



CORNING INCORPORATED

Response to the second draft Commission Recommendation on regulated access to Next Generation Access Networks (NGA)

1 Introduction

Corning welcomes the opportunity to respond to the European Commission's consultation on the draft Commission Recommendation on regulated access to Next Generation Access Networks (NGA).

Corning Incorporated (www.corning.com) is the world leader in specialty glass and ceramics. Drawing on more than 150 years of materials science and process engineering knowledge, Corning creates and makes keystone components that enable high-technology systems for consumer electronics, mobile emissions control, telecommunications and life sciences. Our products include glass substrates for LCD televisions, computer monitors and laptops; ceramic substrates and filters for mobile emission control systems; optical fibre, cable, hardware & equipment for telecommunications networks; optical biosensors for drug discovery; and other advanced optics and specialty glass solutions for a number of industries including semiconductor, aerospace, defence, astronomy and metrology.

As a worldwide market leader in optical fibre, optical fibre cabling and passive hardware solutions with fibre deployed worldwide, Corning has a deep knowledge of the benefits and practical challenges of deploying Fibre to the Home (FTTH). Therefore, Corning believes that we continue to be able to offer valuable insight into the present consultation in relation to the regulation of Next Generation Access Networks (NGA).

While we recognise the importance of putting in place an appropriate regulatory approach to NGA we are concerned at the delays in finalising both the revised Regulatory Framework and the Recommendation on regulated access to NGA networks [the latter of which was originally due for publication a year ago]. Regulatory uncertainty continues to be cited by market players as a significant cause of delay in making the investments in next generation access networks which Europe urgently requires to maintain its global competitiveness. We welcome the Commission's decision to publish an overall broadband strategy for Europe and to integrate this with both this draft Recommendation and also the recently consulted on draft communication on the application of State Aid to NGA investments but we urge an early conclusion.

The proposed Recommendation therefore continues to be a key element in providing the required regulatory certainty, harmonising the European approach to the greatest extent possible and providing clear messages which will accelerate investment while safeguarding consumer interests and transitioning to the new Regulatory Framework.

2 Corning's approach

Corning continues to believe that the EC regulatory framework should favour a policy encouraging investment in infrastructure at the deepest level in order for customers to benefit from both effective long term competition and continuous innovation in services (infrastructure based approach to competition). The development of infrastructure based competition (as opposed to service competition) is also key to enabling the removal of ex-ante regulation at the earliest opportunity. Corning has some concerns that the strong emphasis in the first draft Recommendation on enabling infrastructure based competition wherever possible appears to have been diluted in this second draft.

In determining the approach to regulation of NGA it is also necessary to consider how to approach the question of the technology neutrality rationale. According to the text in the 1999 Communication Review, technology neutrality means that “the legislation should define the objectives to be achieved, and should neither impose, nor discriminate in favour of, the use of a particular type of technology to achieve these objectives”. However we believe that this should be a subsidiary objective to the achievement of infrastructure based competition. There is a danger that considerations of technology neutrality could lead to the development of inappropriate regulation of NGA. We continue to believe that it is more important to develop regulation at the wholesale level which does not discriminate between networks which are capable of delivering the same set of services (irrespective of the specific network technology employed, for example different ‘flavours’ of PON) and which recognises that not all technologies are substitutable. Therefore NGA networks are clearly distinct from legacy copper networks and wireless from fixed NGA networks. It may also be appropriate to consider whether different ‘flavours’ of NGA are also substitutable, for example FTTH networks have a capability potentially two or three orders of magnitude greater than xDSL approaches and are able to support fully symmetric bandwidths. We therefore believe that in taking an infrastructure based competition approach it is important to clearly differentiate between infrastructure with different service capabilities and to apply appropriate, and possibly differing, remedies accordingly in order to correctly balance between regulation to maintain competitiveness and encouraging investment in new capabilities.

