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Results of the RRC-06 Conference: Opportunities for Mobile TV?

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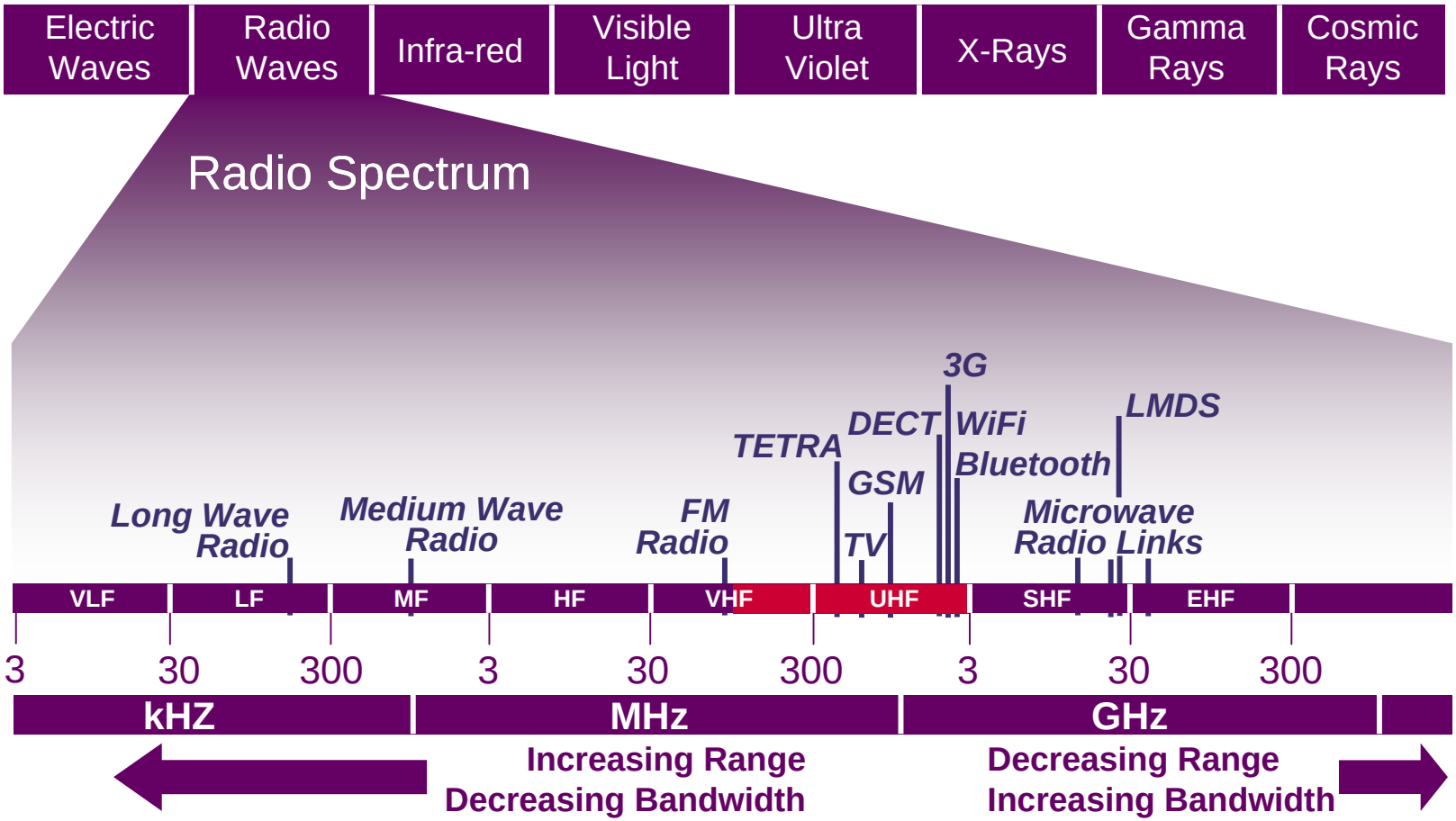
Mobile multimedia is in high demand around Europe

- Mobile multimedia, including mobile TV, is seen a key area of growth for the communications industry
- Interest is being shown by players from broadcasters to mobile phone operators as well many others
- Trials and commercial launches of these services around Europe, and around the world, have indicated a high level of consumer interest in mobile multimedia
- However for these, and many other, services to operate there is the need for spectrum

