



AUTORITÀ PER LE
GARANZIE NELLE
COMUNICAZIONI

EMERG WORKSHOP ON NET NEUTRALITY

13 OCTOBER 2020

***COVID-19 IMPACT ON BROADBAND TRAFFIC:
overall evolution and remedies***



- As you know, Internet traffic greatly increased following coronavirus confinement measures: **social distancing measures across the EU have seen citizens and business shift their activities online.**
- The Covid-19's epidemiological emergency **has led to a general increase in data traffic on the operators' networks.**
- Article 82 of Decree Law no. 18 of 17 March 2020 ("Cura Italia"), in order to cope with the growth in consumption of services and traffic on electronic communications networks in the epidemiological emergency situation, **provides that electronic communications networks and services companies are required to take all useful initiatives to improve the infrastructure and ensure operations and service continuity.**



- In implementation of the “Cura Italia” Decree, the Authority has adopted **the first measures and initiatives for the market, aimed at avoiding situations of congestion, band saturation and social exclusion of customers not yet connected to the ultrawideband network, as well as guaranteeing a higher quality of services offered to end consumers.**
- **Some of these measures are addressed to TIM (Telecom Italia),** as an operator with significant market power in the markets for wholesale access services to the fixed network, **and others to all operators** (Decision of 20 March 2020).
- **To deal with it, the Authority has supervised the TM practices implemented against the possible congestion making targeted requests for information within a technical forum named “Telco and Consumers”** launched on 25 March 2020.



- **The forum has been specifically set up for continuous consultation and discussion** with operators and stakeholders in the electronic communications chain.
- **The same information was also used to update the reports on the status of the Network in the Covid-19 emergency scenario transmitted to the European Commission** in the framework of the monitoring activity established within BEREC, in accordance with the *“Joint Statement from the Commission and the Body of European Regulators for Electronic Communications (BEREC) on coping with the increased demand for network connectivity due to the Covid-19 pandemic”*, BoR (20) 66 of 19 March 2020*.
- **A special mechanism to monitor the effect of heightened traffic on networks across all Member States was set up** by the Commission and BEREC on 19 March. **They regularly publish updates on the findings of the monitoring action and the Internet traffic situation in each Member State.**
- **Initially, some general information on fixed and mobile network traffic levels was reported with a link to the data of the principal IXPs and the activities undertaken were indicated** (RFI, interactions with ISPs, communications by ISPs about actions towards consumers, increase in bandwidth capacity, etc.).

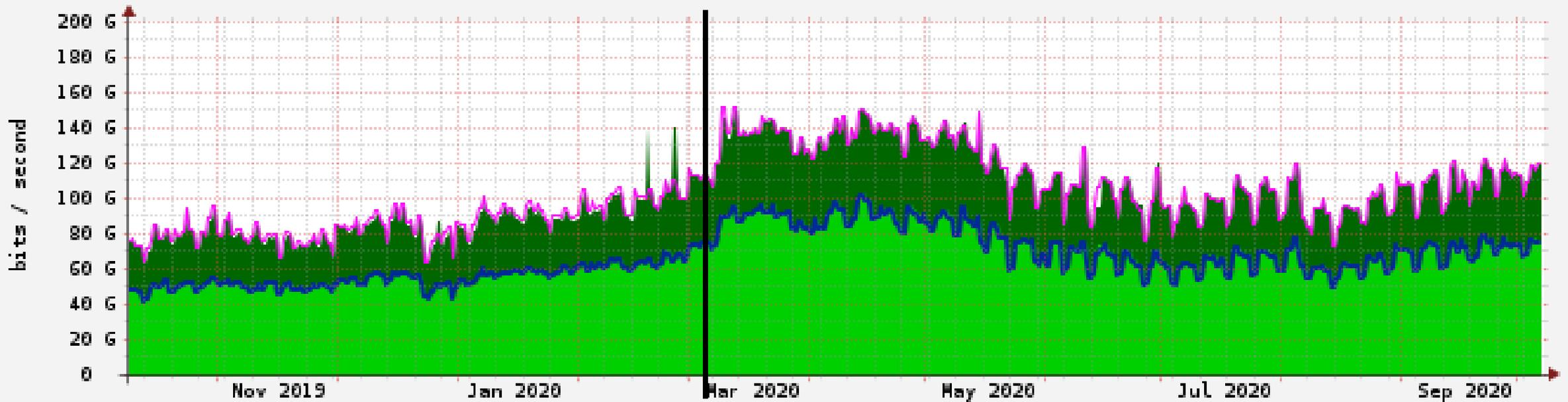
* https://berec.europa.eu/eng/document_register/subject_matter/berec/others/9236-joint-statement-from-the-commission-and-the-body-of-european-regulators-for-electronic-communications-berec-on-coping-with-the-increased-demand-for-network-connectivity-due-to-the-covid-19-pandemic



- But why, for a first look, the IXPs? **In terms of percentage increase in traffic, in fact, the data appear reasonably in line with the IXP data** (the absolute values may instead be different because it is necessary to consider the direct interconnections of the operators and those to the various IXPs).
- **Initially, each NRA had to updated the report every two days** (Tuesday and Thursday), **highlighting (if necessary) the differences from the previous report**. On the following next days (Wednesday and Friday) Berec sent the report to the European Commission.
- **Subsequently**, in order not to have such a heavy commitment, **it was decided to ask for the data to be updated every Thursday**.
- For the reference period, **it emerged that** the participants in the forum **did not implement TM measures aimed at avoiding congestion on fixed and mobile networks**:
 - partly because they were not necessary,
 - also taking into account the measures already envisaged by the Authority to avoid situations of congestion, band saturation and social exclusion.

