

Spectrum Leasing Sharing Criteria Licence Metrics

Kevin Delaney
Spectrum Policy and Planning Manager
Business Radio

14th September 2011

Eversheds, Leeds

Topics covered

- Spectrum Leasing
 - Context and Background
 - Roles and Responsibilities
- Sharing Criteria
- Customer Survey
- Licence Metrics
- Feedback from Industry



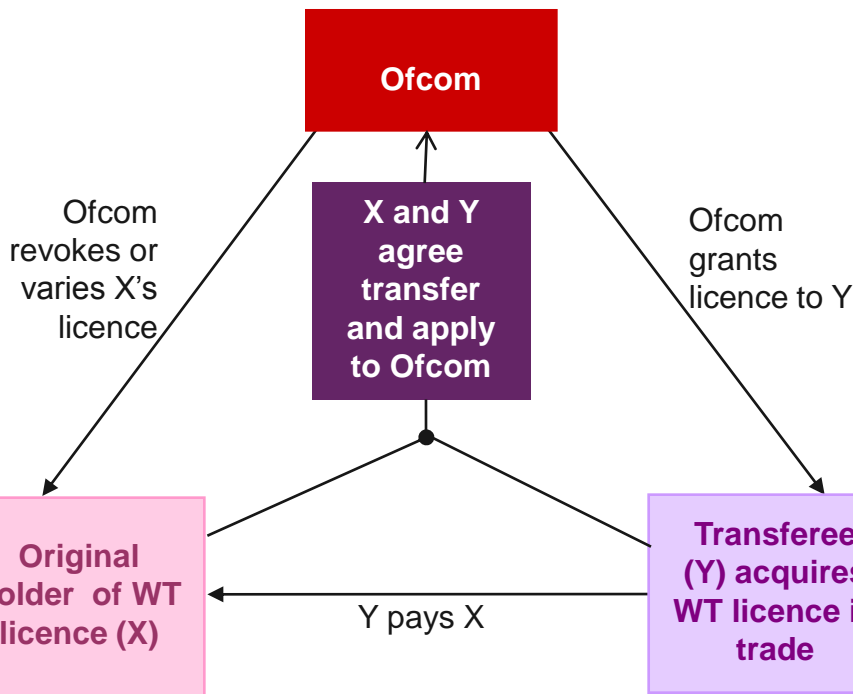
Spectrum Leasing

Spectrum trading: context and background

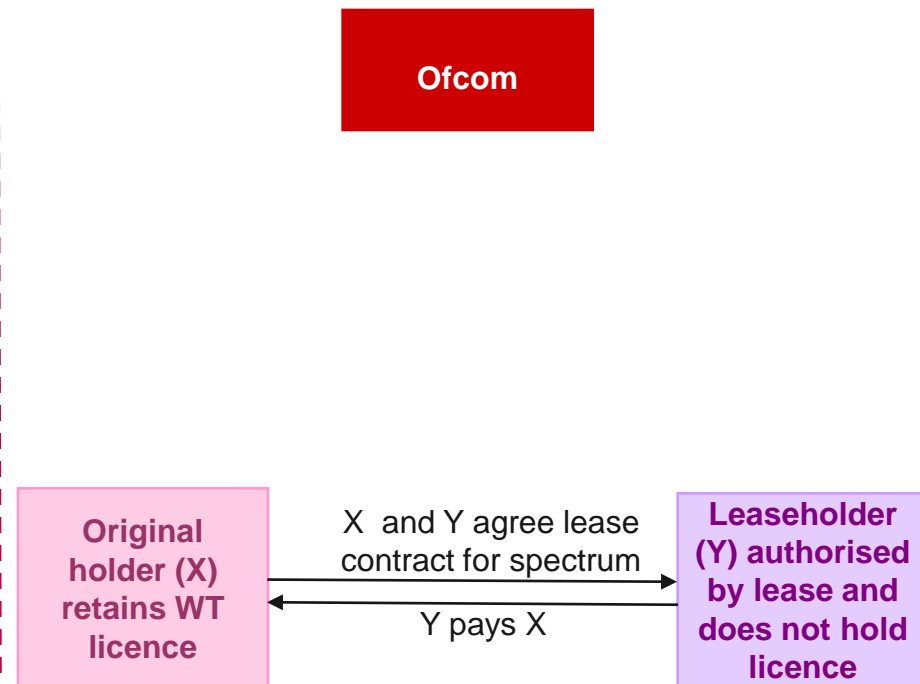
- Key component (since December 2004) of market-based approach to put spectrum into hands of those that can use it best
- Concerned that trading process (notification to Ofcom, grant of licence to purchaser, publication of details) was too burdensome and deterring trading
 - Consulted September 2009 on *Simplifying Spectrum Trading* in anticipation of changes to EU framework and Wireless Telegraphy (WT) Act
 - April 2010 interim statement announced intention to allow leasing once EU and UK law amended to make this possible
- EU trading rules relaxed with effect from 26 May 2011
 - Revised framework opens door to Member States to introduce leasing with lighter touch regulation than transfer
- UK well-placed to take early advantage
 - WT Act amended 26 May 2011 to allow leasing
 - Ofcom final statement 29 June 2011 detailed plans to introduce spectrum leasing