Bands III, IV and V are particularly attractive for a range of services



Spectrum is a key input to all economies and the international context for its use is vital

- Spectrum is a vital input: in the UK it is estimated to contribute at least £24 billion pa to GDP (2002)
  - Inputs to broadcasting, communications, defence, aviation, emergency services, etc
- Spectrum does not stop at borders
  - In order to secure maximum value from the spectrum, international coordination is required
  - This can be done in number of ways, from bilateral negotiations to full scale international planning conferences
- The basic international framework for the use of Bands III, IV and V by analogue broadcasting was set in 1961 at Stockholm
  - RRC-06 (Geneva) updates the international agreements for this spectrum for the digital age
  - RRC-06 is therefore the key determinant of the spectrum quality available around Europe for years to come

The Regional Radio Conference

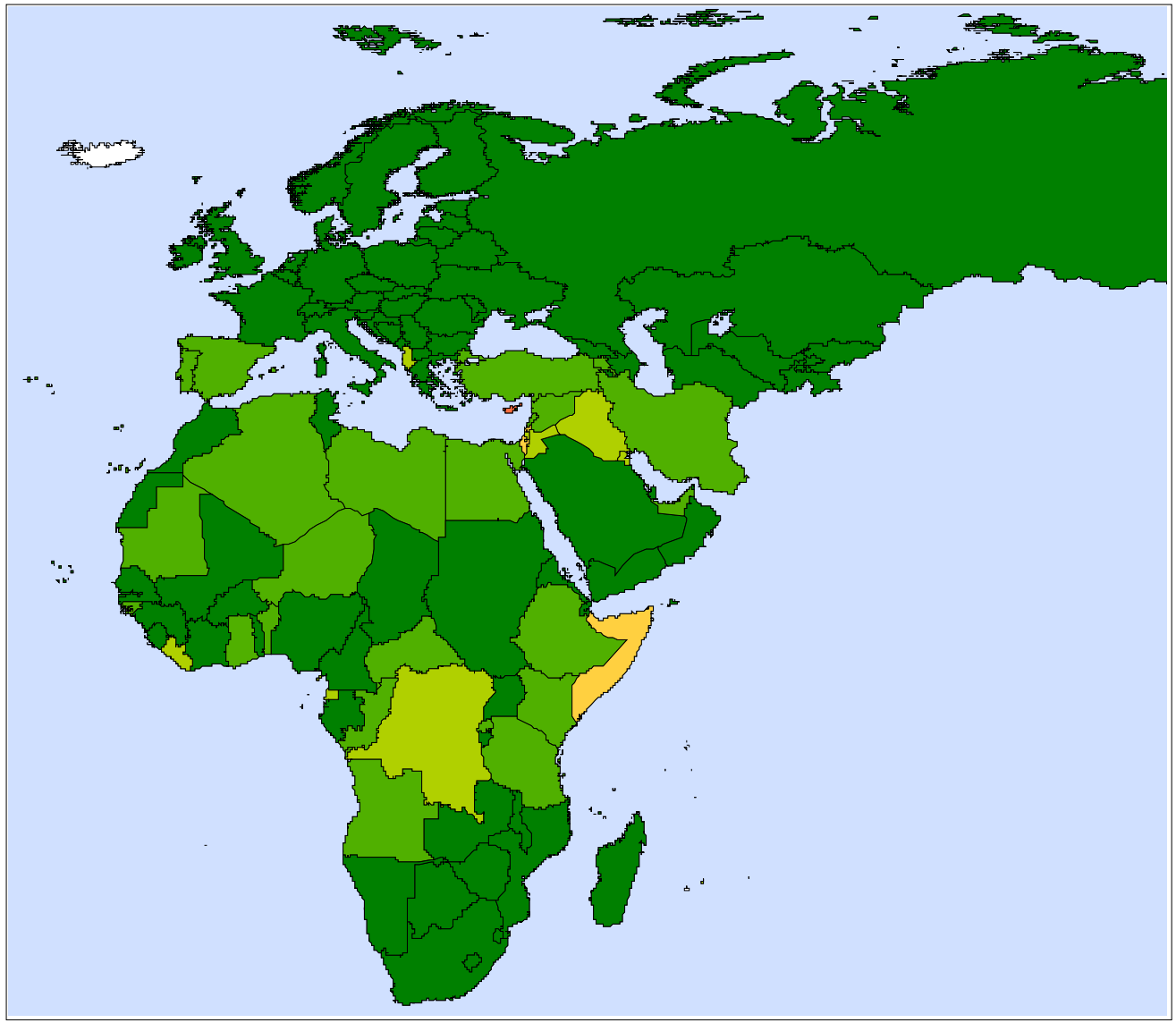
RRC – the event

- An international treaty-making conference of the ITU (International Telecommunication Union, a UN Agency)
- Originally requested by European countries in August 2000
- Arranged in two parts:
  - 2004 (to prepare the technical basis and preparatory work) and
  - May/June 2006 (RRC-06) to produce an new international Agreement between the countries of Europe, Africa and the Middle East
- The Agreement to include:
  - a new all-digital broadcasting plan for DVB-T at UHF, and DVB-T and T-DAB at VHF
  - Transitional arrangements for analogue broadcasting
  - Protection of other radio services – mobile, radars, and radio astronomy

RRC-06 Statistics

- Over 100 countries
