

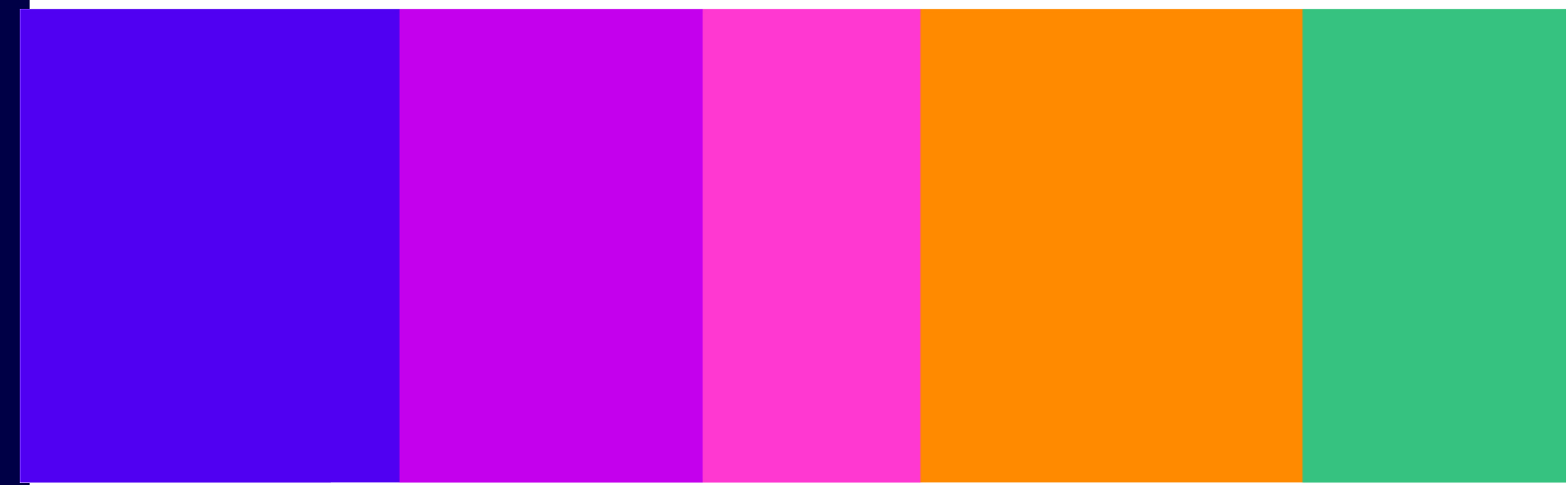
CLI Guidance

Guidance on the provision of Calling Line Identification facilities and other related services

Guidance

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Contents

Section

1. About this document.....	3
2. Summary	5
3. Background, Legal Context and Scope	7
4. End Users' Privacy Rights.....	10
5. Guidance for Communications Providers providing CLI facilities.....	12
6. Network Numbers and Presentation Numbers.....	20
7. Calling Line Identification and calls to the Emergency Services	23

Annex

A1. Glossary.....	24
A2. Call Blocking and/or Stopping Guidance for CPs.....	26

About this document

Calling Line Identification (CLI) facilities provide information to the recipient of a telephone call about the party making the call. Accurate CLI Data can help recipients decide if they wish to answer the inbound call. At the same time, misuse of CLI Data could lead to consumer harm, for example through CLI spoofing, which misleads the recipient of a call about who is calling them.

CLI Data consists of the caller's line identity along with a privacy marking, which indicates whether the number can be shared with the recipient of the call. It is exchanged between communications providers involved in the connection of the call and can also be used in regulatory and enforcement action, for example, to identify the sources of nuisance calls. CLI Data needs to be provided correctly and delivered across networks accurately. As individuals have the right to withhold their CLI to maintain their privacy, it is also important that CLI Data is passed on reliably so that the privacy of individuals can be respected.

General Condition C6 requires communications providers to provide CLI facilities, unless they can demonstrate that it is not technically feasible or economically viable to do so. Where CLI Data is provided, it must include a valid, dialable telephone number which uniquely identifies the caller. This document sets out guidance on how CLI Data should be carried through different networks and the responsibilities of different parties involved in the routing of a call. Its aim is to ensure that communications providers improve the consistency of CLI Data presented to consumers, whilst also complying with statutory requirements on the privacy rights of individuals making and receiving calls.

Version control

26 April 2018	Updated guidelines published Statement: Guidelines for Calling Line Identification Facilities
30 July 2018	Modifications to guidelines to clarify that calls to the emergency services should always be connected regardless of the validity of the associated CLI Data and the inclusion of Annex A2 – guidance on stopping or blocking calls. Statement on changes to the General Conditions of Entitlement
14 May 2019	Updated the link to ND1016 NICC ND1001-1099 Public Network Signalling Specifications
Published: 15 November 2022 Applies from: 15 May 2023	Changes to improve the reliability of the CLI Data that is provided with calls, reflecting amendments to GC C6.6 and including clarifications on <ul style="list-style-type: none"> • the use of different lists to determine if the CLI is a valid number • the types of numbers that can be used as a CLI • handling of international calls with invalid numbers or using a UK CLI • the use of display name information <p>Minor drafting amendments, e.g. definitions of allocate and assign, diallable to dialable, consistency of terminology, and formatting. Statement: Improving the accuracy of Calling Line Identification (CLI) data</p>
Published: 29 July 2024 Applies from: 29 January 2025	Changes to reflect that we expect providers to identify and block calls from abroad that use a UK telephone number as a Presentation Number, except in a limited number of legitimate use cases, including changes to provide clarity on our expectations. Statement: Tackling scam calls – expecting providers to block more calls with spoofed numbers

