

BEREC

**Report on harmonised definitions for
indicators regarding over-the-top services,
relevant to electronic communications
markets**

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1 Introduction

The general objective of this report is to identify and define harmonised metrics which are of interest to many European National Regulatory Authorities (NRAs) in the scope of fulfilling their regulatory tasks. This is data which is considered important for NRAs and BEREC to ensure conformity with the provisions of, or decisions or opinions adopted under the Directive (EU) 2018/1972 (“European Electronic Communications Code”, hereafter EECC) and Regulation (EU) 2018/1971 (“BEREC Regulation”) and which, at the same time, would not result in an undue burden for providers.

The need for the report arises as Article 2 of the EECC provides a new definition for “interpersonal communications services” extending the scope of the European regulatory framework for electronic communications to “number independent interpersonal communications services” (hereafter NI-ICS). Moreover, Article 20¹ provides the legal basis to request data from undertakings which are not active in the electronic communication services or networks but are still operating in closely related sectors, insofar these requests are substantiated and proportionate.

Since 2019, BEREC has been working to fulfil this objective, first by engaging with NRAs to understand what their needs for new data are and second, by maintaining an ongoing consultation with stakeholders, to understand their possibilities to provide data and the efforts and difficulties they would face in doing so.

BEREC issued a first report in 2019², which, in the light of Articles 2 and 20 of the EECC, identified potential new data requirements of NRAs regarding over-the-top (hereafter, OTT) services in order to perform their legal obligations. Then, in 2020, BEREC organized a workshop to discuss a preliminary list of indicators and definitions with stakeholders. These tasks enabled the delivery of BEREC’s Draft Report on harmonised definitions for indicators regarding OTT services, relevant to electronic communications markets³.

This Draft report was subject to public consultation from the 16th of March 2021 to the 21st of April 2021. Nine responses were received, from NI-ICS and video-streaming service providers, operators and operators’ associations. All responses have been thoroughly analysed by BEREC, and BEREC’s answers to these comments are included in the “BEREC Report on the outcome of the public consultation of the BEREC Draft Report on harmonised definitions for indicators regarding OTT services, relevant to electronic communications markets”.

BEREC’s intention with this report is neither to impose on NRAs the obligation to collect data from OTT providers, nor to instruct NRAs on the scope, modalities and frequency of such data collections. Rather, the report provides harmonised definitions for a limited number of indicators that may be necessary for NRAs to collect in the framework of their regulatory mandate. The metric definitions included in this report need to be considered as for reference only, since NRAs will ultimately decide which services to consider in the framework of their regulatory tasks, for example within market analyses and other tasks.

¹ The information collection powers under Article 20 are fundamental for this report, but are not limited to the indicators proposed by BEREC within. For example, Article 20 EECC potentially covers requests to software developers, hardware manufacturers or providers of operating systems.

² BoR (19) 244, BEREC Preliminary report on the harmonised collection of data from both Authorised Undertakings and OTT operators.

³ BoR (21) 33

With the identification of these common indicators, BEREC expects to reduce the costs of providers for complying with the data requests of different authorities. In drafting this report, BEREC has taken into consideration the views of the stakeholders expressed during the Workshop and in their written contributions to the public consultation.

Yet, it should be noted that the final indicators included in this report may not cover all of NRAs' informational needs in the future, as national specificities may imply that some NRAs have extended requirements. In all cases, NRAs requesting the data should at all times justify the necessity of the data, consider the proportionality of the request and attend to any confidentiality-related issues.

In the future, BEREC will continue to evaluate the list of common indicators and may add, remove or adjust indicators to ensure a continued harmonisation of the data collected by NRAs and adjust to NRAs' needs. In order to do this, BEREC will reflect on the learning and experience of the NRAs which collect data and will engage to put the accumulated knowledge at the use of the regulatory practice, to the ultimate benefit of end-users and citizens.

2 Number-independent interpersonal communications services

As argued in the document numbered BoR (19) 244, NRAs have expressed their need for data on interpersonal communication services (ICS) over the public internet, in particular data concerning the NI-ICS.

2.1 Number-independent interpersonal communications services definition

Interpersonal communications services (ICS) are defined in the Article 2 of the EEC Directive (EU) 2018/1972 as *“services normally provided for remuneration that enable direct interpersonal and interactive exchange of information via electronic communications networks between a finite number of persons, whereby the persons initiating or participating in the communication determine its recipient(s) and does not include services which enable interpersonal and interactive communication merely as a minor ancillary feature that is intrinsically linked to another service”*.

ICS include two types:

- Number-based ICS (NB-ICS) which connect with the public telephone network;
- Number-independent ICS (NI-ICS) which do not connect to the public telephone network and are provided over the public internet, referred to in general as “over-the-top” (OTT) services.

This report will deal with NI-ICS as NRAs already have experience in collecting information regarding NB-ICS, while most indicators regarding NB-ICS are harmonized at European and international level, due to the existing definitions used by the European Commission and ITU⁴.

NI-ICS are defined in Article 2(7) of the EEC Directive (EU) 2018/1972 as *“interpersonal communications services which do not connect with publicly assigned numbering resources, namely, a*

⁴ International Telecommunication Union (ITU)

number or numbers in national or international numbering plans, or which do not enable communication with a number or numbers in national or international numbering plans.” Furthermore, it is to be noted that the mere use of a number as an identifier should not be considered to be equivalent to the use of a number to connect with publicly assigned numbers and should therefore, in itself, not be considered to be sufficient to qualify a service as a number-based interpersonal communications service (see Recital 18 of the EECC).

Based on deliberations and research as presented in BoR (19) 244, this report takes particular consideration of the following services:

- Messaging Applications (including those embedded in social network applications);
- Internet or Video-telephony Applications.