- About 1000 delegates
- Largest delegations > 60
- Complexity required massive computing power
- Final digital broadcasting Plan in simplified form contains nearly 2000 pages
- Final Acts, minus frequency lists, comprise over 300 pages
- Five week duration with extensive activity throughout
- In addition to formal output of RRC, many detailed bilateral agreements reached – for the UK these amounted to 700+ pages

The Planning Area



The Agreement Contains:

- The Plan for digital broadcasting (T-DAB and DVB-T)
- The list of analogue TV stations entitled to protection during the transition period
- The list of assignments for other primary services
- Procedures for modifying the Plan and the Lists
- All of the regulatory and technical details for determining which other administrations are affected, and checking for conformity with the Agreement
- All of the timescales for entry into force (17 June 2006 on a provisional basis), plan modifications, and transition period

Flexible use of the spectrum

- Much of this spectrum has historically been used for broadcasting and the GE06 plan in expressed in broadcasting terms
- However restricting the use of this spectrum is likely to store up problems for the future
- Flexibility of use provided for in RRC decisions, supplemented by Declaration co-signed by virtually all of Europe.

Declaration 42

"… formally declare that their administrations may use their digital Plan entries for broadcasting or other terrestrial applications with characteristics that may be different from those appearing in the Plan within the envelope of their digital Plan entries

... agree that any such use will be afforded protection ..."