Difference between transfer and leasing

Transfer
Each party *licensed by Ofcom*

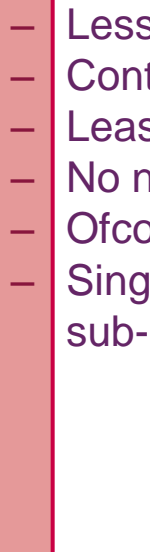


Leasing
Based on *contract between parties*



Leasing as alternative to transfer

Simpler process

- 
- A large, red, L-shaped arrow graphic is positioned on the left side of the slide. It starts as a vertical bar and then turns into a horizontal arrow pointing to the right, framing the list of points.
- Lessor (person granting lease) retains sole licence
 - Contracts with leaseholder to allow spectrum use
 - Leaseholder does not need to be granted a separate licence
 - No need to pre-notify Ofcom
 - Ofcom does not need to grant new licence or record details in licensing database
 - Single-level sub-leasing: A may lease to B who may sub-lease to C (but C may not sub-lease to D)
 - Lower transaction costs
 - Faster execution
 - Quicker access for new services

But *up to parties* to decide whether leasing or transfer suits them better

Role and responsibility of the lessor

- **Responsible** for negotiating terms of lease including technical boundaries on use of assignment within the licence terms and conditions
 - Includes 'band management' if assignment shared between leaseholders
- **Expected to:**
 - be first port of call if leaseholder experiences interference
 - take reasonable steps to resolve issues arising between leaseholders by enforcing contracts with them although Ofcom may ultimately need to be involved
- **Required to:**
 - keep records of leaseholders and sub-leaseholders
 - take reasonable steps to ensure that leaseholders comply with licence conditions
 - inform leaseholders of terms of licence, consequences of non-compliance and possibility of enforcement action including immediate close-down
 - have written lease contracts
 - provide for prompt and satisfactory resolution of disputes involving leaseholders

Process

- Leasing being **rolled out progressively** (for operational and resource reasons) beginning with Area Defined BR and [most] auctioned licences
 - Currently finalising business and process changes and text of licence variation
- Initially proceeding by **individual licence variation**
 - Eligible licensees wishing to take advantage of leasing should apply for individual licence variations
 - Suppliers licences already contain necessary terms so don't need variation
- Might switch to **trading regulations** later if leasing extended to high-volume licence classes

