

Frequency Band and status in UK	RR Allocations (Region 1)	Global regulatory constraints	European regulatory constraints	Bilateral regulatory constraints	Implications for auctions	Implications for trading and/or leasing
470 - 860 MHz Currently TV Broadcasting: part of band could be migrated to other uses when analogue TV ceases	BROADCASTING Need to protect radio astronomy service in 608-614 MHz band (S5.149) 590 - 598 MHz is allocated in the UK to aeronautical radionavigation on a primary basis (S5.302).	Recommendation ITU-R BT.417-4 : Minimum field strengths for which protection may be sought in planning a television service Recommendation ITU-R BT.655-6 : Radio-frequency protection ratios for AM vestigial sideband terrestrial television systems	Stockholm Plan for high power analogue TV transmissions. Band earmarked for review by ERC to consider alternative uses following migration from analogue to digital TV Opportunity for UK to influence European position.	Need to protect current analogue and future digital television services in B, F, IRL and NL. Protection of analogue services likely to be complicated by use of different standards (similar to situation in Band II)	Possible uncertainty over future use in neighbouring countries may affect bidder confidence. Co-ordination, particularly with high powered continental transmitters and low power relays near the border / coastline, may be a significant constraint Incumbents' rights and responsibility for conversion of population of analogue receivers to digital are key issues. Any solution is likely to require some form of government intervention because consumers are served by several broadcasters and small transmitters are fed by larger ones. Size of lots is an issue - simplest approach may be to use existing 8 MHz TV channels but this may not be compatible with new services (e.g. IMT-2000 with 5 MHz channels).	Making broadcasters' spectrum tradable does not deal with co-ordination issues that also arise with auctions. Change of use, or expansion of an existing service, in one region may have an impact (or be constrained by) services in another region, since exported interference limits are cumulative. Value of spectrum in one region likely to be affected by how heavily it is used in adjacent regions. (Could overcome this problem by national licensing).
880 - 960 MHz Currently GSM cellular, but earmarked for IMT-2000 expansion at WRC-2000	FIXED MOBILE excl aero	Recommendation ITU-R M.1073-1 : Digital Cellular Land Mobile Telecommunication Systems	EU Directive 87/372/EEC (GSM Directive) ERC Decision (94)01 (Freq bands for GSM) ERC Decision (97)02 (Extended freq bands for GSM) ERC Recommendation T/R 75-02 (Frequencies in the band 862 - 960 MHz) ERC Recommendation T/R 22-07 (Freq bands, planning and co-ordination for DCS1800) EU Directive 96/2/EC of 16 January 1996 amending Directive 90/388/EEC with regard to mobile and personal communications (the Mobile Directive) ERC Decision (95)03 (Freq bands for DCS 1800) ERC Recommendation T/R 20-08 (Freq bands, planning and co-ordination for GSM)	Existing bilateral agreements with F and IRL cover co-ordination of GSM services on a preferred channel basis. Would require re-negotiation to facilitate change of use. Existing bilateral agreements with F and IRL cover co-ordination of GSM services on a preferred channel basis (also covers co-ordination with transportable fixed links in case of F). Would require re-negotiation to facilitate change of use.	Position of existing operators relative to new entrants needs to be considered. Constraints will apply near international borders - use probably restricted to micro- and pico-cell applications. These constraints will be greater for 3G mobile since 5 MHz channels will all have to be treated as non-preferred. Effect on economic value will depend on whether the bidder has alternative spectrum that can be used in the affected area - if so effect could be negligible as peak spectrum demand in UK is not near border. Spectrum likely to be worth significantly more to existing operators than new entrants as they already have a customer base and established 2G infrastructure in the band.	Trading could potentially allow re-balancing of spectrum allocations between mobile operators (incumbents currently have more in total than 3G new entrant) but not clear why an operator would wish to trade except to create 5MHz blocks. Also scope for exchange of 900 MHz and 1800 MHz spectrum between operators. Same constraints near borders apply as in auction case.
1710 - 1880 MHz Currently GSM cellular, but earmarked for IMT-2000 expansion at WRC-2000	FIXED MOBILE	Recommendation ITU-R M.1073-1 : Digital Cellular Land Mobile Telecommunication Systems	EU Decision 128/1999/EC on the co-ordinated introduction of a third-generation mobile and wireless communications system (UMTS) in the Community (the UMTS Decision) ERC Decision (97)07 (Freq bands for UMTS) for UMTS) ERC Decision (00)01 (Freq bands for UMTS, extending Decision (97)07) ERC Recommendation (01)01 (Border co-ordination of UMTS/IMT-2000 systems)	Bilateral agreements will be negotiated with F and IRL based on ERC Rec (01)01. Would require renegotiation to permit change of use were this required.	Most spectrum has already been auctioned; scope for further auctions probably limited except in case of market failure of one of existing licensees.	Could provide scope for re-balancing of total spectrum assignments (i.e. 2G plus 3G) between operators.
1900 - 2170 MHz IMT-2000 core band (3G mobile)	FIXED MOBILE	Multitude of ITU-R Recommendations relating to IMT-2000 architecture, interfaces and system performance.	This band is currently being considered within ERC Project Team 1, where the possibility of a new Decision has been raised.	The band is currently used for fixed links in France and MMDS services in Ireland, both of which could constrain its use for 3G mobile near the UK border, especially for macro coverage.	Position of new entrants vs existing 3G licensees needs to be considered. Effect of border constraints on economic value will depend on whether the bidder has alternative spectrum that can be used in the affected area - if so effect could be negligible as peak spectrum demand in UK is not near border. Probably means the spectrum would be somewhat more valuable to an existing operator than to a new entrant that would have to rely exclusively on this spectrum.	As there are no existing users in UK (other than SAB services), impact of trading likely to be long term (i.e. after the spectrum has been auctioned for other services). In interim, could continue to be used by SAB and/or cable TV operators (using MMDS to provide interim cable TV services) on a temporary basis, possibly with some form of short term incumbency rights. Introduction of new services that require longer term occupancy unlikely to be viable given band's existing international status as expansion 3G spectrum.
