Response of Speedcast International Limited to Ofcom's Statement and Consultation: "Improving Consumer Access to Mobile Services at 3.6 GHz to 3.8 GHz"

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Speedcast International Limited ("Speedcast") hereby provides is comments in the above-captioned Ofcom consultation. Speedcast supports improving consumer access to mobile services in the 3.6-3.8 GHz band in a manner that fully accommodates incumbent fixed-satellite service ("FSS") earth station receive operations in critical C-band frequencies. As discussed herein, Speedcast believes that Ofcom should adopt a modified version of its Option A that (i) enables continued licensed access to the 3.6-3.8 GHz by FSS earth stations to the maximum extent feasible; (ii) appropriately allocates the costs of spectrum sharing or incumbent relocation (where necessary) to new entrants; and (iii) maximizes the use of the 3.6-3.8 GHz band by enabling future earth station deployment on a licenced basis.

I. Introduction

On 28 July 2017, in its *Statement and consultation on improving consumer access to mobile services at 3.6GHz to 3.8GHz*,[1] Ofcom set out its decision to make the entire 200 megahertz of spectrum from 3.6-3.8 GHz available for terrestrial International Mobile Telecommunications (IMT) wireless services.[2] Ofcom reached this decision despite current use of this band for space-to-Earth receive operations associated with C-band satellite services in certain areas of the United Kingdom, and despite the significant detrimental effect of terrestrial IMT services on existing C-band earth station licencees.[3]

The Consultation requests input from interested parties regarding two alternative proposals for implementing Ofcom's decision. Option A would permit existing licencees to retain access to the affected spectrum, with C-band earth station receive operations taken into account and protected from interference under the terms of any new terrestrial IMT licences, while increasing fees levied on existing users to reflect the extent of the resulting impact on mobile deployment.[4] Option B, for which Ofcom expresses a preference, would involve varying C-band earth station licences to terminate the licenced receive operations in the affected band, effective on 1 June 2020.

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1 Ofcom Statement and Consultation, "Improving Consumer Access to Mobile Services at 3.6GHz to 3.8GHz," 28 July 2017, *available at:* https://www.ofcom.org.uk/consultations-and-statements/category-1/future-use-at-3.6-3.8-ghz ("Statement and Consultation").

2 Statement and Consultation, at 26 (§ 5.57).

3 *Id.* at 32 (§ 6.26) (concluding that, "[c]oexistence between mobile and the satellite earth stations and fixed links users . . . would be very challenging").

4 *Id.* at 34 (§§ 7.3-7.4).

After that date, C-band earth station receive operations would be permitted in that band on a licence-exempt basis only, without protection from terrestrial IMT users.[5]

Earlier this year, Speedcast purchased CapRock Communications International Limited ("CapRock"), which holds certain C-band earth station licences that will be affected by Ofcom's decisions in this matter. As a stakeholder that is impacted by Ofcom's decisions in this consultation, Speedcast believes that Ofcom's decision to introduce mobile services in this band[6] will cause grave harm to providers and users of C-band satellite services, which will be exacerbated if Ofcom proceeds to implement its decision in accord with Option B.

As discussed below, Speedcast believes that Ofcom should afford incumbent C-band earth station licencees protection from harmful interference on their licenced frequencies, particularly in light of the large capital investment required for satellite space station and earth station facilities. Existing Option A places an inappropriate and unnecessary monetary burden on incumbent licencees simply because their existing operations must be accommodated by new entrants. Option B is even more non-viable, however, because it would prematurely terminate the spectrum usage rights of Speedcast and other incumbent licencees as of an arbitrary date, without regard for the substantial capital investment and contractual obligations that those incumbents have assumed in reliance on those licences.

A better approach would be to enhance Option A to accommodate existing earth station licences and even permit new deployment, while at the same time facilitating IMT deployment in the 3.6-3.8 GHz band. Specifically, Option A could be modified to eliminate the unnecessary and penal spectrum fee increase proposed by Ofcom, grandfather existing C-band earth station sites and allocate costs of accommodating spectrum sharing on new IMT network operators. Ofcom also could permit additional C-band earth station receive operations in the 3.6-3.8 GHz band beyond a specified minimum distance from IMT base stations, with future base stations accommodating earth station receive operation. In this way, Ofcom can facilitate reasonable growth in both services based on a "first in time" principle that would encourage rather than preclude spectrum use.