1. Summary

- 1.1 Calling Line Identification (CLI) facilities provide information about the party making a telephone call. CLI Data consists of the caller's line identity along with a privacy marking, which indicates whether the number can be shared with the recipient of the call. The CLI Data is shared between different Communications Providers (CPs) who are involved in the connection of the call. For the information to be shared reliably, it requires that the CLI Data is provided correctly and that this information is passed between networks accurately. As the CLI identifies the end user associated with a number, the privacy choices of the end user need to be respected.
- 1.2 The requirements for the provision of CLI facilities are set out in Ofcom's General Conditions of Entitlement (GCs), in GC C6, which applies to all providers of Number-based Interpersonal Communications Services and Public Electronic Communications Networks over which Number-based Interpersonal Communications Services are provided.¹ Number-based Interpersonal Communications Services are services made available to the public which connect with publicly assigned numbering resources or services which enable communications with a number or numbers in a national or international numbering plan. Therefore these requirements apply to any provider of a calling service that makes use of telephone numbers from a national or international numbering plan, including voice services using technologies such as IP.
- 1.3 Every call must have CLI Data that represents the point of ingress into the network, this is known as the 'Network Number'. It may also include another number representing the identity of the caller which is the telephone number displayed to the recipient of the call, this is known as the 'Presentation Number'. In many situations, the Network Number and the Presentation Number are the same number. CLI Data may also include an optional display name field.
- 1.4 The CLI Data that is presented with a call can provide assurance to the recipient of the call about who they are talking to, and allow them to take informed decisions on how to handle incoming calls. However, the passage of CLI Data can be vulnerable to misuse, for example the insertion of false information to intentionally mislead the recipient of the call as to the identity of the caller.
- 1.5 Therefore it is important that CPs ensure that CLI Data is provided accurately at the start of a call and that there is a consistent approach to the handling of CLI Data, from call origination through to call termination, particularly for calls that pass through two or more CPs. This is to ensure that the CLI itself can be passed on accurately and that the privacy choices made by end users about their CLI Data are respected by all CPs involved in the origination, transmission and termination of that call. Calls with inaccurate CLI Data should be stopped or blocked, to protect recipients from spoofed calls.
- 1.6 Ofcom's General Conditions require CPs to provide CLI facilities, where technically feasible and economically viable to do so. They also require CPs to ensure that any CLI Data provided with and/or associated with a call includes a valid, dialable telephone number which uniquely identifies the caller. The aim of this document is to establish the principles

¹ Ofcom, [General Conditions of Entitlement](#).

Calling Line Identification Facilities Guidance

for this approach, setting out what is expected of CPs to meet these requirements and to provide guidance for all CPs that participate in the origination, transmission and termination of a call in the UK.

2. Background, Legal Context and Scope

Background

- 2.1 This document sets out guidance on how CPs should approach the handling of CLI Data from the initiation of a call to its termination. The aim of this document is to ensure that the accuracy of CLI Data is protected throughout the transmission of a call and that the privacy choices of end users are respected and maintained throughout all parts of the call process, from the origination, to the transmission and to the termination of a call.
- 2.2 A common approach by all CPs is necessary as this will give CPs and end users certainty about the information that is provided with a telephone call. This is because the end-to-end conveyance of a call originated by an end user frequently requires the collaboration of several CPs and it is important that all CPs treat CLI Data in the same way. This document replaces the Ofcom guidelines on CLI facilities which were published in 2003 and subsequently amended in 2007.

Legal Context

- 2.3 The requirements for the display of CLI Data are set out in the General Conditions of Entitlement (GCs), in GC C6.² This requires CPs, subject to technical feasibility and economic viability, to provide Calling Line Identification facilities. It also specifies that the CP must ensure that any CLI Data provided with a call includes a valid, dialable telephone number which uniquely identifies the caller. Where CPs identify a call in relation to which the CLI Data provided is invalid, does not uniquely identify the caller, or does not contain a Telephone Number that is dialable, the GC requires the CP to prevent these calls from being connected to the called party, where technically feasible.
- 2.4 CLI Data is personal data within the meaning of data protection legislation. Therefore, CPs must also comply with regulations 10 to 13 of the Privacy and Electronic Communications (EC Directive) Regulations 2003 (PECR).³ This sets out a fundamental series of privacy rights for end users making and receiving calls.
- 2.5 PECR was amended in 2016 to require anyone making calls for direct marketing purposes not to prevent the presentation of the identity of the calling line on the called line and to ensure that a valid number is presented to the recipient of the call.⁴
- 2.6 We may need to make changes to this guidance from time to time. We will consult on these changes in the usual way as and when appropriate.

² Ofcom, [General Conditions of Entitlement](#).

³ [Privacy and Electronic Communications \(EC Directive\) Regulations 2003](#).

⁴ [Privacy and Electronic Communications \(EC Directive\) \(Amendment\) Regulations 2016](#).

Scope

- 2.7 This guidance applies to all CPs who fall under the scope of the requirements of GC C6 and of PECR. Therefore, it applies to all providers of Number-based Interpersonal Communications Services and Public Electronic Communications Networks over which Number-based Interpersonal Communications Services are provided. Number-based Interpersonal Communications Services are services made available to the public which connect with publicly assigned numbering resources or services which enable communications with a number or numbers in a national or international numbering plan. Therefore these requirements apply to any provider of a calling service that makes use of telephone numbers from a national or international numbering plan, including voice services using technologies such as IP.
- 2.8 Although CPs are required to comply with GC C6 for *Calling* Line Identification, CPs must also be mindful of the privacy requirements relating to the *Connected* Line, arising from PECR. Therefore, we also encourage CPs to follow these principles for Connected Line information.⁵
- 2.9 We also encourage CPs to reference this guidance in their interconnect agreements so that their contracting parties also follow them.

