| **Title:** | **NGMN Alliance Performance Evaluation Methodology** |
| **Source:** | NGMN Technical Working Group Steering Committee (TWG-SC) |

To: IEEE 802.16 – Roger Marks, Chair (r.b.marks@ieee.org)

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Attachments: **NGMN Performance Evaluation Methodology Document v. 1.2**

1. Introduction

NGMN Alliance is an initiative by a group of leading mobile operators to provide a vision for technology evolution beyond 3G for the competitive delivery of broadband wireless services to increase further end-customer benefits. The objective is to establish clear performance targets, fundamental recommendations and deployment scenarios for a future wide area mobile broadband network, and to make sure that its price/performance is competitive with alternative technologies.
This initiative intends to complement and support the work within standardisation bodies by providing a coherent view of what the operator community is going to require in the decade beyond 2010.

In the NGMN Alliance White Paper v. 3.0, recommendations for common system features, radio access network, core network, terminals and services are made, and operator requirements are established.

2. NGMN Performance Evaluation Methodology v. 1.2

In the attached paper, an evaluation methodology for some of the NGMN Alliance requirements as set out in the NGMN Alliance white paper 3.0 is proposed. This includes a more detailed definition of the high-level metrics, and a set of common evaluation scenarios. The objectives are to verify the performance of different NGMN Alliance system proposals under the same conditions and to align the evaluation parameters of different partners developing the same technology.

The metrics should reflect the user experience and operator requirements as closely as possible whilst being reasonably easy to be assessed by simulations and trials.

Different standardization bodies addressing systems within the scope of NGMN Alliance have developed their own set of metrics and evaluation scenarios, which makes a reasonably fair "apples with apples" comparison difficult. Also, these evaluation methodologies are not always completely defined or consistent leading to large variations of results even if different sources simulate the same technology with the same methodology.

Being technology-agnostic, this paper specifies only metrics and scenarios, but not the elements of the technology itself (e.g. which modulation and coding scheme). However, any evaluation of a system according to the NGMN Alliance methodology shall provide an exact description of the underlying technology elements.

3. IEEE 802.16 requested action

1.) NGMN Alliance requests that IEEE 802.16 considers and adapts the *NGMN Performance Evaluation Methodology v. 1.2* as part of the development of IEEE 802.16m - *Air Interface for Fixed and Mobile Broadband Wireless Access Systems - Advanced Air Interface* evaluation methodology.

The methodology was developed by a group of leading mobile operators and reflects thus a broad consensus of mobile operators. Since IEEE 802.16m develops technology which addresses large parts of the NGMN Alliance requirements, it would be beneficial for both the group of NGMN Alliance operators and IEEE 802.16 if the simulation-based performance evaluation is aligned as much as possible. It is clear that there are specifics to IEEE 802.16m which are not covered in the attached technology-agnostic document, but NGMN Alliance would welcome if IEEE 802.16m would adapt the NGMN Alliance metrics and scenarios as a subset of their methodology.

2.) NGMN Alliance requests that IEEE 802.16 gives feedback on the *NGMN Performance Evaluation Methodology v. 1.2* and starts a dialogue on a further refinement of our respective methodologies.

NGMN Alliance is aware that *NGMN Performance Evaluation Methodology v. 1.2* is just an initial version which can be further improved by input from partners coming from a different background, amonst them IEEE 802.16. NGMN Alliance acknowledges the expertise of the members of the IEEE 802.16 group.