3GPP CN#19 Birmingham NP-030134
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Source: Nortel Networks

Subject: Comments on Proposed TR "Specific network implementation faults and possible UE workaround procedures"

Document for: Decision

Agenda: 7.12

Introduction

A TR on "Specific network implementation faults and possible UE workaround procedures" has been proposed to overcome compatibility problems between certain Release 99 mobiles and legacy Release 97 networks. This case represents an unusual situation where a small number of newly introduced mobiles encounter incompatibilities in legacy networks. In this unusual situation it may be possible to adapt the mobile design to accommodate the legacy networks. This is the reverse of the normal situation where it is hard to change deployed mobile implementations and networks must adapt to solve compatibility problems.

In principle, Nortel Networks thinks that documentation of problems and work arounds in this specific case could be a pragmatic approach to address compatibility problems. However, we think that:

- ?? the criteria for inclusion in the report must be clear, and that the scope and title needs correction
- ?? In general the approach of "mobile based" work arounds should be limited to the unusual situation where a small population of new mobiles is incompatible with widely deployed existing infrastructure and a quick work-around is required.
- ?? The proposed problems and work arounds are reviewed in detail by technical experts prior to inclusion in a TR.

Similar incompatibilities were experienced in the early days of GPRS. To address this problem the report 09.95 ("Interworking between modified Public Land Mobile Network (PLMN) supporting GPRS and legacy GPRS mobiles") was created to specifically address the problem situation. A similar approach should be followed in this case.

Criteria

We propose that the scope of the technical report should be limited to Release 99 and later mobiles operating in legacy infrastructures. For other cases then it is normal to fix infrastructures rather than implementations.

We propose the following criteria for inclusion in the technical report:

1. The problem applies to Release 99 or later mobiles interworking with legacy GSM/GPRS networks. A legacy network is one that was deployed prior to the first introduction of R99 terminals.
2. A work around in the mobile must be found that doesn't cause further problems with existing or standards compliant future implementations
3. The mobile work around must be compatible with the existing documented mobile tests.
4. That the work around must be free from any oppressive IPR claims

In addition, Nortel Networks is not convinced that the problems currently reported can be accurately described as "faults" in all cases. The value of the report is to explain pragmatic solutions to problems rather than to assign blame.

Comments on the Draft TR

The following changes are proposed:

The title is changed to "Interworking between early Release 99 or Later Mobiles and legacy GSM/GPRS networks"

The introductory text is amended as shown

Introduction

~~Sometimes network implementation errors are found only after the introduction of some new protocol extension or a new capability indicated by UE. This is particularly harmful if the time between the rollout of the network implementation containing the error and the detection of the error is long, since it means that network implementations containing the error will be very wide spread when the problem is detected.~~

~~Specifically s~~Some GSM phase 2 network implementations either provide degraded service or fail to provide any service to a R99 or later UE. This could delay significantly the rollout of R99 UEs.

In general such network implementations must be corrected without any delay but when that is not practical, a UE manufacturer may choose to implement some workaround solutions so that the R99 and later UEs will get at least GSM phase 2 level services even if the serving network containing the incompatible implementation ~~error~~ has not yet been updated.

The present document describes UE design workarounds to overcome some known network ~~errors~~implementations.

The intention is not to mandate any of the workaround solutions which are described in the present document or any combination of them. It is an implementation specific issue to choose whether any of the solutions is supported. It is also possible to choose another workaround solution.
~~The primary solution is rapid installation of corrections to known network errors in the existing networks. Therefore it is recommended that if any workaround solutions are implemented by the UE, these should be used for a transitory period only to overcome unacceptable difficulty or delay in bringing new mobiles to the market.~~

~~The present document is intended to serve two purposes;~~ The present document is intended to inform ~~informing~~ the manufacturers and operators of known problems and to document the known workaround solutions ~~so that these can be considered when extending the protocol in the later releases~~.

1 Scope

The present document clarifies possible measures which can be adopted by 3GPP UE utilising UTRAN, GSM or GERAN as access network to enable inter-working to be obtained between various network implementations of the 3GPP specification. The objective is to obtain compatibility without changing the consolidated set of specifications. The present document describes the recommended changes to the UE to cater for some specific ~~faults within some~~ network impelementations.

The lifetime of the herein described measures together with their potential impact on optimal network performance is out of the scope of the present document.

The present document is intended to contain documented workaround solutions which can be adopted by a R99 or later UE implementation to overcome interoperability problems with networks of earlier releases ~~which suffer from any of the known and documented errors. The intention is to document only those cases which the 3GPP group responsible for the corresponding core specification has analysed and judged to be error cases.~~ Therefore the workarounds are of temporary nature to allow the rollout of R99 UEs before all networks in the world have been updated.

In case multiple solutions to the same problem do exist, then it is recommended to document all of them without a ~~beauty contest~~ comment on the merits of the different solutions. The choice between such alternative methods, if any of them is supported, is implementation specific.

For inclusion in this document, a problem must meet the following criteria:

1. The problem applies to Release 99 or later mobiles interworking with legacy GSM/GPRS networks. A legacy network is one that was deployed prior to the first introduction of R99 terminals.
2. A work around in the mobile must be found that doesn't cause further problems with existing or standards compliant future implementations
3. The mobile work around must be compatible with the existing documented mobile tests.
4. That the work around must be free from any oppressive IPR claims

Recommendations

It is recommended that:

- ?? 3GPP accepts a TR with the proposed criteria indicated above for inclusion
- ?? That the title and introductory text is as shown above
- ?? That experts in CN and GERAN working groups are asked to assess the technical correctness of the proposed work arounds in the draft TR. This should be done before they are included in the draft TR text.