Technical Standards

- 2.10 The format of telephone numbers is defined by the ITU in their International Public Telecommunication Numbering Plan.⁶ This document sets out the structure of telephone numbers and how the numbers should be interpreted.
- 2.11 In the UK, CPs have developed the rules that must be applied when an interconnection is made between different CPs, via NICC standards.⁷ These rules are set out in ND1016.⁸ CPs interconnecting with other CPs should follow these rules wherever possible. There is further guidance for CPs using IP networks in ND1439.⁹ CPs have also developed guidance on blocking inbound international calls with UK CLI as a Network Number, under ND 1447.¹⁰

Enforcement

- 2.12 Although this guidance is not legally binding, we may take it into account in enforcement action against other binding requirements, including:
- the General Conditions, requiring CPs to provide CLI facilities, including CLI Data with a telephone number that is valid, dialable and uniquely identifies the caller; and

⁵ The Connected Line Identity (COL) represents the information about the called party.

⁶ International Telecommunications Union (ITU-T), October 2010. [E.164: the international public telecommunication numbering plan.](#)

⁷ NICC Standards Limited is the UK telecoms industry standards forum that develops interoperability standards for UK communications networks.

⁸ [ND1016](#) - Requirements on Communications Providers in relation to Customer Line Identification display services and other related services.

⁹ [ND1439](#) - Guidance for Implementing ND1016 in SIP networks.

¹⁰ [ND1447](#) - Guidance on blocking of inbound international calls with UK Network Number as CLI.

Calling Line Identification Facilities Guidance

- the Communications Act 2003, which gives Ofcom powers to take enforcement action against persistent misuse of Electronic Communications Networks or Services. These powers may be exercised where end users knowingly cause unauthentic or misleading CLI Data to be sent.¹¹

2.13 The Information Commissioner's Office has primary responsibility for enforcement against the requirements of PECR.

¹¹ Ofcom, December 2016. [Review of how we use our persistent misuse powers.](#)

3. End Users' Privacy Rights

- 3.1 This section sets out the principles that arise from the Privacy and Electronic Communications (EC Directive) Regulations 2003 (PECR),¹² in particular regulations 10 to 13, which set out a series of fundamental privacy rights for end users making and receiving calls.
- 3.2 The rights of the calling party are that:
- a) They must be able, using a simple means and free of charge, to prevent the display of their number at the point where their call terminates – this option may be exercised by users on a call-by-call basis and by subscribers on a more permanent basis by preventing the display of CLI Data on all calls made from a particular line;
 - b) but any person making calls for direct marketing purposes must not withhold their number (see below).
- 3.3 The rights of the called party are that:
- a) They must be able, using a simple means and free of charge for reasonable use, to prevent the display of CLI Data relating to incoming calls (so that help-lines are able to offer an assurance of anonymity to people who call them).
 - b) Where CLI Data is displayed before a call is established, they must be able, using a simple means, to reject calls where the caller has (i) been given the option of preventing the display of their CLI Data and (ii) deliberately chosen to exercise this option. The service is commonly known as Anonymous Call Reject (ACR).
 - c) Where connected line identification (COL) is in use they must be able, using a simple means and free of charge, to prevent the display to the caller of the actual number to which an incoming call has been connected.
- 3.4 The Privacy and Electronic Communications (EC Directive) (Amendment) Regulations 2016¹³ introduced new requirements specifically in relation to direct marketing calls and calls on automated calling systems. The amended regulations 19 and 21 of PECR stipulate that any person making direct marketing calls or calls on automated calling systems must not prevent the presentation of the identity of the calling line on the called line and must present the identity of a telephone number on which they can be contacted.
- 3.5 An additional right that arises from the application of general data protection principles is the ability of called end users to render inaccessible received CLI Data that is stored by a CP in a form directly retrievable by an end user. This capability is commonly known as call return/1471 erasure.
- 3.6 Where a called end user has selected to use Anonymous Call Reject, in accordance with paragraph 4.3(b), the calling end user should be advised as to why the call has been rejected, for example a recorded announcement with an explanation that the call was rejected because they restricted their CLI. This notification should be provided free of charge to the calling end user.

¹² [Privacy and Electronic Communications \(EC Directive\) Regulations 2003.](#)

¹³ [Privacy and Electronic Communications \(EC Directive\) \(Amendment\) Regulations 2016.](#)

Exceptions to the caller's privacy rights

- 3.7 PECR also sets out exceptions where the caller's right to prevent the display of their CLI Data can be overridden. These are for calls that are made to the emergency services or to assist relevant authorities in investigating and tracing malicious or nuisance calls.
- 3.8 Privacy rights may also be restricted in order to safeguard national security, defence, public security and to facilitate the prevention, investigation, detection and prosecution of criminal offences. The Investigatory Powers Act 2016 creates a legal framework within which Communications Data, which includes CLI Data, may be obtained and disclosed to designated authorities in order to secure these objectives.

4. Guidance for Communications Providers providing CLI facilities

- 4.1 This section sets out the principles for CPs providing CLI facilities on how CLI Data must be provided and passed through their networks to meet the requirements in the General Conditions and to respect end users' privacy wishes.
- 4.2 General Condition C6 requires CPs to provide CLI facilities and enable them by default unless they can demonstrate that it is not technically feasible or economically viable to do so. CLI facilities must be provided at no additional or separate fee. The CP must inform its subscribers if CLI facilities are not available on the service they are providing. We expect CPs to inform their customers at the start of their contract whether they are able to provide the functions of the CLI facilities and to update their customers where the situation changes.
- 4.3 GC C6 also specifies that when providing CLI facilities, CPs must ensure, so far as technically feasible, that any CLI Data provided with and/or associated with a call includes a valid, dialable telephone number which uniquely identifies the caller. It also requires CPs to respect the privacy choices of end users. GC C6.6 also requires that, other than in relation to calls to the emergency services, where technically feasible, CPs must take all reasonable steps to identify calls in relation to which the CLI Data provided is invalid, does not uniquely identify the caller, or does not contain a Telephone Number that is dialable, and prevent those calls from being connected to the called party. For the avoidance of doubt, calls to the emergency services should always be connected, regardless of the validity of associated CLI Data.
- 4.4 The CLI facilities are the functions supporting the provision of CLI Data with a telephone call. The CLI Data consists of a telephone number and an associated privacy marking. This represents the identity of the party making the call. CLI Data may also include an optional display name field.
- 4.5 These rules help to ensure that the correct information is made available to end users, where appropriate, and for network functions, such as call tracing. Where a CP is unable to provide CLI facilities to their customer, they should inform their customer.
- 4.6 In addition to these principles, this section also sets out the restrictions on CPs' access to their customers' CLI Data, to comply with data privacy rules.