2.2 Number-independent interpersonal communications services metric definitions

The metrics presented here pertain to the registered and active users, usage of service, revenues generated by NI-ICS and pre-installations of NI-ICS on devices, as analysed and discussed by BEREC during the dedicated workshop.

NI-ICS providers have stated that their services are offered on multifunctional global platforms, which are not necessarily addressed by country and service type in their internal business analytics. Additionally, it appears that some of the proposed metrics are not deemed appropriate and/or feasible to collect at this point for various reasons.

Most of the NI-ICS providers can only access data with respect to the duration of calls (volume/traffic) at the end-user devices' level. However, in a few cases, while the NI-ICS provider knows if/when a call or message has been originated, it does not know whether such communication has been (successfully) terminated, and in those specific circumstances, some assumptions would be needed, based on any available evidence.

At this stage, only registered and active users metrics and the number of originated calls/messages “by country” can already be defined with the objective to obtain such information from NI-ICS providers in a harmonized way. BEREC draws the attention to the fact that there are a number of caveats in relation to the collection of these data (see section 2.2.1.1. below), which should not impede obtaining valuable information nonetheless.

Regarding the revenue indicators for NI-ICS, the providers argued that applications are offered free of charge to consumers and that they monetize the sales of services to third parties (e.g. advertisement income). Advertising may however only occur at the related social media component and not particularly in the NI-ICS. Certain NI-ICS form part of a so-called digital platform or ecosystem, where different functionalities are bundled together to provide value added to the end consumer.

However, **service revenue is an important indicator for regulators**, as it allows NRAs to determine the size of the market for services, assess the importance of different providers by evaluating their market shares and understand the average revenue per user. Moreover, Recital 16 of the EECC recognises that the concept of remuneration of an electronic communication services is wide, as services are often supplied to the end-user not only for money, but increasingly and in particular for the provision of personal data or other data. In some cases, the services are funded by donations and grants or funds.

In view of the above, the revenue information for NI-ICS is currently not considered as a metric that can be easily collected in a harmonized way. Nevertheless, BEREC will engage in future workstreams in analysing the variety of business models applied by NI-ICS providers, in particular with respect to direct or indirect remuneration, as well as donations-based financing. This may help NRAs in assessing the proportionality of any type of data request and information provision obligations in this field⁵ and their relevance for competition analysis, with respect to consumers, as well as to business users.

Pre-installation can have a large impact on the usage of services. Consumers may use certain services because they are readily available on the device. Several studies by NRAs⁶ demonstrate how pre-installations can have an impact on consumer choices, leading to a decreased number of consumers switching to other services, e.g. also by the impossibility for consumers to uninstall pre-installed apps. Information on pre-installations is hardly publicly available, but crucial in assessing the extent of its impact on the use of and competition between NI-ICS, and consider the implications for ECS markets. Thus, some BEREC members would find it useful to collect information concerning the devices on which a NI-ICS is pre-installed – concerning pre-installations on devices of own brands and, when applicable, as well as pre-installations on the devices of other companies. The information may encompass characteristics of the devices on which a NI-ICS is pre-installed. In case the provider of NI-ICS is also manufacturing devices and performing pre-installations, the NI-ICS provider can offer a list of device models, on which those pre-installations are performed.

2.2.1 Indicators

It should be stressed that all data cited within section 2.2.1 **should be provided per each NI-ICS/service**, regardless of whether a specific company is offering different NI-ICS in the market.

Moreover, BEREC reminds that the information concerning active user metrics (and in general all the NI-ICS indicators) is to be reported by the NI-ICS providers offering the respective services and not by Internet Service Providers (ISPs).

Finally, in some cases, BEREC is recommending NRAs to collect data as of some specific periods - for example, for 4 different calendar months in the case of active users, or aggregate quarterly data in the case of usage data. Yet, NRAs can decide to collect these data once or twice a year, or even more regularly, depending on their needs.

2.2.1.1 Number of Active Users

Regulatory relevance

The collection of this metric will assist NRAs to:

⁵ E.g. Art. 40, Art. 70, Art. 102, Art. 103, Art 104 EEC

⁶ ACM (2019): Market study into mobile app stores; ARCEP (2018): Devices, the weak link in achieving the open internet; RTR (2019): Report on the open internet: operating systems, apps and app stores.

- Assess if there is a legitimate reason to impose on those NI-ICS the requirement to enable access to emergency services⁷ or to comply with any other obligation, taking into consideration the importance/size of NI-ICS in terms of number of active users;
- Assess the relevance of certain NI-ICS to safeguard appropriate application of the regulation regarding NI-ICS on “Security of networks and services”⁸, “Obligations of non-discrimination”⁹, “Information requirements for contracts”¹⁰, “Transparency, comparison of offers and publication of information”¹¹ and “Quality of service related to internet access services and publicly available interpersonal communications services”¹²;
- Estimate the share of active users per country of the respective major players in the field of ICS for market monitorization purposes and in order to assess developments in ECS markets. Where relevant, the information could be used for market definition purposes (e.g. to assess if NI-ICS could be considered as a substitute for traditional ECS, calculation of market shares, identification of significant market power).
- Evaluate how and if NI-ICS offerings place a competitive constraint on traditional NB-ICS in consideration of their size/share;
- Assess the economic importance of certain NI-ICS for business users (e.g. advertisers or businesses using the service commercially to reach end users); and
- Produce and maintain statistics, which may also be useful for international benchmarking.

Definition of business user

Following the contributions received during the public consultation which pointed at the difficulties to distinguish between “business users” and “users” when both types make use of standard versions of the NI-ICS applications, BEREC is now providing a definition of “business user” that clarifies the notion and its difference with “user”.

A business user is any natural or legal person acting in a commercial or professional capacity, making use of an enhanced NI-ICS, offered by the NI-ICS provider for professional and/or business use.

