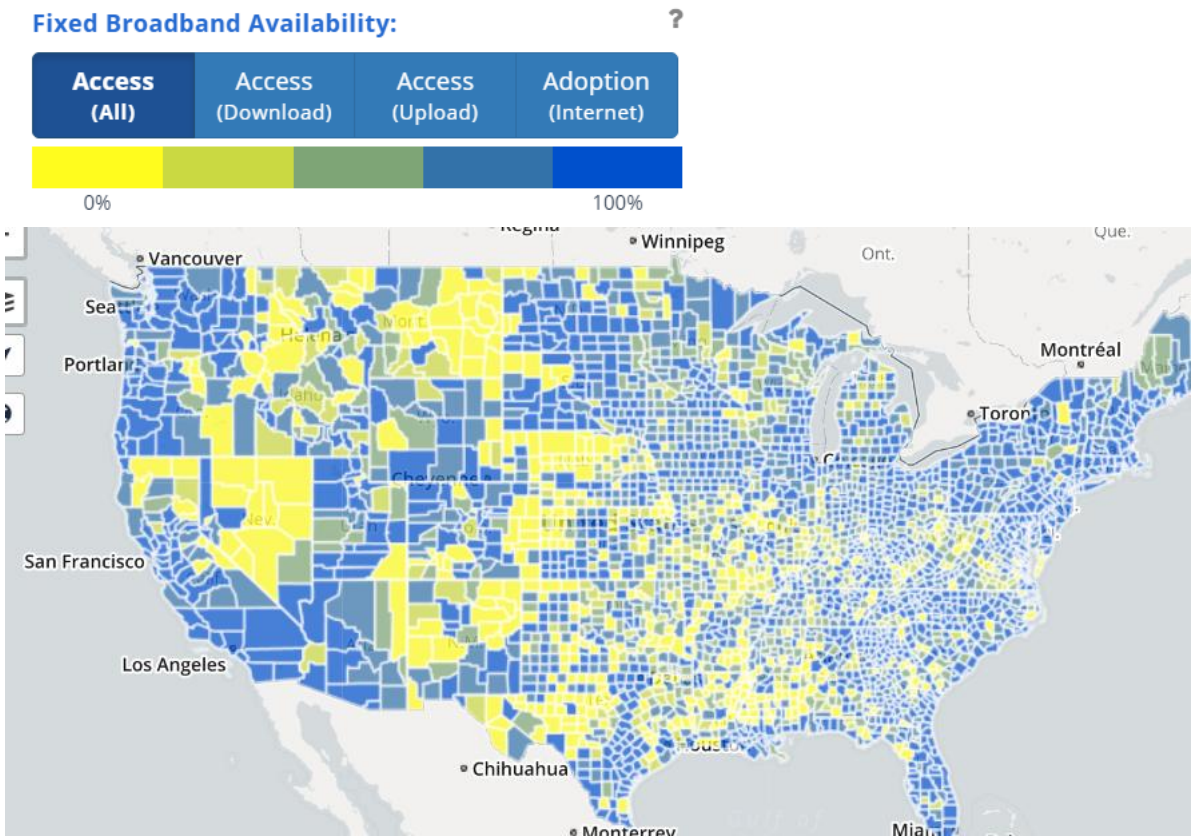
Maritime Connectivity

Inflight WiFi

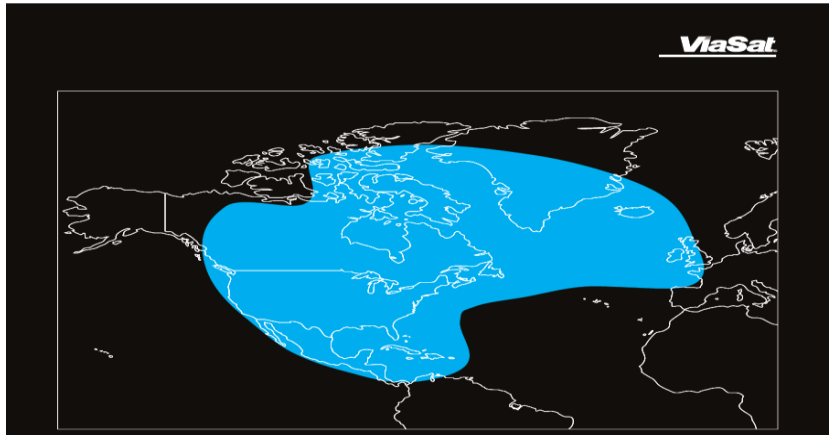
Satellite Communications By The Numbers:

- 220 Million Satellite TV Subscribers
  - 20% of worldwide TV subscribers
- 32.7 Million Satellite Radio Subscribers
  - Comparable to Apple Music
  - 8% growth from 2016
- 2 Million U.S. Satellite Broadband Subscribers
  - 5% growth from 2016
- $1B in-flight market, according to London School of Economics
  - $30B revenue and $15B in cost-savings for airlines by 2035

