



# REFERENCE OFFER OF CROATIAN TELECOM INC. FOR DIRECT WHOLESALE ROAMING ACCESS (REFERENCE OFFER)

## INTRODUCTION

According to Article 3 of the Regulation (EU) 2022/612 of the European Parliament and of the Council of 6 April 2022 on roaming on public mobile communications networks within the Union ("Roaming Regulation") and the BEREC<sup>1</sup> Guidelines on the application of Article 3 of the Roaming Regulation, issued on September 30th 2022, Croatian Telecom Inc. ("HT") shall meet every reasonable request of the undertaking for direct wholesale access to HT network for the purpose of that other undertaking providing retail regulated roaming services to its customers while in roaming under the HT network as visited network ("Access Seeker").

## DEFINITIONS

**Access Seeker:** undertaking which is entitled under the law of the EU/EEA member state in question to provide roaming services to its retail customers.

**Direct Wholesale Access Agreement:** the written agreement on providing direct wholesale access to HT network for the purpose of providing roaming services and which shall, following the negotiations the parties will have in good faith having this Reference Offer as the starting point, be concluded between Access Seeker and HT. By the Direct Wholesale Access Agreement HT enables the provision of Regulated Roaming Call, Regulated Roaming SMS and Regulated Roaming Data services to Access Seeker's end customers while temporarily roaming in the Republic of Croatia ("RH") under the HT network as visited network and the provision of other nonregulated services from this Reference Offer to Access Seeker's end customers while temporarily roaming in RH under the HT network as visited network in case HT and Access Seeker signed an agreement for nonregulated services on commercial basis. Within the scope of Regulated Roaming Services, the Direct Wholesale Access Agreement allows, where it is technically feasible, the Access Seeker to request access to all available technologies and network generations in HT network which may be necessary in order to replicate mobile services provided domestically. The Direct Wholesale Access Agreement between HT and Access Seeker is not intended to substitute domestic wholesale offerings for the provision of domestic services on HT network. Any use of the Direct Wholesale Access Agreement for purposes other than provision of previously stated services - such as but not limited to Permanent Roaming and Anomalous or Abusive Use in HT network - is not part of the Direct Wholesale Access Agreement. The Direct Wholesale Access Agreement between HT and Access Seeker will be concluded for an unlimited period of time with a termination notice period of 6 (six) months.

**Regulated Roaming Services:** Regulated Roaming Call, Regulated Roaming SMS and the Regulated Roaming Data services.

**Regulated Roaming Call:** a mobile voice telephony call made by an Access Seeker's end customer in roaming, originating on the HT network (as a visited network) and terminating on a public communications network within the EU/EEA country or a mobile voice telephony call received by an Access Seeker's end customer in roaming, originating on a public communications network within the EU/EEA country and terminating on the HT network (as a visited network).

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<sup>1</sup> BEREC – Body of European Regulators for Electronic Communications



**Regulated Roaming SMS:** an SMS message sent by an Access Seeker's end customer, originating on the HT network (as a visited network) and terminating on a public communications network within the EU/EEA country ("SMS-MO") or an SMS message received by an Access Seeker's end customer, originating on a public communications network within the EU/EEA and terminating on the Access Seeker's end customer on HT network (as a visited network) ("SMS-MT");

**Regulated Roaming Data Traffic:** a roaming service enabling the use of packed switched data communication services by an Access Seeker's end customer by means of his mobile device while it is connected to HT network (as a visited network). The Regulated Roaming Data Traffic does not include the Regulated Roaming Call or Regulated Roaming SMS, but does include the transmission and receipt of MMS messages.

**Parties or Party:** HT and/or Access Seeker.

**Services:** a direct wholesale access services enabling unilateral use of Regulated Roaming Services to Access Seeker's end customers in RH while temporarily roaming on the network of HT as visited network.