This definition is applicable only in the context of this report and corresponding data collection.

For practical purposes in the data collection, BEREC suggests collecting data on business users per each NI-ICS, where business users are those using: (i) an enhanced version of the standard service against payment (i.e. all users who pay for the respective services); and/or (ii) an enhanced service/service with enhanced functionalities (e.g. a dedicated software application or application

⁷ The potential future requirement to introduce access to emergency services from NI-ICS is discussed within Art. 123 (1) (c) EECC. For NI-ICS to reach ‘emergency services’, this might require a non-number-based approach, as NI-ICS are *de facto* unable to connect with public numbering resources.

⁸ Art. 40 EECC

⁹ Art. 70 EECC

¹⁰ Art. 102 EECC

¹¹ Art. 103 EECC

¹² Art. 104 EECC

programming interface (API)), which target particularly business, either or not against payment (i.e. all users who make use of business-type/grade applications and can be identified/labelled as such by the NI-ICS providers).

In the light of the above, BEREC is proposing the following metrics:

1. Number of Monthly Active Users (MAU) who used the service in the last calendar month as of the date of measurement, by country of residence, by service.

This metric refers to the users that cannot be qualified as business users, as defined in this report.

2. Number of Monthly Active Business Users who used the service in the last calendar month as of the date of measurement, by country of service deployment, by service.

In order to have a better view on the seasonality, BEREC recommends to NRAs in need of this information to collect active user data for the calendar months of March, June, September and December.

BEREC is aware of the possible **caveats** related to these indicators, which however should not impede obtaining the information:

- Country information provided upon registration would be the primary source of user location information. Country of residence information is however not always required upon registration and even if this is the case, it is not necessarily uniformly measured throughout different NI-ICS providers or even within a single company providing multiple NI-ICS. Furthermore, there may be no verification process in place for this piece of information.
- Lacking the aforementioned piece of information, the mobile phone number or the payment information could be used as a proxy for the country of residence. NI-ICS providers pointed out that these proxies are not entirely reliable and commented that:
 - o Telephone number country codes may not be suitable because the user may be nomadic, and not reside at the location indicated by the country code;
 - o Payment information is not necessarily linked to the user's country of residence, as payment may be made in a country other than the country of residence of the user;
 - o IP tracking could, in absence of information on telephone number country codes or payment information, also be used as a source for the country of residence of active users. However, the originating IP address is neither geographically precise, nor reliable in all instances (e.g. when VPNs are used);
 - o IP-tracking - for which end user consent would anyway be required¹³ - is not commonly applied by NI-ICS providers.
- The MAU indicator on end-user will not provide insights on the underlying dynamics. For instance, when MAU statistics remain stable over a longer period, it is not possible to conclude whether this was caused by more or less an equal number of new subscriptions and customers cancelling the service. But, from an NRAs' point of view, MAUs should be seen as an

¹³ As explained by the stakeholders during the dedicated Workshop.

appropriate starting point to assess user engagement per service, followed by further investigation and analysis.

Finally, BEREC recommends that NI-ICS providers inform the NRAs on the assumptions made when collecting data for these metrics, as well as qualify their accuracy, especially with respect to the “per country” dimension and provide any evidences they may hold to assess such accuracy.

2.2.1.2 Number of Registered Users

Regulatory relevance

The collection of this metric, which is complementary to the active users indicator, will enable NRAs to:

- Assess the adoption of NI-ICS. By comparing the number of active and registered users, NRAs will be able to monitor the effective usage of NI-ICS. Nevertheless, BEREC is aware that a significant share of the registered users may never use the service after registration or may stop using it after the first trial following the registration.

So, finally, BEREC is proposing these two metrics, mirroring the ones in subsection 2.2.1.1:

3. Number of Registered Users, who registered with a specific NI-ICS, by country of residence and by NI-ICS, at a specific date.

This metric refers to the users that cannot be qualified as business users, as defined for the purpose of this report.

4. Number of Registered Business Users, who registered with a specific NI-ICS, by country of residence and by NI-ICS, at a specific date.

The definition for a business user presented in section 2.2.1.1. is valid for this metric as well.

In order to have a better view on the seasonality, having minded the stakeholders’ contributions regarding the problems with registration metrics during the public consultation phase, BEREC recommends to NRAs in need of this information to collect registered user and registered business user data for the 31st March, 30th June, 30th September and 31st December of each year.

BEREC is aware of the possible **caveats** related to this indicator, which however should not impede obtaining the information:

- Registration is not necessarily related to a specific service, but rather to the general use of a bundle of services. In such case, the NI-ICS provider will need to make assumptions in order to determine the number of registered users for a certain service (which could, for instance, be based on the portion of registered users that have used the service in question at least once). BEREC recommends that NI-ICS providers inform the NRAs on the assumptions made in this respect. Furthermore, it cannot be excluded that some users may be associated to multiple accounts.

The same situation would occur in the case of pre-installed apps, for which registration is not specifically requested, but merely there is a general registration requirement, whereby, thereafter, all the pre-installed apps under the same “umbrella” may be used (for instance, Apple-ID account and iMessage, Google account and Google apps, etc.).

- The caveats with respect to the country of residence information and recommendations made by BEREC in section 2.2.1.1. are also valid for this metric.

