# **ABSTRACT**

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## CLASS: -FINAL YEAR CSE

## ROLL NO. : - 07

## SEMINAR TOPIC: -**STARLINK**

## **GUIDE: - Prof. Nachiket Rathod**

**ABSTRACT: -**

**Starlink** is a satellite internet constellation operated by SpaceXproviding satellite Internet access to most of the Earth. The constellation consists of over 1600 satellites in mid-2021, and will eventually consist of many thousands of mass-produced small satellites in low Earth orbit (LEO), which communicate with designated ground transceivers. While the technical possibility of satellite internet service covers most of the global population, actual service can be delivered only in countries that have licensed SpaceX to provide service within any specific national jurisdiction. As of October 2021, the beta service offering is available in 19 countries.

The SpaceX satellite development facility in Redmond, Washington houses the Starlink research, development, manufacturing, and orbit control teams. The cost of the decade-long project to design, build, and deploy the constellation was estimated by SpaceX in May 2018 to be at least US$10 billion.

Early-stage planning began in 2014, with product development occurring in earnest by 2017. Two prototype test-flight satellites were launched in February 2018. Additional test satellites and 60 operational satellites were deployed in May 2019. SpaceX launches up to 60 satellites at a time, aiming to deploy 1,584 of the 260 kg (570 lb) spacecraft to provide near-global service by late 2021 or 2022.

On 15 October 2019, the United States Federal Communications Commission (FCC) submitted filings to the International Telecommunication Union (ITU) on SpaceX's behalf to arrange spectrum for 30,000 additional Starlink satellites to supplement the 12,000 Starlink satellites already approved by the FCC.  By 2021, SpaceX had entered into agreements with Google Cloud Platform and Microsoft Azure to provide on-ground compute and networking services for Starlink.

Astronomers have raised concerns about the constellations' effect on ground-based astronomy and how the satellites will add to an already jammed orbital environment. SpaceX has attempted to mitigate these concerns by implementing several upgrades to Starlink satellites aimed at reducing their brightness during operation.The satellites are equipped with krypton-fueled Hall thrusters which allow them to de-orbit at the end of their life. Additionally, the satellites are designed to autonomously avoid collisions based on uplinked tracking data.