**Roaming Customer:** an Access Seeker's end customer in a geographical area outside the Access Seeker's licensed area served through HT's network having a valid legal relationship with Access Seeker using a GSM SIM (Subscriber Identity Module) and/or a GSM USIM (Universal Subscriber Identity Module) for use by that Access Seeker's end customer of the Services while temporarily roaming on HT's network in accordance with the terms and conditions of the Direct Wholesale Access Agreement.

**Permanent Roaming:** shall mean a cumulative use of Services by the same Roaming Customer for 91 days (accumulated) or more per 4 months period on the HT network as a visited network. Furthermore, Permanent Roaming shall also include scenarios whereby means of intelligent traffic steering across several national mobile networks a permanent usage of Services in RH shall be established in order to provide domestic offerings.

**Anomalous or Abusive Use:** shall mean any use of wholesale roaming access that is contrary to the purpose of this Reference Offer. For example, where significant volumes are generated from a number of Access Seeker's SIM cards that are sold to persons not effectively residing or having stable links in the Member State of Access Seeker for other purposes than periodic travel.

## SUBJECT AND SCOPE

This Reference Offer describes the main conditions under which HT offers the Services to the Access Seeker and it is a basis for negotiations between HT and the Access Seeker.

HT shall meet every reasonable request for Services by means of Direct Wholesale Access Agreement on the basis of this Reference Offer provisions. Specific services could be subject to different pricing schemes than described below.

Additional information regarding the Services is available via GSMA Association ("GSMA") which can be accessed via web page <http://www.gsma.com>.

## REASONABLE REQUEST FOR THE SERVICES

The Access Seeker can raise reasonable request for the Services.

The reasonable request for the Services shall include all the information necessary for the provision of direct wholesale access (such as traffic forecast) as defined within this Reference Offer.



The Access Seeker, among other things, has to fulfil all other requirements stated within this Reference Offer which together with Access Seeker's request form the reasonable request for the Services.

Notwithstanding other clauses of this Reference Offer, any request by Access Seeker which is not technically feasible or could put network integrity at risk or which requires from HT to deploy an undue level of resources to implement it and where it is reasonable to foresee that the implementation costs will not be recovered within a reasonable period, entitles HT to consider it as an unreasonable request and to refuse it.

## SERVICE OFFER & PRICING

HT offers the Services in accordance with tariffs set out in the Roaming Regulation and which are valid from July 1, 2022:

- Mobile originated voice telephony call originating on the HT network (as a visited network) and terminating to EU/EEA destinations<sup>2</sup>:  
0.022 EUR/min from July 1, 2022 until December 31, 2024<sup>3</sup>  
0.019 EUR/min from January 1, 2025 until June 30, 2032;
- Mobile terminated voice telephony call, terminating on the HT network (as a visited network):  
0,0000 EUR/min;
- SMS-MO:  
0.004 EUR/SMS from July 1, 2022 until December 31 2024<sup>4</sup>  
0.003 EUR/SMS from Jan 1 2025 until June 30, 2032;
- SMS-MT:  
0,0000 EUR per SMS;
- Regulated Roaming Data Traffic:  
2,00 EUR/GB from July 1, 2022 until December 31, 2022<sup>5</sup>  
1,80 EUR/GB from January 1, 2023 until December 31, 2023  
1,55 EUR/GB from January 1, 2024 until December 31, 2024  
1,30 EUR/GB from January 1, 2025 until December 31, 2025  
1,10 EUR/GB from January 1, 2026 until December 31, 2026

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<sup>2</sup> Voice calls made over LTE technology ("VoLTE") are charged at the price of the Mobile originated voice telephony call where 1 minute corresponds to 375 kB

<sup>3</sup> Price for period July 1, 2022 until December 31, 2022 denominated in local currency is 0,165911 HRK/min. Applied exchange rate is in accordance with the Article 1 of the Roaming Regulation (the average of the reference exchange rates published on 17 January 2022, 15 February 2022 and 15 March 2022 by the European Central Bank in the Official Journal of the European Union)