II. Background

As noted in the CapRock *Response to Ofcom's Request for Information Regarding Use of 3.6-3.8 GHz Band*,[7] Speedcast and CapRock jointly operate three teleport facilities in the UK – Demore Road and Newton Road in Scotland (legacy CapRock) and Shrewsbury in England

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5 *Id.*at 35 (§ 7.5).

6 Statement and Consultation, at 26.

7 Response *CapRock Communications International Limited* to Ofcom's Request for Information Regarding Use of 3.6-3.8 GHz Band, submitted to Ofcom by Mr. Carlos Nalda, LMI Advisors, 15 April 2017.

(legacy Speedcast) – with a total of 11 C- band gateway earth stations capable of operating in the 3.6-3.8 GHz band. All three UK gateway sites support maritime and remote users throughout Europe, Africa and Middle East regions, including offshore oil and gas platforms in the North Sea, and represent a vital communications link to these otherwise isolated facilities. Satellite-based connectivity often is the only available service for safety, security, operational and other critical communications needs.

Market trends in this region have only pointed to signs of growth in the C-band. For this reason, the existing C-band capability in the UK region played a significant role in Speedcast's decision to acquire the CapRock global satellite communications business, as part of a larger effort to bring new services to global customers.[8] Together, Speedcast and CapRock have been heavily investing in their UK facilities in order to maximize their utilization, bringing in traffic that was previously downlinked at foreign teleport facilities. To this end, expansion of the Shrewsbury facility is underway, where Speedcast is undertaking infrastructure upgrades necessary to use teleports in the United Kingdom to meet the increasing throughput needs of our customers throughout the hemisphere. CapRock and Speedcast have more than 170 employees supporting their UK operations, with roughly 150 of those based in Aberdeen, Scotland, where CapRock is also currently recruiting for additional positions to support its increased activities in the region.

This rapid growth will undoubtedly be slowed by Ofcom's decision, and the company will have to seek options to minimize the impact on Speedcast's customers in the UK and throughout the hemisphere.

III. Discussion

While Speedcast understands Ofcom's desire to create a conducive environment for the rollout of IMT technology, it cannot agree with either approach proposed by Ofcom. Instead, Ofcom should allow C-band earth station licencees to retain access to the 3.6-3.8 GHz band, effectively grandfathering existing C-band earth station sites, without any increase in spectrum fees. In addition, to the extent additional costs or financial losses are suffered by incumbent licencees as a result of Ofcom's decision in the proceeding, these costs and losses should be reimbursed by new IMT networks operators using the 3.6-3.8 GHz band. Finally, Ofcom should permit additional C-band earth station deployment on a protected, first-in-time basis.

[8] *See* Speedcast Completes Acquisition of Harris CapRock (Jan. 3, 2017), available at: http://www.speedcast.com/speedcast-completes-acquisition-of-harris-caprock/.

A. Response to Question 1: ***Do you agree with our proposed approach towards registered fixed link and satellite earth stations users of the 3.6GHz to 3.8GHz band?***

1. Options A and B Would Be Severely Disruptive and Impose Substantial Costs on Satellite Service Providers

It is not clear that the options proposed by Ofcom fully consider the impact of IMT deployment in the 3.6-3.8 GHz band on incumbent licencees or other potential approaches that can be pursued to accommodate the interests of incumbent operators and new entrants for the public's benefit. Speedcast believes that appropriate operational and regulatory provisions can maximize spectrum use and services provided by C-band earth station operators and IMT interests.

High-power terrestrial IMT transmissions that interfere with C-band receive frequencies in the UK will adversely impact Speedcast's use of its licenced facilities throughout the region. C-band satellite transmit and receive frequencies are paired and hard-coded into the satellites themselves. As a result, if Speedcast is unable to receive on 3.6-3.8 GHz, that will preclude its customers' use of a corresponding 200 MHz of C-band uplink spectrum. This impact will be felt, not only in the UK, but throughout the hemisphere, and will impact satellite and earth station licences issued by dozens of nations, primarily in ITU Region 1.

In addition, high-power terrestrial IMT base station and user transmissions in the 3.6-3.8 GHz band can effectively prevent the entire C-band downlink from being used because they overpower (or saturate) the ability of earth stations to receive any satellite signal in the entire receive band. As a result, in many cases it may be necessary to replace low noise block (LNB) downconverters to those that only receive signals in the remaining C-band downlink spectrum. Such a technical necessity will have highly significant costs that should be addressed by Ofcom.