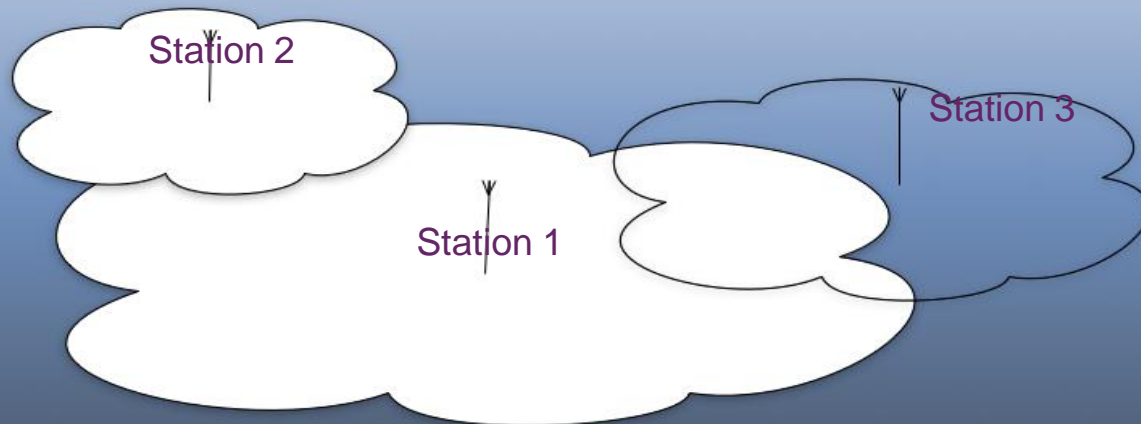
Leasing Technically Assigned shared licences

- Lessor can sublease to unlimited number of lessees
- In shared spectrum what is the impact on the neighbours
- Impact on Ofcom assignment tool
 - we lose sight of use on the channel as lessees do not hold a licence with us
 - difficult to offer a quality of service to licence holders
- How will you ensure your lessees share equably with adjacent users
- How will you cope with interference resolution
- Help us help you make the most of leasing to secure optimal spectrum use
 - Please send feedback on leasing process and suggestions for FAQs to Laurence.Green@ofcom.org.uk, Principal Policy Advisor or Paul.Jarvis@ofcom.org.uk, Head of Business Radio

Sharing Criteria

Shared Coverage

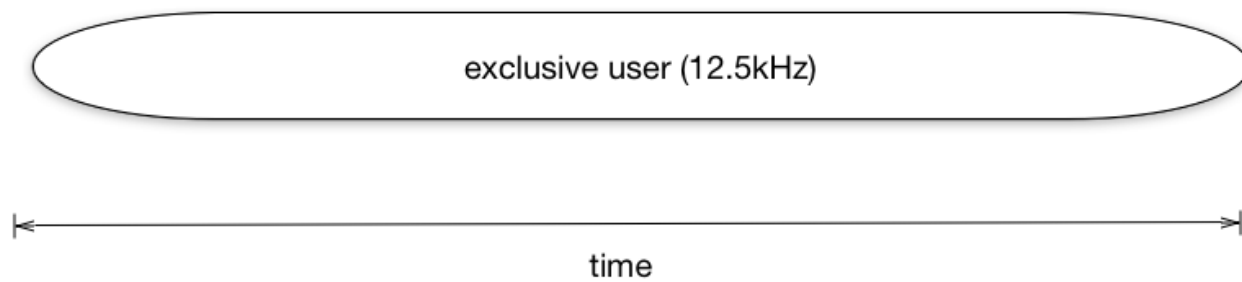
Station 1 has about 25% of his coverage shared by other users
 Station 2 shares about 20% of his coverage with Station 1
 Station 3 shares about 30% of his coverage with station1
 Our existing test checks that 50% is not exceeded
 Current algorithm considers the statistic distribution of mobiles.



