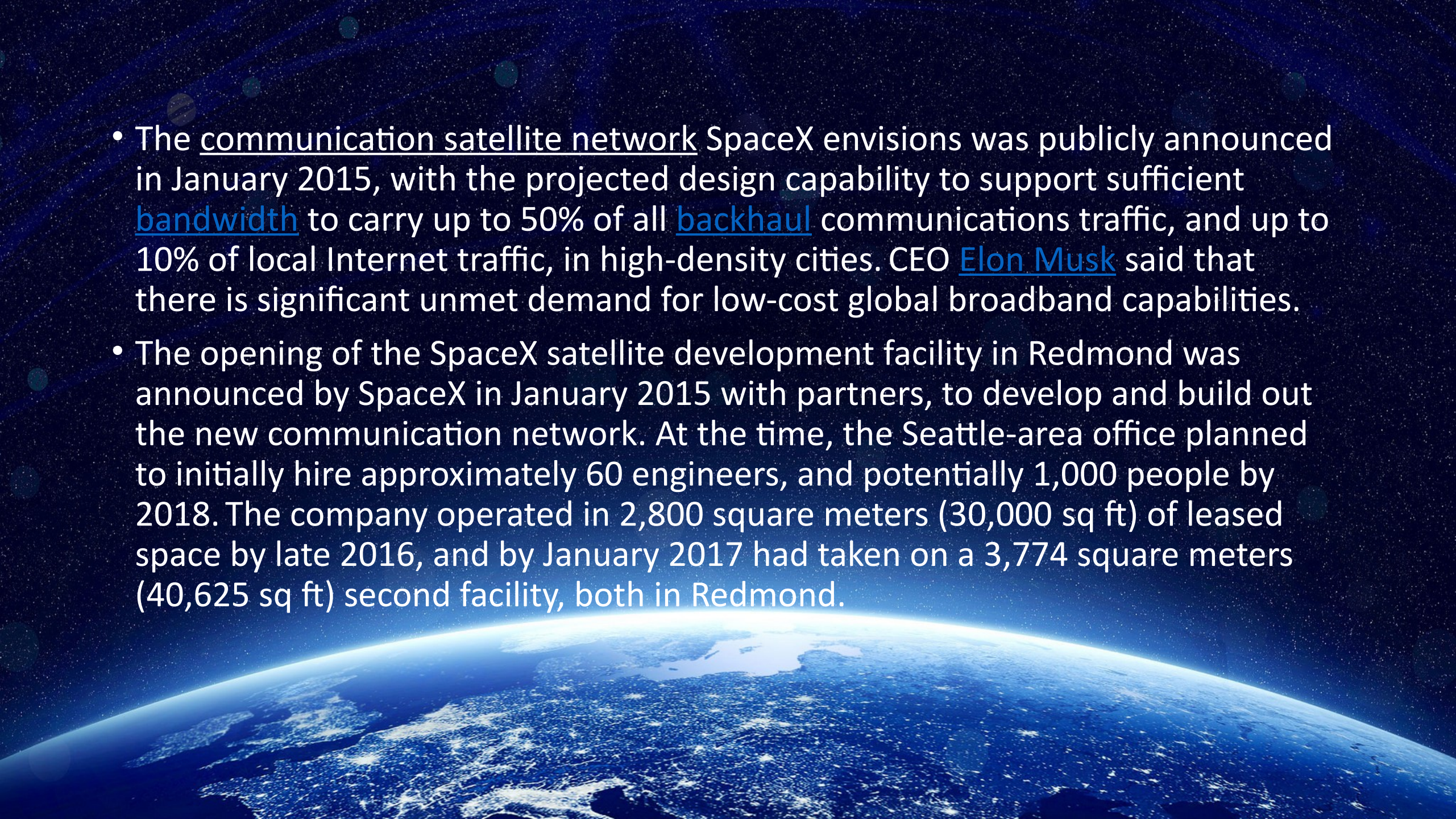

Starlink
project realised by Mihai Postolache

What is Starlink?

- **Starlink** is a satellite constellation being constructed by SpaceX to provide satellite Internet access. The constellation will consist of thousands of mass-produced small satellites in low Earth orbit (LEO), working in combination with ground tranceivers. SpaceX also plans to sell some of the satellites for military, scientific, or exploratory purposes.



- The communication satellite network SpaceX envisions was publicly announced in January 2015, with the projected design capability to support sufficient bandwidth to carry up to 50% of all backhaul communications traffic, and up to 10% of local Internet traffic, in high-density cities. CEO Elon Musk said that there is significant unmet demand for low-cost global broadband capabilities.
- The opening of the SpaceX satellite development facility in Redmond was announced by SpaceX in January 2015 with partners, to develop and build out the new communication network. At the time, the Seattle-area office planned to initially hire approximately 60 engineers, and potentially 1,000 people by 2018. The company operated in 2,800 square meters (30,000 sq ft) of leased space by late 2016, and by January 2017 had taken on a 3,774 square meters (40,625 sq ft) second facility, both in Redmond.

Keeping space clean

- Starlink is on the leading edge of on-orbit debris mitigation, meeting or exceeding all regulatory and industry standards.
- At end of life, the satellites will utilize their on-board propulsion system to deorbit over the course of a few months. In the unlikely event the propulsion system becomes inoperable, the satellites will burn up in Earth's atmosphere within 1-5 years, significantly less than the hundreds or thousands of years required at higher altitudes.