<sup>4</sup> Price for period July 1, 2022 until December 31, 2022 denominated in local currency is 0,030165 HRK/SMS. Applied exchange rate is in accordance with the Article 1 of the Roaming Regulation (the average of the reference exchange rates published on 17 January 2022, 15 February 2022 and 15 March 2022 by the European Central Bank in the Official Journal of the European Union)

<sup>5</sup> Price for period July 1, 2022 until December 31, 2022 denominated in local currency is 15,08286 HRK/GB. Applied exchange rate is in accordance with the Article 1 of the Roaming Regulation (the average of the reference exchange rates published on 17 January 2022, 15 February 2022 and 15 March 2022 by the European Central Bank in the Official Journal of the European Union)



1,00 EUR/GB from January 1, 2027 until June 30, 2032.

Regulated mobile originated voice telephony calls originating on the HT network (as a visited network) and terminating to EU/EEA destinations are charged on per second basis with initial minimum charging period of 30 seconds. Regulated Data Roaming Traffic is charged on per KB basis.

Prices are stated without VAT.

The conveyance of calls and the transmission of caller location information to the emergency services that are technically feasible to be used by roaming end-customers in RH are free of charge for the Access Seeker. Overview of emergency services available to roaming end-customers in RH are provided in Annex I.

Apart from the Services HT offers non-regulated roaming services which are subject to commercial negotiations and include:

- Mobile originated voice telephony call and SMS-MO, originating on the HT network (as a visited network) and terminating to non-EU/EEA destinations;
- Mobile originated voice telephony call and SMS-MO to value-added services, premium rate services or non-geographical services;

The negotiated non-regulated roaming services and their rates will be stipulated in the Direct Wholesale Access Agreement and are subject to commercial negotiations between the Parties.

HT supports CAMEL Phase 1 and CAMEL Phase 2 on its network.

Notwithstanding the foregoing, HT can offer new non-regulated services or modify existing ones. In this case HT shall update this Reference Offer and/or the Direct Wholesale Access Agreement and notify the Access Seeker.

Cell broadcast and location base SMS are available and supported in HT network for the transmission of public warnings in RH.

## **TIMETABLE IN CASE OF THE REASONABLE REQUEST**

HT shall provide a draft of the Direct Wholesale Access Agreement to the Access Seeker at the latest one month after the receipt of the Reasonable Request for the Services, provided that the Access Seeker fully and cumulatively complies with the criteria defined by this Reference Offer and has supplied all the required necessary information to HT. HT must process an Access Seeker's initial request for the Services in a timely fashion and professional manner and respond at latest within two weeks from the date of receipt of the request with the confirmation of the receipt of the request together with specification of missing information and documents which should be delivered.

HT shall grant direct wholesale access to HT network to the Access Seeker within a reasonable period of time not exceeding three months from the signature date of the Direct Wholesale Access Agreement, provided that the Access Seeker has complied with all its obligations and has not caused delays in implementation of the direct wholesale access to HT network, provided that the technical testes have been successful, all that in accordance with this Reference Offer.

In the event that the number of access requests received by HT is higher than HT's ability to handle them, HT can give priority to requests related to establishing VoLTE-roaming services. In case of such prioritisation, it may happen that granting direct wholesale access to HT network to the Access



Seeker may exceed the aforementioned three months period. Access seeker will be informed about that by HT as soon as possible.

The Direct Wholesale Access Agreement is valid and will be legally effective from the moment of implementation into HT systems whereby the readiness and commercial start date for provisioning the Services shall be jointly agreed between HT and the Access Seeker by means of bilaterally signing the Commercial Launch Letter upon conducted tests as further detailed in this Reference Offer.

## **TESTING AND IMPLEMENTATION PROCESS IN CASE OF THE REASONABLE REQUEST**

Testing procedures are described in GSMA documents IR.24, IR.25, IR.32, IR.35, IR.50. Besides the foregoing, in case of the request for CAMEL services, Access Seeker will provide to HT additional documents necessary for testing of CAMEL services. For all functional tests the relevant billing data will be exchanged, tested and certified according to TADIG testing procedures.