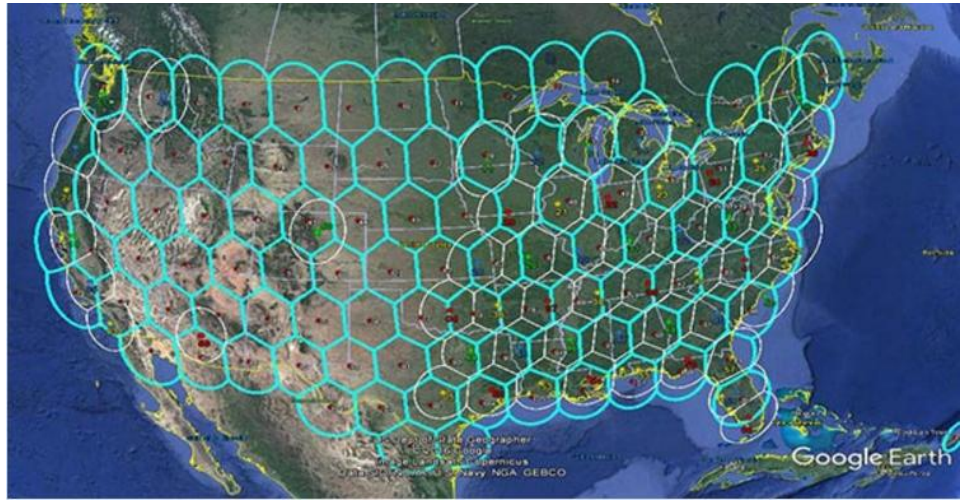
Satellites Can Bridge the Digital Divide



FCC Fixed Broadband Availability by Household, 2018



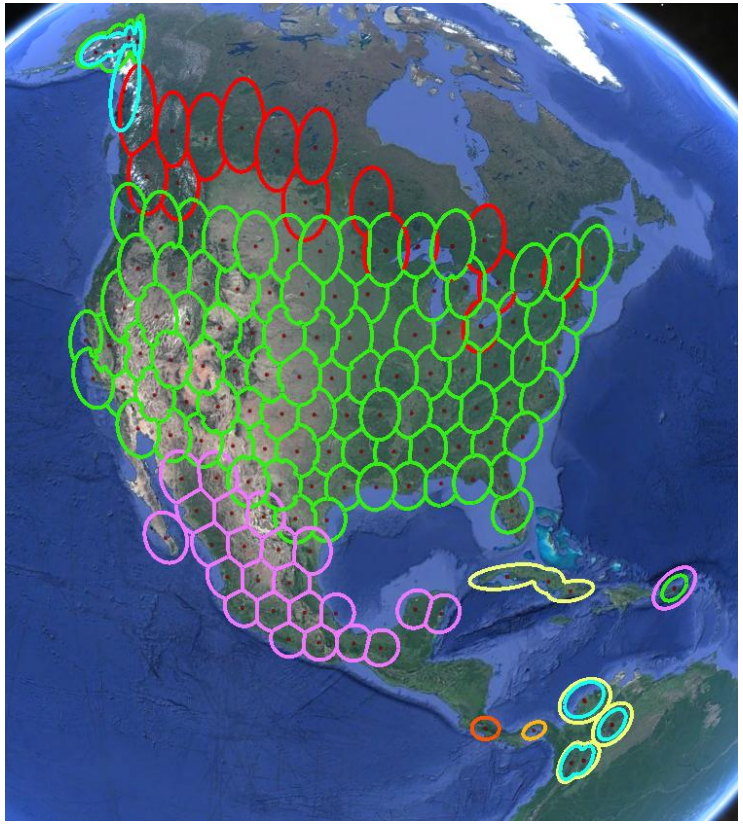
ViaSat 2 Broadband Coverage



HughesNet Gen 5 US Broadband Coverage

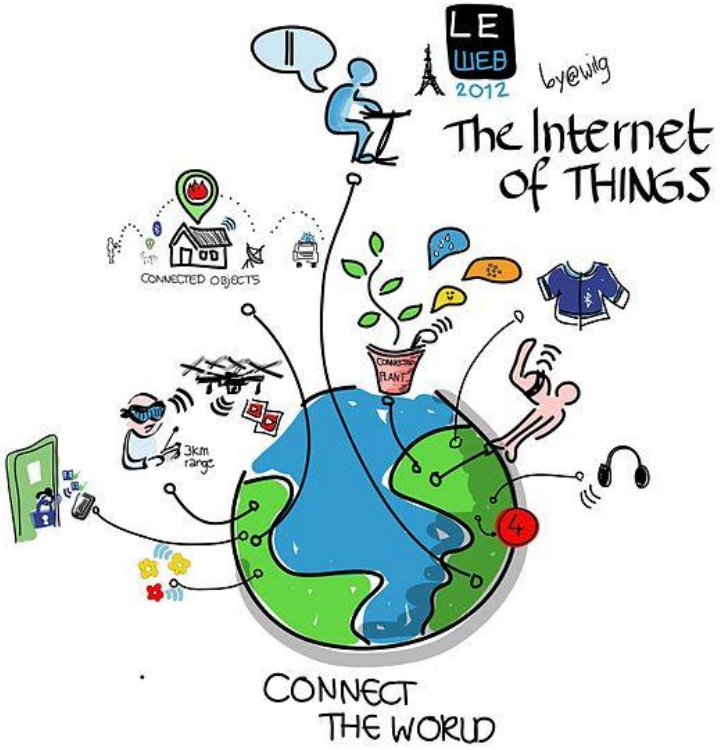
Satellite Companies Are Investing Billions in Innovation