Consider 3 assignments with shared coverage areas:

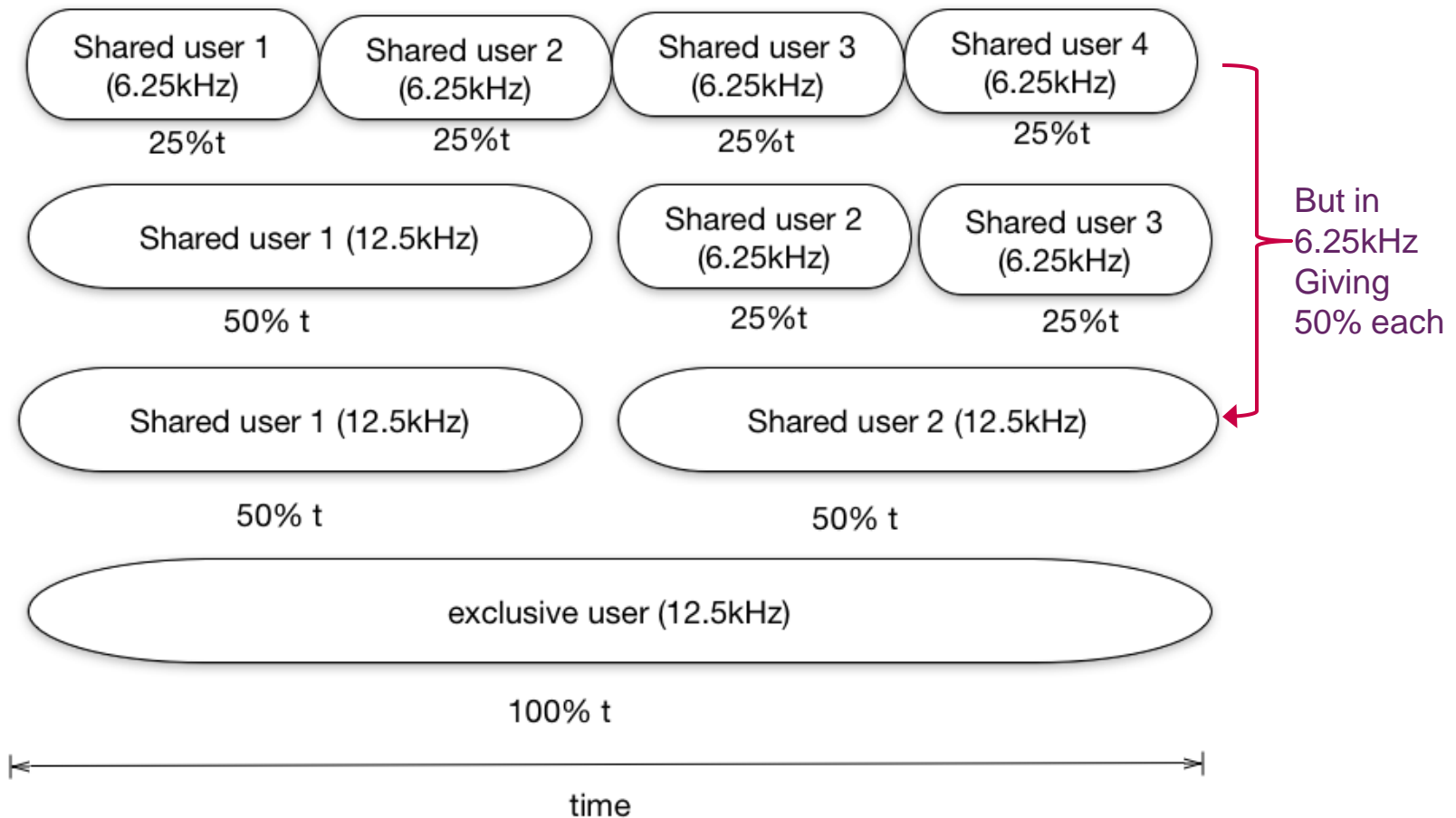
Lets think about the time that is available to a user

PMR Channel Sharing



If both of the original users change to digital technology then 4 users share 2 x 12.5 kHz so in this case we revert to:

PMR Channel Sharing



Questions re Sharing Criteria

- Should the same assignment criteria apply to all environments to ensure consistency of assignment
- Should there be a 50% rule
 - Different business rules for conurbations
- Should we keep loading shared channels until users say stop?
- Could Dealers manage this effectively
- At what point will digital comprise majority of the PMR market
- What percentage of sales are digital
- What is market share of digital