Principles for the provision and handling of CLI Data

- 4.7 The fundamental principles behind the provision of CLI facilities are those of validity, privacy and integrity. As CPs will need to co-ordinate between different networks to follow these principles, we recommend that CPs refer to industry guidance, such as ND1016 and ND1439.
- 4.8 A telephone call may be associated with two numbers, the Network Number and the Presentation Number. The Network Number is a telephone number that unambiguously

identifies the line identity of the fixed access ingress to the Public Electronic Communications Network. The telephone number that is displayed to an end-user is the Presentation Number representing the identity of the caller.¹⁴ The CLI can identify the individual making the call or the organisation that the individual is representing, for example where the individual caller is making a call from a line behind a Private Branch Exchange (PBX).

- 4.9 Every call must be associated with a Network Number, which identifies the source of the call. In many cases, the Presentation Number is the same as the Network Number. In this situation, the CP must be mindful of the requirements for both Network and Presentation Numbers.

A valid, dialable number which uniquely identifies the caller

- 4.10 The General Conditions require that CPs must present a valid, dialable telephone number which uniquely identifies the caller.
- A **valid number** is one which complies with the International public telecommunication numbering plan (Recommendation ITU-T E.164).¹⁵ Where a UK number is used, it must be a number that is designated as a 'Telephone Number available for Allocation' in the National Telephone Numbering Plan¹⁶ and be shown as allocated in the National Numbering Scheme.¹⁷
 - A **dialable number** must be one that is in service and can be used to make a return or subsequent call.
 - A number **uniquely identifies the caller** (which can be an individual or an organisation) where it is one which the user has authority to use, either because it is a number which has been assigned to the user or because the user has been given permission (either directly or indirectly) to use the number by a third party who has been assigned that number.
- 4.11 The responsibility to ensure that CLI Data fulfils these requirements falls to all CPs involved in the transmission and interconnection of the call. The checks that a CP may be expected to carry out will vary depending on their role in that call.

The originating CP

- 4.12 It is the responsibility of the originating CP to ensure that the correct CLI Data is generated at call origination. This applies in respect of both the Network Number and the Presentation Number. When setting the Network Number and the Presentation Number, the originating CP should have regard to the recommendations set out in Section 5. The Network Number must be one that has been allocated to the originating CP or a number that has been ported into their network. This number identifies the point of ingress for that call. Where a dialable

¹⁴ For the COL, the number that is displayed represents the destination of the call.

¹⁵ ITU-T, October 2010. E.164: [the international public telecommunication numbering plan](#).

¹⁶ Ofcom, [National Telephone Numbering Plan](#).

¹⁷ The [National Numbering Scheme](#) is the day-to-day record of the telephone numbers allocated by Ofcom in accordance with the Numbering Plan.

Presentation Number is also provided, the Network Number does not need to be a dialable number.

- 4.13 The originating CP is also responsible for ensuring that the Presentation Number satisfies the requirement that the CLI Data displayed with the call is a number that uniquely identifies the caller. The number must be either a CLI from a number range that has been allocated to the originating CP, or the originating CP should seek assurance from their customer that they are using a CLI that they have permission to use (either because they have been directly assigned that number or have been given permission by a third party who has been assigned that number). The number that is used as a CLI should be a 10- or 11-digit number.¹⁸
- 4.14 In addition to ensuring that CLI Data is populated properly, General Condition C6 also places an obligation on all CPs to take steps to prevent calls where the CLI data provided is invalid, does not uniquely identify the caller, or does not contain a Telephone Number that is dialable, from reaching the called party. For the originating CP, this means they should not initiate calls that have invalid or non-dialable CLIs as Presentation Numbers or where they are unable to confirm that the caller has the permission to use the number, as set out in 5.13.

The CP receiving a call from a network outside these requirements

- 4.15 There may be some CPs who offer services where a CLI is not required, e.g. where the call does not originate on a Public Electronic Communications Network. On its ingress to a Public Electronic Communications Network, CLI Data must be provided with the call. This could be a Network Number that has been allocated or ported to the CP, so long as the CP is able to uniquely identify the original caller where needed.
- 4.16 For calls originated on networks outside the UK, the responsibility to check the validity of the CLI Data falls on the CP at the first point of ingress to the UK network.
- 4.17 Where the CP at the point of ingress considers the Presentation Number to be an invalid or a non-dialable number (for example, because it does not comply with the format specified in the ITU-T Recommendation E.164), the call should be blocked. The call should also be blocked where there is no Presentation Number and the Network Number is also missing or invalid, unless the CP knows that the missing CLI information is due to a known technical issue, for example the call has originated in a country where CLI data is removed for calls where the caller has restricted the display of their CLI information.
- 4.18 If the call has a valid Presentation Number, but the Network Number is not available, and the CP has good reason to consider this to be a legitimate call,¹⁹ then the call can be connected. Where the call has a valid Presentation Number, but the Network Number is considered to be an invalid number because it does not comply with the International public telecommunication numbering plan ITU-T E.164, the call should be blocked, unless

¹⁸ Where the CLI is in the International public telecommunication numbering plan ITU-T E.164 format, the number should be 11 or 12 digits.

¹⁹ For example, because the CP is aware of a known technical reason why the Network Number cannot be provided with the call or because the call is from a country where there are known issues with the provision of CLI data.

the CP is investigating the cause of the invalid CLI data.²⁰ Where the call is being connected despite there being an invalid or missing Network Number, the CP should insert a CLI from a range that has been allocated to it for this purpose as a Network Number and mark it as 'unavailable' so that it is not displayed to the call recipient.