SATELLITES 1000km +
STARLINK 550km
550 k

- In May 2018, SpaceX expected the total cost of development and buildout of the constellation to approach US$10 billion.[8] In mid-2018, SpaceX reorganized the satellite development division in Redmond, and terminated several members of senior management.

- In November 2018, SpaceX received US regulatory approval to deploy 7,518 broadband satellites, in addition to the 4,425 approved earlier
- The new approval was for the addition of a very-low Earth orbit non-geostationary satellite orbit constellation, consisting of 7,518 satellites operating at altitudes from 335 km (208 mi) to 346 kilometres (215 mi)
- As of 22 April 2020, SpaceX has launched 422 Starlink satellites. They plan to launch 60 more per Falcon 9 flight, with launches as often as every two weeks in 2020. In total, nearly 12,000 satellites are planned to be deployed, with a possible later extension to 42,000.[55] The initial 12,000 satellites are planned to orbit in three orbital shells: first placing approximately 1,584 in a 550 kilometres (340 mi) altitude shell, then approximately 2,825 K_u-band and K_a-band spectrum satellites at 1,110 km (690 mi), and approximately 7,500 V-band satellites at 340 kilometres (210 mi).

Watch the Starlink deployment from Romania

- During the night of 28th of April, you were able to watch the satellites, more clearly from the west part of Romania, with the condition of the sky to be clear.
- An employer from Google has developed a website where you can watch the satellites live
- Starlink live <- click

A picture of the satellites from Tübingen, Germany

The launches of Starlink satellites so far

Flight No.	Mission	Date and time (UTC)	Launch site	Launch vehicle[b]	Orbit altitude	Inclination	Number deployed	Version	Outcome
0	Tintin	February 22, 2018, 14:17	Vandenberg, SLC-4E	F9 FT ♺ B1038.2	514 km (319 mi)	97.5°	2	–	Success
	Two test satellites known as Tintin A and B(MicroSat-2a and 2b) that were deployed as co-payloads to the Paz satellite. The two prototypes are still in orbit.[68][69]								
1	v0.9	May 24, 2019, 02:30 [70]	CCAFS, SLC-40	F9 B5 ♺ B1049.3	440–550 km (270–340 mi)	53.0°	60	v0.9	Success[74]
	The first launch of 60 Starlink test satellites.[33] Said to be "production design", these are used to test various aspects of the network, including deorbiting.[75] They do not yet have the planned satellite interlink capabilities and they only communicate with antennas on Earth. A day after launch an amateur astronomer in the Netherlands was one of the first to publish a video showing the satellites flying across the sky as a "train" of bright lights.[76] By five weeks post launch, 57 of the 60 satellites were "healthy" while 3 had become non-operational and were derelict, but will deorbit due to atmospheric drag.[77] As of October 31, 2019, 49 satellites were in the target 550 km orbit while the others were still raising their orbits.[71]								
2	v1.0 L1	November 11, 2019, 14:56[78]	CCAFS, SLC-40	F9 B5 ♺ B1048.4	550 km (340 mi) (target)	53.0°	60	v1.0	Success
	The first launch of 60 Starlink "operational" satellites (v1.0),[80] was the first to include Ka-band antennas.[81]								
3	v1.0 L2	January 7, 2020, 02:19[82]	CCAFS, SLC-40	F9 B5 ♺ B1049.4	550 km (340 mi)	53.0°	60	v1.0	Success
	One of the satellites, dubbed **DarkSat**,[55] has an experimental coating to make it less reflective, and to reduce the impact on ground-based astronomical observations.[83]								
4	v1.0 L3	January 29, 2020, 14:06[84]	CCAFS, SLC-40	F9 B5 ♺ B1051.3	550 km (340 mi)	53.0°	60	v1.0	Success
5	v1.0 L4	February 17, 2020, 15:05[85]	CCAFS, SLC-40	F9 B5 ♺ B1056.4	550 km (340 mi)	53.0°	60	v1.0	Success
6	v1.0 L5	March 18, 2020, 12:16:39[86]	KSC, LC-39A	F9 B5 ♺ B1048.5	550 km (340 mi)	53.0°	60	v1.0	Success
7	v1.0 L6	April 22, 2020, 19:30:30[1]	KSC, LC-39A	F9 B5 ♺ B1051.4	550 km (340 mi)	53.0°	60	v1.0	Success
8	v1.0 L7	June 2020[87]	CCAFS, SLC-40	F9 B5 ♺ B1049.5	550 km (340 mi)	53.0°	60	v1.0	Planned
	At least one satellite will have a sunshade (**VisorSat**).[88]								
9	v1.0 L8	June 2020[87]	CCAFS, SLC-40	F9 B5 ♺	550 km (340 mi)	53.0°	60	v1.0	Planned
	All satellites will have a sunshade to reduce the impact on ground-based astronomical observations.[88] Plus three SkySat Earth-imaging satellites for Planet Labs as rideshare payloads on this mission.[87]								
10	v1.0 L9	June 2020 [87]	KSC, LC-39A	F9 B5 ♺	550 km (340 mi)	53.0°	60	v1.0	Planned