The implementation process in case of the Reasonable Request is arranged in following sequence:

- After signature of the Direct Wholesale Access Agreement and the bilateral confirmation of test readiness, the IREG testing teams of both Parties shall agree on a start date for testing.
- The Access Seeker shall provide to HT all relevant test documents based on the GSMA IREG standard and in case of the request for CAMEL service Access Seeker will provide to HT additional documents necessary for testing of CAMEL service.
- After IREG test finalisation, HT will provide the Access Seeker with the TADIG test files containing all TAP billing records generated for the test cases.
- The Access Seeker shall review the test files and shall approve the test results by issuing a Test Completion Certificate ("TCC") and therefore confirm the successful execution of IREG & TADIG tests according to the test specifications of GSMA documents. The issuance of the TCC completes the testing phase.

The same testing procedure applies to each test program: 2G/Voice Services (+SMS), GPRS/Data, LTE, 5G NSA, CAMEL (if necessary).

After testing procedure is finished, but prior to further preparation of both Parties networks/IT for the commercial launch of the Services, both Parties shall agree on a binding commercial launch date of the Services by signing a Commercial Launch Letter ("CLL").

In case of negative results of the testing procedures (results attesting that the tests were not successful or that the access to the Access Seeker is technically not possible, where causes are outside of HT's control and HT's influence), which incurred within in the period of more than 3 (three) months from the signature date of the Direct Wholesale Access Agreement, the Direct Wholesale Access Agreement will automatically be terminated with no indemnity to be paid by any Party to the other Party in this respect, which includes but is not limited to consequential damages.

## **TRAFFIC FORECAST & REVIEWS**

The Access Seeker shall provide HT with a 12-month roaming traffic forecast with monthly granularity as follows:

- Total number of minutes for circuit switched voice telephony call – outgoing and



terminating;

- Total number of SMS messages - outgoing and incoming;
- Total number of MB for packed switched data.

HT reserves the right to reject the unreasonable requests for the Services as it is defined by this Reference Offer.

Both Parties shall review the annual roaming traffic figures at the end of each contractual year in order to assess the continuation of the roaming relationship taking into account the interests of both Parties. The first review will take place at the end of the first contractual year.

## **TECHNICAL PRECONDITIONS WHICH HAVE TO BE FULFILLED BY THE ACCESS SEEKER**

The Access Seeker must meet the following GSMA standards, specifications and processes as a prerequisite for the technical implementation and commercial launch of the Services:

- Binding GSMA specifications to enable the technical set up and provision of international roaming;
- GSMA's Permanent Reference Documents (PRDs) defining the Standard International Roaming Agreement: AA.12/AA.13/RAEX and its encompassed commercial references in BA.XX documents as well as the BA.20 for NRTRDE (Near Real Time Roaming Data Exchange) dealing with fraud prevention;
- Exchange of billing & accounting data according to GSMA based TADIG specifications and procedures including the ability to receive and process billing data in TD.57 record format;
- Roaming testing according to GSMA based IREG testing procedures described in IR.24/ IR.25/ IR.32/ IR.35/ IR.50 as well as the corresponding TADIG billing tests.

In order to enable a direct wholesale access relation between HT and Access Seeker and in order to ensure appropriate service quality to end customers, the Access Seeker needs to be identifiable on a network level and thus is required to present an own and dedicated Mobile Country Code/ Mobile Network Code (MCC/MNC) identifier via an "own" IMSI. This MCC/MNC needs to be uniquely linked to a TADIG code.

## **MANDATORY DOCUMENTS TO BE PROVIDED BY HT**

After the receipt of request for the Services as defined by this Reference Offer, HT shall provide the Access Seeker with following documents:

- a) Direct Wholesale Access Agreement, based on GSMA PRDs AA.12 and AA.13;
- b) Individual Annexes to the Direct Wholesale Access Agreement, based on GSMA RAEX document;
- c) Annex to the Direct Wholesale Access Agreement, based on GSMA IR.21 document.

