

Ofcom consultation on Global Titles and Mobile Network Security

BT Group Response

BT Group

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1 We are supportive of Ofcom’s objectives and already have controls in place to prevent misuse of our GTs

1.1 We fully support Ofcom’s goal to prevent bad actors from using GTs for malicious activities, to protect customers from malicious communications and to restore the reputation of the +44 numbering range. Like Ofcom, we do not want bad actors using GTs to target our network or our customers. We recognise that the UK (+44) numbering range has been cited by Ofcom as a prolific source of malicious signalling worldwide¹ and agree that change is needed in the way providers with UK number allocations control and monitor the GTs they loan to third parties.

BT’s MVNO customer models²

1.2 Our MVNO/MVNE/MVNA customers can choose from 4 commercial offerings: Full MVNO, Enhanced Service Provider, Service Provider and Branded reseller. Each of these offer different levels of technical integration with BT’s network. See Figure 1 below.

Figure 1 – BT MVNO customer models

Full MVNO Core network operator	Enhanced Service Provider MVNO IT & call control	Service Provider MVNO IT only	Branded Reseller Easy entry
Channel branding and proposition	Channel branding and proposition	Channel branding and proposition	Channel branding and proposition
Front office • Billing (BSS) / CRM / Payments	Front office • Billing (BSS) / CRM / Payments	Front office • Billing (BSS) / CRM / Payments	Front office • BT provided BSS/CRM solution
Back office • Call control & charging	Back office • Call control & charging (OCS)	Back office • BT enabler platform and OCS	
Core services • MVNO core network	Core services • Mobile network features and platforms. SIMs, Interconnectivity, IMS, Voicemail Roaming, Numbering etc		
Access coverage • BT bearers providing 2G, 4G and 5G coverage			

BT’s approach to GT leasing

1.3 BT does not generally lease GTs to third parties, however we do allow the use of our GTs in a limited manner upon request from an MVNO, where required for technical reasons and as part of a wider commercial agreement. We currently allow four MVNOs ✂ to use our GTs:

- **Full MVNOs** ✂ use the GTs alongside IMSI sponsorship to address technical constraints or improve customer experience.
- **Enhanced Service Providers** ✂ manage their own IN/SCP functions which allows call control, number translation and FMC type applications. They use our GTs to facilitate interconnect with EE’s network for those functions.

1.4 When onboarding a new MVNO customer we run due diligence checks to verify the MVNOs reputation and we include clauses in our contracts with them to prohibit fraud and misuse. We also have technical controls

¹ Ofcom consultation on Global Titles and Network Security para 3.80, [Global Titles and Mobile Network Security \(ofcom.org.uk\)](https://www.ofcom.gov.uk/consult/condocs/global/global_titles_and_mobile_network_security/)

² Please note when we refer to BT we are also including EE’s mobile network

in place to ensure we remain in the signalling flow and to monitor traffic spikes on our network which are often a good indicator of misuse:

Upfront due diligence	<p>When onboarding new MVNOs our due diligence checks include confirming:</p> <ul style="list-style-type: none">• If they are an MVNO already, (if not in the UK, then in another country)• If their brand would have credibility in the market• Their financial viability (e.g. credit rating)• The likelihood of addressing their target market• If they have the necessary technology themselves to operate an MVNO service (or have a credible technical enabler)• The high level MVNO solution required
Contractual controls	<ul style="list-style-type: none">• We have contractual clauses in our MVNO agreements to prevent fraud and misuse and to allow for suspension or termination of the service if we found any deliberate abuse/misuse.• We make clear that the service can only be used to support the contracted service and not for any other purpose (this includes the use of any GTs).
Technical controls	<ul style="list-style-type: none">• We always remain in the signalling flow (signalling gateway) for GTs used by third parties. All traffic relating to loaned GTs transits the BT/EE network allowing a level of control or blocking to be possible.• MVNO services and interfaces are monitored to catch any spikes in traffic, faults or capacity issues. This monitoring is near real-time and would allow BT to react to any change in usage/trend.• Individual GTs are allocated for the solution, we do not provide a range of numbers.

1.5 In addition to the controls already in place above, we are also in the process of implementing the measures set out the TSA Code of Practice³. This includes those designed to improve security and responsibility for loaned GTs (M3.06, M3.08 and M3.10). To date, we have not detected any misuse of our GTs or received any complaints about the GTs we allow third parties to use.

³ [Telecommunications Security Code of Practice \(publishing.service.gov.uk\)](https://publishing.service.gov.uk)

2 There is merit in exploring enhancing Ofcom's existing tools to achieve its objectives before imposing a ban

2.1 There are already a number of regulatory tools available which Ofcom could use to tackle GT misuse without the need to impose a blanket ban. We believe that Ofcom should explore these existing frameworks first to see if that addresses fraud and misuse from loaned GTs. We think Ofcom could do this in three ways.