Customer Survey

BR Customer Qualitative Survey



- Undertaken by external agency  'bdrc bdrc continental
- Covered 35 BR licence holders split:
 - 12 dealers
 - 27 end users (new licence, existing licence and revoked)
 - 25 face-to-face interviews in April and May at customer premises
- There were two clear objects:
 - view the process of applying for a BR licence, including opinions of the BR section of the Ofcom website
 - to understand opinion of the BR licence renewal process and what could be changed to make the process easier
- The health warnings:
 - Small sample size for the individual groups
 - Based on user perception (cannot validate everything that was said)
 - Perceptions directly impacted by radio and online experience and actual level of engagement in the radio licence process

User Findings

- User perception differences between products:
 - **Simple Site licences**
 - ❑ Customers most positive – particularly if Dealer completed application
 - ❑ Five year fixed rate and offered great value
 - ❑ Straightforward application
 - **Technically Assigned licences**
 - ❑ Customers quite negative - pitched at experts
 - ❑ Information difficult to understand
- End Users have little knowledge about their licence and took little interest in it.
- Some have inherited role and do not always inform Ofcom about personnel changes
- Often Dealer completes application – so user not aware about the need for renewing a licence
- Some admit operating illegally but only realised this when upgrading equipment
- Few users aware about the Ofcom website and do not consider going online to find out more