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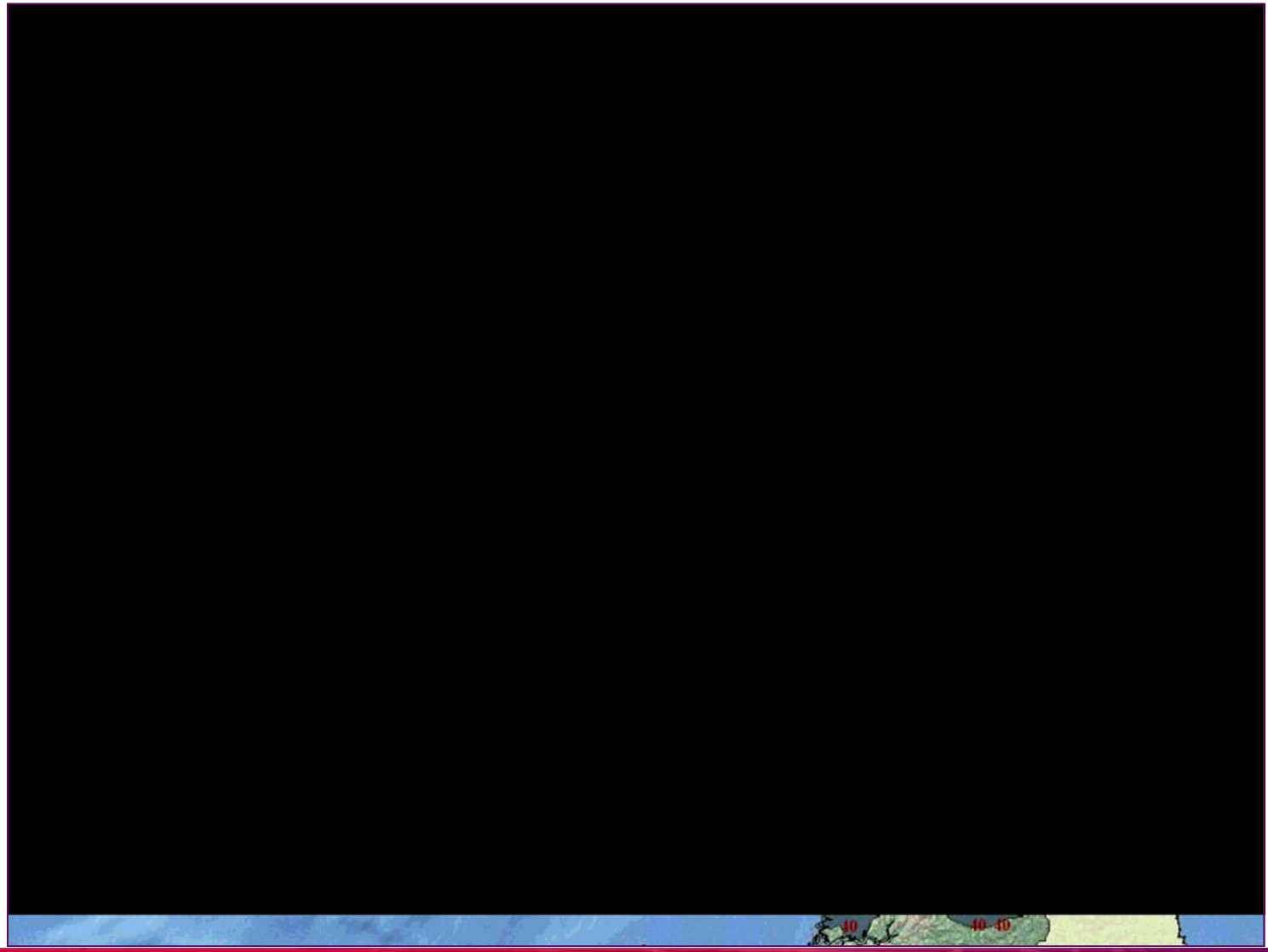
RRC & Mobile Multimedia

Plan assignments for Channel 40



UHF Bands IV/V in the UK

(Channels 21-68 (470-854 MHz) in the UK – RRC also covered Ch 69)

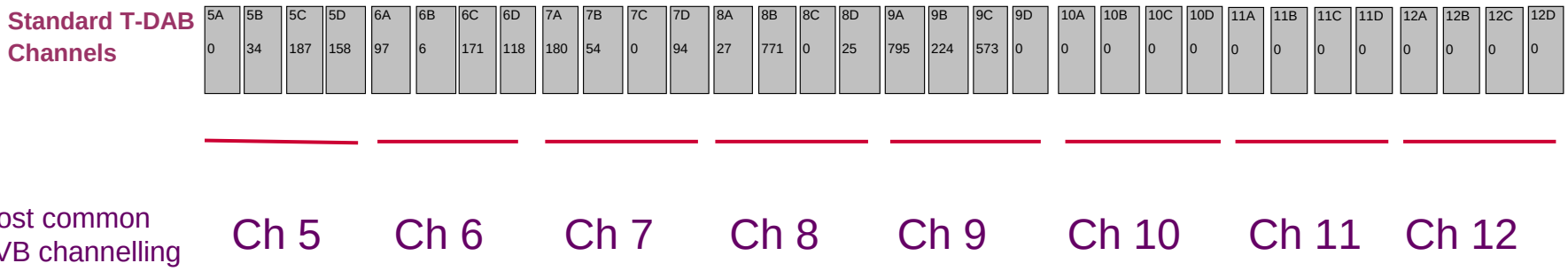
470MHz

21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44
45	46	47	48	49	50	51	52	53	54	55	56
57	58	59	60	61	62	63	64	65	66	67	68
69											

862MHz

- Spectrum available from digital switchover
- Currently unavailable spectrum – 36 is radar; 38 is radio astronomy
- Spectrum assigned to six DTT multiplexes post-DSO, and resulting “interleaved” spectrum
- Spectrum currently used by PMSE

VHF Band III – The UK outcome



In the RRC preparatory process.....