HT's Direct Wholesale Access Agreement is based on GSM Association's contract draft for Direct Wholesale Roaming Access. In its vital parts the Direct Wholesale Access Agreement essentially corresponds to the GSMA Roaming Agreement documents AA.12/AA.13 and determines the uni-directional roaming relationship between the Access Seeker and HT.



## MANDATORY DOCUMENTS TO BE PROVIDED BY THE ACCESS SEEKER

In the moment of submitting the request for the Services as defined by this Reference Offer, the Access Seeker shall provide to HT following documents:

- a) Declaration by the legal representatives of the Access Seeker for the readiness of the Access Seeker to establish bank guarantee upon the request of HT as defined by this Reference Offer;
- b) Traffic Forecast for a 12 month period for mobile voice telephony roaming services traffic (MOC/MTC), data roaming traffic and SMS roaming traffic as defined by this Reference Offer.

During the course of realisation of the request as defined with this Reference Offer and in accordance with HT's requests, Access Seeker shall provide to HT following documents:

- a) Individual Annexes to the Direct Wholesale Roaming Access Agreement, based on GSMA RAEX document (as far as applicable for uni-directional roaming);
- b) Annex to the Direct Wholesale Roaming Access Agreement, based on GSMA IR.21 document;
- c) Test documents for each requested test program (e.g. 2G/Voice Services(+SMS), GPRS/Data, LTE, 5G NSA, CAMEL) as defined by this Reference Offer.

## BANK GUARANTEE

After signature of the Direct Wholesale Access Agreement and before the signing of the Commercial Launch Letter, HT reserves the right to request a bank guarantee from the Access Seeker in the amount of the 12 months revenue estimate based on the initial roaming traffic forecast and the relevant prices.

HT reserves the right to request adjustments in the value of the bank guarantee at any time during the term of the Direct Wholesale Access Agreement depending inter alia on the development of the actual roaming traffic or the payment behaviour of the Access Seeker.

The value of the bank guarantee will be subject to a review every six months based on the actual traffic volumes achieved in the preceding six months period. The first review will take place after the initial period of 6 months following the commercial start date of the Services as specified in the CLL.

Foreign banks from which bank guarantees are received must satisfy following ratings:

Agencies	Credit rating
Fitch Ratings	BBB
Moody's Investor Service	A3
Standard & Poor's	A-

## DATA PRIVACY

Both Parties are subject to all applicable legal and regulatory provisions in regard to data protection, data privacy and electronic communication secrecy. Hence, it is mandatory that both Parties commit themselves to observe the secrecy rules and maintain the data privacy when implementing the appropriate technical and organisational measures necessary for managing the risks posed to the security of networks and services and for ensuring confidentiality of communications and





privacy according to the applicable laws and regulations and shall indemnify and hold harmless the other Party from and against all costs or expenses of any kind arising out of any claim or demand brought by any person, entity or authority as result of any breach or alleged breach of e.g. Data Privacy Law, Law on Protection of Data Secrecy, Electronic Communications Act and other regulations.

Each Party's obligations in regard to data privacy will be further detailed in the Direct Wholesale Access Agreement.

## **SERVICE LEVELS**

HT shall offer the Services to the Access Seeker under the same technical and other conditions as those being offered to other access seekers or mobile network operators which has already signed international roaming agreement with HT. The availability of the Services may depend on the availability of the appropriate functionality enabling roaming.

While roaming in HT network (as visited network), Access Seeker's end customers shall experience the same conditions of the Services as those experienced by the HT's end customers and the end customers of other wholesale roaming partners of HT which signed international roaming agreement with HT.

## **QoS PARAMETERS AND SPECIFICATIONS**

Information on available radio technologies, frequency bands and other configurations or parameters, as well as estimated maximum/advertised download and upload speeds per available technology supported in HT network are provided in Annex II.