2.2.1.3 Usage: Number and minutes of voice calls and video-calls and number of instant messages¹⁴

Regulatory relevance

The collection of this metric may be required, since it can enable NRAs to:

- Compare the actual usage of NI-ICS to the usage of NB-ICS (total number of minutes, total number of instant messages) and support the analysis of whether those services are substitutes or not;
- Compute the market shares of NI-ICS providers (number of minutes over total number of minutes, for example);
- Gather information relevant to assess the need for the interoperability of services, particularly in the context of Article 61(2)(c) of the EECC;
- Assess the economic relevance of certain NI-ICS to safeguard appropriate application of regulation regarding NI-ICS on “Security of networks and services”¹⁵, “Obligations of non-discrimination”¹⁶, “Information requirements for contracts”¹⁷, “Transparency, comparison of offers and publication of information”¹⁸ and “Quality of service related to internet access services and publicly available interpersonal communications services”¹⁹;
- Facilitate and complement the analysis of any qualitative assessments carried out to gather insights on the purposes that users place on each kind of service.

So finally, BEREC is proposing the following metrics:

- 5. The total number and minutes of voice calls made by NI-ICS users²⁰ towards other NI-ICS users, by country of residence of the caller, in a specific period.**
- 6. The total number and minutes of video-calls made by NI-ICS users towards other NI-ICS users, by country of residence of the caller, in a specific period.**
- 7. The total number of instant messages sent by NI-ICS users towards other NI-ICS users, by country of residence of the sender, in a specific period.**

¹⁴ The term instant message includes any kind of asynchronous communication between users, therefore also the transmission of pictures, video and audio messages and files.

¹⁵ Art. 40 EECC

¹⁶ Art. 70 EECC

¹⁷ Art. 102 EECC

¹⁸ Art. 103 EECC

¹⁹ Art. 104 EECC

²⁰ Users and business users, as defined in the report.

In order to have a view on the seasonality, BEREC recommends to NRAs that may need this information to consider collecting aggregate quarterly data, as of the 31st of March, 30th June, 30th September and the 31st December.

BEREC is aware of the possible **caveats** related to these indicators, which however should not impede obtaining the information:

- The total number of minutes is an important indication which enables some kind of comparability to NB-ICS and, thus, should be taken into account. However, as explained, some NI-ICS providers mention that they do not record the minutes of calls, for example some do not even record whether an initiated call has been terminated or not. In those cases, the number of minutes would need to be proxied, and BEREC recommends that the NRA requires that the NI-ICS provider informs about the assumptions made to proxy this indicator.

In any case, the number of calls (this is, calls that are initiated and terminated) should be collected (or if not available, proxied). This is a partial indicator to measure the usage of NI-ICS and will assist NRAs in understanding the traffic information.

- Group calls and messages with multiple recipients require further consideration.
- Country information available through registration information or some other proxy may not always be accurate as already detailed in section 2.2.1.1. In any event, BEREC recommends that NI-ICS providers inform the NRAs on the assumptions made regarding the country of residence.

3 Video-streaming services

Article 20 in the EEC provides the legal basis for NRAs to request data from services other than ECNs and ECS. Section 5 deals with the legal aspects related to these data requests, but it is important to note that this information can only be requested from providers of those services in case it cannot be obtained from providers of ECNs and ECSs and when it is clearly reasoned and proportionate to the NRAs' needs.

In 2019, in the context of the work leading to this report, 19 NRAs expressed that the information on video-streaming services was relevant to their tasks in the scope of electronic communication markets. The reasons why these NRAs expressed this view were very varied in nature and depended on national contexts, with many NRAs requiring the data to assess how video-streaming offers affected competition in the fixed broadband markets, others arguing for the necessity to understand the demands that video-streaming services place on data traffic and a few explaining that data would be required in the context of the analysis of broadcasting markets.

Because of this, BEREC initiated a scoping exercise to identify harmonised definitions of some metrics that most video-streaming providers could technically deliver on and that NRAs may find useful to collect data for, whenever they conclude that such data requests are necessary, reasonable and proportionate. It should be noted that the list of indicators included in this report is not exhaustive, reflective of every NRA's needs, and that each NRA can decide what are the most suitable metrics to cater for.

Therefore, the list of indicators and the video-streaming definition are indicative and would be subject to change in view of new insights and developments. The definition and list should be considered as a reference only, since NRAs will ultimately decide which services to consider in the framework of their regulatory tasks, for example market analysis work and other tasks.

Finally, it is also BEREC's view that it is important that, whenever data needs are not of an urgent nature, the providers of video-streaming services can anticipate the data requests made by NRAs. Moreover, BEREC would recommend that, in general, provision/reporting of video-streaming data should be considered confidential.

3.1 Video-streaming service definition

Streaming of audio-visual content refers to a broad category of services, including but not limited to video on demand services, video-sharing platforms, online gaming, social networks, as well as media and broadcasters' online offerings. Some of these services are provided in exchange for payment, while others not. Some of these services are commercialized as standalone, while others are offered in bundles or integrated with others.

For the purpose of this report, a video-streaming service is defined as streaming of video content over the public internet, including on-demand services (i.e. for the viewing of programmes at the moment chosen by the user and at his individual request on the basis of a catalogue of programmes) and/or linear content (i.e. for simultaneous viewing of programmes on the basis of a programme schedule), which is either:

1. exclusively offered to consumers who get access to content (movies, series, documentaries, sport's events etc.), typically in exchange of a fixed monthly (or other regular) payment – subscription video on demand or SVOD (e.g. Netflix, Disney+, HBO Max, Apple TV);
2. offered from a catalogue at request of the consumer, in exchange of a fee per individual content or per transaction – electronic sell-through or EST and/or transactional video on demand or TVOD (e.g. Apple TV);
3. offered at no specific cost to consumers as such, but being part of a bundle of different services which are offered by the provider in exchange for payment (e.g. Amazon Prime Video).

It should be noted that some video-streaming services are "hybrid" in the sense that they combine features of different types, for example Apple TV comprises both subscription and transactional services.

Video-streaming services (partly) compete with, but, in some cases, rather complement traditional pay TV services (IPTV and cable). Since the above-mentioned video-streaming services are similar in terms of provision to consumers and their embedded features, common harmonised indicators can be determined for those.