We believe that it is important to recognise that for the first time in the fixed network we are considering the regulation of networks which for the large part are still to be built. We therefore have a one-off opportunity through an appropriate combination of regulation and, where appropriate, State Aid to encourage the market to invest in new networks and capabilities which will serve Europe for at least the next generation and which will be a key element in driving Europe's economy. We therefore believe that it is vital for regulators to consider the investment timeline and to develop a strategy which maps onto the investment cycle from the initial planning stage, through the

investment phase to maturity and eventually to replacement (the latter is difficult to imagine yet in the context of NGA but we already face this issue in today's copper access networks).

3 The need for an overarching vision, relationship to Framework proposals, and perceived changes in direction from the first draft.

In our response to the consultation on the first draft Recommendation we set out our belief that there was a need for the articulation of an overarching vision for the regulation and promotion of NGA. In particular we proposed a holistic approach involving the setting out of guidance on the application of symmetric remedies and State Aid rules to investments in NGA together with an elaboration of asymmetric remedies applied to operators with SMP in order to promote the maximum possible clarity enabling operators to make clear and early investment decisions. As stated earlier we welcome the recent publication of a draft communication on the application of State Aid to NGA and the forthcoming broadband strategy. We understand that the proposed Recommendation continues to be restricted to the market analysis process only. The present proposals therefore continue to underestimate the potential role for symmetric remedies in the roll out of NGA networks. This would be an area, we believe, where a further communication would be of considerable value and we will return to this later in our response.

Since the publication of the first draft the proposed changes to the Framework have been largely agreed, confirming the importance of infrastructure based competition and the role of geographic market analysis. However, we are concerned that the present draft appears to have lost some of this emphasis particularly with the loss in the present draft of the proposals for the graded application of remedies which we believe to be a key enabler of maximising the extent of infrastructure competition. Again we will return to this later.

4 Promoting true NGA over upgraded copper networks

As we set out in our previous response, we firmly believe that fibre to the premise is the only foreseeable technology with significant future proofing and its deployment needs to be anticipated now. This view is not driven by a lack of technology neutrality but rather a recognition that premises will in future require access to two way bandwidths which can only be delivered over a fixed network of sufficient capacity. Ultimately wireless and satellite infrastructures are capacity constrained by the spectrum which is available over a particular physical 'footprint'. Fibre has both higher spectrum availability and because it is a 'wire' the whole spectrum can be delivered to an essentially infinite number of locations.

Although incumbents and other operators may choose to initially deploy FTTN networks for reasons of cost and speed of deployment or even in response to the regulatory regime, we believe that it is particularly important that the regulatory regime should support other operators to bypass such FTTN networks with an FTTH deployment, particularly by ensuring the availability of suitable passive remedies (ducts etc) and that cabinet deployments do not block fibre bypass. We believe that it would be wrong to assume, or indeed support by regulation, the view that alternative

operators will adopt a follower strategy to the deployment of the incumbents. We further welcome the clear statement in support of fibre to the premise as the technology of choice set out in the draft communication on State Aid for NGA and the more tacit recognition in this draft Recommendation.

5 Infrastructure based competition is favoured

We fully support the approach set out in the Framework which favours infrastructure based competition over service based competition. Although this has been set out in the current Framework as a principle, we would welcome its inclusion as a founding principle of the approach to be adopted towards NGA regulation as was set out in the first draft. We recognise that infrastructure based competition will likely not happen on a nation wide level; however, we support an approach which seeks to establish infrastructure competition first wherever possible and leave service competition to only those areas where infrastructure competition cannot be expected to naturally emerge over a reasonable timeframe. We are concerned that the approach as set out in the present draft, which appears to seek as a first principle to make all remedies available where SMP is found in Market 4 and 5, will not foster that approach. The gradation of remedies as set out in the first draft which we strongly supported has the benefit of driving a market analysis which first supports the view that infrastructure based competition is possible and then forces an analysis to conclude that in some geographies it will not be possible and therefore bitstream remedies may be the appropriate remedy. It is also important to remember that some Market 4 remedies and in particular duct access could be mandated *before* investments in fibre are made. Market 5 remedies based on fibre obviously require significant investment to have been made already.

