



QoS Survey for Programme Developers

By NGMN Alliance

Version:	1.0
Date:	27-SEP-2010
Confidentiality Class:	P - Public

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1 INTRODUCTION

1.1 About NGMN

The NGMN Alliance www.ngmn.org is a group of world leading mobile operators, technology vendors and research institutes. NGMN's primary objective is to provide a coherent view of what the operator community is going to require beyond currently deployed 3G networks. The global and open Alliance strives to ensure that next generation networks for mobile broadband communications will enable an exceptional mobile user experience: cost-effective and user-friendly services as well as a range of attractive end-user devices like mobile phones, embedded mobile devices for laptops and consumer electronics. This will empower even more people to get access to the internet and their personalised digital services while on the move.

The NGMN Alliance was founded by leading international mobile network operators in 2006. Its goal is to ensure that the standards for next generation mobile networks and end user equipment will satisfy customer expectations upon future applications, as well as requirements of the network operators. All projects and activities are established to have commercial services ready for launch by 2010. In order to achieve this ambitious goal, a combined effort of all the stakeholders in this complex ecosystem is necessary. Already by end of 2009, a major achievement was reached when TeliaSonera – as the first operator in the world – launched commercial next generation network services in Sweden and Norway.

1.2 Background

This survey is initiated by NGMN Task Force Quality of Service. The objective of the task force is to facilitate the industry's leverage of the benefit of Quality of Service (QoS) capability provided by next generation mobile network - LTE/EPC network.

In order to better understand the current status of QoS utilization in the industry and the requirements for QoS from the views of different stakeholders, the task force has initiated three surveys, respectively distributed to: mobile operators, mobile network vendors and mobile application developers.

Through this survey which targets mobile application developers, we would like to find out how you think about current QoS levels provided by mobile network and the influence of QoS in mobile applications. Based on the results of the survey, the NGMN task force will study the ways to improve QoS for mobile applications in future.

Note: In this survey, mobile applications only refer to applications which require network connectivity.

Method and Dissemination:

- Answers will be anonymised before consolidation.
- The QoS Task Force and all participants of this survey will receive a report of the consolidated results. Furthermore, the results will be published on the internal NGMN Partner Portal.

Kindly fill out the survey and return it to Office@ngmn.org. If you have any questions, please do not hesitate to contact the NGMN task force QoS via office@ngmn.org

Thank you very much for your valuable contribution and support!

The NGMN Task Force QoS, NGMN Alliance.



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Question P1:

Which percentage of the mobile applications developed by your company depends on mobile network connectivity?

Please answer by specifying: __%

Comments:

Note: in the below questions, applications only refer to applications which require mobile network connectivity. Thus please answer the following questions only if your company develop such applications.

Background Information of Question P2:

With the mobile network technology evolved several generations, current operators usually have heterogeneous networks and some of the different networks are having different coverage areas. Thus during the movement of a mobile user, the radio technology connected to the UE (user equipment) may change, for instance, from WCDMA coverage to GSM coverage only. Due to the different capability of different radio networks, the performance of application running over them could be affected, e.g. in the above example, WCDMA has higher data rate than GSM.

Question P2 is referring to the above procedure to find out how you as application developer are dealing with this problem.



Question P2:

Does your company have any application servers?

Please answer by ticking the appropriate box:

YES

NO

If yes, are application servers of your company aware of handoff events such as a change of radio access technology?

Please answer by ticking the appropriate box:

YES

NO

If yes, do application servers have to the ability to adjust the application bandwidth based on capabilities of the radio technology? For instance, can the application server decrease the encoding rate of a video session when the UE (user equipment) moves from LTE to 3G?

Please answer by ticking the appropriate box:

YES

NO

Comments:

Question P3:

How do you think about the importance of Quality of Service (QoS, such as data rate, latency, etc) in applications?

Please answer the question by ticking one of the boxes below:

QoS in applications has high influence in terms of user experience and sales of the application

QoS in applications has low influence on user experience and sales, yet the influence would be higher in case QoS capabilities would increase

No obvious influence

Comments:



Background Information for Questions P4 to P6:

Mobile networks design many mechanisms in order to deliver the appropriate QoS for mobile service users. The mechanisms include a series of QoS parameters which can represent the level of QoS the service receives.

According to the definitions of 3GPP standardization body, each time when a UE (user equipment) sends a request to a network to establish a new session for a service/application, the UE should also include in the request which QoS level (parameters) it wishes to receive. The QoS request actually needs to be conveyed by the application running on the UE. Alternatively, if there is an application server on the network side, the application could also convey the QoS request by interacting with the server. However in practice, sometimes applications do convey the QoS request via UEs or application servers to the mobile network, while other times the QoS request is just "NULL" since the application did not convey.

At the same time, due to different terminal types and operator policies, even when applications convey their QoS request, it is possible that the request is not supported eventually.

Questions P4 to P6 are referring to the above procedures to find out how often you as application developer request for QoS and how those requests are actually treated.

Question P4:

Do the mobile application(s) developed by you/your company explicitly convey the request for specific QoS levels in signaling to UEs (user equipment) or application servers?

Please answer by ticking the appropriate box and feel free to provide any comments:

Yes, always	No, never	Depends on the type of application

If you answer "No, never", please go straightly to Question P6.

If you choose "Depends on the type of application", please specify below the types of application which usually request specific QoS levels and the exact QoS levels of the applications' request:

- Application type: _____ QoS Requirement: _____
- Application type: _____ QoS Requirement: _____
- Application type: _____ QoS Requirement: _____

Comments:

Question P5:

If at least a few of your applications explicitly convey specific QoS level requests, do terminals support or mobile networks provide the QoS level as requested by the applications?

Please answer the question by ticking one of the boxes below:

	Yes, always	In most cases	Sometimes	In a few cases	No, never
Terminals support the QoS as requested by the applications					
Mobile networks provide the QoS as requested by the applications					

Comments:

Question P6:

For applications which do not explicitly convey QoS requests, or in case the requested QoS is not provided due to either terminal or network reasons, do you think the QoS levels actually delivered to the applications are nevertheless sufficient?

Please answer the question by ticking one of the boxes below:

Yes, always sufficient	In most cases sufficient	Sometimes sufficient	No, never sufficient

Comments:



Question P7:

LTE/EPC network enables different QoS levels to be delivered to different applications (e.g. according to application types, application sources or other criteria based on subscription). **Do you think such a subscription model will be helpful to you/your company?**

Please answer the question by ticking one of the boxes below:

<u>Extremely Important</u>	<u>Very Helpful</u>	<u>Fairly Helpful</u>	<u>Indifferent</u>	<u>Not Helpful At All</u>

Comments: