Broadband versus GPS

With billions $ at stake
LightSquared Timeline

2004

SkyTerra authorized to operate ancillary terrestrial component (ATC) for dual-mode mobile satellite service (MSS)/ATC devices licensee in the 1525-1559 MHz/1626.5-1660.5 MHz band

March 2010

U.S. Federal Communication Commission’s National Broadband Plan released. Requires use of bands near GPS

March 2010

Harbinger Capital acquisition of SkyTerra – creates LightSquared. Lightsquared’s goal is to build out a nationwide 4G ATC network (to cover 260M in U.S. by end 2015)

Nov 18, 2010

LightSquared request submitted to FCC for modification of its ATC authority (for up to 40,000 ground stations)
LightSquared Timeline

Jan 26, 2011
FCC Order and Authorization
Granted conditional waiver (ATC-only handsets)
Requires addressing GPS concerns; final report to be submitted by June 15

Feb 10, 2011
White House reiterates 500 MHz commitment and details plans for $27.8B, estimated to be raised through auctions.

March 2011
Save Our GPS group forms
LightSquared Timeline

Early June 2011
Interference confirmed

June 30, 2011
Interference report released

July 20, 2011
LightSquared returns from ESRI User Conference encouraged by lack of issue awareness

July 30, 2011
Comments due to the FCC

September 2011
LightSquared goes political – General Shelton testimony
“...Aviation receivers operating as far as 7.5 miles from LightSquared transmitters completely lost GPS and were degraded out to distances of more than 16.5 miles. For two representative receivers tested by the FAA, results also showed GPS would be completely unusable for an aircraft 500 feet above the ground in an area spanning Stafford, Virginia through Washington and Baltimore, and out to Frederick, Maryland.

High precision GPS receivers such as those used for surveying and geological study requiring precise measurements were adversely affected out to 213 miles and totally lost GPS out to 4.8 miles.

“...A conclusion in the LSQ recommendations paper is that interference “is because legacy GPS receivers do not adequately reject transmissions from base stations operating in the adjacent frequency band because the GPS receivers have been deliberately or, sometimes, inadvertently, designed or manufactured with the assumption that there would be no adjacent-band terrestrial transmissions.” In fact, GPS receivers were quite purposefully designed to operate in a portion of the radio frequency spectrum deliberately maintained as a “quiet neighborhood,” with neighboring frequencies primarily occupied by signals of comparable power levels, all based on the widely accepted understanding of previous FCC rules and intent. The proposed LightSquared transmitters will produce received signal strengths five billion times stronger than the GPS received signal...”
Illustration of Concerns with LightSquared

Situation before LightSquared

Situation with LightSquared

Credit: Christopher J. Hegarty, MITRE Corp.
LightSquared Timeline

December 9th, 2011

Bloomberg News reports a second round of Federal Communication Commission (FCC) mandated interference tests confirmed LightSquared’s broadband system would disrupt the signal to 75% of GPS units.

December 10th, 2011

The Wall Street Journal reports LightSquared’s financier, Minnesota youth hockey prodigy, Philip Falcone, is being threatened with possible civil-fraud charges by the U.S. Securities and Exchange Commission (SEC).

December 12th, 2011

CEO of LightSquared, Sanjiv Ahuja, fires off a letter to Department of Defense Deputy Under Secretary Ashton Carter and Department of Transportation Under Secretary John Porcari (interference testing leads), demanding an investigation into the information leaked to Bloomberg News on December 9th.
LightSquared Timeline

December 14th, 2011
The report on the second round of interference testing due to the Executive Committee overseeing testing.

Mid-December 2011
Lehman Group lobbies Minnesota Legislators on behalf of LightSquared claiming backing of 73 State Legislators, Counties and organizations

January 13, 2012
National Space-Based Positioning, Navigation and Timing (PNT) Executive Committee (ExComm) – Science of LightSquared will not work
January 27, 2012
Bloomberg Reports the Federal Communication Commission (FCC) is taking comments on a December 20th, 2011, LightSquared request to rule GPS is not a legally protected signal

January 31, 2012
Sprint tells LightSquared it has until Mid-March to receive FCC approval or its biggest customer is gone

February 14, 2012
National Telecommunications and Information Administration's (NTIA) release of three reports on LightSquared testing – all very negative

February 15, 2012
The FCC begins the formal process to rescind LightSquared's conditional waiver to operate
• Jones vs. United States

• Drones authorized to fly in U.S.

• Sierra Club vs. Orange County

• Indoor GPS

• Russian Cyber Attack on Illinois Water Plant

• Driverless Cars

• Save a Heart with Your Cell Phone

• Japanese Taking Emergency Management Into Their Own Hands