Cover sheet for response to an Ofcom consultation

BASIC DETAILS

Consultation title: Review of General Condition 18 – Number Portability

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Representing (self or organisation/s): Network Interoperability Consultative Committee (NICC)

Address (if not received by email):

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Name: ***Paul Rosbotham*** Signed (if hard copy)

NICC Response to Ofcom Consultation:

Review of General Condition 18 – Number Portability

NICC welcomes Ofcom's consultation on the implementation of number portability. As NICC's activities and outputs are extensively referenced in the consultation, it is appropriate that NICC responds; however, individual NICC members will undoubtedly take the opportunity to comment on specific issues, and these responses should take precedence where there is conflict.

NICC believes that the timescales laid down by Ofcom represent stretch targets, but we are willing to make all efforts to achieve them. It cannot be over-emphasised, however, that NICC's remit extends solely to matters of agreeing technical standards. Ofcom's proposals have profound implications into commercial issues and processes, which require consideration beyond NICC. This is particularly the case if the most ambitious usage of a Common Numbering Database is pursued, namely using it to break the current number block routeing paradigm, facilitating separation of numbering administration and routeing (see section on contents of database in Annex).

We offer the following observations on the timescales;

Stable standards agreed by the NICC – June 2007

The requirement to support changes of the type proposed by Ofcom has been anticipated, and factored into the Green Release of NICC NGN standards. Although June 2007 is Ofcom's anticipated delivery timescale for this, it should be noted that a NICC review will take place in the spring of 2007 to assess progress, and it is possible that the June date will slip : we will keep Ofcom informed of this process.

Ofcom's requirements will need to be worked up into an agreed set of detailed requirements. Agreement of such requirements may not be straightforward given the wide spectrum of types of CPs operating in the UK: it is possible that Ofcom involvement may be beneficial to facilitate this. Agreement of a suite of standards to support implementation is technically complex, and NICC has already identified a series of issues that need addressing : Annex A to this response provides an overview of these issues. NICC would highlight that some of these issues could impinge on the feasibility of shortening lead times for portability.

NICC observes that Ofcom's consultation addresses voice calls and makes no mention of SMS within the mobile domain. The present MNP solution in ND1208 addresses both voice and SMS and differs from the contemporary fixed number portability standard for this reason. A consequence of this is that NICC lacks the requirements needed to frame standards that encompass both SMS and Voice, keeping in mind that both now exist in fixed and mobile domains.

Governance arrangements for the database agreed by industry – July 2007

NICC has been in contact with NGNuk to propose a break-down of the technical issues that will be addressed by NICC, and the governance ones which fall more naturally either within NGNuk or the existing NP groups. Given many of the governance issues cannot be addressed until certain technical issues have been resolved, NICC regards July as an extreme stretch target, and a slip to this timeline (e.g. to Q1 2008) may be appropriate.

(Potential) Implementation by Mobile Industry of direct routeing according to NICC ND1208 (formerly Service Description 008) – end 2007

NICC notes that this specification was approved some time ago, and we leave it for the mobile CP community to comment as to the feasibility of implementing it in the stated timelines.

ND1208 will imminently be revised and re-issued, but this is simply to take account of an editorial matter to remove the specific values of the fields which make up IRNs, to take account of the new assignments recently made by Ofcom. NICC notes that networks are increasingly converged, serving both fixed and mobile lines. In this context, clarification is sought as to the regulatory position proposed if, for example, a network was predominately serving fixed lines but had mobile capabilities to serve a small minority of mobile customers.

Common database established, available for voluntary use – September 2008

This milestone is clearly linked into the previous two items, and should be reviewed in the light of the achievement of these.

Records of all ported numbers hosted on NGN nodes to be populated in the database – September 2009

Once again this is contingent on the fulfilment of earlier milestones. As noted in Annex A, one of the key issues which NICC is considering is whether it is optimal that the database contains *all* numbers that are hosted on UK NGNs, or just those that are ported. It is possible for the regulatory requirement to be that just ported numbers be populated but UK CPs voluntarily choose to populate all numbers. However, to achieve the real benefits it would be best if the same solution were to be adopted by all CPs. Therefore, NICC urges Ofcom to frame any regulation to align with the decision agreed within the NICC technical standards in this area. At present, NICC notes that the consultation is ambiguous in this area. In clause 1.10, it is mandated that;

> *Records of all ported numbers hosted on NGN nodes to be populated in the database – September 2009.*

Whereas in the proposed changes to GC18 itself, in 18.8 the text states;

> *(b) "Common Database" means information storage system(s) that can be interrogated electronically by each Communications Provider and containing, in relation to* ***each Telephone Number in active use in the UK****, up to date and complete information required to route any Electronic Communication originating from a Communications Provider in the United Kingdom to such Telephone Number in a manner not dependent on the intervention in realtime of the Donor Provider.*
> (NICC's emphasis)

The former would suggest that Ofcom's intention is the database contains ported numbers only, the latter that all numbers should be populated.