Because of these issues, in particular LNB saturation, Option B is effectively non-viable because establishing unprotected earth station operations in the 3.6-3.8 GHz band effectively would preclude use of the entire C-band downlink. Further, the options Ofcom offers under Option B to earth station licencees – migrating services to other frequencies, using alternative technologies and using alternative sites[9] – are inadequate and unworkable.

Speedcast believes these options have not been sufficiently considered, particularly with regard to compensation of earth station licencees for the associated costs and impact on their services. Migration of services to other frequencies is unlikely to be possible in every case because frequencies may not be available and, even if they were, earth station licencees are left with stranded infrastructure that is unusable, at least in significant part, for which they can obtain no revenue or return. Furthermore, transition to alternative C-band spectrum will preclude

[9] *Id.* at 42 (§ 7.48).

additional revenue generation using the bands to which prior customers were moved. It is also certain that the resulting compression of the C-band will increase congestion and further limit operational flexibility. Even if it were possible, migration to other parts of the C-band will require satellite service providers to renegotiate long-term commercial arrangements with satellite operators.

Other satellite bands also do not provide a viable answer. Customer terminals have fixed capabilities set to particular frequencies that cannot be adjusted between C-band, Ku-band or other FSS bands. In order to migrate to a new frequency, all earth station licencee and customer equipment will need to be replaced. Of course, this would be an extremely costly and time-consuming process.

Neither will the use of alternative technologies be universally feasible. In fact, the high cost and inherent limitations of satellite service mean that few customers would elect satellite if alternative terrestrial service were feasible. Speedcast's customers very often require broadband connectivity to locations that terrestrial service simply cannot reach, such as cruise ships, commercial merchant or fishing vessels, oil platforms, ferries, mines, or other remote sites, where the very infeasibility of terrestrial options is the reason why they elect to use satellite services. Depriving access to C-band for satellite services will leave these customers (which often require reliable connectivity to mitigate human safety risks) with fewer communications options.

Likewise, the use of alternative sites will not be satisfactory, particularly with Option B, the deployment of IMT networks could occur in any location and LNB saturation and other factors will preclude C-band earth station receive operations throughout the entire country. The direct costs and service disruption of one or more relocations would be prohibitive and, of course, the potential use of alternative sites outside the UK would be similarly non-viable.

For these reasons, Speedcast submits that Option B is unworkable and should be rejected. Even the UK Space Agency "cautioned that Ofcom was likely to have underestimated the potential impact of its proposals given licence exempt use."[10] Thus, Ofcom should focus on adapting Option A as the potential foundation for enabling IMT access to the 3.6-3.8 GHz band.

2. The Proposal to Vary Satellite Service Provider Licences on 1 June 2020 Date is Neither Reasonable Nor Feasible

The proposed 1 June 2020 sunset date for satellite spectrum usage rights in the 3.6-3.8 GHz band is far from "reasonable." Such a short time period upsets settled expectations on which licencees have invested substantial capital. Relocation will take time, planning, and itself cause FSS operators to incur additional costs with which they otherwise would not have to cope.

[10] Statement and Consultation at 37-38 (§ 7.19).

Satellite infrastructure, including both spacecraft and earth stations, require prodigious capital investment, which incumbent satellite operators have made in reliance on the primary UK allocation of 3.6-3.8 GHz to fixed-satellite services (FSS). The useful life of those facilities exceeds the remaining term of Speedcast's UK earth station licences. Failure to provide a sufficient transitional period would strand those substantial capital investments and substantially impair the continuity of satellite services. In fact, as discussed above, Speedcast has recently been investing substantial new capital to revitalize and expand its UK earth station facilities, including purchase and deployment of new C-band antennae at its existing teleport facility in Shrewsbury.

The high cost and long planning, deployment, and useful life cycles of satellite infrastructure mean that satellite service provider contracts typically carry lengthy terms, both with customers (frequently 3-5 years) and with satellite operators (often 10 years or more). Thus, there will be many contracts in 2020 that will need to be renegotiated or broken prematurely. This will affect not only those using the 3.6-3.8 GHz range, but potentially also those higher in the band that may suffer knock-on effects from the compression of C-band satellite spectrum. Thus, to vary satellite service provider' licences earth station licences as of 1 June 2020, as proposed by Ofcom,[11] or any similarly short-term arbitrary date, would strand substantial capital investment and drive mitigation costs sharply higher.