6 The role of access to civil infrastructure

It is well recognised that in a new build situation the construction of the required civil infrastructure; ducts, poles, manholes etc. can represent as much as 80% of the total cost of deploying an NGA network. Incumbent telcos, Cable TV operators, and other utilities (gas, electricity and water) have access to existing infrastructure which in many cases has spare capacity which can be used to significantly reduce the cost of deploying NGA. Access to civil infrastructure is therefore the only true pre-existing bottleneck asset and barrier to investment in NGA (assuming appropriate access to backhaul). We therefore welcome the proposals set out in Article 9 that NRAs should assess the availability of civil engineering infrastructure owned by the SMP operator but would also stress the importance of consideration of other available civil infrastructure and the possibility of imposing access under Article 12 of the Framework. The current draft goes on to propose that NRAs should then consult to determine demand for duct access before imposing it as a remedy¹. We have some concerns that this may result in low uptake as alternate operators may be reluctant at an early stage to indicate demand. One could consider poor initial demand for copper ULL as an historical precedent for such a likelihood. This would be further exacerbated if alternative operators came to the conclusion that a fully functional bitstream offer would be available before the incumbent could roll out new services

¹ Articles 10 and 11

based on his fibre investment² which together would have the outcome of the potential for infrastructure based competition being significantly reduced. We believe that this is an outcome which would be to the detriment of the overall regulatory strategy set out in the Framework and the current proposed revisions. We would therefore encourage the Commission to recommend that the publication of a Reference Offer for access to the SMP operator's civil infrastructure be mandated and that consideration should be given to a similar offer for access to alternate infrastructure based on Article 12. In undertaking its Market Reviews the NRA can then take into account the availability of access to civil infrastructure in determining the appropriateness of further remedies in Market 4 and Market 5 in order to maximise the potential for infrastructure based competition.

We note and support the proposal in Article 14 for NRAs to encourage or where legally possible oblige the SMP operator when building civil engineering infrastructure to install sufficient capacity for other operators to make use of these facilities however we would also note that there would need to be an appropriate financial regime in place to support this. The possibility of State Aid being available for this purpose has been referred to in the recent consultation on State Aid for NGA.

7 Geographic Analysis

We continue to believe that investment and competition will emerge at different rates depending on the business case which is a strong function of both local demographics as well as localised competitive intensity (eg presence of cable). It is therefore important in our view that NRAs analyse the market with this in mind and apply appropriate geographically differentiated remedies. We welcome the inclusion in the draft of the concept that different SMP conclusions may be reached in different areas with correspondingly different remedies and importantly that different conclusions may be reached for Market 4 and Market 5 by area. In our previous response we set out our view of the desirability of developing some common tests or to outline characteristics which would determine whether Market 4 in particular could be considered competitive, thus removing the need for remedies to be applied to both Markets 4 and 5, recognising that the number of infrastructure based competitors is likely to be lower than existing numbers of WBA based competitors. We welcome the inclusion of such statements although we have some concerns which we will return to later on the Commission's conclusions with regard to co-operative co-investment models for multi-fibre roll-outs.

We additionally see a need for guidance to NRAs which facilitates an appropriate assessment of geographic differentiation in the market. A concern is that past practice by regulators (and endorsed by the Commission) has focussed on existing market dynamics without much weight being given to the future market dynamics. We believe that a forward looking assessment of the potential for competition incorporating basic market characteristics such as population density are likely to reveal areas of potential competition to a greater extent than an examination of current competition. For instance an urban area such as Brussels might have very limited infrastructure based competition based on LLU (perhaps because pricing was poor)

² Articles 33 and 34

which leads to a conclusion that there is a national market. However, such an assessment would miss the fact that Brussels is very densely populated, has extensive duct infrastructure and has a very high broadband penetration rate which should all support competitive NGA deployment unlike many other parts of Belgium. Therefore an analysis which relies on a forward looking perspective is much more likely to reveal the true potential of areas to support infrastructure based competition than a static analysis based on today's competition and today's technologies.