4.19 As the CLI represents the origin of a call, calls from outside the UK (or Crown Dependencies) should not use UK CLI as a Network Number or as a Presentation Number, except in the limited number of use cases identified below.²¹

4.19A Calls from outside the UK (or Crown Dependencies) can present a UK CLI as a Network Number in the following situations:

- calls with a CLI from the +447 range. This is to ensure calls from UK (and Crown Dependency) mobile users roaming on a non-UK (or non-Crown Dependency) network making calls back to +44 numbers are not blocked;
- calls to a mobile user who is roaming in the UK (or Crown Dependencies). These are calls to numbers within the Mobile Station Roaming Number (MSRN)/International Roaming (IRN) ranges;²²
- where the CP can demonstrate the traffic has originated on a UK (or Crown Dependency) network, then onward routed outside the UK (or Crown Dependencies) before then re-entering through a UK (or Crown Dependencies) network. This includes calls originating on nodes or cloud services located in the UK (or Crown Dependencies); or
- where the CP can demonstrate²³ the call is being made by a UK (or Crown Dependency) customer but has originated on a non-UK (or non-Crown Dependency) network. This includes traffic that is hosted on nodes or cloud services outside the UK (or Crown Dependencies).

²⁰ Where the CP needs to investigate the cause of the invalid CLI data, it can connect these calls on a temporary basis, and insert a Network Number from the range that has been allocated to it for this purpose. However, CPs should ensure that this period of time should be kept to a minimum and keep a record of such calls.

²¹ As noted in paragraph 4.16 of the CLI Guidance, for calls originated on networks outside the UK, the responsibility to check the validity of the CLI Data falls on the CP at the first point of ingress to the UK network. This check may be carried out by an international gateway provider or a provider that receives a call into the UK via a direct route. Where a call has entered the UK network through an international gateway provider, we expect the UK provider that first receives the call from the international gateway provider to reassure themselves (for example, via appropriate contractual arrangements) that the international gateway provider has carried out the relevant checks. For further details, please see also paragraph 3.31 of our Statement on Presentation Number Blocking. Ofcom, 2024. [Statement: Tackling scam calls – expecting providers to block more calls with spoofed numbers](#)

²² A list of these number ranges can be made available on request by email to siwg@ofcom.org.uk. CPs who have such numbers can also submit their number ranges for inclusion using the same email address.

²³ See footnote 21 above. One way in which CPs can demonstrate this legitimate use case applies for calls which use UK CLI as a Network Number is by seeking assurance that the caller is using a number that has been allocated to the originating CP or one that has been ported into the originating CP's network. See also paragraph 3.58 of our Statement on Presentation Number Blocking. Ofcom, 2024. [Statement: Tackling scam calls – expecting providers to block more calls with spoofed numbers](#)

- 4.19B Calls from outside the UK (or the Crown Dependencies) can present a UK CLI as a Presentation Number in the following situation:
- where the CP can demonstrate²⁴ the call is being made by a UK (or Crown Dependency) customer but has originated on a non-UK (or non-Crown Dependency) network. This includes traffic that is hosted on nodes or cloud services outside the UK (or Crown Dependencies).
- 4.19C Some calls may have a UK CLI as both the Network Number and the Presentation Number, in which case all of the use cases will apply.
- 4.19D Except in these use cases, calls from outside the UK (or Crown Dependencies) using UK CLI should be blocked.²⁵

The transit and terminating CP

- 4.20 Where technically feasible, transit CPs should also ensure that the CLI Data that they pass with a call contains valid and dialable CLI and the terminating CP should present only valid and dialable CLI to the end user. A transit CP should use all the information that is available to them to check whether the CLI provided with the call is a valid and dialable CLI. For example, in the case of UK CLIs, they should check that the number is from a range that has been allocated in the National Numbering Scheme.
- 4.21 Transit and terminating CPs are not currently able to validate whether the CLI uniquely identifies the caller. However, they are expected to check whether the CLI should be used for outbound calls, for example by checking the Do Not Originate (DNO) list.²⁶ CPs should also have regard to the recommendations set out in Section 5 on Network and Presentation Numbers.
- 4.22 For calls with an international number, a valid CLI is one that complies with the format set out in the International public telecommunication numbering plan ITU-T E.164, with a maximum of 15 digits.²⁷ CPs should check that the CLI has the correct number of digits and is in a suitable format.
- 4.23 The transit or terminating CP should block calls that do not have valid or dialable CLI, or where they have information indicating that the CLI should not be used and therefore that it does not uniquely identify the caller.

²⁴ See footnote 21 above. One way in which CPs can demonstrate this legitimate use case applies for calls which use UK CLI as a Presentation Number is by seeking assurance from the non-UK network that the caller is using a CLI that they have permission to use (either because they have been directly assigned that number or has been given permission by a third party who has been assigned that number). See also paragraph 3.58 of our Statement on Presentation Number Blocking. Ofcom, 2024. [Statement: Tackling scam calls – expecting providers to block more calls with spoofed numbers](#)

²⁵ The NICC has published guidance in [ND1447](#) about blocking calls from abroad using UK CLI.

²⁶ The DNO list is a list of numbers which are not used for outbound calls. The DNO list can be made available to CPs on request by emailing DNO@ofcom.org.uk. Further detail on the DNO list is included on our website: [‘Do Not Originate’ \(DNO\) list](#).

²⁷ ITU-T, October 2010. E.164: [The international public telecommunication numbering plan](#). CPs may also assume the country of origin of the call using the Country Code in the received CLI. Further information about the format of CLI in different countries is available at [National Numbering Plans](#). There may be some satellite (SATVOICE) calls from aircraft to an air traffic service unit that have a shorter CLI. See Section 2.6 of the International Civil Aviation Organisation’s [Satellite Voice Guidance Material](#).

