Westica Communications Response to Ofcom Consultation Document WRC-15
This response to the consulation document is made in respect of Question 4. We have no comments to make on the other questions.

Question 4: In view of the recent developments on the 1 492 - 1 518 MHz and 5 925 - 6 425 MHz bands, what are your views on the potential identification of these bands for IMT and/or RLAN and on the mobile data applications that could make use of them? How do you believe the sharing with the fixed service and the fixed satellite services could be managed at the national level?

Background
Westica Communications are a supplier of fixed links in the 1.4GHz bands, and have been supplying such products to UK and international markets since 1999. We have supplied products in compliance with the Ofcom regulated band of 1350-1375MHz paired with 1492-1517MHz in compliance with CEPT T/R 13-01 Annex A, and have also supplied product to other international plans including CEPT T/R 13-01 Annex B.
We are one of few, if not the only, company who continue to manufacture licensed fixed links products in the UK.
In light of our specialised experience in this area we believe we understand the importance of this band as a fixed links band, and further believe we are well placed to provide input which represents our own views in addition to that of our users.

Use of 1.4GHz fixed Links in UK and Internationally.
Westica Communications have been supplying fixed links in1.4GHz bands to UK and international markets since 1999. We have supplied products in compliance with the Ofcom regulated band of 1350-1375MHz paired with 1492-1517MHz in compliance with CEPT T/R 13-01 Annex A, and have also supplied product to other international plans including CEPT T/R 13-01 Annex B.
This frequency plan is regulated and licensed in the UK on a mixed bathing basis, and from our experience of supplying the market, this attracts a wide variety of users.

Our supplied links in the band within the UK and internationally are deployed in mission critical applications across the following sectors:

- Emergency Services
- Utilities (Gas, Water and Electricity)
- ISP's
- Vessel and Air-Traffic Control System Operators
- PTO's
- Mobile Operators including TETRA operators
- Military

These users and applications require the safeguard of using licensed spectrum in order to meet operational and regulated service requirements.

Applications also demand bi-directional communications which are best served by duplex frequency plans with Go-Return pairings. Links are deployed in urban and rural areas.

Development of higher-capacity products with higher-modulation schemes, which, due to advanced engineering techniques resulting in greatly improved performance, can still meet the regulated standards which were/are designed around lower modulation schemes opens up additional applications including back-haul of rural broadband wireless distribution networks and have a significant potential to aid the deployment of networks to help meet UK targets for broadband roll-out.

We note the potential investigation of allocation to IMT of spectrum in the range 1350 to 1518 MHz and request that Ofcom strongly defend the valuable contribution of relevant parts of this spectrum for the Fixed Services.

Economic Contribution of Fixed Services Spectrum

Ofcom have reported in the past on the significant economic contribution arising from the use of radio spectrum, and we believe that the fixed services is a vital and critical element of this.
With the recent trend towards allocation of spectrum by auction of to single or limited user applications, we suggest that in order to maximise the economic contribution of radio spectrum as a national asset it is vital to maintain the flexibility of mixed user allocation in key areas of the spectrum. We would assert that the 1.4GHz fixed links band represents one such key area.

1.4GHz Characteristics

It is our belief that the 1.4GHz band has a number of unique characteristics as a fixed links band. some key points are summarised below.

- The only current Ofcom licensed band to permit narrow channel bandwidths e.g. sub-3.5 MHz.

- Good propagation characteristics and immunity to rain fade providing users with highly available links even in rain conditions beyond the Ofcom planning norm. This is increasingly important in a changing climate with reportedly increasing rainfall rates.

- Lightweight easy to install antennas with relatively wide beamwidths which can be installed on lightweight structures. Higher frequency bands with narrower beamwidths typically demand more robust structures to mount on which can significantly impact project costs. Simple and fast antenna alignment reduces cost of installation.

- Small antennas relative to the achievable link distances. Use of small lightweight antennas can provide cost-efficiencies on third-party site rentals which leads to improved whole-life costs.

- Due to relatively long wavelength, the ability, in some circumstances, to counteract tidal fading by antenna positioning without need for space or frequency diversity.

- Narrow channels which although restrictive in capacity, provides good receiver performance and C/I performance characteristics.

- All indoor equipment with coaxial feeders to passive antennas reduces maintenance costs and outage risks for critical links in challenging environments (high winds, snow and ice as well as extreme heat, sandstorms etc).

Although we note, and actively encourage the CEPT activity, in the area of allocation of narrow channel bandwidths within the L6 and U6 GHz bands, we feel that this does not represent a direct replacement for the 1.4 GHz band due to different propagation and antenna characteristics and the loss of capability to provide all indoor solutions resulting from the increased feeder losses.

Worldwide use of 1.4GHz

Although the UK has always represented our most significant market, we have supplied 1.4GHz products internationally. The table below provides information on our knowledge of 1.4GHz spectrum availability around the globe. This is based largely upon countries where we have supplied product, but a few countries where we have been requested to participate in buds to supply which have ultimately been served by other manufacturers.

The table indicates the frequency plan relevant to the countries, and in the most part follow the CEPT allocations in recommendation T/R 13-01 Annex A and Annex B. However we have also supplied product in compliance with ITU-R recommendation 1242 which includes a 65 MHz DS split. The column listed as alternative band plans typically represents this frequency plan, although national variations on the ITU-R and CEPT plans exist. However the table indicates our knowledge of countries licensing fixed links plans which utilise parts or all of the spectrum from 1492 to 1518 MHz.

There are other suppliers of 1.4GHz equipment internationally who we are aware have provided solutions in many countries beyond those listed below.

Cept T/R 13-01 Annex A	Cept T/R 13-01 Annex B	Alternative Band Plans utilising all or parts of 1492-1518MHz
Algeria	Abidjan	Spain
Austria	Austria	Argentina
Belgium	France	Brazil
France	Germany	New Zealand
South Korea	India	Australia
Iraq	Ireland	Bahrain
Ireland	Saudi Arabia	India
Italy	India	Malaysia
Kuwait		
Poland		
Portugal		
Slovenia		
South Africa		
Spain		
Sudan		
Rwanda		
Sweden		
Libya		
Vietnam		
UK		
Bangladesh		
Nepal		

Sharing FS and FSS services with IMT

Our opinion is that it is generally considered very difficult to share any point to point (FS) service with any point-to-multipoint technology (fixed or mobile) in the same geographical area, particularly when lack of spectrum prevents the protection afforded by guard bands.

Perhaps if mobile use was restricted to below the clutter line on a small-cell basis this would be open up some possibilities, however even then there is likely to be some impacts as a result of raising the noise floor in any specific geographical area.

Given the possibility of international support for the allocation of 1.4GHz FS spectrum to IMT, we would actively encourage Ofcom to preserve national flexibility to retain highly strategic, effective and economically vital spectrum for the fixed services in this area.