## **CONTACT DATA**

The Access Seeker can request a draft contract for the Direct Wholesale Access Agreement via following e-mail address [roaming.coordination@t.ht.hr](mailto:roaming.coordination@t.ht.hr). The Access Seeker has to provide proof of its entitlement for provision of roaming services to its end customers in RH pursuant to the Roaming Regulation and all other documents as defined by this Reference Offer.

## **FRAUD PREVENTION PROCEDURES**

Both Parties shall implement fraud prevention procedures as specified by the GSMA within BARG Binding Permanent Reference Document BA.20.

## **PERMANENT ROAMING AND ANOMALOUS OR ABUSIVE USE**

Where HT, according to objective indicators, has the suspicion that Permanent Roaming and/or Anomalous or Abusive Use is taking place by Access Seeker's customers HT may request Access Seeker to provide information allowing the determination of whether a significant share of Access Seeker's customers are in a situation of Permanent Roaming and/or Anomalous or Abusive Use on the HT network. Upon HT's request Access Seeker shall provide the respective information within 4 (four) calendar weeks.

The provision of this information is without prejudice to EU and national data protection requirements.

In case Access Seeker fails to provide any or sufficient information in due time, Permanent Roaming and/or Anomalous or Abusive Use is deemed to be established.





Where HT has established that Permanent Roaming and/or Anomalous or Abusive Use of Access Seeker's customers is taking place or such situation is deemed to be established, HT may notify Access Seeker respectively and may request Access Seeker to cease such Permanent Roaming and/or Anomalous or Abusive Use within 14 (fourteen) days.

In case of Permanent Roaming and/or Anomalous or Abusive Use of Access Seeker's customers HT may apply wholesale charges provided in the Roaming Regulation upon notification to Access Seeker.

Where Access Seeker does not cease Permanent Roaming and/or Anomalous or Abusive Use (e.g. if Access Seeker does not adopt, revise or enforce fair use policies applicable to Access Seeker's Roaming Customers in accordance with the detailed rules in the Commission Implementing Regulation (EU) 2016/2286 of 15 December 2016), HT may without liability suspend all or any of its Services to Access Seeker's Roaming Customers until receipt of a written confirmation of Access Seeker to cease such use.

If Access Seeker does not provide written proof to HT within a period of 3 (three) calendar months after the start of the notification that the reasons leading to the Permanent Roaming and/or Anomalous or Abusive Use by a significant share of the Roaming Customers have been remedied, HT shall have the right to terminate the Direct Wholesale Access Agreement unilaterally. Termination of the Direct Wholesale Access Agreement will be by written notice and follow prior authorisation of the national regulatory authority.

## **SUSPENSION AND TERMINATION OF THE DIRECT WHOLESALE ACCESS AGREEMENT**

HT shall, without any liability thereof and without paying any damage or indemnity or any other compensation to the Access Seeker, suspend or terminate services that are subject to the Direct Wholesale Access Agreement to the Access Seeker's end customers in circumstances in which HT would suspend or terminate the same services to its own end customers.

HT reserves the right, with the 30 days prior notice, to suspend the roaming services to Access Seeker's end customers if the Access Seeker does not fulfil in due time any of its contractual obligations regarding the payment of the due amounts for the services that are subject to the Direct Wholesale Access Agreement or any of its contractual obligations regarding the bank guarantee. After the expiry of the aforementioned notice period of 30 days, if the Access Seeker did not remedy the notified default on which it has been informed about by HT, HT shall terminate immediately the Direct Wholesale Access Agreement and demand compensation for the damages from the Access Seeker.