Stopping and blocking calls

- 4.24 Calls can be stopped either through blocking or filtering. Blocking is where the CP, subject to their technical capability, identifies calls in relation to which the CLI Data provided is invalid, does not uniquely identify the caller, or does not contain a Telephone Number that is dialable, and prevents these calls from being connected to the end user. Alternatively, terminating CPs could provide a call filtering service, where they can identify calls where the CLI Data provided is invalid, does not uniquely identify the caller, or does not contain a Telephone Number that is dialable, are diverted to a mailbox, so that these calls are not immediately connected to the end user.
- 4.25 There are other ways to prevent calls reaching the called party. For example, CPs can prevent calls where the CLI Data provided is invalid, does not uniquely identify the caller, or does not contain a Telephone Number that is dialable from being connected to the called party by working with their upstream providers to ensure that any calls that are connected to their network have CLI Data that meets the requirements of GC C6.4.

Optional display name information

- 4.26 It may also be technically possible for some CPs to include display name information about the caller in the CLI Data. When using such information, CPs should follow the industry principles for the transport of such information. For voice services on SIP, this is in NICC specification ND1035.²⁸ It is not currently possible to validate display name information, therefore this field should not be displayed to the recipient of the call unless the CP is confident that it contains accurate information.

Privacy

- 4.27 Regulations 10-13 of the Privacy and Electronic Communications (EC Directive) Regulations 2003 (PECR) set out the privacy rights for end users making and receiving calls.
- 4.28 The CLI Data associated with a call includes the privacy marking which indicates how the caller wishes this information to be used. This marking must indicate to the recipient's network that the CLI is:
- Available – where the caller has been given the possibility of preventing the display of CLI Data and has chosen not to do so; or
 - Withheld – where the caller has been given the possibility of preventing the display of CLI Data and has chosen to exercise this option.
- 4.29 Within the network CPs may use other indicators in situations other than the above, such as where it is not possible to offer an end user privacy choices and ensure they are respected.
- 4.30 To satisfy the end user's right to prevent the display of their number, the originating CP must provide the correct privacy marking alongside the number. For calls received from a network outside the scope of these requirements, the CP at the first point of ingress to the UK networks is responsible for ensuring that the call signalling reflects UK regulation to ensure that caller's privacy rights are respected. The CP receiving the call at the ingress to

²⁸ [ND1035](#) - SIP Network to Network Interface Signalling.

UK networks can use the same privacy markings as above, but in this context the markings have a different meaning:

- Available – where the CLI Data is deemed to be reliable and the caller has chosen not to prevent the display of their CLI.
- Withheld – where there is an explicit indication that the caller does not wish to make their CLI available to the recipient of the call.
- Unavailable – where there is an explicit indication that the originating network has restricted the CLI on behalf of the calling party and their CLI should not be made available, or where it is absent, or when the ingress CP has inserted a Network Number into the call as it has deemed the CLI Data presented with the call unreliable.

- 4.31 The transit CP should ensure that the privacy marking is passed with the call unchanged, so that the integrity of CLI Data is maintained from the originating CP to the terminating CP.
- 4.32 It is the responsibility of the CP terminating the call to ensure that CLI Data is only displayed to the end user where the caller has chosen to make this information available and the recipient of the call has chosen not to prevent the display of CLI Data relating to incoming calls.²⁹
- 4.33 For calls that are being passed to networks where these requirements do not apply, the CP at the point of egress should only pass on the CLI Data where the caller has chosen to make this information available and where they have good reason to believe that the CPs in the onward chain will respect the privacy markings. Otherwise, to avoid a caller's identity being displayed to the called party where the CLI has been classified as 'withheld' or 'unavailable', the CLI Data should be deleted at the gateway exchange.

Integrity

- 4.34 All CPs involved in the transmission of a call should do all that is technically feasible to ensure that the authenticity of the CLI Data is maintained from call origination to call termination. Where this includes a Presentation Number, CPs must consider whether this number is sufficiently authentic and whether further verification is required, subject to technical feasibility. Section 5 sets out some of these scenarios.

Use of end user's CLI Data within the network

- 4.35 Although PECR sets out the specific rules for CPs to help end users manage information relating to their privacy, CPs must also be mindful of the access they have to the end users' CLI Data. They should only use their privileged access to this information where its use is essential to the provision of an Electronic Communications Service.
- 4.36 Therefore, this access should be limited to those staff for whom it is essential, for example for technical management of the network and/or account and, in co-operation with the relevant authorities, for emergency calls and the tracing of malicious calls and similar activities.

²⁹ For COL, the originating CP (that is the originating CP for the party initiating the call) is responsible for ensuring that COL data is only presented where the called party has chosen to make this information available.

Calling Line Identification Facilities Guidance

- 4.37 CPs must respect the privacy of callers who have elected to prevent the display of their line identities by not exploiting this information for telemarketing or any commercial purpose other than billing and repair.
- 4.38 Furthermore, CPs must ensure that where callers have chosen to prevent the display of their line identities, the Network Number and Presentation Number should not be passed on to a party who is not a CP.

5. Network Numbers and Presentation Numbers

5.1 Section 4 of this document sets out guidance relating to CLI Data. The CLI that is displayed to the call recipient is the Presentation Number representing the identity of the caller. All calls must also be associated with a Network Number, which identifies the origin of the call. Where the caller has not selected to use a different number for display to the recipient of the call, the Presentation Number will be the same as the Network Number, and therefore should follow the guidance for both Network Numbers and Presentation Numbers. For the connected line (COL), the number that is displayed to the party making the call represents the destination of the call.