The relocation of large earth station facilities is a costly and time-consuming process. Not only would Speedcast need to identify, evaluate, and select one or more candidate sites, but it would then need to obtain the necessary permits and authorizations; satisfy any environmental, use, zoning, or other local concerns; engage building contractors; and complete the construction and relocation of the facilities themselves. Moreover, satellite earth station operators rely on a work force with specialized training in the use, operation, maintenance, and repair of the earth station facilities, and those skills are not widespread. There would be a substantial cost of relocating those employees and their families to the new site, as well as substantial difficulty in attracting those workers and their families to locations sufficiently remote to address the interference concerns.

This process simply could not be completed by mid-2020. Given the cost and complexity of the process, it could easily run into the millions of pounds to physically relocate a teleport facility to a more remote area where it could continue to operate in C-band. While the Statement and Consultation cites an estimate from Orange that "migrating a satellite earth station service from C-band to Ku band could cost less than £500,000 for a large dish,"[12] it does not discuss the cost of any alternatives for a satellite service provider that needs to continue to operate in C-band.

Thus, if Ofcom proceeds with Option B, Speedcast believes that C-band FSS incumbents' rights should be protected for a minimum of 15 years. That period is necessary to enable a new generation of spacecraft that take into account the repurposing of this spectrum in the UK and

[11] Statement and Consultation at 50 (§ 8.8).

[12] Statement and Consultation at 43 (§ 7.51).

elsewhere around the world to be designed, constructed, and launched in due course. It will also allow incumbent earth station licencees and C-band satellite service, as well as their customers, to undertake an orderly transition, while minimising the amount of stranded capital investment at risk. Finally, it will allow long term transponder leases to expire and be renegotiated to account for this policy change in the ordinary course of business. Furthermore, if terrestrial IMT services produce greater benefit than C-band satellite services, then the new IMT entrants could efficiently compensate incumbents for the extraordinary costs associated with abandoning sunk capital investments and giving way. A new terrestrial IMT entrant that finds it economically efficient to do so could thus "buy out" the C-band FSS operator before the end of this 15-year period.

3. Ofcom Should Adopt a Modified Option A

Speedcast prefers Option A, which would help afford it the continued certainty of protected, licenced operations in the 3.6-3.8 GHz band. But, Option A does not go far enough to appropriately allocate the costs of spectrum sharing to new IMT entrants and the proposal to increase fees on satellite licencees is fundamentally flawed. Rather, it inappropriately penalizes incumbent licencees through a proposed spectrum fee increase, does not adequately allocate costs of spectrum sharing to the new IMT entrants and fails to maximize spectrum use and efficiency by permitting future earth station deployment on a protected first-in-time basis. Speedcast urges Ofcom to adopt a modified Option A, as discussed below.

Incumbent licencees should not bear the burden of proving the value of continuing to operate in accord with their licence conditions for their full licenced term, or compensate new entrants for increased costs or foregone opportunities. The very purpose of the licence is to grant the licencee (in this case, satellite service providers) sufficient predictability and certainty for a fixed term to permit them to invest in capital, develop business, and incur contractual obligations with customers.

In this regard, the Statement and Consultation turns this well-settled approach on its head by suggesting an increase in spectrum fees to reflect the extent to which preservation of satellite service providers' licenced spectrum rights would increase deployment costs for terrestrial IMT entrants. Ofcom should not only reject this misguided notion but also should impose the costs of interference mitigation, equipment replacement and lost revenues (to the extent that the 3.6-3.8 GHz band cannot be used by earth station licencees) on new entrants. In this way, incumbents' operations can be accommodated and new entrants can include the incremental spectrum sharing costs into their business plans.

If new entrants or new technologies have emerged that create superior public benefits or opportunities for economic growth, then principles of economics dictate that the new providers should rationally be willing to compensate the incumbents for their costs of abandoning sunk investment in capital, relocating their operations, and breaking or restructuring their contractual commitments.

Furthermore, to enable the most intensive use of the 3.6-3.8 GHz band, Ofcom should permit future earth station deployment utilizing the 3.6-3.8 GHz band on a protected first-in-time basis. If demand for terrestrial IMT services is as high as Ofcom assumes, then providers of those services may be expected to build out terrestrial networks relatively quickly following Ofcom's authorization. If on the other hand, deployment lags, then satellite service providers should not be precluded from siting new earth stations that may become necessary to meet demand for their services in areas where they will not interfere with then-existing terrestrial IMT operations. Once licenced, those earth stations should be protected under Option A to the same degree, and for the same reasons, as those that currently exist.