1. Enforcing the existing GSMA Global Title Leasing Code of Conduct

2.2 For example, transposing some or all of the GSMA Code into Ofcom guidance e.g only allowing lessor routing for GTs and discouraging the general leasing of GTs. Many providers are already working towards compliance with the Code so this could be delivered quicker and with less disruption to existing MVNO's business models.

2. Using Ofcom's existing powers under the General Conditions to investigate and enforce on bad actors

2.3 GC B1.6 and B1.8 already require number range holders to ensure the effective and efficient use of telephone number and that customers of that number range holder should comply with Ofcom's B1 conditions:

***B1.6** Where Telephone Numbers have been Allocated to the Communications Provider, that provider shall secure that such Telephone Numbers are Adopted or otherwise used effectively and efficiently.*

***B1.8** The Communications Provider shall take all reasonably practicable steps to secure that its Customers, in using Telephone Numbers, comply (where applicable) with the provisions of this Condition, the provisions of the National Telephone Numbering Plan and the Non-provider Numbering Condition.*

2.4 Providers are expected to adhere to both the General Conditions (GCs) and Ofcom's Good Practice Guide⁴ on Sub-allocated and Assigned Numbers. These Conditions, coupled with the guidance⁵ (which covers due diligence and complaints handling) can serve as a tool for Ofcom to identify and investigate non-compliance.

2.5 We note that Ofcom has acknowledged evidence of ongoing misuse since publishing its guidance in 2022 and has found it challenging to investigate providers due to a) difficulties in detecting malicious signalling in a timely way and b) limited access to intelligence outside the UK. However, it remains unclear how these challenges differ from those encountered in other investigations, and whether Ofcom has initiated any enforcement action against providers based on this evidence of misuse.

2.6 If the source of the misuse can be traced to a specific range holder, Ofcom should be able to use its standard enforcement procedures to request relevant information from that range holder to support any investigation.

3. Telecoms Security Act

2.7 There are also two measures within the TSA Code of Practice which set standards on GT usage for UK providers. Providers are in the process of implementing these measures and Ofcom has an ongoing monitoring and enforcement programme assessing progress:

***M3.06** - Trust shall not be assumed based on the source of any incoming message. For example, 'UK' source addresses (e.g. +44 global titles in SS7) shall not be assumed to be trusted and shall not be allowed by default and*

⁴ [Annex 2: Good practice guide to help prevent misuse of sub-allocated and assigned numbers \(ofcom.org.uk\)](https://www.ofcom.gov.uk/guidance/good-practice-guide-to-help-prevent-misuse-of-sub-allocated-and-assigned-numbers)

⁵ [Annex 2: Good practice guide to help prevent misuse of sub-allocated and assigned numbers \(ofcom.org.uk\)](https://www.ofcom.gov.uk/guidance/good-practice-guide-to-help-prevent-misuse-of-sub-allocated-and-assigned-numbers)

M3.08 - Where providers allow others to use number ranges that have been allocated to them (e.g. GTs, IMSIs), they remain responsible for the activity related to that number range, and any further security implications. This does not apply in the case of MSISDNs shared through MNP.

M3.10 - Networks shall only send outgoing signalling in support of services permitted by the recipient. Guidance on what the GSMA has defined as permitted services is set out within Section 5 of GSMA's charging and accounting principles and Section 10 of GSMA's interconnection and interworking charging principles.

- 2.8 Measure M3.08 in particular reinforces Ofcom's General Conditions that it is the range holder who is responsible for any misuse activity by UK providers. We note that the TSA does not cover the Crown Dependencies but Jersey has already aligned its legislation with the UK Telecoms Security Act⁶ and therefore likely to also implement similar Code of Practice measures.

⁶ [TELECOMMUNICATIONS LAW \(JERSEY\) AMENDMENT REGULATIONS 202](#)

3 If Ofcom considers banning GTs necessary, it should carve out legitimate use cases

3.1 Ofcom acknowledged in its consultation that there are legitimate reasons for providers to loan their GTs to third parties e.g for MVNOs, network extension or outbound roaming. BT considers Ofcom’s proposed near-total ban on GT leasing to be overly restrictive. There are unintended consequences for MVNOs who legitimately use GTs. We therefore think that Ofcom should carve MVNOs out of any proposed ban. We further request confirmation that usage for our national roaming solution would not fall within the scope of the proposed ban.

MVNOs/MVNAs/MVNEs

3.2 A near-total ban could significantly impact the commercial offerings for our MVNO/MVNA/MVNE customers. This is concerning, especially since the consultation provides little evidence of misuse in this area. Number range holders have methods to prevent misuse by MVNOs on their networks. For instance, providers can maintain control over signalling and invoke contractual clauses to address fraud and misuse when identified.

3.3 A ban on the leasing of GTs could harm the current MVNO model. GT usage allows MVNOs to access key technical enhancements from MNOs without needing to develop these features themselves. This access is crucial for MVNO services, particularly to offer call routing propositions aimed at immigrant populations, allowing them to benefit from favourable carrier rates. Additionally, GTs support Single number translation services and fixed mobile convergence products for resellers and small businesses. Some full MVNOs also seek IMSI sponsorship (leading to GT loaning) to lower operating costs, enhance roaming access and improve the device experience for end customers.