Finally, the following services are not considered as video-streaming services (excluded from the analysis):

1. IPTV and cable TV services, i.e. video transmission that is not provided over the public internet and video content as an add-on to linear TV provided online or through an app (tablets or smartphones)²¹;
2. Internet access services (IAS) that merely convey video content that is being streamed on-demand by a subscriber.

3.2 Video-streaming metric definitions

This section includes video-streaming metrics and their definitions. All the metrics were defined taking into consideration the stakeholders' views. BEREC's conclusions are that:

- i) there is no major technical issue that justifies why video-streaming providers could not report data according to almost all of the metrics;
- ii) given that Recital 57 of the EEC states that "It may, by way of exception, also be necessary to gather information from other undertakings active in sectors that are closely related to the electronic communications services sector, such as content providers, that hold information which could be necessary for them to exercise their tasks under Union law", it would not be suitable for BEREC to suggest specific dates for which data would need to be provided by video-streaming operators. Therefore, BEREC is providing a list of indicators, for which NRAs may collect data whenever they think this is adequate and proportionate and also for the periods of reference which best suit their needs.

3.2.1 Indicators

3.2.1.1 Subscriber metrics for subscription video on demand (SVOD) services

The first proposed metric concerns the **number of registered users**, who subscribe to a specific SVOD, the service that allows the consumption of several audio-visual content for a pre-established period of time, for example a month, which is contracted once and then has an ongoing payment. The number of subscribers should be identified by the subscriber's country of residence.

BEREC understands that this information is generally available and that there are no major concerns identifying the country of residence of subscribers, although there are differences between services as far as the payment schemes and subscription models are concerned.

Since sometimes, one registration may support several simultaneous streams, **the number of "simultaneous streams"** that are marketed with "subscription" services by country is the second metric proposed. That is, if one registration only provides for 1 stream, it would count as 1, but if it provides 3 simultaneous streams, it would count as 3.

²¹ Note that the definition also excludes content that is viewed over the public internet, which is offered as an app complementary to a paid managed IPTV or cable TV service, where the content included in the main (IPTV/cable) TV service can be accessed online using devices such as tablets or smartphones. It is BEREC's view that the relevant information concerning these apps can be requested directly from the operators providing such services.

Following the receipt of the stakeholders' submissions during the public consultation period, BEREC clarifies that this metric aims at describing the situations in which multiple users, through a single subscription (account), can access various video contents on multiple screens at the same time, highlighting that this is a widespread practice of video-streaming platforms. Thus, this metric is considered highly useful for NRAs to assess the actual penetration rate corresponding to these services.

In summary, BEREC defines two different metrics related to video-streaming subscription services:

1. **Number of registered users, who subscribed to a specific “subscription service” by country of residence at a specific date.**
2. **Number of “simultaneous streams” that are marketed with “subscription” services by country of residence at a specific date.**

If one registration only provides for 1 stream, it would count as 1, but if it provides 3 simultaneous streams, it would count as 3.

3.2.1.2 Number of content pieces and registered users - for electronic sell-through (EST) and transactional video on demand (TVOD) services

Transactional services are rented or sold on a “fee per content basis”. The content is sold once for viewing or for viewing within a defined time window and is not subject to further recurrent payments. Therefore, these services include both form of purchase or rental of a content (so called EST – electronic sell-through and TVOD – Transactional video on demand).

The proposed metrics are **the number of content pieces sold** and, if available, **the number of registered users** by country of residence of the user.

Video-streaming providers need to be aware of the country of residence of the registered user in order to group these by country. BEREC has concluded that, in general, there are no major issues in providing this information or identifying country of residence for transactional services. However, it cannot be presumed that this is unproblematic in all cases, and for transactional services for which providers state that this is not possible, they should use proxies for the “country of residence” - for example, considering the country of reference for the payment (i.e. according to the debit/credit card information, bank information). Providers should inform the NRAs about any proxies used.

In summary, BEREC defines two different metrics related to electronic sell-through (EST) and transactional services (TVOD):

3. **Number of content pieces sold in a specific period, by country of residence of the user.**
4. **Number of registered users at a specific date, by country of residence of the registered user.**

3.2.1.3 Active User Metrics – for subscription video on demand (SVOD) services bundled with other non-entertainment services (other than IAS)

Active users' metrics are particularly relevant in cases in which a video-streaming service is offered at no specific cost to consumers, but only bundled with other services offered by the provider in exchange

for a single payment. The cases in which such metrics are particularly relevant are the ones where the video-streaming services are bundled with other non-entertainment services, seen as the core services of the bundles by users and an important motivation for their contracting of the bundle (as it is the case of Amazon Prime, for instance). In those cases, the number of subscribers may be much larger than the number of active users, as some subscribers may not use the service or even be aware of it. Therefore, the number of active users is a means to assess the relevance of the information on registered users.

At the same time, BEREC notes that the bundles with internet access services are not being considered in this metric²². Therefore, BEREC notes that the “active user metric” concerns exclusively video-streaming subscription services that are sold bundled with other non-entertainment services (other than IAS).

Finally, the proposed metric requires the number of users that have used the service at least once in the last calendar month as of the date of measurement.

- 5. Number of monthly active users at a specific date, who used the video-streaming service at least once in the last calendar month as of the date of measurement, by country of residence and by service. Applicable only to subscription services (SVOD) bundled with other non-entertainment services (other than IAS).**

3.2.1.4 Revenue Metrics

Revenue is generated by subscriptions (recurrent fees), by the sale of content (one-time purchases) and/or by other direct revenues sources, such as merchandising.