B. Response to Question 2: *Do you have any comments on our assessment of the likely costs and benefits of our proposed approach?*

1. More Detailed Analysis of the Costs of Implementing Mobile IMT Services in the 3.6-3.8 GHz Band Is Necessary

Speedcast does not believe that Ofcom has sufficiently considered the magnitude of the impact and associated costs that Option B will impose on existing licencees. While in part this is likely due to the fact that stakeholders "provided limited information on the likely scale of these costs in response to the October consultation,"[13] the fact remains that the costs are extremely difficult to determine at this point in the process.

The costs of Ofcom's proposals to incumbent licencees will be substantial and the disruption of services to important industry sectors, including the UK oil and gas and maritime industries, will be severe. In contrast, the cost of accommodating incumbent operations can be factored into new entrant business plans with minimal impact on public services. At the very least, Ofcom should require new terrestrial IMT licencees in this band to compensate incumbent licencees for costs incurred to protect their operations from interference or losses suffered from a decision to vary their licences. Otherwise, licencees that have invested millions of pounds in infrastructure and have long been providing a critical service to the UK area will suffer multiple losses of unduly bearing the burden of rolling out IMT technology without any of its financial benefits, carrying stranded infrastructure investment and losing substantial revenue as a result of an inability to use a substantial amount of spectrum previously available to provide services.

Option B, and even potentially Option A, will impact Speedcast's ability to fulfill its contractual obligations to its customers, which in many cases establish the specific frequency bands and carriers on which their services will operate. It is far from clear whether and to what degree changes to those frequencies will be possible. For example, depending on the transmission technology employed, once a specific frequency is used anywhere in the satellite coverage area it may be unavailable to any other user of that satellite. It is far from certain

[13] Statement and Consultation at 43 (§ 7.51).

whether there is sufficient existing C-band satellite capacity to accommodate wholesale relocation of all affected satellite services to frequencies elsewhere in the band.

Costs of renegotiating Speedcast's contracts with existing customers and satellite operators will vary dramatically depending on how readily the counterparties are able to accommodate the necessary changes. Relocation costs will vary over a broad range depending on the location and characteristics of the new site. Other implementation costs, likewise, will depend on the timing of the change because, with greater notice, Speedcast could plan for the impact in the context of the standard contract renewal cycle.

2. Ofcom Should Create a Mechanism to Require New Terrestrial IMT Entrants to Compensate Incumbent Licencees for the Costs of Interference Mitigation, Relocating or Abandoning Their Businesses

To the extent that Ofcom believes that the public benefits of terrestrial IMT service at 3.6-3.8 GHz outweigh the harms to C-band satellite services, Ofcom should create a process under which new terrestrial IMT entrants compensate incumbent C-band satellite service providers for the costs that satellite service providers will incur to mitigate the resulting interference including, as the case may be, the costs of equipment necessary to mitigate interference, relocate their facilities or teleport operations, or abandon their businesses altogether. Doing so would ensure that the decision to undertake the transition to terrestrial IMT services in this band is, in fact, economically efficient: if terrestrial IMT service is, in fact, the "highest and best use" of this spectrum, then it will prove economically rational for the new terrestrial service providers to compensate the satellite incumbents to vacate the band.

It is clear, however, that widespread replacement of teleport earth station and customer equipment throughout the hemisphere, renegotiation or termination of customer contracts and satellite operator agreements, and relocation of personnel and facilities are all, as discussed above, far more costly and complicated undertakings than the Statement and Consultation reflects. LNB saturation from interference in the 3.6-3.8 GHz band would preclude satellite service providers from using *any portion* of the C-band unless and until they replace each teleport LNB with one that does not receive those frequencies. Not only would that process be very costly, it would preclude licence-exempt operation in that band. With less spectrum available, satellite service providers will have diminished capacity to serve customers, with correspondingly more limited opportunities to earn revenue from their services.

A mechanism for facilitating payment of compensation frequently accompanies policy changes that displace incumbent operators in favor of new entrants that regulators believe will offer greater economic or public interest benefits. Ofcom should establish a process for new entrants to compensate the current incumbent FSS operators for costs that may incude, as the case may be: transponder lease and customer service contract termination costs, foregone customer revenues, migration to new spectrum or new locations, interference mitigation and equipment replacement costs, and migration to costly new technologies.