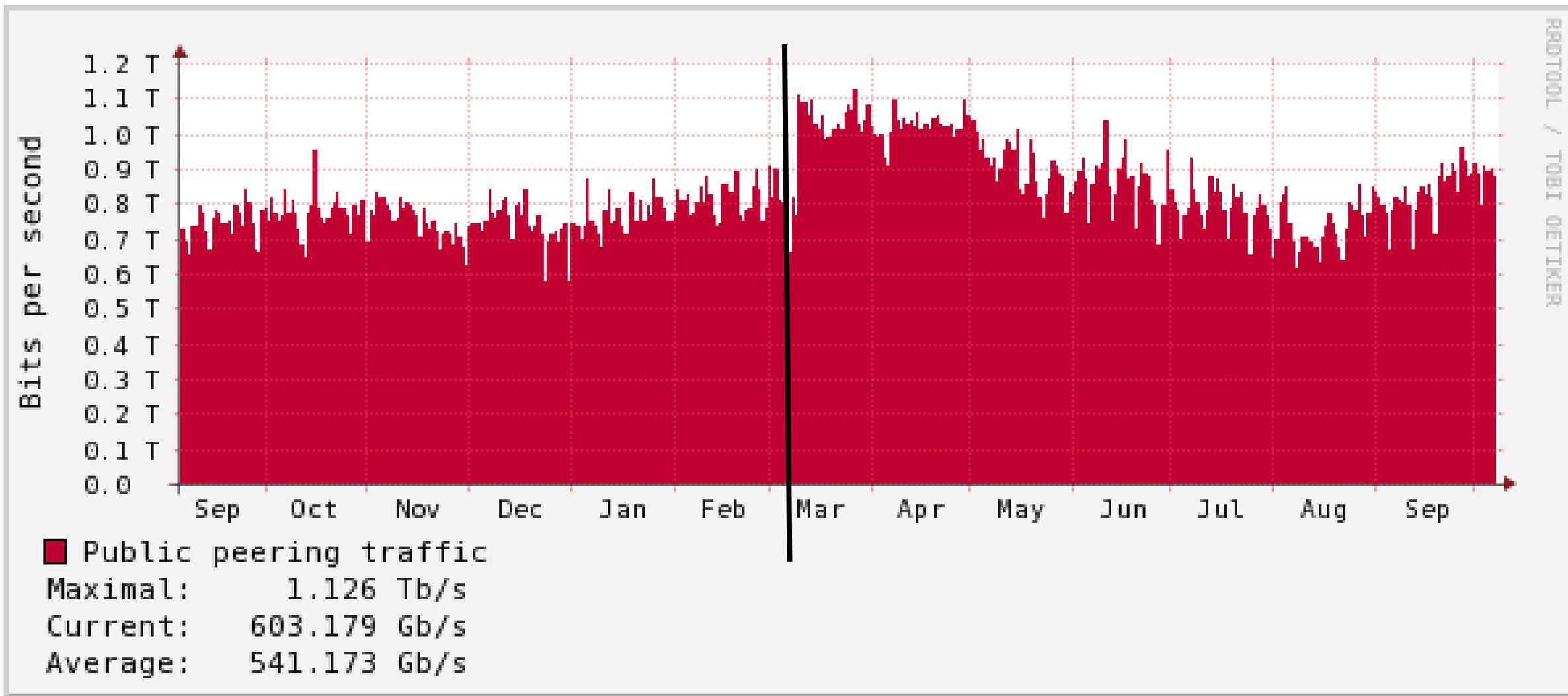


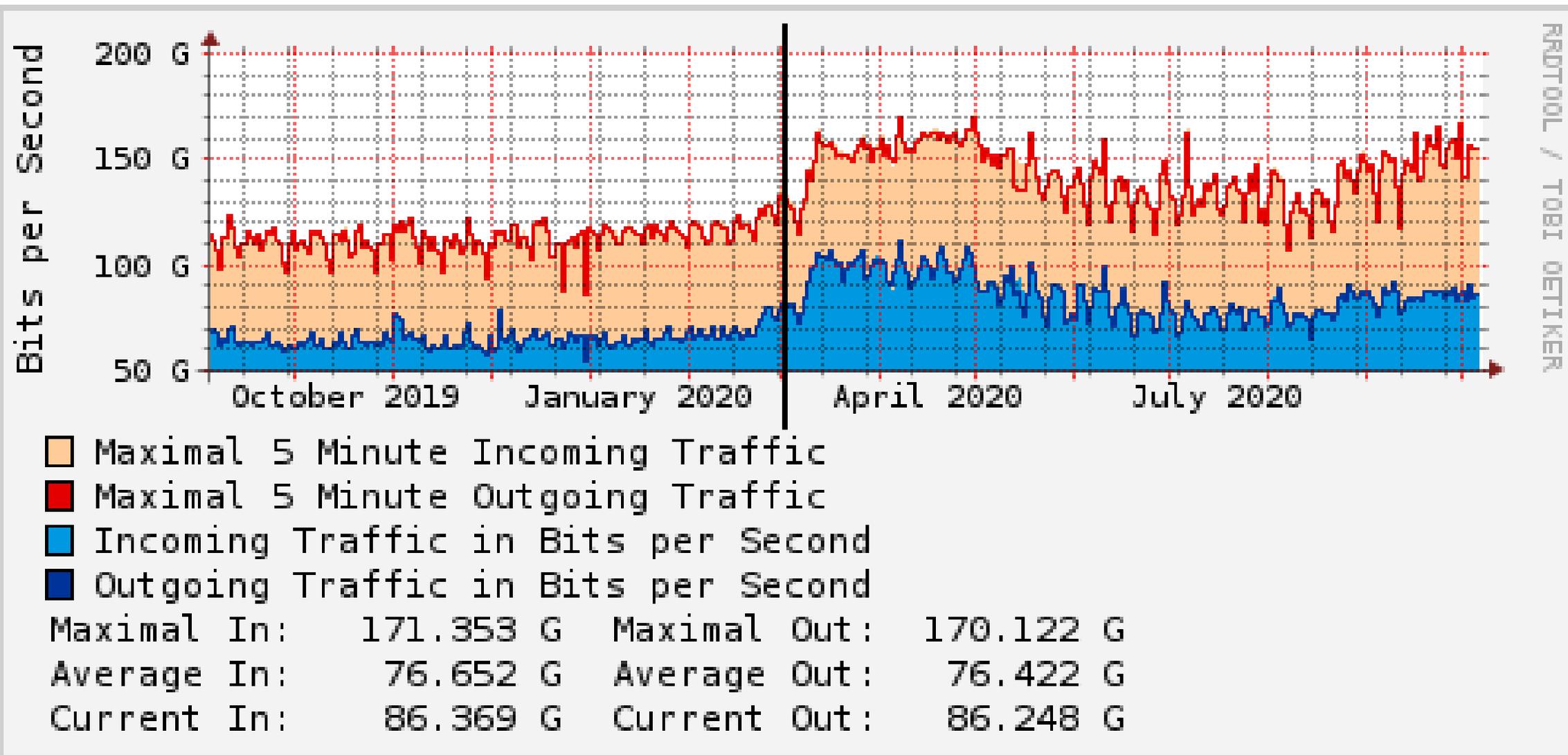
NAMEX Roma IXP :: NAMEX Roma IXP