Given the NRAs’ experience in collecting similar data from IPTV and cable TV providers, and after discussing this metric with stakeholders, BEREC concludes that there are no technical issues that would impede video-streaming providers to hand in data according to the following categories of revenues:

- 6. User-based revenue from video-streaming services²³, split by recurring fees (SVOD) and one-time purchases (EST and TVOD), by country and service in a specific period.**
The revenues must have been generated in the country, in the period defined by the NRA.
- 7. Other direct user revenue sources, by country and service, in a specific period.**
This refers to other user-related revenues, for example merchandising revenues, generated in the country, in the period defined by the NRA.

²² Note that the active user metric proposed refers to video-streaming services bundled with services other than the IAS. When video-streaming services are bundled with IAS, NRAs can seek any necessary metrics from traditional electronic communications networks/services providers. In the case of bundles with IAS, the information would be sought from the internet services providers (ISPs).

²³ If the SVOD are provided in a bundle, please provide the revenue information for the whole bundle, with the corresponding explanation.

Where country of residence is not available, providers should use proxies for the “country of residence” with respect to these revenue metrics - for example, considering the country of reference for the payment (i.e. according to the debit/credit card information, bank information). Providers should inform the NRAs about any proxies used.

4 Data Traffic Metrics

Video-streaming services are known to be one of the major drivers of demand for data traffic, together with a wide variety of other over-the-top services, such as video-sharing platforms, social media or, in general, any types of online audio-visual services.

Countries concerned about network congestion may want to assess aggregate data traffic, so as to evaluate the pressure exerted by demand on the networks and strive for the continuous improvement of the quality of the internet access services provided to end-users. This makes it necessary for public authorities to ordinarily gain information on data traffic carried over access networks and, more generally, over electronic communications networks in order to see whether targeted policies are necessary to address any mismatches between the demand for network connectivity and the actual network capabilities. In recent times, the unprecedented demand triggered by the COVID-19 pandemic has made the need for this kind of information very clear.

To that end, BEREC considers that the data traffic information at an aggregate level is an important metric to all relevant public authorities. This aggregated information where no distinction is made on what/who generates the traffic should be reported by/retrieved from the internet access network providers/ISPs.

Data traffic per service

However, in some exceptional instances, public authorities may find it necessary to identify the traffic that is generated by the use of a particular service which runs over the internet for other reasons than the ones related to the identification of potential network congestions, such as the monitorization and assurance of compliance with the provisions of the Open Internet Regulation²⁴ (OIR thereafter), particularly with regards to overseeing the equal and non-discriminatory treatment of traffic in the provision of internet access services and verifying the transparency, non-discrimination and proportionality in the implementation of the traffic management measures where/when applicable²⁵.

In the former stages of this report, the data traffic metrics per service have been discussed and considered exclusively for video-streaming services. However, BEREC considers that this kind of information may also be collected from other OTT service providers and therefore does not want to circumscribe the data traffic metrics exclusively to video-streaming services but rather to treat this as a

²⁴ Regulation (EU) 2015/2120 of the European Parliament and of the Council of 25 November 2015 laying down measures concerning open internet access and retail charges for regulated intra-EU communications and amending Directive 2002/22/EC and Regulation (EU) no 531/2012.

²⁵ According to Art. 3 (3) OIR third subparagraph.

separate metric applicable to all categories of services running over the Internet whenever the information is necessary to NRAs.

During the consultation undertaken by BEREC, stakeholders have provided the view that, except in very limited cases²⁶, the information about the data generated by a specific service, app or content can only be reported to NRAs by the provider of such service, app or content deliverer, since for legal reasons²⁷, ISPs cannot retrieve or have access to these data.

Taking all of this into account and especially the fact that data traffic information per service will depend a lot on the specific need of each NRA, BEREC does not propose a specific harmonised definition for this indicator.

5 Legal considerations

Section 2 in the document numbered BoR (19) 244 includes a detailed analysis of the legal considerations that frame the NRAs' ability to collect information from providers of different services stemming from the EECC and the BEREC Regulation.

This section summarises BEREC's conclusions regarding data requests about NI-ICS and services other than electronic communication networks or services, such as video-streaming services. In all cases, requests need to be adequately reasoned, motivated and proportionate, not creating an undue burden on providers.

Overview of the legal basis on the possibilities to request data

Addressed entity →	NI-ICS	non-ECN/S
Requesting entity ↓		
NRAs and Competent Authorities (CAs)	Yes, according to Article 20* of the EECC	Yes, but only when data provided by ECN/S was insufficient according to Article 20*(1) subparagraph 2 of the EECC

²⁶ The exception is a situation where a CDN provides exclusively one content and the ISP has a direct interconnection with this CDN.

²⁷ Further reasoning for that is to be found in the stakeholders' contributions, summarised and explained in BEREC Response 19 of the BEREC Report on the outcome of the public consultation of the BEREC Report on harmonised definitions for indicators regarding OTT services, relevant to electronic communications markets.

BEREC: Indirect requests of information via NRAs to inform tasks under Article 4 of the BEREC Regulation	Yes, according to Article 40 of the BEREC Regulation, Article 5(1) subparagraph 2 of the EEC	Yes, according to Article 40 of the BEREC Regulation
BEREC: Direct requests of information to providers to inform tasks under Article 4 of the BEREC Regulation	Yes, but only when information needed for fulfilling the purpose of Article 4 of the BEREC Regulation is not made available by NRAs in a timely manner according to Article 40(4) of the BEREC Regulation	No direct requests, as a conclusion from Article 40(4) of the BEREC Regulation

**Wherever Article 20 is the basis for a request for information the sharing mechanism of Article 20(1) subparagraph 2 applies (cross border information sharing mechanism)*

a) Who may request data?

Article 20 of the EEC explicitly attributes the power to request data to the NRAs and Competent Authorities (CAs) and Article 29 of the EEC gives the power to impose penalties in case of non-compliance with a request for information to the NRAs and CAs only.