Such an approach of compensating negatively impacted incumbents is not new to Ofcom. In 2011, during the rollout of 4G technology, Ofcom introduced the possibility of interference for digital terrestrial television (DTT) users.[14] To offset this possibility for the relatively few users, Ofcom setup "at800", an implementation body that managed mitigation measures for DTT. Ofcom proposed (and ultimately adopted) that "the costs of creating this body and the work that it carries out should be borne predominantly by the new licencees of the 800 MHz spectrum."[15] More recently, in October 2016, Ofcom published a spectrum management decision to work towards accelerating the 700 MHz clearance programme by 18 months and releasing the spectrum for mobile services by May 2020, instead of September 2021.[16] As a result, Ofcom served notice on equipment owners that operate in the 700 MHz band that they will no longer have access to spectrum in this band from 1 May 2020. Ofcom has decided to fund a grant scheme to support equipment owners that have to vacate the 700 MHz band earlier than expected by providing funding equivalent to the residual value of equipment operating in the 700 MHz band which they need to replace at the time of clearance.[17]

Similarly, this practice of compensation has also been used by other successful regulators such as the US Federal Communications Commission (FCC). Recently, when the U.S. reorganized the 800 MHz band to accommodate the communications needs of public safety first responders and other emergency services, the FCC established a Transition Administrator to oversee the distribution of funds for service reconfiguration and spectrum relocation costs incurred by incumbents.[18]

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[14] *See* Consultation on coexistence of new services in the 800 MHz band with digital terrestrial television, 2 June 2011. Available at: https://www.ofcom.org.uk/consultations-and-statements/category-1/coexistence-with-dtt.

[15] Consultation on coexistence of new services in the 800 MHz band with digital terrestrial television, 2 June 2011, §1.10. See also §§6.49 - 6.56.

[16] Consultation: PMSE clearing the 700 MHz band - Support for PMSE equipment owners, 20 April 2017, §1.1. Available at: https://www.ofcom.org.uk/consultations-and-statements/category-1/support-pmse-equipment-owners?utm_source=update&utm_medium=email&utm_campaign=pmse700mhz.

[17] Consultation: PMSE clearing the 700 MHz band - Support for PMSE equipment owners, 20 April 2017, §1.2.

[18] *See, e.g., Improving Public Safety Communications in the 800 MHz Band*, WT Docket No. 02-55, Report and Order, Fifth Report and Order, Fourth Memorandum Opinion and Order, and Order, FCC 04-168, 19 FCC Rcd 14969 (2004), at ¶¶ 177-178 ("Band reconfiguration will be costly . . . . Under the band reconfiguration plan, the principle cost component will be borne by Nextel, which will pay for all channel changes necessary to implement the reconfiguration. Nextel is obligated to ensure that relocated licencees receive at least comparable facilities when they change channels."), *available at:* https://apps.fcc.gov/edocs_public/attachmatch/FCC-04-168A1.pdf. *See generally* FCC 800

IV. Conclusion

Speedcast understands why, as a matter of policy, Ofcom is seeking to open up the 3.6-3.8Hz band for IMT rollout. However, it must disagree with the proposed Option B approach to implementing this policy because it puts an inequitable and disproportionate share of the burden of this transition on incumbent licencees that will be deprived of the expected benefits of their licences, and will never otherwise have the opportunity to recover their investments. The proposal fails to appreciate the cost and complexity involved in shared co-existence between IMT and satellite earth stations and their proposals will, for the foregoing reasons, leave millions of pounds of investment stranded in these bands and foisting further millions in mitigation costs on incumbents alone. This loss will be solely incurred by legitimate licencees that will have no hope of recovering their costs and the customers who rely on satellite communications as well as their customers.

Nevertheless, Speedcast is willing to work with Ofcom to ensure a smooth a transition for the wider public, provided that those in the best position to shoulder the full costs of an IMT rollout do so. In this context, Speedcast proposes that, as it has done in the past, Ofcom adopt an approach, such as a modified version of Option A, that will protect incumbent licencees spectrum usage rights without increasing fees, and require new terrestrial IMT service providers to cover costs of displacing the incumbents, to the extent it is economically efficient to do so.

MHz Band Reconfiguration: https://www.fcc.gov/general/800-mhz-spectrum. *See also* 800 MHz Transition Administrator: http://www.800ta.org/content/aboutus/.