8 Gradation of remedies and the relationship between Market 4 and 5

As we set out in our previous response, we strongly support an approach based on a market analysis starting out at the lowest level with a clear linkage of the different remedies within market 4 and with a clear linkage with geographic competition on market 5 as we have described above in Section 7. To elaborate further, in areas where infrastructure competition can be expected to emerge based on access to physical infrastructure alone then the imposition of further remedies including Market 5 remedies would not be appropriate otherwise there is a real danger of stifling the emergence of the desired competitive infrastructure investments. At the other extreme where any investment is unlikely without public investment such as in rural areas then bitstream remedies alone would be appropriate in combination with equality of input conditions although we note that access to ducts may also be an enabler for such public sector supported projects in both white and grey areas. We strongly support the statements in the present draft indicating that remedies should not be applied to Market 5 where sufficient competition exists in Market 4³ however we believe that the presumption that this can only be the case either where there have been joint deployments of multi-fibre FTTH networks or there is effective access to the unbundled fibre loop of the SMP operator's network is an overly prescriptive approach. There may for example be adequate competition in some areas based solely on access to civil infrastructure (see Section 9 below).

9 Co-operative investments and other forms of infrastructure competition

We welcome the Commission's proposals to encourage co-operative and other models for the deployment of multi-fibre networks⁴ but are concerned that these models together with unbundled fibre may be seen as the only approaches which could result in effective competition in Market 4. We have set out elsewhere our belief that, at least in some areas, competitive deployments of multiple networks facilitated for example by appropriate access to civil infrastructure could create effective competition. We would therefore suggest that specific references to conditions for effective competition in Market 4 be given as examples only.

³ Recital 44 and Articles 41 and 42

⁴ Articles 23 and 24

10 Unbundled access to the fibre loop

We are concerned that the Commission is proposing that NRAs should mandate unbundled access to the local loop in all cases⁵. We believe that such an obligation is only appropriate when access to civil infrastructure is impracticable or is otherwise unlikely to result in competitive investment in fibre or additionally where co-operative investments have not been made in multi-fibre infrastructures or dark fibre is not available. An additional obligation to unbundle in these circumstances would seem disproportionate even if allowance is made for additional quantifiable investment risk. The proposed relief from cost orientation in certain circumstances is unlikely to provide any additional incentive since it is still subject to a margin squeeze test.

11 Bitstream access and the development of infrastructure based competition

We have already noted in Sections 7 and 8 that we believe it will be inappropriate to impose bitstream remedies where there is sufficient competition in Market 4. This raises a question of timing because it will not be immediately obvious where the market will support infrastructure based competition. Too early imposition of a bitstream remedy on an SMP operator deploying FTTH may have the effect of discouraging further infrastructure investment. It may then be appropriate where a forward looking assessment suggests that competition is feasible to advise NRAs to restrict any bitstream offer to that already mandated for the existing copper based network. As discussed in Section 9 this enables alternate operators to maintain their existing business (in those areas where SMP has been found based on existing copper based services) whilst encouraging them to make suitable further investments. Where infrastructure based competition does not exist and is not likely to emerge and access to enhanced bitstream services on the new fibre networks is being proposed, great care will be required to ensure that prices are set appropriately. In the first instance this could be achieved by facilitating commercial negotiations between parties.

12 Access to terminating segment

We note the Commission's recommendation that NRAs should analyse the market and determine a point after which they should mandate access to the terminating segment of the SMP operator's network. We note two issues in relation to this: firstly the competence of the various NRAs in relation to in-building wiring and private premises which may require the use of other legislative instruments (as in France) and secondly that in order to ensure end to end infrastructure competition together with the ability of customers to purchase unbundled services from more than one operator, it will be necessary to mandate where possible the installation of a sufficient number of fibres to each premise from the concentration point as proposed in Article 18.

In principle we support the provision of access to this part of the network which is likely to be non-replicable however we are strongly of the view that this should be based on symmetric remedies in an approach similar to that already being adopted in France. Only by adopting a symmetric approach can the necessary incentives be put in

⁵ Article 19

place to encourage the maximum deployment of fibre in this part of the network and as a result the maximum degree of infrastructure competition. We note however that care will need to be taken in imposing additional, potentially non-recoverable costs on an operator who will now be obliged to ensure that the distribution point is designed to allow access to other operators.

13 Retiring Copper

We fully support the Commission's view that steps should be taken by NRAs to avoid the unintended consequence of requiring new copper to be installed in parallel with new fibre.