Out	Peak	151.86G	Avg	102.70G	Cur:	76.62G
In	Peak	152.14G	Avg	103.32G	Cur:	76.64G

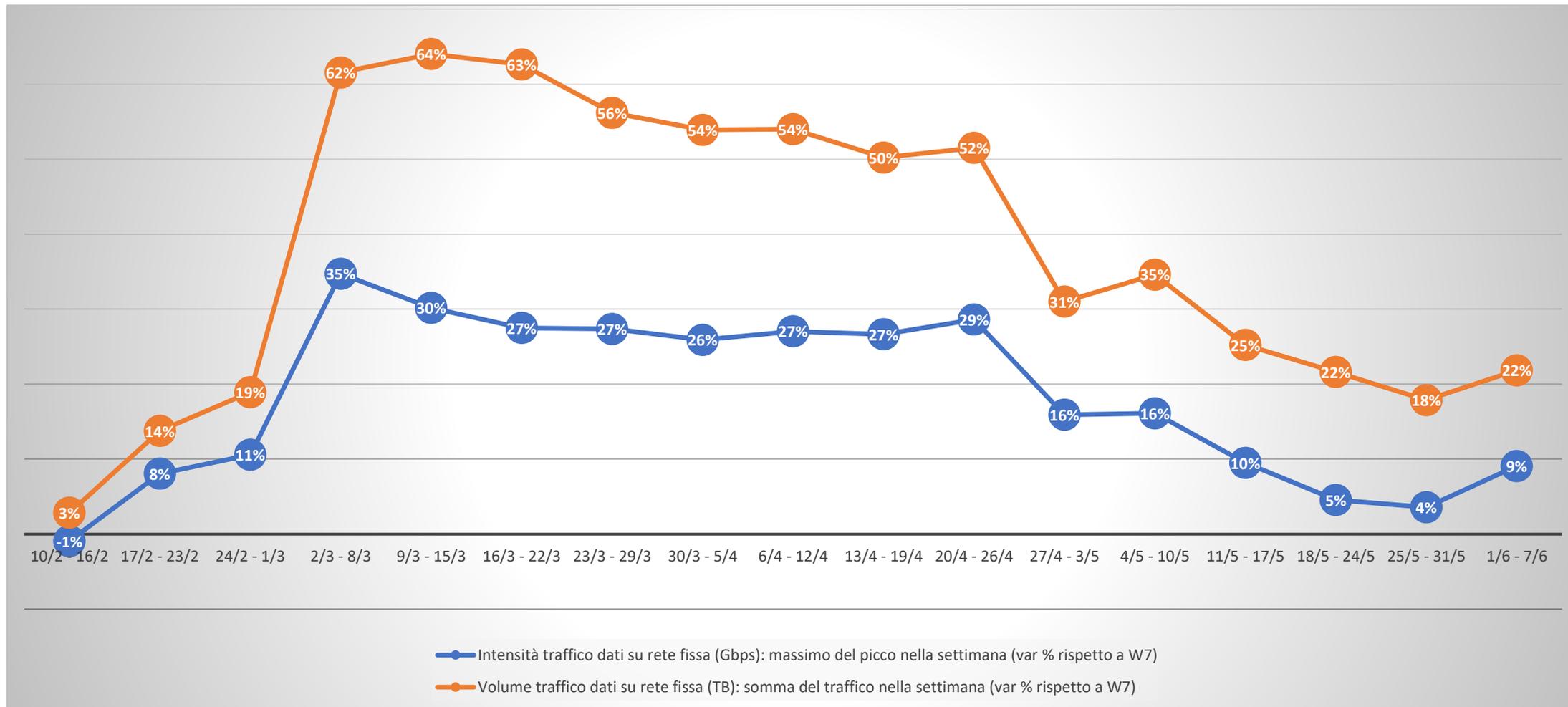