Further, NICC notes that clause 18.4 of the revised GC18 states;

> *The Communications Provider shall use all reasonable endeavours to establish a Common Database by 1 September 2008 and to maintain it thereafter.*

This would, on a strict reading, mean that the Common Database would need to be populated for all numbers, regardless of whether they're hosted on a TDM or NGN network. Is this the intent?

Assuming the intent is per the main body of the consultation rather than the draft GC18 text, NICC has identified a degree of imprecision in Ofcom's requirements. On some networks numbers may not be served on a particular NGN node (or indeed exclusively by NGN infrastructure), hence the requirement may not be triggered as intended. NICC encourages Ofcom to work with CPs, in particular mobile network providers, to gain greater clarity in this area.

(Potential) Mobile – Mobile calls to use common numbering database devised by NICC – September 2009

NICC has certain reservations with this proposal. It should be noted that the NICC technical standards under development are premised upon the networks involved being based upon Next Generation Network technologies (i.e. IP-based). Whilst existing mobile networks are capable of querying a database for every call, in isolation of any long term solution the nature of this query and the answer received would not be based on IP technologies (e.g. SIP/DNS).

NICC is extremely reluctant to develop standards that are complicated by a transitional situation of having to support both TDM and NGN queries, versus the current plan of standards based around the NGNs to which most CPs (both fixed and mobile) have planned migrations. As such, it is NICC's intention that the standards will be based solely upon NGN technologies, and if there is any regulatory requirement for CPs to access the database from networks based upon other technologies (either mobile or fixed), then it will be for the querying network to build an appropriate interworking interface.

Full transition to all call query solution – end 2012

NICC notes this proposal, and assumes it is indirectly based upon the answers we provided to the Ofcom consultation regards the future of the UK numbering plan. NICC continues to believe that 2012 represents a reasonable proxy for a time when the vast majority of UK lines could have migrated to NGN technologies. However, we believe it would be advisable to build in a review of this milestone, and would suggest the end of 2009. Further, NICC believes that Ofcom will have to give explicit considerations to the treatment of those CPs that retain lines on traditional TDM networks beyond this cut-off date. In absence of this, it is possible that the requirement to query the numbering database would become a tipping point for CPs to migrate TDM networks to NGN, or distort the market to force originating TDM networks to route calls via NGN transit providers in order to meet the obligation.

NICC also queries whether the combination of the proposed change to CG18 clause 18.5;

> *As from the Relevant Date, all Originating Communications Providers shall ensure that all Electronic Communications originated by them are routed to the Terminating Communications Provider in a manner independent of the Donor Provider.*

…with the definition of Originating Communications Provider of;

> *"Originating Communications Provider" means a Communications Provider on whose network an Electronic Communication originates;*

results in the unintended consequence that BT would have responsibility for querying the database in the case of Carrier Pre Selection and Indirect Access.

Should Ofcom require any clarification of any of the points raised in this consultation, please do not hesitate to contact us.

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Annex A : Key Technical Issues under consideration

This Annex provides a summary of the key technical issues being discussed within NICC around changes to the number portability solution. As discussion points, no firm conclusions have yet been reached; however the Annex is included in this response to provide an indication to Ofcom of the degree of complexity in fulfilling what at first sight could be misconstrued to be a simple requirement. Additionally, NICC wishes to highlight that some of the issues may require regulatory consideration.

Nature of Common Numbering Database – Real Time or Reference which is periodically downloaded?

Ofcom correctly points out that its proposals make no judgement as to whether the numbering database should be one queried in real-time, or a reference one that is periodically downloaded into individual CP networks. NICC is examining both approaches. In brief, a real-time approach provides certainty that number ports are quickly reflected in originating CP networks, at the expense that many CPs regard an external query as an increased risk to network integrity. Conversely, a periodic download approach gives CPs the certainty that real-time interaction is solely with databases in their own network, at the expense of measures being required to ensure that number ports are propagated through all networks in a timely manner.

NICC is examining hybrid solutions in this area, notably;

- The database being made available for bulk download as a reference, but also available for real-query purposes. The decision between the two approaches would be an individual CP matter.
- A reference database being periodically downloaded, but with "time-to-live" indicators against individual records, with numbers due to be ported/made live set with low values, such that a real-time external query is forced just for these numbers.

Although NICC is not commenting directly to the proposal that the MNP process be streamlined, we would draw Ofcom's attention to the fact that any solution based upon a reference database requires that CPs update their local copy in step with the lead-time for number ports[1]. The proposal to reduce the lead-time for number ports to 24 hours would require that CPs update their copy of the reference data more frequently than daily. NICC wishes to highlight to Ofcom that from the perspective of minimising network risk, a sensible time to update such routeing tables is outside of network busy hours; if these updates are required more than once a day, this is unlikely to be possible.

Contents of Database – fixed versus mobile, ported numbers or all numbers?

NICC strongly supports that the database cover both fixed and mobile number ranges. Convergence between services means that the distinction between a mobile and fixed CP is increasingly a moot point, and see no benefit in providing separate solutions for the two communities.

[1] Unless rangeholder CPs are mandated to support the existing NP solution during the day of the port.

