ARM

ARM is a UK Headquartered company which designs microprocessors, used in 95% of mobile phone and many other products.

We have the following comments:

(Relevant to the following Ofcom Questions:

Question 1: Have we captured all the major trends that are likely to impact spectrum use over the next ten years in this section and the separate Appendix on sectoral developments? Are there other market, technology or international developments that could lead to significant changes in spectrum demand and supply over the next 10 years?

Question 3: Do you think we have adopted the right approach to analysing future trends and developments that could raise the need for future regulatory action?

Question 4: What are your views on the results of our analysis of future developments summarised in this section and discussed in greater detail in the Appendix to this consultation? Please provide evidence in support of your views wherever possible

Question 5: Do you agree that a consideration of mobile and wireless data demands should feature as a priority area in our work programme for the next ten years? Have we captured all the major issues that we should consider within this area?

Question 7: Do you agree that the implementation of our 700 MHz strategy and the longer term future of DTT should feature as a priority area in our work programme for the next ten years? Have we captured all the major issues that we should consider within this area?

Question 8: Do you agree that a consideration of competing demands for spectrum at 450 - 470 MHz should feature as a priority area in our work programme for the next ten years? Have we captured all the major issues that we should consider within this area?

Question 9: Do you agree that spectrum sharing should feature as a priority area in our work programme for the next ten years? Have we captured all the major issues that we should consider within this area?)

We thank you for giving us the opportunity to comment on Ofcom's forward strategy. We think your strategy is a good document, outlining the key issues, and signalling Ofcom's intention to put the UK where possible in a leading position in spectrum usage. We believe this is an important step to ensuring the UK becomes a leading edge high tech nation.

We have not commented in detail, because we agree with the thrust of many of your proposals. But we have a few general comments particularly relevant to the questions identified above.

We agree that there will be significant increase in demand for spectrum over the next ten years. This will be driven by growing demand for mobile data, plus other developments including the Internet of Things (M2M).

IOT/M2M is likely to impact on a variety of sectors including:

Energy – the roll out of smart meters is already foreseen over the next 5 years;

Health – the impetus to accelerate remote monitoring of health is growing. It is driven first by increasing consumer awareness of devices and how they can help individuals monitor and manage their own health. Second, a growing elderly population will increasingly need to be cared for in their homes to avoid undue strain on primary health care services and to provide better quality of life for the elderly or chronically ill;

Agriculture – the use of sensors to help farmer calibrate exactly how much water or nutrients their soils need is already being tested;

Smart Cities – there are potentially a wide range of IoT benefits for managing cities, including smart street lighting with a network of nodes on street lights allowing for delivery of many IoT type services (identification of available car parking spaces etc).

Infrastructure – water companies are already using sensors to help monitor water flows through their pipes.

Insurance – there is already an insurance company offering to calibrate premiums based on remote monitoring of how you drive. This may increase to other sectors eg security..

We agree that the challenge will be find ways of freeing up Spectrum and using Spectrum more efficiently .

On mobile data, a trend which the industry is exploring is the convergence of mobile and tv. LTE (4G) has the potential to deliver broadcasting services as well as traditional person to person communications. Some are already claiming that LTE broadcasts could replace DTT, with significant prospects of spectrum savings.

Meanwhile, we strongly support OFCOM's moves to free up unlicensed White Space, and to promote Dynamic Shared Access. Old Licensing models limit the amount of spectrum available for broadband access, when and where consumers need it, including in remote or sparsely populated areas. Mobile Operators, Consumers and businesses are already increasingly relying on non licensed WiFi access for their connectivity.

DSA technology, along with a flexible regulatory framework, can offer the possibility of stimulating innovation and removing barriers to market entry and unlock more of spectrum's economic potential. It has the potential to provide a more flexible way of managing spectrum in the future, in contrast to the old model of locking spectrum into certain uses and users. (Though we recognise that there will always be a need to avoid interference and to provide free to air services.)

We agree that international coordination of spectrum initiatives is important. We welcome the moves to make the 700 Mhz band a global band for mobile. There is talk of the ITU's World Radio Conference in 2015 looking at making similar arrangements for the 600 Mhz band. There is a possibility that some states will allocate the whole of the UHF band to mobile. Regional coordination will be important.