Article 5(1), subparagraph 2, of the EEC and Article 40 of the BEREC Regulation state that “*For the purposes of contributing to BEREC’s tasks, NRAs shall be entitled to collect necessary data and other information from market participants*”. Therefore, NRAs may request data from the market participants when this is necessary for contributing to BEREC’s task according to Article 4 of the BEREC Regulation. Article 40(1) explains that BEREC may request the data from NRAs by a reasoned request, provided that NRAs have legal access to the information, and that the information is necessary in relation to the nature of the tasks BEREC is carrying out. Article 40(4) introduces a condition under which BEREC is allowed to request data directly from relevant ECN/S undertakings:

“Where information is not made available by the NRAs in a timely manner, BEREC or the BEREC Office may address a reasoned request either to other NRAs and other competent authorities of the Member State concerned, or directly to the relevant undertakings providing electronic communications networks, services and associated facilities”.

Thus, BEREC can address undertakings providing ECN/S directly whenever a previous request of information to the NRAs has failed or has not been answered in a timely manner.

b) What data can be requested?

Article 20 of the EEC mentions the different types of data that may be required, which include any data necessary for NRAs, CAs and BEREC to ensure conformity with the provisions of, or decisions or opinions adopted in accordance with, the EEC and the BEREC Regulation.

All the information that BEREC may request from NRAs (or – in exceptional cases – directly from undertakings providing ECN/S) must be linked to the fulfilment of BEREC’s tasks as described in Article 4 of the BEREC Regulation (Article 5(1), subparagraph 2, of the EEC and Article 40 of the BEREC Regulation).

c) From whom?

Article 20(1), subparagraph 1 of the EECC allows data collection from “*undertakings providing electronic communications networks and services, associated facilities, or associated services*”. However, in exceptional cases, Article 20(1), subparagraph 2 allows the data collection from other undertakings²⁸, as well:

“Where the information collected in accordance with the first subparagraph is insufficient for national regulatory authorities, other competent authorities and BEREC to carry out their regulatory tasks under Union law, such information may be inquired from other relevant undertakings active in the electronic communications or closely related sectors.”

This is clarified by Recital 57 of the EECC:

“It may, by way of exception, also be necessary to gather information from other undertakings active in sectors that are closely related to the electronic communications services sector, such as content providers, that hold information which could be necessary for them to exercise their tasks under Union law. [...].”

Neither the EECC, nor the BEREC Regulation limit the targeted audience for BEREC’s indirect information requests as long as the information is needed for the fulfilment of BEREC’s tasks according to Article 4 of the BEREC Regulation. Note that according to Article 40 of the BEREC Regulation, BEREC can request information from any NRA in Europe which is represented in the Board of Regulators, as well as the EC.

However, with regard to direct information requests of BEREC²⁹, Article 40(4) of BEREC Regulation only refers to: “*relevant undertakings providing electronic communications networks, services and associated facilities*”, therefore excluding requests to “*other relevant undertakings active in the electronic communications or closely related sectors*” as mentioned in Article 20(1), subparagraph 2 of the EECC.

d) Cross-border information sharing

Article 20(2), subparagraph 2 of the EECC describes a cross-border sharing mechanism between Member States and BEREC and its prerequisites:

“Subject to the requirements of paragraph 3, Member States shall ensure that the information submitted to one authority can be made available to another such authority in the same or different Member State and to BEREC, after a substantiated request, where necessary to allow either authority, or BEREC, to fulfil its responsibilities under Union law.”

Article 20(3) of the EECC basically states that such a request for information cannot be denied due to confidentiality concerns as BEREC, NRAs and CAs shall ensure its confidentiality.

²⁸ Note that the definition of electronic communication service in Art 2 EECC explicitly excludes services providing, or exercising editorial control over, content transmitted using electronic communications networks and services. Therefore, video-streaming services are a category of services that can be included under the concept of “*other relevant undertakings active in the electronic communications or closely related sectors*”, as paragraph 57 in the EECC preamble suggests.

²⁹ Information requests targeted at the concerned undertakings.

e) The geographical jurisdiction for video-streaming services

Video-streaming services are mainly regulated by the Audio-Visual Media Services Directive (hereinafter the AVMSD)³⁰. In particular, the provision of video-streaming services does not fall under the remit of the EECC; the definition of electronic communications services in Article 2(4) of the EECC clearly excludes “*services providing, or exercising editorial control over, content transmitted using electronic communications networks and services*”³¹.

The application of the AVMSD provisions is subject to the Country of Origin principle (CoO), with the aim of promoting the free provision of audio-visual media services across Europe, in the pursuit of the Internal Market goal.

The latest review of the AVMSD has extended the CoO principle to on-demand audio-visual media services (previously reserved to traditional broadcasting services). According to the CoO principle, Article 2 of the AVMSD ensures that providers of broadcasting channels and video on-demand services based in one country are only subject to the set of rules and regulations established by that country (that is, the „Country of Origin“) even though its channels/services are offered in (and are targeting citizens from) another country (that is, the „Country of Destination“)³².

However, **Article 2 circumscribes the CoO principle to the law applicable to audio-visual media services and for the purposes of the AVMSD³³, and does not extend its applicability to other separate purposes, for example, the EECC’s.**

As a matter of fact, the **EECC relies on the Country of Destination principle; therefore, NRAs’ requests for data/information pursuant to Article 20 of the EECC can be targeted directly to the providers of services in closely related sectors, wherever those are established within the EU, in so far the requests are proportionate and well-motivated** (those should be made to ensure conformity with the EECC and/or the BEREC Regulation or any derived legislation). Such regime has to be considered as completely separate from the AVMSD regime.