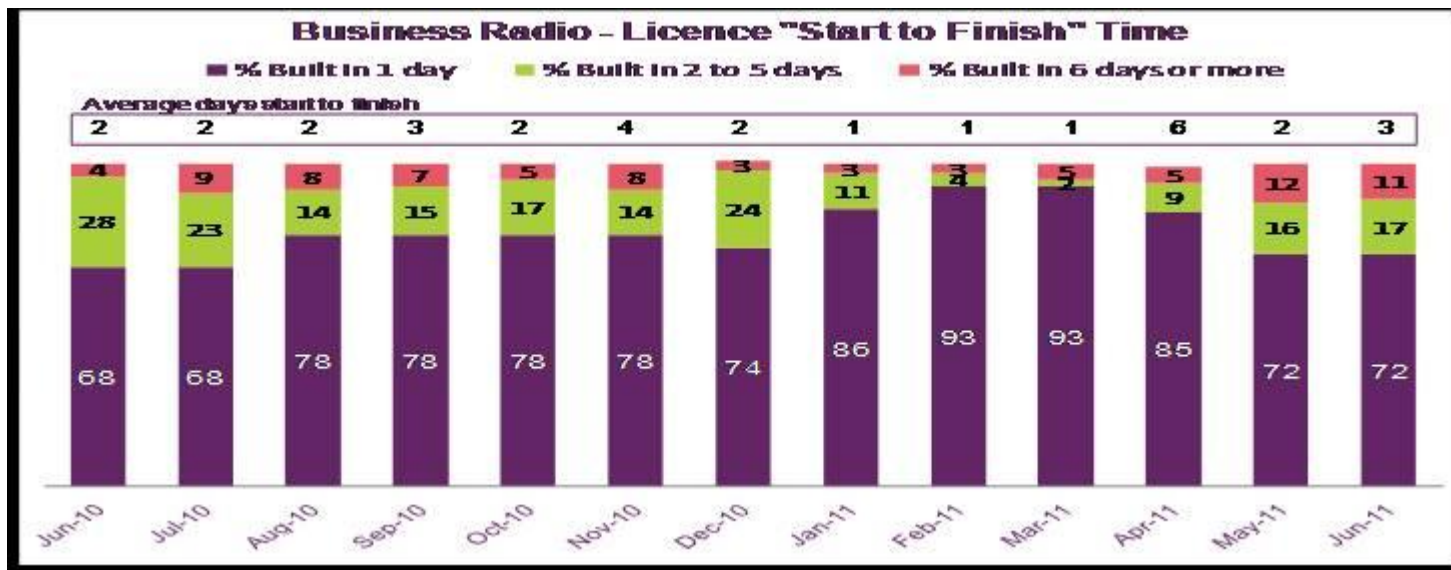
Dealer Findings

- Dealer reaction very mixed:
 - **Positives**
 - ❑ Online applications replacing paper – one of the best improvements
 - ❑ Enforcement colleagues well informed and supportive
 - ❑ Back office staff knowledgeable and very helpful
 - ❑ Spectrum management – felt Ofcom making a real effort and marked improvement from the Radiocommunications Agency
 - **Negatives**
 - ❑ End Users being fairly critical of application process
 - ❑ Information and guidance too difficult to understand for average person and results in mistakes
 - ❑ Although have great support for Ofcom want more in return (i.e. Account manager or named contact would be an enormous help in their role)

Licence Metrics

Licence Metrics

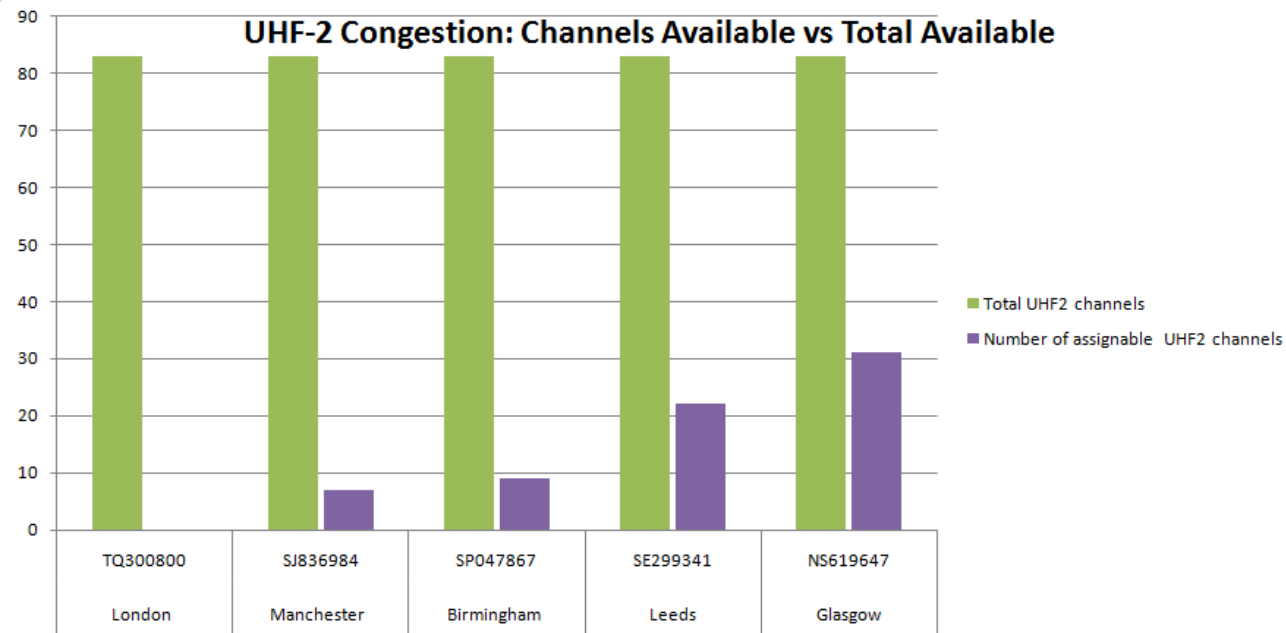
- Business Radio average to build a licence is 3 days from receipt of application



Licence Metrics – available spectrum

- Shown below is potential versus actual amount of spectrum available for assignment

Band	Total number of Channels	Number of assignable channels	% assignable
High	220	60	27.27%
UHF2	83	22	26.51%



Feedback and Questions