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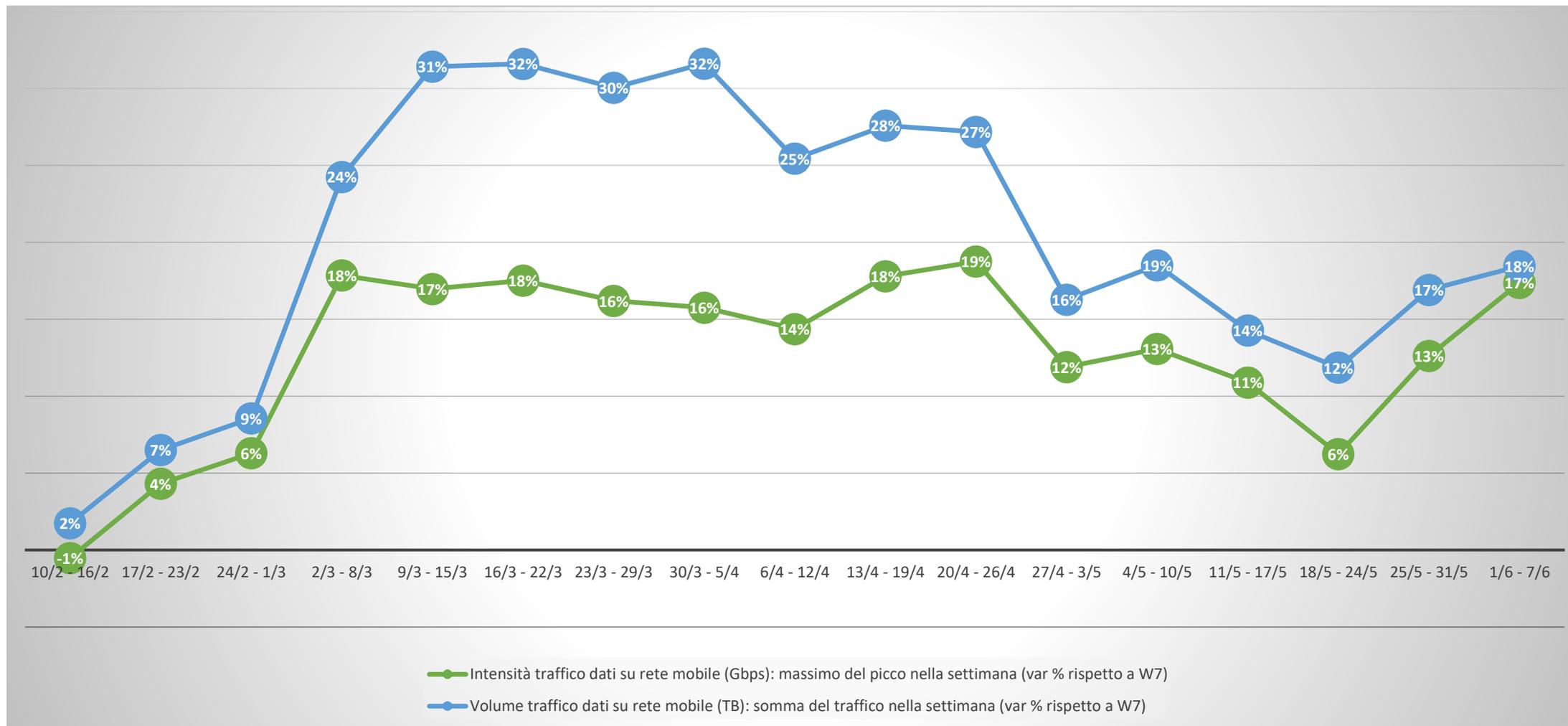