High Throughput Satellites allow for efficient use of spectrum



HughesNet Spot Beam Coverage over North America

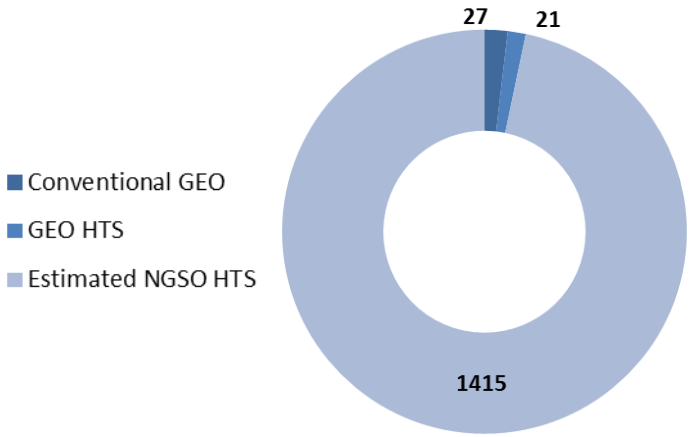
Satellites will play a large role in 5G due to their global reach, contributing to the Internet of Things/communications on the move, trunking and head-end feed, backhaul and tower feed, and hybrid multiplay



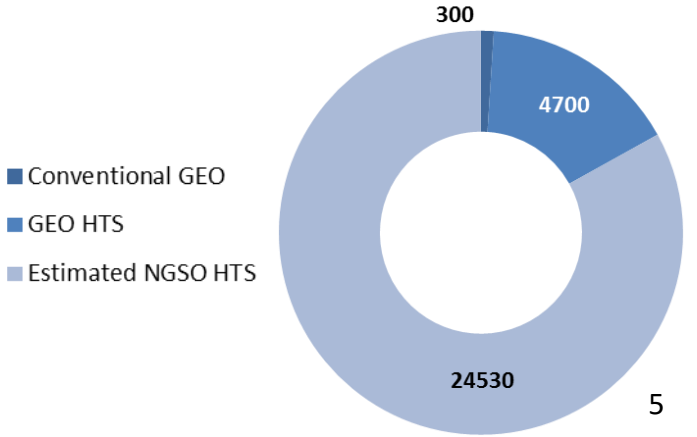
Operators Plan to Deploy Some 30 Tbps in 2018 - 2022

- Total 48 commercial GEO satellites reported under contract, in various R&D or construction phases
  - 27 conventional w/b satellites, predominantly for video distribution and broadcasting
  - 21 HTS mainly for broadband connectivity
  - Expected to deploy in 2018 – 2022
  - Total capacity of at least 5,000 Gbps
  - More satellite orders anticipated to be announced with similar deployment timeframe
- Estimated 1,400+ HTS planned for deployment by NGSO prospective constellation operators
  - Focusing on global low latency broadband connectivity
  - Potential capacity approaching 25,000 Gbps
- Numbers reflect published plans of satellite operators with satellites under manufacturing contracts or announced in-house manufacturing plans; no adjustment made for likelihood of deployment

Satellites under contract, planned to launch in 2018 – 2022



Satellite capacity under contract, planned to deploy in 2018 – 2022, Gbps



Prepared by:

Satellites Are Recognized As Critical Infrastructure for Broadband Deployment

FCC Chairman Ajit Pai:

"I've often said that in order to bring digital opportunity to all Americans, we need to use all of the tools in the toolbox. Satellite broadband service is one of those tools. Next-generation satellites are bringing new competition to the broadband marketplace and new opportunities for rural Americans who have had no access to high-speed Internet access for far too long. …

NTIA Administrator David Redl:

"There is no doubt that the United States needs a vibrant satellite sector. This industry creates tens of thousands of high-paying jobs and enables millions more in the larger economy. In the next few years, a new era in satellite coverage will strengthen our nation's broadband infrastructure and power advanced services that will improve people's lives… As the agency that is principally responsible for advising the President on telecommunications and information policy, NTIA can help create an environment that allows for continued global leadership in the market for satellite-based services and manufacturing. This includes the important role satellites will play in delivering 5G and ensuring that the United States stays on the cutting edge of wireless technology."

White House Space Council, Executive Secretary Scott Pace:

"The United States has a strong and entrepreneurial satellite communications industry, available to engage in global competition. To ensure we retain the strategic advantages afforded by space services, the United States needs to continue to open and promote competitive markets and protect spectrum allocation for space services to compete.

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