Network Numbers

5.2 The Network Number must be a line identity that comprises a unique number in the ITU-T E.164 format (or from which that number may be reconstructed) that unambiguously identifies the line identity of:

- the fixed access ingress to, or egress from, a Public Electronic Communications Network, i.e. the Network Termination Point (NTP);
- a Subscriber or terminal/telephone that has non-fixed access to a Public Electronic Communications Network, i.e. the line identity that has been assigned to an individual subscription or terminal/telephone with a non-fixed access to the Public Electronic Communications Network; or
- the first known UK PECN (or a node within that PECN) in the call path. This should only be used where the first known UK PECN does not reasonably trust the CLI Data that is being provided or the CLI Data is not available. In these circumstances, the privacy marking provided alongside the CLI should be marked as 'unavailable'.

5.3 The authenticity of a Network Number is guaranteed as the number must be one which has been provided by the originating network and it is a number that has been allocated to the originating CP, or has been ported to the originating CP. This number should not be changed by other CPs in the call path. Where a dialable Presentation Number is also provided, the Network Number does not need to be a dialable number.

5.4 Calls entering the UK network from abroad should not have a UK CLI as a Network Number, unless it is in line with the exceptions provided in paragraph 5.19.

Presentation Numbers

5.5 The Presentation Number is a number nominated or provided by the caller that can identify that caller and be used to make a return or subsequent call, and therefore should be a dialable number. In the UK, the industry has recognised a number of scenarios where Presentation Numbers may be provided, as a commercial service, to meet differing customer calling requirements. These are specified in paragraphs 6.8 - 6.14 below. Where the party who has been assigned a number gives permission for multiple callers to use that

number, we would expect the party assigned the number to keep records of who they have given permission to use the number, to aid in call tracing requests.

5.6 Unlike a Network Number, a Presentation Number will not necessarily identify a call's point of ingress to a Public Electronic Communications Network. However, it may carry other useful information. The requirements of a Presentation Number are that:

- It must be a valid number, i.e. be a number which complies with the International public telecommunication numbering plan (Recommendation ITU-T E.164). Where a UK number is used, it must be a number that is designated as a 'Telephone Number available for Allocation' in the National Telephone Numbering Plan and be shown as allocated in the National Numbering Scheme. The number that is used as a CLI should be a 10- or 11-digit number.³⁰
- It must be a dialable number, i.e. a number that is in service and can be used to make a return or subsequent call;
- It must uniquely identify the caller (which can be an individual or an organisation), i.e. be a number that the user has been given authority to use (either because it is a number that has been assigned to the user or because the user has been given permission (either directly or indirectly) to use the number by a third party who has been assigned that number); and
- It must not be an 09 non-geographic number (NB the exploitation of a Presentation Number to generate revenue sharing calls may constitute persistent misuse of an Electronic Communications Network or Electronic Communications Service).

5.7 Where additional verification is needed to demonstrate that the caller has permission to use the number, the originating network could demonstrate this in the form of a contract between the caller and the third party who has been assigned that number.

Guidance on the use of Network and Presentation Numbers

5.8 There are a number of scenarios where Presentation Numbers may be provided, as a commercial service, to meet differing customer calling requirements. Examples of different types of Presentation Number are listed below.

Types of Presentation Number

Type 1

5.9 A Presentation Number is generated by the subscriber's CP. The number is stored in the network and applied to an outgoing call at the originating node in the Public Electronic Communications Network by the CP. Because the number is applied by network equipment there is no need for it to be verified each time a call is made – instead the level of authenticity will depend on the checks made by a CP that a subscriber is entitled to use a particular Presentation Number.

³⁰ Where the UK CLI is in the ITU-T Recommendation E.164 format, the number should be 11 or- 12 digits.

Type 2

- 5.10 A Presentation Number which identifies a caller's extension number behind a DDI³¹ switchboard. Although the number or partial number is generated by the user's own equipment, the CP is able to check that it falls within the range and length assigned to a particular subscriber. In this way the authenticity of the number may be ensured. It should be noted that some CPs classify Type 2 Presentation Numbers as Network Numbers (especially where the full number is constituted at the local exchange). This type of number is considered to carry sufficient authenticity to be classified as a network number and is carried as such by some networks.

Type 3

- 5.11 A Presentation Number limited to the far-end break out scenario where a call's ingress to the Public Electronic Communications Network may be geographically remote from where it was originated. The number is generated by the user's equipment and is not capable of being subjected to network verification procedures. Verification is based on a contract between the subscriber and the CP in which the subscriber gives an undertaking that only authentic Presentation Numbers will be generated.

Type 4

- 5.12 A Presentation Number available for the onward transmission of the originating number where a call breaks into a private network and breaks out again before termination, as in a DISA³² scenario. On the break out leg the number is generated by the user's equipment although it will have already been verified in consequence of having been delivered to the private network. To maintain the verification, it is necessary to ensure that the number submitted by the private network is the number that was received.
- 5.13 CPs wishing to offer a Type 4 service will require a contractual commitment from customers that they will only submit CLIs that have been received from the Public Electronic Communications Network.

Type 5

- 5.14 Presentation numbers that identify separate groups of callers behind a private network switch wishing to send different outgoing CLIs. A typical scenario is a call centre making calls on behalf of more than one client. Type 5 Presentation Numbers are generated by the user's equipment. Subscribers will need to enter into a similar contractual commitment with their CPs as for Type 1 Presentation Numbers – that they are entitled to use the numbers they have selected.

³¹ Direct Dial In

³² Direct Inward System Access

6. Calling Line Identification and calls to the Emergency Services

- 6.1 General Condition A3.5 requires all Regulated Providers to make available Caller Location Information when a caller makes a call to the emergency numbers 999 or 112. To discharge this obligation on behalf of the Regulated Provider, the 999/112 Call Handling Agency (CHA) with whom they have contracted to process emergency calls will, for all types of call, need the Network Number of the call. The CHA will use this Network Number as a reference with which to interrogate either a database of pre-provided location information or other systems which can identify the caller's location in real-time.
- 6.2 When an emergency call is initiated from their network, all Regulated Providers must supply the relevant CLI Data and include as a minimum the Network Number from which the call originated.
- 6.3 In cases where a Regulated Provider receives an emergency call in relation to which the CLI Data provided is invalid, does not uniquely identify the caller, or does not contain a Telephone Number that is dialable, that Regulated Provider should connect the call (as opposed to blocking or filtering the call as if it were a non-emergency call). That Regulated Provider should then work with the Regulated Provider or customer who had initiated the call to ensure that future emergency calls include the necessary CLI. This should apply to all emergency calls: both those from the end-user to the CHA and those from the CHA to the emergency authority control room.