NICC notes that Ofcom's proposals could be interpreted to require that only ported numbers be included in the database. Although not finally agreed, NICC can see merit in all numbers being included in the database, regardless of whether they are ported;

1. This would mean that calls to ported and non-ported numbers are treated equally.

2. Such an approach provides the opportunity to totally decouple numbering administration and routeing.

   NICC supports Ofcom's conclusions in the review of numbering strategy that the need for number changes is rarely as a result of a shortage of numbers per se, but more commonly because of a shortage of number blocks. Although the conservation measures currently being deployed stave off exhaustion of number blocks in a series of locations, a better long term solution would be if the size of number blocks assigned by Ofcom could be matched with the requirement, rather than being fixed by arbitrary considerations of what networks are able to support. By routeing all calls on an individual number basis, this becomes more practicable.

   It must be noted, however, that major reworking of OSSs is likely to be required if this approach is adopted, as current systems (eg. number management and allocation) are based around blocks whose size is generally 10k (in some cases 1k). Business case justifications for this rework will have to be made.

3. Given all calls would result in a query to a database, it makes sense to provide an answer to each query, rather than providing a null response where customer hasn't yet chosen to port their number.

It would be most beneficial if Ofcom were able to revise their cost/benefit analysis work to incorporate the costs (larger database, OSS/process activity) and benefits (potential avoiding of future number changes, diminishing of need to publish off-line number range→network node mapping, simplification of process for enabling number ranges) of including all numbers in the database. If NICC does conclude that all numbers should be populated, it would provide greater certainty if the regulatory mandate aligned with the technical standards.

Access rights to database

There are profound policy concerns around who should have access rights to the database. At one extreme, access could be universally available. Arguably the mapping of telephone numbers to the network on which they are hosted is not personal data. However informal discussions with the Office of the Information Commissioner have resulted in concerns that via the concept of "linked data", the database could indeed need to be treated as containing personal data.

Since the 2003 regime was introduced, there is no longer any concept of licenses for CPs, so this cannot be used as a "passport" to enable access. Similarly, it is not possible to rely on an entity having been assigned E.164 telephone numbers to determine that they are a CP, because there is asymmetry around call routeing, e.g. a CP providing CPS (hence originating services only) need not have any E.164 telephone numbers but have a legitimate need to access the data.

NICC believes that a solution is possible based upon an entity being considered to be a CP hence having access rights so long as they have been assigned any form of "number" by Ofcom. In this context, we take the wide definition of "number" used in the 2003 Act, which would encompass for example CUPIDs, Indirect Access Codes and Signalling Point Codes. NICC is ready to explore this issue in more depth with Ofcom and NGNuk. However, we feel that there is definitely a regulatory role to be made in reaching conclusions in this area, indeed it could be useful if Ofcom were to act as a certification authority in enabling access to the database.

Database structure and contents

A series of database architectures are possible, whether based upon DNS, another open system, or indeed an agreed proprietary system. NICC is examining these architectures, in the light of whether the database will be accessed in real-time, and any requirements from CPs to host their own data, coupled with cost metrics.

At its simplest, the database need only hold sufficient information for originating CPs to determine the terminating network. However, NICC is assuming that there will be a commercial requirement to provide sufficient information to least cost route calls. What level of information will be required is heavily linked to the Replacement Charging Mechanism activity within NGNuk, hence considerable liaison between the two bodies will be required.

Interworking with existing NP solutions

There are a series of CP networks that can be involved in a call path to a ported number;

- Originating CP
- Rangeholder CP
- Terminating/recipient CP
- Transit between Originating & Rangeholder, between Rangeholder & Terminating, between Originating & Terminating.

Each of these CP networks could be using the existing Onward Routeing solution (i.e. be a TDM network or NGN supporting Purple Release NICC standards), or be capable of querying the common numbering database. This results in a large number of combinations, and NICC is working through each of these to ensure that there is no scope for circular routeing to occur. Already, NICC has identified the need for additional signalling parameters to indicate that the database has been queried, and the need for a call, having involved a database interaction but dropped back to a TDM network, to convey sufficient information to route to the Terminating network without Rangeholder network involvement. In the context of the latter requirement, NICC has noted deficiencies in the implementation of the existing number portability solution; workarounds have been identified but we would welcome more detailed discussion of the issue with Ofcom.

Treatment of variable length numbers

The UK has a variable length numbering system. Already, this has presented difficulties with the implementation of NGNs, and NICC is currently compiling a “best practice guide” to minimise the use of overlap signalling in UK networks. It would be highly unfortunate if a common numbering database is to be used, but it was still necessary for CPs to keep detailed tables on each originating node of the length of each number. Clearly, two mechanisms to overcome this would be that the UK number length be harmonised or that customers be required to press some form of “send” button when they finish dialling the number; NICC recognises, however, that these are impracticable propositions and hence networks must be able to cope with the variable length numbering plan in the UK.

NICC is examining mechanisms by which the database could provide an indication of the required number length when a CP queries with insufficient digits.

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