Representing:

Organisation

Organisation (if applicable):

Hughes Network Systems, LLC and Hughes Network Systems, Ltd (collectively, “Hughes”)

What additional details do you want to keep confidential?:

No

If you want part of your response kept confidential, which parts?:

Ofcom may publish a response summary:

Yes

I confirm that I have read the declaration:

Yes

1. IoT definition, applications and demand:

As Ofcom recognizes, the IoT encompasses the interconnection "of multiple M2M applications" across industry sectors. The IoT is "set to enable large numbers of previously unconnected devices to communicate and share data with one another," and the IoT will deliver many benefits to a range of industry sectors, including healthcare, transport and energy.

M2M "describes the interconnection, usually through the use of wireless technologies, of devices that previously would not have had the ability to communicate."

Hughes' satellite services provide a conduit to the Internet to consumers and businesses for a wide variety of IoT services that enable the exchange of data and information which is critical to commercial and government operations. For example, Hughes' satellite services are used today for pipeline monitoring and railway monitoring. In addition, as a broadband Internet provider, Hughes' subscribers have the capability to connect any household device or machine to the Internet.

2. Spectrum requirements :

As satellite communications play and will continue to play an important role in the IoT, it is imperative that Ofcom maintains adequate spectrum for satellite communications. In addition, as the IoT increases demand for spectrum use, Ofcom should consider the important role that satellite communications can play in meeting the needs of the IoT. Accordingly, as spectrum is allocated or reallocated, satellite services should be considered as an important potential user of such spectrum. With regard to spectrum sharing to support IoT uses, Hughes supports

sharing of the spectrum when existing services are fully protected and able to expand to meet demands.

3. Network-related issues:

The IoT needs to rely on the full range of telecommunications technologies - whether wireless or wired. This includes satellite communications which are particularly important in providing these services both in rural and hard to reach areas, as well as in delivering superior reliability and redundancy, as many IoT services are critical and require the highest levels of reliability.

The ubiquitous nature of satellite services makes these services critical to the success of the IoT. Satellite communications are able to reach some of the most isolated and distant locations, including in the waterways and in the air. As the "M2M Applications Characteristics and Their Implications for Spectrum" report recognizes "applications operating offshore or in very remote locations beyond the reach of terrestrial networks may need to adopt satellite communication." In addition, with capabilities to function virtually everywhere, satellite services are an ideal component for tracking assets on the move like trailers and motor vehicles.

Satellite communications systems are also recognized for their reliability as they do not have the same susceptibilities as terrestrial networks in the event of a natural disaster. For example, in the aftermath of Hurricane Sandy, one of the most powerful hurricanes in modern history, Hughes provided Internet and voice services to the affected communities when terrestrial and wireless networks failed or were unreliable. Furthermore, unlike terrestrial wireline and wireless services, the satellite services that Hughes provides are offered using infrastructure that is 22,300 miles from the Earth's service, making it immune to the sorts of disasters that occur on Earth.

4. Security and resilience:

5. Data privacy:

6. Numbering and addressing:

7. Devices:

8. Digital literacy:

9. Data analysis and exploitation:

10. International developments:

11. Ofcom’s role :

Satellite communications play an important role in meeting the needs of the IoT and are especially critical in supporting these uses due to their ubiquitous nature. As Ofcom reviews ways to meet the increasing demands of spectrum for IoT, Ofcom needs to ensure that in

whatever approach it adopts, there is adequate spectrum for satellite communications now and in the future.

12. Additional comments: