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Modern-day developed Stratellite body

# Stratellite Communication: Futuristic Endeavour

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THAT is not a spelling mistake! Stratellite Communication, which sounds strikingly similar to Satellite Communication, is the brainchild of NASA's former scientist, Bob Jones. Stratellites are an advancement over the modern-day satellite communication overcoming the many hurdles faced by satellites.

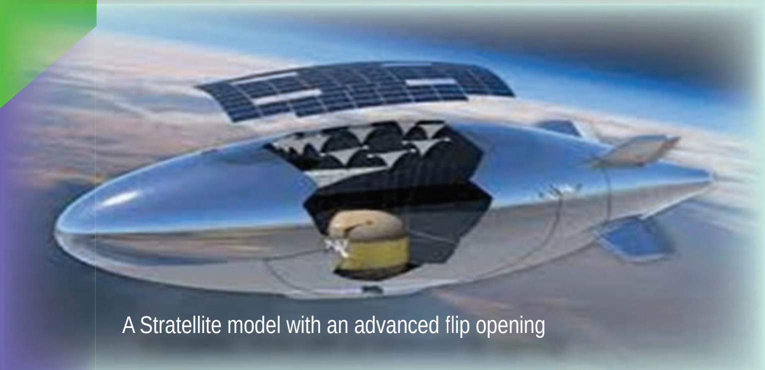
Stratellites are high-altitude airships originally meant to hover in the Stratosphere, nearly 20 km above the surface of the Earth. The concept of Stratellite was first taken into serious consideration for manufacturing by a Germany based organisation, Sanswire. The idea of Stratellite communication seemed ludicrous yet viable as it provided a stationary platform for the various modes of wireless communication. Unlike a satellite that revolves around the earth and needs receiving antennas positioned at different angles to receive the transmitted signals when the satellite would be at different positions around the Earth, the Stratellite's stationary positioning sounds beneficial as the location of the receiving antennas can be fixed and would not have to be changed from time to time.

Satellite communication comes with the baggage of triple bifurcation on the basis of the radial distance of the orbits from the centre of the Earth along which the satellites revolve. The three major orbiting zones are the Geosynchronous orbit (GEO) which is nearly 19,300 nautical miles from the Earth's surface, the Medium earth orbit (MEO) which ranges between 500-1200 nautical miles from the Earth and the Low earth orbit (LEO) which is nearly 200 nautical miles above the earth.

However, as the satellites hover around the earth in these three orbiting zones they are faced with interference from electromagnetic signals of large frequencies and wavelengths, leading to the emendation of rules and regulations that specify wavelengths to various companies beyond which they cannot operate. The process of separating out wavelengths, in order to have minimal interference and effective communication, has to be very meticulous. On the other hand, the concept of Stratellite communication has by far idealised the principle of stationary communication without the intervention of orbits of different radii that rather complicate the process of transmission.

Satellites that hover in the MEO and LEO region are devoid of any scope of being stationary, only leading to discontinuous and limited coverage. This discontinuous and limited coverage


Model developed and manufactured by Sanswire


A Stratellite model with an advanced flip opening

*The Stratellite is NASA's dream project and much of its feasibility is still being worked on by various scientific organisations across the globe.*

of area for transmission leads to increase in the number of satellites in order to ensure complete coverage and smoother transmission. These hurdles can be overcome with the use of Stratellite communication which has a wide range of coverage and ensures an uninterrupted channel due to its appreciably low distance from the surface of the earth. The minimal distance at which the Stratellite is placed from the earth's surface guarantees clearer transmission and faster reception due to significantly less interference.

Stratellite communication, due to its greater area coverage and better transmission, could replace the exceeding number of satellites that not only hover over the orbital areas and increase the space traffic, thus saving the cost of manufacturing such expensive satellites. Stratellites could be a boon to the telecommunication sector with almost half the expense.

The Stratellite body involves less dramatic and complicated functioning in comparison to the heavy satellite body, which has extremely technical internal working system and can have single launches only. The main propeller behind this futuristic model is Helium gas that can be used to propel the airship for long.

Although the Stratellite has a rigid framework, yet its internal structure is quite flexible making it easily upgradable. The benefit of being easily upgradable makes the Stratellites a more advanced mode of communication as new amendments could be made easily to its working. The Stratellite's structure is extremely simple and can be propelled with Helium, which is non-reactive and relatively eco-friendly.

The Stratellite's positioning is ideal. It lies far above the jet streams and influential weather zones, making it scantily vulnerable to atmospheric disturbances. Its efficient working could help power broadband, digital television, radio signals and mobile phones to a large area. This would promote greater coverage and reduce time lags significantly.

The concept of Stratellites involves two classifications of this futuristic model – the Unmanned Aerial Vehicles (UAVs) that could be powered by solar cells and electric motors and the High Altitude Airships (HAA). The working of the Stratellite could be expected to be something very similar to that of a Low Earth Orbit satellite resulting in greatly improved latency of Geostationary satellites.

The Stratellite could reduce time lag by 2000 times and power geographic areas of about 125,000 square miles at a time. With their much flexible orientation, Stratellites could also be able to support the GPS technology by an arrangement of such balloons held in position by six GPS units connected to the ship's engines.

The commercial model of Stratellite as proposed by Germany-based Sanswire is said to have a 100 feet radius, a length of 245 feet and requires nearly 13 cubic feet volume of a mixture of Helium and Nitrogen. Sanswire has estimated that a Stratellite would be able to carry up to a 5,000 lb payload at 8,000 feet for 10-16 hours of continuous operation. Unlike satellites, Stratellites depend entirely upon solar photovoltaic thin film panels making them easily deployable in damaged areas or non-existent energy bodies like developing nations and battle grounds.

Its low cost of manufacture and maintenance, multiple launch facility and unlimited space availability are definite advantages. The flexible and reliable Stratellite communication has a higher bandwidth that can assure speedy and uninterrupted transmission of signals throughout the process of communication. This easily attainable speed would save a lot of time lags and make global interactions a simpler affair.

However, the Stratellite body has been created and re-created over the years, only to face failure in making it feasible in the real world environment. The airship has been designed to climb to high altitudes and technically, for its sustenance, the Helium gas inside it must expand to ten times its volume on ground requiring extremely complex systems to make this possible. The environment through which the Stratellite is intended to enter is that of jet streams where the climate is extremely violent, tearing up the airship body. Lastly, the Stratellite fails to attain what we term 'Super pressure', which is crucial to the airship in order to retain a perfect pressure to stay afloat at higher altitudes.

The Stratellite is NASA's dream project and much of its feasibility is still being worked on by various scientific organisations across the globe. Countries like Germany and France are dedicated to the cause of this project led by an American initiative.

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