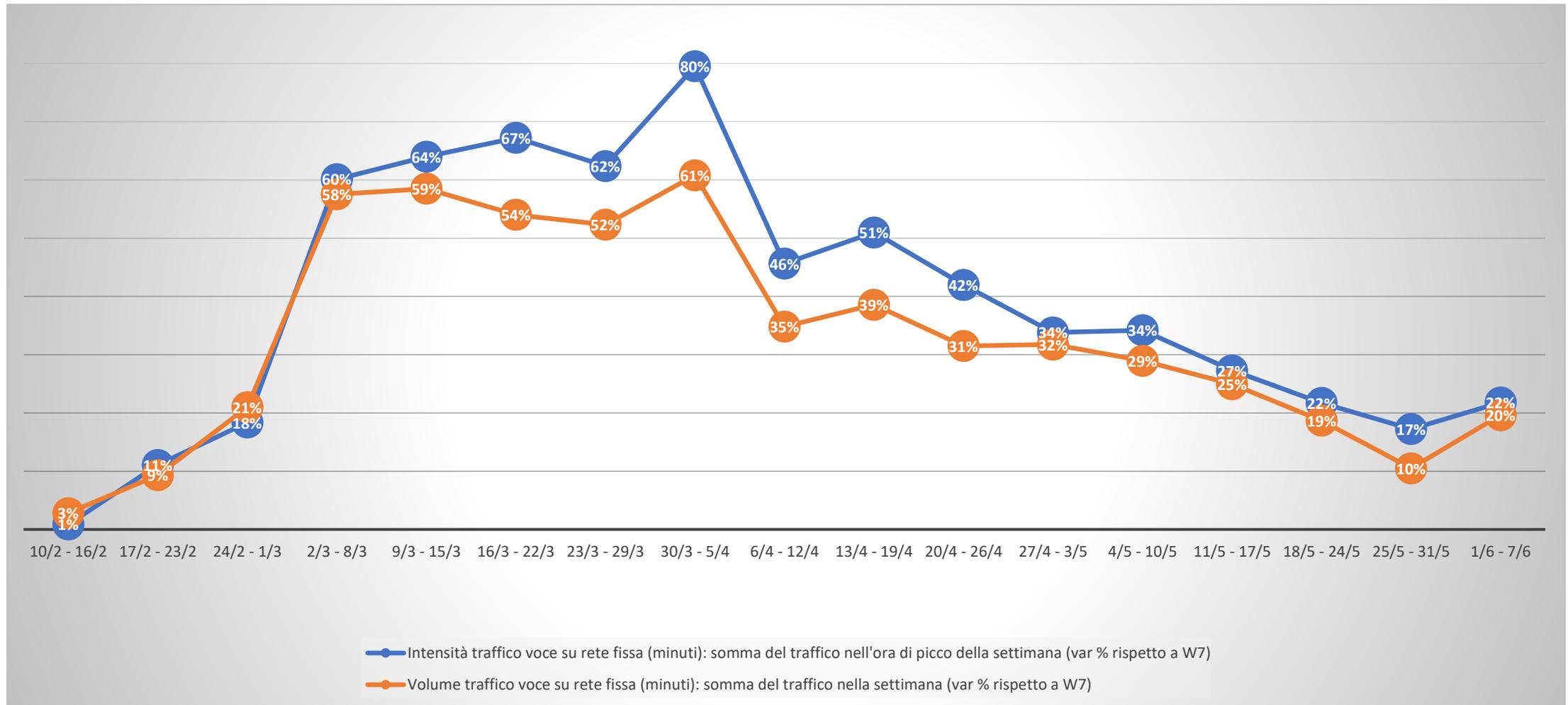


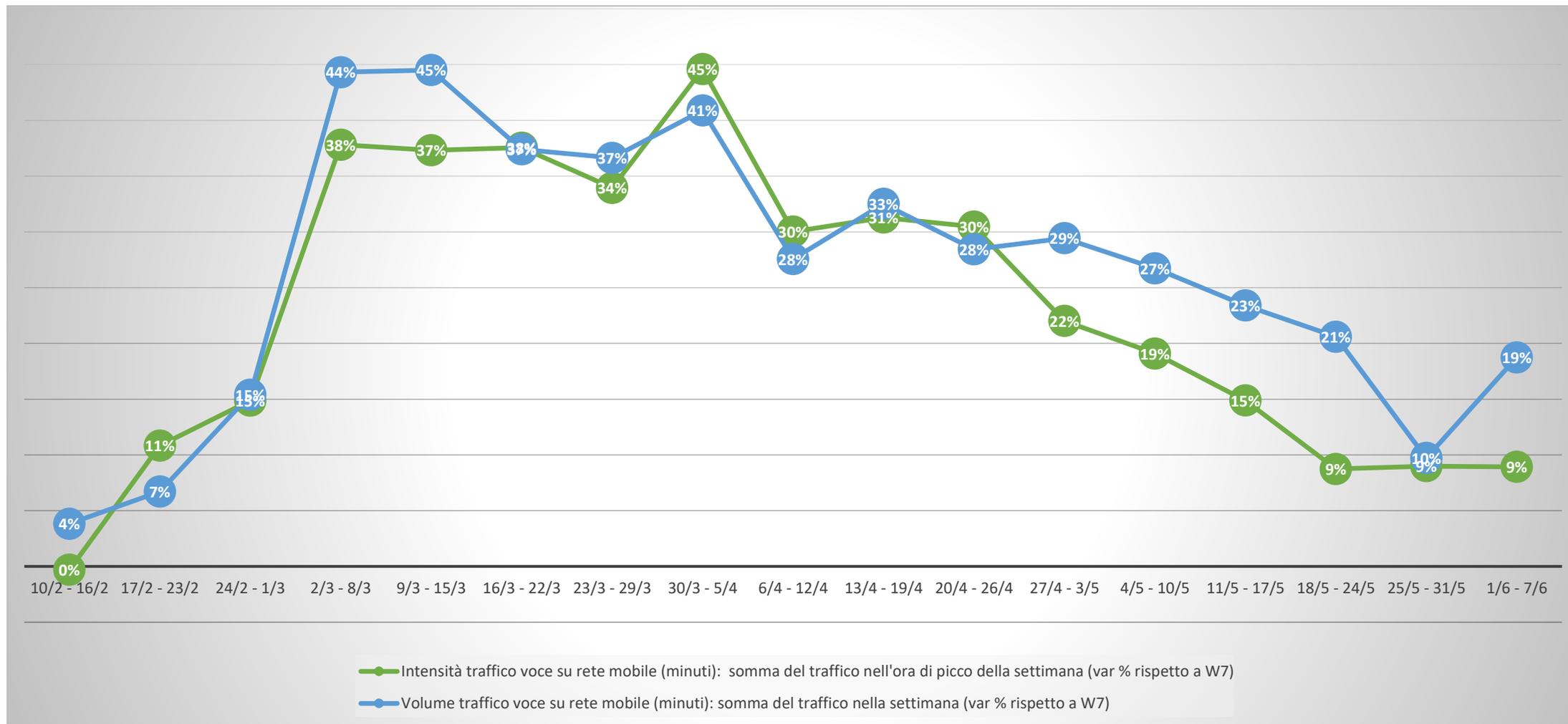


- **In the start-up phase of the forum, most operators noted a significant increase in data and voice traffic, both for fixed and mobile networks**, compared to the period prior to the start of the epidemic crisis and the first lockdown measures in some territorial areas (Phase 1), generally identified in week 7 (10-16 February 2020). **The full lockdown in Italy (addressing a population of 60 mln) started on March 9, 2020.**
- **A first decrease in traffic was recorded in week 21 (18-25 May 2020), coinciding with the start of Phase 2 and the end of the lockdown.**
- As the baseline is the week 7 (10-16 February 2020 - before covid), **the percentage shown in the next slides is the variation in respect of the baseline: $\text{KPI (week } n) / \text{KPI (week } 7)$**
- Note that, shown in the next slides, for the data traffic (both fixed and mobile) we have:
 - **Intensità = «traffic intensity (Gbps): maximum peak of the week»**
 - **Volume = «traffic volume (TB): sum of traffic in the week»**
- Instead for the voice traffic we have:
 - **Intensità = «traffic intensity (min): sum of traffic at peak time of the week»**
 - **Volume = «traffic volume (min): sum of traffic in the week»**
- Bear in mind that **these are "raw" data in the sense that the operators basically calculate the KPIs in absolute terms** (Gbps, mln of minutes, etc.) and then communicate the % to us
- **These raw data encompass, in any case, the physiological increase of traffic from one year to the next**











- **The overall traffic on fixed and mobile networks has significantly increased** during the Covid-19 crisis, but that **no major congestion issues have occurred**.
 - It is mainly **an increase in daytime traffic** that the higher volume of traffic has been attributed to.
 - **Network operators have been able to cope well with this additional traffic load.**
 - **Some targeted interventions have been reported** that relate to adjusting the capacity of specific parts of the networks and national IXPs.
 - **Some local and temporary difficulties** with the internet access have been **observed and mitigated** but has **not been considered to be critical**.
 - **A stabilization in traffic as well as a decrease in the peak traffic were observed after the measures** put in place by some of the larger content providers, such as Netflix, Amazon PrimeVideo, YouTube and Facebook: **CAPs have reduced the bitrate transmission of their streaming services***.
- Following Commissioner Breton's initiative, measures had been applied throughout Europe by some of the larger content providers, such as Netflix, YouTube, Amazon Prime and Facebook.