As we set out in our earlier response, when it comes to legacy copper, it is important to recognise that the early withdrawal and decommissioning of copper has two beneficial impacts. Firstly it enables the early realisation by the incumbent of maintenance cost savings. Secondly it enables duct decongestion thus enabling lower cost access to civil infrastructure by other operators.

However, we note that the Commission has not significantly developed this critical issue in its Recommendation. We would recommend that as a minimum the NRAs and/or the Commission start as soon as possible to analyse this critical issue in detail and possibly propose a consultation in order to collect the view of all stakeholders including the companies who are specialised in these issues.

In areas where the access copper legacy network is to be withdrawn, it may be necessary therefore to mandate the replacement of *existing* remedies based on the capability of the copper local loop with a bitstream product enabling existing operators to maintain their *existing* product offering for a limited period of time and we would support the proposals in Articles 37 to 39, noting that Article 37 refers specifically to existing obligations. Regulation should not be used to remove or mitigate commercial risks resulting from technology innovation.

14 Fibre sub-loops and SMP

We continue to be concerned that where the concentration point is removed from the immediate vicinity of the building entry then issues may arise about findings of SMP. Reliance on existing Article 7 provisions may not be effective in cases where the non-SMP operator has deployed fibre, for example where he has decided to deploy an FTTH network, leapfrogging an incumbent's FTTN network. We therefore recommend that access to fibre infrastructure after the concentration point should be based on symmetric remedies alone.

15 Pricing

We strongly support the view that in the case of new investments in NGA, regulation should aim to promote infrastructure competition wherever possible with access prices safeguarding investment incentives because this will lead to self-sustaining competition and has the potential to lead to a complete removal of sector specific ex-

ante regulation. Furthermore these measures should promote the immediate and widescale NGA investment which is required. In this context the inclusion of a project specific risk premium in many of the Commission's proposals is to be welcomed. In view of the very significant scale of the required investments and the degree of uncertainty at this stage in assessing likely returns we continue to strongly support Commissioner Reding's earlier proposal for an ~15% risk premium. We have some concern that the application of a margin squeeze test in the absence of cost orientation may significantly reduce any incentive that removal of cost-oriented pricing offers. In the case of WBA we are concerned that the Commission's proposals and in particular cost orientation and/or the application of a margin squeeze test could effectively preclude normal commercial strategic pricing which would be employed to maximise revenues from the retail market through price differentiation. Such mechanisms are particularly effective in maximising penetration rates and revenues with new products and services and its loss would place the SMP operator at a commercial disadvantage.

16 Conclusions

We believe that it is necessary to carefully balance the different forms of NGA regulation in order to maximise infrastructure based competition whilst also ensuring that investments are made in a timely manner across the EU. The right regulatory approach can help Europe to maintain competitiveness and to ensure that the objectives of the Lisbon agenda are achieved.

We are concerned that this second draft of the Recommendation on regulated access to NGA seems to de-emphasise the Commission's earlier objective to maximise infrastructure based competition which is superior to service based competition. There are some areas in the present draft where this could be re-emphasised in particular by setting out a broader range of conditions where Market 4 could be considered to be competitive and to clarify that Market 5 remedies are not appropriate unless an analysis of Market 4 shows that conditions are not in place for it to be competitive.

We continue to be concerned that the present draft may open the door for NRAs to mainly focus on market 5 while limiting the role of market 4 in achieving effective regulation. Consequently, the situation may become very similar to the current fragmented position where some NRAs are giving clear signals that they favour infrastructure based competition over bitstream where others are giving the reverse message to the market. We believe this should be avoided if at all possible and clarification in the Recommendation as we have proposed would be helpful in this regard.

In summary in order to maximise the potential for infrastructure based competition and to establish the regulatory certainty necessary for sustainable investments to be made we continue to believe that it is important for a geographically focused, tiered set of remedies to be set out which link both Markets 4 and 5, thus establishing clear guidelines for the regulation of NGA networks. We welcome this broad approach in the consultation draft but believe that some clarifications and amendments to the present text are necessary and we have set out a number which we believe will enhance clarity and improve the outcome for European NGA deployment.