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Legal Challenges Represented by Large Satellite Infrastructures and Constellations (4)

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BRINGING INTO USE OF FREQUENCY ASSIGNMENTS FOR NON-GSO CONSTELLATIONS:  
NEW REGULATORY FRAMEWORK REQUIRED

**Abstract**

Lately, a general trend has appeared towards more interest in the use of non-geostationary satellite orbit (non-GSO) systems for different satellite services. Apart from other features, such systems are known to have a wide diversity of orbital characteristics and a large number of satellites. For example, the global navigation satellite systems GPS and GLONASS each use about thirty satellites on six and three orbital planes, respectively, in medium Earth orbit. OneWeb company intends to build the world's largest constellation of 648 micro satellites in low Earth orbit to provide global Internet access. Even frequency filings exist for fleets of a thousand to seventy thousand satellites. At the same time, quite a few of the existing provisions of the Radio Regulations of the International Telecommunication Union (ITU) were formulated with geostationary satellite orbit (GSO) systems in mind, mainly intended for the operation of a single satellite on a single orbital plane. This is applicable to the procedure of bringing frequency assignments into use. Under the ITU Radio Regulations, a frequency assignment filed for the deployment of a satellite system is considered to have been brought into use when an operating satellite has been deployed and maintained at the notified orbital position for a ninety-day period within a given timeframe. This rule also applies to bringing into use both non-GSO and GSO satellite networks. Evidently, this approach, which is the same for very different satellite systems, has drawbacks. On the one hand, the operator of a large non-GSO satellite constellation should not be subject to excessive time constraints when deploying its constellation inasmuch as it has to launch a multitude of satellites in contrast to the operator of a GSO system. On the other hand, if it becomes possible to bring into use a non-GSO system, even a huge one, just by a single satellite on one of the notified orbital planes irrespective of the total number of orbital planes and satellites in the non-GSO constellation, this may lead to the risk of dealing with the so-called 'paper satellites' and with the freezing of the radio-frequency spectrum. Obviously, a new regulatory framework is necessary to balance out the interests of all users of this limited natural resource and secure its rational, efficient, and economical utilization