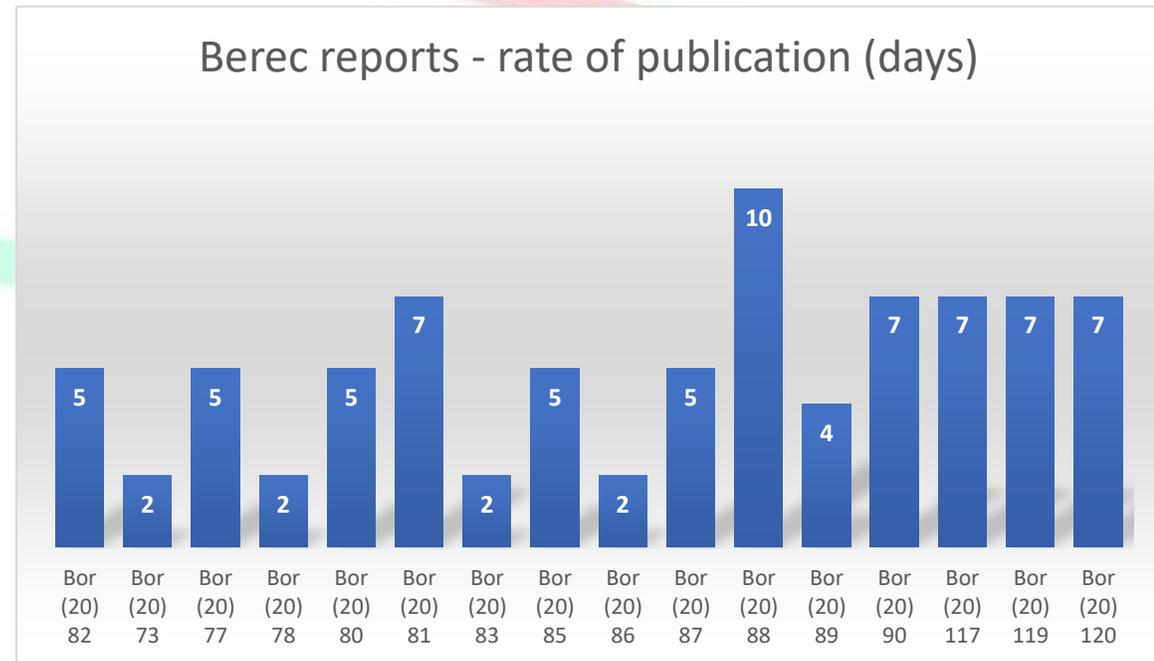
- Several NRAs have informed the market players about the available exception for TM during congestion in Article 3(3) c) of Regulation (EU) 2015/2120 as well as about their duties in such an event.
- **Article 3(3) of Regulation (EU) 2015/2120 states: “Providers of internet access services shall not engage in traffic management measures going beyond those set out in the second subparagraph, and in particular shall not block, slow down, alter, restrict, interfere with, degrade or discriminate between specific content, applications or services, or specific categories thereof, except as necessary, and only for as long as necessary, in order to:**
 - *comply with Union legislative acts, or national legislation that complies with Union law, to which the provider of internet access services is subject, or with measures that comply with Union law giving effect to such Union legislative acts or national legislation, including with orders by courts or public authorities vested with relevant powers;*
 - *preserve the integrity and security of the network, of services provided via that network, and of the terminal equipment of end-users;*
 - ***prevent impending network congestion and mitigate the effects of exceptional or temporary network congestion, provided that equivalent categories of traffic are treated equally.”***



- For this reason, **ISPs are asked to immediately notify the NRAs about any major incidents and any exceptional measure that are put in place.** This is particularly relevant for the application of any exceptional TM measure: **operators should notify the respective NRA if any such TM measure is applied.**
- Note that **a trend that shows three phases** can be clearly observed in the overall **traffic evolution** during the crisis: **sharp increase, stabilization and a slight decrease from the peak.**
- Consequently, **overall internet traffic is beginning to revert to average internet traffic levels** of before the start of the Covid-19 crisis. Now, the question is... the difference shown in the previous slides (ca. 8-21% increase) **is it a normal traffic increase (YoY) or is it the “new normal”?**
- Note also that **the measures taken** from NRAs, other Public Institutions and market players **are very heterogeneous.**



- **NRAs monitored the situation and regularly collected data from the ISPs and other market players about the status in their networks: the frequency of collecting data ranges varies from once per day, to once, twice or three times a week.**
- The graphic shows the rate of publication of the Berec reports: the baseline is 19/03/2020 (joint statement Berec-EC).
- As you can see, initially we have a variable close exchange of data, then we have a peak (Easter period) after that a stabilization.





