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IN-ORBIT SERVERS: DOES THE OUTER SPACE TREATY HAVE SPACE?

Abstract

With every click, like, share and more, we create an estimated 1.7MB of data per second per person. Data centres and servers power the internet by storing, processing, and transmitting data. Data centres have unique infrastructure that occupy a lot of space and are high energy consumers. As our dependence on the internet grows, so does the demand for data centres, which have resulted in many innovations in the past decade.

Between 2008 - 2009, Google acquired patents to run floating and sea-water cooled data centres, In 2015, Microsoft piloted Project Natick, submerging a data centre to assess the viability of submersible cloud computing technology. Questions have been raised on the regulatory schemes applicable to these floating or submersible data centres, with rising national exercises of jurisdiction to regulate the internet - be it for content, transactions, or crimes. In 2012, the notorious Pirate Bay, floated the idea of low-orbit server drones to beat censorship and confiscation of their servers by authorities. Today, several companies are exploring concepts and developing technologies to put data centres or networks in orbit around the Earth. For example, ConnectX plans to launch a network of small low-earth orbit satellites for storing digital currency wallets and perform 'off-planet' financial transactions. One business rationale, in ConnectX CEO's words, is that 'From a security perspective, no one can physically access our system and no government or entity can force the exposure of your information'. While servers in orbit can soon be economically and socially beneficial, they would test legal boundaries, if left unregulated.

Currently the internet, including servers, are regulated simultaneously by multiple and most often conflicting national laws. For example, in relation to published content online, in case of a claim arising from a cyber crime, the UK exercises access-based jurisdiction, while China exercises location-based jurisdiction. By taking data infrastructure to space, we add another layer to the existing confusion.

This paper, will discuss the applicability of Article VI on State responsibility for national activities in outer space, and Article VII on jurisdiction and control by the State of registry to servers in space and explore the interface between international space law, and cyber/information technology laws. By discussing case law on cyber activities, and challenges posed by current trends in national regulation of cyberspace, this paper will argue for the application of transnational legal principles to regulate space based data storage, processing, and transmission.