In case of any use of wholesale roaming access that is not in accordance with this Reference Offer or with the Direct Wholesale Access Agreement - such as but not limited to Permanent Roaming and Anomalous or Abusive Use in HT's network, HT may without liability forthwith suspend all or any of its services to Roaming Customer(s). If Access Seeker does not provide written proof that the reasons leading to the suspension have been remedied within a period of 4 weeks after being notified by HT of said reasons, HT shall have the right to terminate the Direct Wholesale Access Agreement with immediate effect by written notice, with exception in case of termination due to Permanent Roaming and/or Anomalous or Abusive Use when procedure set in Permanent Roaming and Anomalous or Abusive Use chapter is applicable.



Both Parties will reserve the right to terminate the Direct Wholesale Access Agreement pursuant to reasons explicitly mentioned in the Direct Wholesale Access Agreement.

## **GOVERNING LAW AND DISPUTE RESOLUTION**

Pursuant to the Article 18 of the Roaming Regulation all disputes between the Parties in regard to the obligations resulting from the Roaming Regulation shall be solved by the dispute resolution procedures laid down in articles 26 and 27 of Directive (EU) 2018/1972). All other disputes arising out of or from the Direct Wholesale Access Agreement shall be governed by the Swiss law and shall be finally settled under the Rules of Conciliation and Arbitration of the International Chamber of Commerce (ICC).

## **MODIFICATION OF THE REFERENCE OFFER**

This version of the Reference Offer is valid and in effect until a new version of the Reference Offer is published by HT as consequence of the changes caused by the change of HT's internal policies, QoS parameters and specifications, list of available emergency services, modifications of the roaming services, change of regulated roaming services' prices, modifications of the Roaming Regulation, modification of the applicable legislation and/or the individual decision of a Regulatory Authority that imposes the modification of this Reference Offer.



## **ANNEX I**

### **EMERGENCY SERVICES AVAILABLE TO ROAMING END-CUSTOMERS IN RH**

Emergency services available to roaming end-customers in RH:

- 112 single European emergency number, common emergency telephone number that can be dialed in order to reach emergency service (police, ambulance, fire and rescue)
- Emergency SMS available to roaming end-customers on a dedicated long number +385 98 8100 112.

HT enables emergency communications convey and transmit of the caller location information to the most appropriate public safety answering point ("PSAP"). Provided location information are network based (cellID, advanced cellID), and handset-derived (AML). All information are available without delay and free of charge.



## ANNEX II

### QoS PARAMETERS AND SPECIFICATIONS

Frequency bands and radio technologies used in HT network:

- 2G technology available in the following frequency band:
  - B8
- 3G technology available in the following frequency bands<sup>6</sup>:
  - B1 (only in 2 counties bordering with Bosnia and Herzegovina)
  - B8
- 4G (CA with all band combinations) technology available in the following frequency bands:
  - B1 (15 MHz)
  - B3 (20 MHz + 10 MHz non-contiguous)
  - B7 (20 MHz)
  - B20 (15 MHz)
  - B28 (10 MHz)
- 5G (NSA in combination with all LTE bands) technology available in the following frequency bands:
  - n1 (15 MHz / DSS support)
  - n28 (10 MHz / DSS support)
  - n78 (100 MHz)

Supported UE capability:

- FDD bands: 1, 3, 7, 8, 20, 28
- TDD band: n78
- 4x4 MIMO, 256 QAM DL & UL
- LTE up to 5cc CA (all band combinations supported<sup>7</sup>)
- NR + LTE 4cc CA
- NR FDD-TDD CA

Maximum achievable (advertised) datarates (DL / UL):

- 4G: 600 Mbps / 50 Mbps
- 5G: 2 Gbps / 150 Mbps

Frequency bands and radio frequency technologies, as well as maximum achievable (advertised) datarates depend among others on the network coverage, network configuration, signal level, terminal equipment used by end-customers and level of traffic congestion.

In case of plans concerning the phasing-out of particular mobile radio technology, HT will inform Access Seeker and amend this Reference offer, as far as these phase-out plans are public.

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<sup>6</sup> The shutdown of 3G technology in the HT network is currently underway, and it is scheduled to be fully completed in the first quarter of 2025.

<sup>7</sup> Band availability depending on location and deployed capacity per site