- DAB standard channelling plan (dates from CEPT agreement of 1995)
- DVB: variety of bandwidths allowed by RRC04 preparatory conference but European countries agreed to converge on a common DVB channel plan, aligned with DAB. e.g. Ch 5 DVB includes DAB blocks 5A, 5B, 5C, 5D, etc.

A wide range of potential uses for the UHF spectrum have been identified

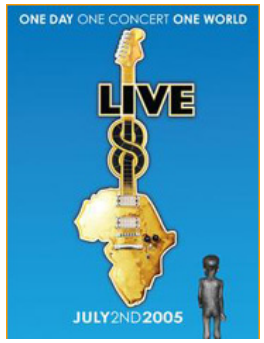
Digital Terrestrial Television
- standard definition

- high definition

- local TV

Wireless broadband / cellular

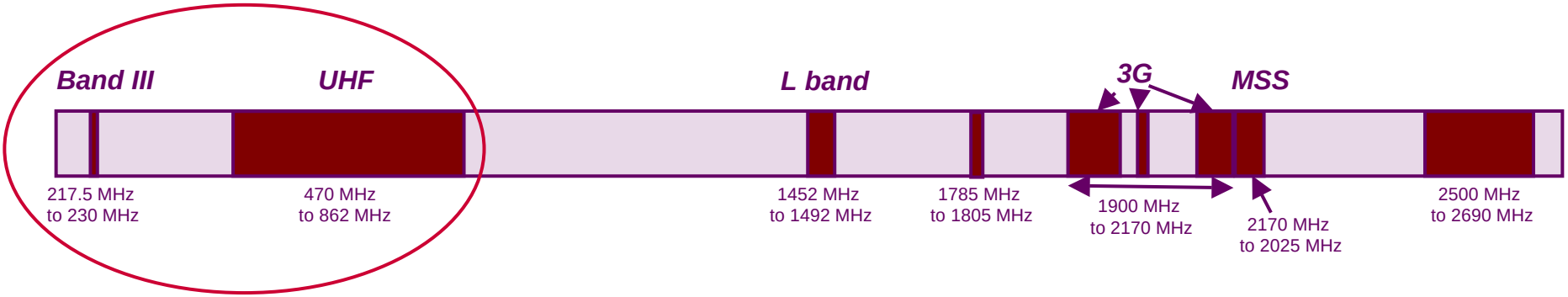
Programme making



Licence exempt low power (eg wireless hubs in-home)

Mobile multimedia

Spectrum opportunities for mobile multimedia



Increasing antenna size and reducing capacity

Reducing propagation range and increasing transmitter network costs

Ideal range?

DVB H HANDHELD

World DAB

IPWireless Generations Ahead

TDtv

Should spectrum be reserved for mobile multimedia?

- UK does not favour “old model” of harmonisation – in which regulators reserved particular bands for particular technologies and/or uses
  - in many cases, excessive harmonisation has reduced spectrum availability for long periods: TFTS, ERMES, Maastricht Arrangement
  - GSM a major success – but now GSM Directive is major constraint on change of use in 900MHz band

- But this does not mean no need for any kind of harmonisation; “new model”
  - making similar frequencies available to market, to similar timescales, across EU, can allow operators to realise economies of scale more easily
  - no need to reserve exclusively for particular uses/technologies; framework should be flexible and consistent with principles of WAPECS

- The market can make better decisions than the regulator, but the regulator can:
  - increase flexibility for users of spectrum,
  - reduce regulatory intervention to minimum required
  - release spectrum to market;
  - introduce trading, liberalisation; and
  - hold technology- and use-neutrality as key general principles

Conclusions

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- After a significant international effort over a number of years the Regional Radio Conference delivered a flexible plan that fully met the requirements of most of the participants
- The spectrum that was the subject of the conference is in high demand
- A number of mobile TV technologies can be used in this spectrum and the flexible that the RRC has allowed across Europe will mean that the GE06 agreement will not restrict that use
- But focus of RRC on broadcasting means that is would be difficult to find internationally-harmonised channels for alternative use
- There are other spectrum opportunities outside the scope of RRC-06