2520 - 2670 MHz Currently SAB and trans-horizon links but earmarked for IMT-2000 expansion	FIXED MOBILE exc. aero BROADCASTING-SATELLITE	Recommendation ITU-R F.1243 : Radio-Frequency Channel Arrangements For Digital Radio Systems Operating In The Range 2 290-2 670 MHz	ERC Recommendation 14-03 (channel arrangement for 3400 - 3600 MHz) ERC Recommendation 13-04 (FWA in 3 - 29.5 GHz)	Although this band is used for FWA in all the UK's neighbouring countries, different channel arrangements apply in each and no bilateral agreements are yet in place. These are likely to be somewhat more complex than for GSM due to this non-homogeneity.	Current state of FWA market suggests demand may be muted, however if more flexible use offered (e.g. ability to use for infrastructure support) this may make competitive auction viable.	Trading could provide partial solution to current market downturn, providing operators with a tradable spectrum asset, though its value may be insignificant relative to network infrastructure and other assets.
3400 - 3600 MHz FWA	FIXED FIXED-SATELLITE (S-E) Mobile Radiolocation	Recommendation ITU-R F.1488 : Frequency block arrangements for fixed wireless access systems in the range 3400 - 3800 MHz				

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5150 - 5350 MHz Hiperlan	5150-5250 MHz: AERONAUTICAL RADIO NAVIGATION FIXED-SATELLITE (E-S) 5250-5350 MHz: EARTH EXPLN SATELLITE RADIOLOCATION SPACE RESEARCH	Recommendation ITU-R S.1426 Aggregate Power Flux-Density Limits, At The FSS Satellite Orbit For Radio Local Area Network (RLAN) Transmitters Operating In The 5 150-5 250 MHz Band Sharing Frequencies With The FSS (RR No. S5.447A) Recommendation ITU-R M.1454: EIRP density limit and operational restrictions for RLANS or other wireless access transmitters in order to ensure the protection of feeder links of non-geostationary systems in the mobile satellite service in the frequency band 5150 - 5250 MHz ITU-R Recommendations in development	ERC Decision (96)03 (Harmonised frequency band for Hiperlan) HIPERLAN standards specified in Decision but likely to be pressure from non-European manufacturers to introduce other equipment meeting the essential requirements of the R&TTE Directive.	Licence-exempt nature of operations will lead to global circulation of devices. Little regulatory control - no bi-laterals required.	Auctions unlikely to be appropriate owing to widespread licence exempt use of the band (it would be difficult to guarantee any grade of service or degree of access / exclusivity with in the band)	Trading unlikely to be appropriate for same reason.
5470 - 5725 MHz Hiperlan	5470 - 5650 MHz: MARINE RADIO NAVIGATION Radiolocation 5650 - 5725 MHz: RADIOLOCATION Amateur Space Research FIXED-SATELLITE (E-S) RADIOLOCATION Amateur	ITU-R Recommendations in development	ERC Decision (01)06 (On non-specific SRDs in 5725 - 5875 MHz)			
5725 - 5875 MHz Poss future FWA?	FIXED-SATELLITE (E-S) RADIOLOCATION Amateur					
27.5 - 29.5 GHz FWA	FIXED FIXED-SATELLITE (E-S) MOBILE	Recommendation ITU-R F.748-3: Radio-frequency channel arrangements for radio-relay systems operating in the 25, 26 and 28 GHz bands.	ERC Decision (00)09 (Use of 27.5 - 29.5 GHz band by the Fixed and Broadcasting-Satellite / Fixed-Satellite service) ERC Recommendation 01-03 (Use of the band 27.5 - 29.5 GHz for FWA)	Band currently designated for fixed links in France, Belgium and Ireland. Likely to lead to significant constraints near border. Bilateral agreements not yet in place.	Auctions already held but not all licences successfully let. Further auction stage imminent. If this is successful, scope for further auctions probably limited except in case of market failure of one of existing licensees	Trading may provide scope for market rationalisation (e.g. aggregation of geographic regions or spectrum blocks), though this may lead to fewer (but stronger) operators in the market
40.5 - 43.5 GHz MWS planned	40.5 - 42.5 GHz: FIXED BROADCASTING BROADCASTING-SATELLITE Mobile 42.5 - 43.5 GHz FIXED FIXED-SATELLITE (E-S) MOBILE RADIO ASTRONOMY		ERC/DEC(99)15 ERC Decision of 1 June 1999 on the designation of the harmonised frequency band 40.5 to 43.5 GHz for the introduction of Multimedia Wireless Systems (MWS) including Multipoint Video Distribution Systems (MVDS) ERC Recommendation T/R 52-02 (Harmonised frequency band for MVDS in Europe)	Band designated throughout Europe for MWS services, which provide a high degree of flexibility with elements of broadcast and fixed access.	Auctions likely to be appropriate but will depend on market conditions for broadband services being favourable. Offering very flexible licences would be feasible and would offer chance for new innovative services.	Given the potentially diverse applications that MWS might cater for, trading could help to encourage new, innovative market entrants who could acquire spectrum from existing holders rather than having to wait for future licence competitions or auctions. Also if there is uncertainty concerning the services that use the spectrum, trading offers the flexibility to change the way spectrum is used in response to technology and market developments.