3.4 If Ofcom proceeds with a ban, there are only two viable alternatives outlined in the consultation: MVNOs can either request their own number ranges from Ofcom or transition to a fully hosted solution. The table below highlights the implications for MVNOs and the customer experience of each of these alternatives. Ultimately, both options eliminate the benefits of GT access from MVNOs, negatively affect the end-user experience and involve significant drawbacks and costs associated with re-engineering the technical solution.

	Light MVNO/A⁷ to become fully hosted	Full MVNOs to obtain own numbering range
Impact to MVNO	<ul style="list-style-type: none"> • Loss of IN/SCP functions and FMC call control • Loss of USSD application • Large project to re-design and migrate (high cost) • Impact to business operational and support processes • Risk that they can no longer differentiate from competitors 	<ul style="list-style-type: none"> • Device experience reduced • No longer have a managed International Roaming solution & would have to build • Risk potentially needing regression testing for automotive applications with car manufacturers and to embed new IMSI/Modules carrying their own UK numbers
Impact on customer experience	<ul style="list-style-type: none"> • Loss of USP features • Less flexibility on how to top-up or manage account • Slower time to market • Re-contracting • BT become part of service journey, loss of autonomy 	<ul style="list-style-type: none"> • Downgrade in mobile experience (e.g. device needs manual setup) • Reduced coverage (Roaming) • Increased costs (Roaming) • Potential SIM swap/Module swap disruption. Or at least multiple over-the-air campaigns required to update SIM remotely

⁷ Enhanced service providers as set out in Figure 1.

Cost to BT⁸	✂	✂
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3.5 We are a further particularly concerned about the impact of a ban on MVNAs ✂

3.6 ✂

3.7 Due to the technical complexities involved in migrating MVNOs to either a fully hosted solution or having them seek their own number ranges, we will need more time than the 9 month implementation period proposed by Ofcom. We estimate it will take between 12 to 18 months to re-engineer the solution for each MVNO customer.

National roaming

3.8 We seek clarification that the ban on Global Title leasing would not impact the progress being made in the delivery of IoT solutions that use multiple mobile networks. ✂

⁸ There will also be an associated cost for the MVNO itself to migrate to a new model which we cannot comment on.

Annex 1 - Ofcom consultation questions

Consultation Question	BT Response
Question 1: Do you agree with our proposal to ban GT leasing to third parties? If not, please explain your reasons including how you would prevent malicious signalling by lessees.	<p>We do not agree with the ban as currently set out. We believe Ofcom has existing frameworks it can use instead within GCs, GSMA Code and TSA. But if it presses ahead with a ban the should be a carve out for legitimate use cases e.g MVNOs. See our response in section 3.</p> <p>We do not “lease” our GTs, but we do allow third parties to use them whilst maintaining control of signalling. In this model, fraud and misuse is unlikely.</p>
Question 2: Do you agree with our proposal to only include exemptions to our ban on GT leasing relating to intra-group and supplier use? If you consider that any other exemptions are necessary, please explain how these exemptions could be limited to prevent malicious signalling by lessees.	<p>We think that MVNOs should also be included in the list of exemptions. See our response in section 3.</p>
Question 3: Do you agree with our proposal to ban the creation of GTs from sub-allocated numbers by third parties?	<p>We agree – there is no legitimate use case we can think of that would require sub-allocation.</p>
Question 4: Do you agree with our proposals to strengthen our rules to prohibit the misuse of GTs by operators that hold UK mobile numbers and to provide supplementary guidance on the types of steps range holders are expected to take when providing a service to a customer (using a GT as an input) that has the potential to generate malicious signalling?	<p>We agree with the guidance Ofcom has proposed.</p>
Question 5: Do you agree with our proposal to strengthen our rules to prohibit the creation of GTs from numbers not allocated for use?	<p>We agree with this proposal – there is no legitimate use case we can think of for non-allocated numbers to be used to form GTs.</p>
Question 6: Do you agree with the proposed implementation period?	<p>If Ofcom goes ahead with its proposal to implement a total ban including MVNOs, we expect the time period for implementation is too short. We will need between 12-18 months to complete the technical process for each MVNO. We also have concerns that the MVNA business would be no longer viable.</p>
Question 7: Do you agree with our provisional impact assessment?	<p>Since publication of the consultation we have provided Ofcom with additional evidence on the wider impact which Ofcom could consider when making its final decision.</p>
Question 8: Do you agree with our proposed changes to the General Conditions of Entitlement, National Telephone Numbering Plan and Numbering Condition Binding Non-Providers?	<p>No we do not agree that there needs to be any changes to the numbering plan or numbering conditions to fulfil Ofcom’s objective to prevent misuse of GTs. See our response in section 2.</p>



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