³⁰ Directive 2010/13/EU of the European Parliament and of the Council of 10 March 2010 on the coordination of certain provisions laid down by law, regulation or administrative action in Member States concerning the provision of Audio-Visual Media Services, as amended by Directive 2018/1808/EU of 14 November 2018.

³¹ Recital 7 of the EECC further clarifies that its scope does not include content of services delivered over electronic communications networks using electronic communications services.

³² “Article 2

1. *Each Member State shall ensure that all audio-visual media services transmitted by media service providers under its jurisdiction comply with the rules of the system of law applicable to audio-visual media services intended for the public in that Member State.*

2. *For the purposes of this Directive, the media service providers under the jurisdiction of a Member State are any of the following:*

(a) *those established in that Member State in accordance with paragraph 3;*

(b) *those to whom paragraph 4 applies.”*

³³ Recital 104 in Directive 2010/13/EU states that its objectives are: “*the creation of an area without internal frontiers for audio-visual media services whilst ensuring at the same time a high level of protection of objectives of general interest, in particular the protection of minors and human dignity as well as of minors and human dignity as well as promoting the rights of persons with disabilities*”.

In operational terms, in case the video-streaming provider is established in a different Member State than the one it is requested to provide information/data, NRAs should be aware that the enforcement of data/information requests to video-streaming services would be dependent on the cooperation of the NRA implementing the EU regulatory framework for electronic communications in the Member State where the provider of the concerned service is established or has its residence. For example, if an NRA from Country A requests data/information from a provider established in Country B, and the provider declines the request, the NRA in Country A will need to cooperate with the NRA in Country B in order to oblige the provider to hand in the information requested (e.g. through enforcement measures).

6 Conclusions

This report provides a set of indicators on the basis of which, where necessary, NRAs can collect comparable data on OTT services (especially, NI-ICS and video-streaming services) within their regulatory mandate.

As far as NI-ICS are concerned, only “by country” metrics related to registered and active users and the number of originated calls/messages can be defined with the objective to obtain such information in a harmonised way. The other proposed metrics are not deemed appropriate and/or feasible to collect at this point, for various reasons. Further analysis will be required regarding other indicators, for which definitions could be elaborated at a later stage.

With respect to the video-streaming metrics, there are no major technical issues and constraints for the provision of data concerning the majority of the initially proposed metrics.

The EECC explicitly attributes the power to request data to NRAs and CAs. Moreover, the BEREC Regulation implies that BEREC may request NRAs to provide available data from market participants when this is necessary for contributing to BEREC’s tasks. When information is not made available by the NRAs in a timely manner, BEREC may directly request information from the relevant undertakings providing electronic communications networks, services and associated facilities. There is also a legal basis for cross-border information sharing between Member States and BEREC and its prerequisites.

At the same time, considering the potential practical difficulties which NRAs might face in the actual process of data collection regarding NI-ICS and video-streaming services, BEREC is to further investigate the way and the extent to which it could assist NRAs to successfully fulfil their data needs.

The country-of-origin principle as set forth in the AVMSD does not extend its applicability to other separate purposes, while the EECC does not include any principle “analogous” to the AVMSD’s country of origin principle. Hence, NRAs’ data requests can be targeted directly to the providers of services, wherever those are established, in so far those requests are proportionate and well-motivated.

Annex 1 - LIST OF INDICATORS

NI-ICS

1. Number of Monthly Active Users (MAU) who used the service in the last calendar month as of the date of measurement, by country of residence, by service.
This metric refers to the users that cannot be qualified as business users.
2. Number of Monthly Active Business Users who used the service in the last calendar month as of the date of measurement, by country of service deployment, by service.
3. Number of Registered Users, who registered with a specific NI-ICS, by country of residence and by NI-ICS, at a specific date.
This metric refers to the users that cannot be qualified as business users.
4. Number of Registered Business Users, who registered with a specific NI-ICS, by country of residence and by NI-ICS, at a specific date.
5. The total number and minutes of voice calls made by NI-ICS users towards other NI-ICS users, by country of residence of the caller, in a specific period.
6. The total number and minutes of video calls made by NI-ICS users towards other NI-ICS users, by country of residence of the caller, in a specific period.
7. The total number of instant messages sent by NI-ICS users towards other NI-ICS users, by country of residence of the sender, in a specific period.

In order to have a view on the seasonality, following stakeholders' engagement, BEREC recommends to NRAs that consider collecting the data:

- for active users/active business users that the data shall refer to the calendar months of: March, June, September and December;
- for registered users/registered business users that data shall refer to the following dates: 31st March, 30th June, 30th September and 31st December;
- for usage data, that aggregate quarterly data, as of the 31st of March, 30th June, 30th September and the 31st December, should be sought.

Video-streaming services

1. Number of registered users, who subscribed to a specific "subscription service" by country of residence, at a specific date.
Only for subscription services (SVOD).
2. Number of "simultaneous streams" that are marketed with "subscription" services by country of residence at a specific date.
Only for subscription services (SVOD). If one registration only provides for 1 stream, it would count as 1, but if it provides 3 simultaneous streams, it would count as 3.
3. Number of content pieces sold in a specific period, by country of residence of the user.
Only for electronic sell-through (EST) and transactional services (TVOD).
4. Number of registered users at a specific date, by country of residence of the registered user.
Only for electronic sell-through (EST) and transactional services (TVOD).

5. Number of monthly active users at a specific date, who used the video-streaming service at least once in the last calendar month as of the date of measurement, by country of residence and service.
Only for subscription services (SVOD) bundled with other non-entertainment services (other than IAS).
6. User-based revenue from video-streaming services split by recurring fees (SVOD) and one-time purchases (electronic sell-through (EST) and transactional services TVOD), by country and service in a specific period.
7. Other direct user revenue sources, by country and service, in a specific period.