A1. Glossary

Allocate (in relation to phone numbers)	In this document, 'allocate' means allocation of numbers by Ofcom or sub-allocation of numbers by a CP to other CPs or resellers.
Anonymous Call Reject (ACR)	Where the called party has opted to reject calls where the caller has chosen to prevent the display of their CLI Data.
Assign (in relation to phone numbers)	Where numbers are transferred to end users, i.e. individuals and businesses.
Calling Line Identification (CLI)	Calling Line Identification means data that enables identification of the number from which a call could be made or to which a return call could be made.
Calling Line Identification (CLI) facilities	These are the facilities by which the telephone number of a calling party is presented to the called party prior to the call being established.
CLI Data	<p>CLI Data means the contents of all signalling messages which can be used between Communications Providers and/or between Communications Providers and End-Users to signal the origin of the call and/or the identity of the calling party, including any associated privacy markings.</p> <p>It is comprised of a mandatory Network Number, an optional Presentation Number and respective privacy information (which indicates what the call originator is prepared to have displayed to the called party). CLI Data may also include an optional display name field.</p>
Connected Line Identity (COL)	Connected Line Identity is the data that is provided with a telephone call about the called party. It consists of the called party's line identity along with a privacy marking, which indicates whether the number can be shared with the caller.
Network Number	The Network Number is a telephone number that unambiguously identifies the line identity of the fixed access ingress to or egress from a received Public Electronic Communications Network or a subscriber or terminal/telephone that has non-fixed access to a Public Electronic Communications Network. For CLI, it can also be the first known Public Electronic Communication Network in the call path, where the first known UK PECN does not reasonably trust the CLI Data that is being provided or the CLI Data is not available.
Network Termination Point	This is the physical point at which a subscriber is provided with access to a Public Electronic Communications Network and can be identified by means of a specific network address, which may be linked to the Telephone Number or name of a Subscriber.
NICC	NICC is the UK telecoms industry standards forum that develops interoperability standards for UK communications networks.
Presentation Number	The Presentation Number is a number nominated or provided by the caller that can identify that caller or be used to make a return or subsequent call. It may not necessarily identify the line identity of the geographic source of the call.

Calling Line Identification Facilities Guidance

UK CLI	CLI associated with a telephone number identified in the National Telephone Numbering Plan.
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A2. Call Blocking and/or Stopping Guidance for CPs

- A2.1 General Condition C6.6 requires Communications Providers (CPs), where technically feasible, to take all reasonable steps to identify calls in relation to which the CLI Data provided is invalid, does not uniquely identify the caller, or does not contain a Telephone Number that is dialable, and prevent those calls from being connected to the called party. There is further guidance in Section 4 of this document on what is meant by a valid, dialable telephone number which uniquely identifies a caller and what transit and terminating CPs should consider when identifying calls that do not have such CLIs.
- A2.2 General Condition C6.6 requires Communications Providers (CPs), where technically feasible, to take all reasonable steps to identify calls in relation to which the CLI Data provided is invalid, does not uniquely identify the caller, or does not contain a Telephone Number that is dialable, and prevent those calls from being connected to the called party. There is further guidance in Section 4 of this document on what is meant by a valid, dialable telephone number which uniquely identifies a caller and what transit and terminating CPs should consider when identifying calls that do not have such CLIs.

Process for stopping or blocking calls

- A2.3 Two of the ways a CP could prevent calls in relation to which the CLI Data provided is invalid, does not uniquely identify the caller, or does not contain a Telephone Number that is dialable, from being connected to the called party are by blocking or stopping calls. There are also other ways that CPs can demonstrate compliance with the requirements of GC C6.6 that do not require stopping or blocking. Therefore, this is not intended to be an exhaustive list of the options.

Process for Stopping calls

- A2.4 "Stopping" calls refers to attempts by a CP to stop any future calls from a known or suspected nuisance caller from entering its network. This is typically achieved by refusing all traffic from a problem CLI, traffic route or interconnecting CP due to previous breaches of contractual prohibitions against nuisance call traffic. In this way, nuisance callers are essentially disconnected from the terminating UK networks - further calls are stopped "at source" before they can be made. In their contracts with their interconnect partners, and with their originating customers, CPs should include a provision that they will not carry such traffic. When such traffic is identified, CPs will enforce these contractual conditions.

Process for Blocking calls

- A2.5 "Blocking" is applied on a call-by-call basis (in real-time) to calls that have already found their way onto a CP's network. Calls that have invalid or non-dialable CLI, or CLI which does not uniquely identify the caller, are identified and blocked - that is, the calls are not delivered to their intended recipient. When blocking calls, CPs should take appropriate steps to ensure they do not cause network congestion.

Dispute Resolution Process

- A2.6 Blocking or stopping calls that have invalid or non-dialable CLI, or CLI which does not uniquely identify the caller, is based on the presumption that legitimate calls have valid CLIs. However, it is possible that some legitimate calls may be blocked when they should not be. CPs should therefore have a process in place to remove the blocking/stopping in the event of disputes in which the blocking/stopping decision is reasonably rebutted. Where these calls are identified, CPs are encouraged to work with their customers to improve the accuracy of the CLI data. The dispute resolution process should be managed in a timely fashion to limit harm to inappropriately impacted callers. The dispute resolution process should be published on the CP's website, so that it is discoverable by blocked callers or their CPs. It should also be widely communicated within their organisation particularly where queries about blocked calls will be received, such as the customer contact teams.