Consumer protection measures:

- many NRAs initiated **information campaigns on the responsible use of services with practical recommendations** (e.g. no downloading large files or streaming HD videos during peak hours) **to avoiding congestion issues** and supporting access to essential information, teleworking and distance learning applications.
- **several measures have also been implemented** (asking operators not to take any actions against consumers who could not -given the circumstances- settle their bills, information gathering about consumer care and retail operation, tracking service outages at essential services sites -e.g. doctors' premises-, etc.)

Against disinformation measures:

- some NRAs (and Governments) have launched **initiatives to contrast disinformation, especially online, covering matters relating to Covid-19 like misinformation and conspiracy theories concerning the links between 5G and Covid-19.**

Spectrum measures:

- in some instances, **NRAs suspended or postponed some planned or ongoing procedures such as spectrum tenders or releases of frequencies** (in particular 700 MHz band) related to delays in DVBT2 transition, partly due to the need to ensure continuous DTT reception during the crisis, and also due to restrictions regarding movement and “field operations”.
- other actions include the **temporary assignment of radio spectrum to enable mobile operators to increase capacity.**



Security measures:

- NRAs (other national authorities and operators) have been jointly **working towards ensuring the continuous availability of essential ECSs such as voice and internet access, especially for critical infrastructures, national services and systems** (e.g. prompting operators to adopt contingency plans and to continually assess and mitigate risks regarding service continuity, integrity and security).
- several NRAs **reported attacks against electronic communications infrastructure** (e.g. Wi-Fi equipment) to which they **responded by raising awareness on the consequences of such actions**.
- some NRAs have **issued warnings in response to an increase in fraud and cyber-attacks** related to Covid-19.

Wholesale regulatory measures:

- A few NRAs **adopted extraordinary wholesale measures to improve conditions of service provision** in response to the crisis, for example:
 - **reduction in unit wholesale cost of the incumbent's copper and fibre Ethernet bandwidth,**
 - **early opening of the incumbent's new fibre cabinet,**
 - **fast provision of transport kits and VLAN,**
 - **request to the incumbent** to make its infrastructure available in the whole territory of the country,
 - **request to operators** to increase bandwidth per consumer or voice interconnection capacity,
 - **postponement of earlier adopted measures on margin squeeze tests** which would result in changes to the contracted prices during the crisis.



Temporary restriction of number portability:

- in some Member States, **only the number portability that does not imply movement of the customer or professional intervention at the customer's premises was allowed**. This means that most of the mobile number porting not sold in a fixed mobile convergent bundle is being carried out. On the contrary, only a limited amount of fixed number porting was allowed as this requires physical interventions in clients' homes.
- on the one hand, **operators are not allowed to issue extraordinary advertising campaigns on services that require number portability and mobile and fixed portability**: caps have been set to achieve the right balance between the new regulation and the State of Alarm situation.

Covid-19 number:

- in some Member States, **specific numbers have been assigned to Covid-19 hotlines** for medical purposes and to facilitate registrations for tests **in order to avoid 112 congestion**.

Other:

- several measures **aimed at suspending or lowering the burden of some administrative procedures** have been implemented to help operators to focus on their core business during the pandemic.



General extraordinary emergency measures adopted:

- **Public warning systems:** Examples of such measures include, inter alia, **using SMS or mobile applications for public warning systems and the usage, on a temporary basis, of master data and location data of mobile users to send push-SMS to users in certain regions** (e.g. users within a village under quarantine), **or to users with specific master data** (e.g. users above a certain age).
- **Measures to trace movement of citizens:**
 - in some Member States, **new legislation has been introduced requiring operators to share location data so that the relevant authorities can monitor compliance with restrictions on movement during quarantine or to enforce quarantine orders or, in other cases, to understand movements of the population and assess the health resources needed** in every region.
 - another reported example of measures adopted is the **use of a dedicated app to trace infected citizens based on the prior consent of the individual**. Most of these apps use anonymized or pseudonymized data for tracking and recording the spread of the virus based on questionnaires, but some more apps also use Bluetooth-based solutions to record contacts and warn users if they get close to an infected person.
- **Other:** In general, **national Governments are tending to encourage/require teleworking and are informing consumers about the responsible use of IAS from home**. Several NRA mentioned **business continuity-related measures**. One NRA reported on the **postponement of enforcement procedures over monetary assets** for three months (during the special circumstances) with the possibility of extension for a further three months.



- In some cases, **operators temporarily suspended or restricted commercial activities or new installations that would require the physical presence of technicians** (with exceptions for essential services sites).
- In one Member State, **an agreement was signed between the Government and telecom operators including a number of voluntary commitments** to cope with the Covid-19 situation. **These commitments aim at the implementation of measures to ensure the provision of services**, especially with respect to the networks that support emergency services.



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THANK YOU

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