Technical Specification Group Services and System Aspects *TSGS#5(99)373*

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Title:	GSM Radio work coordination for Release 2000 and beyond
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Introduction

UMTS is being developed and specified on the basis of a common evolved core network with GSM. This approach will allow common services, common development, efficient evolution, and seamless UMTS-GSM roaming and handover. The principle of common core network evolution has had the practical effect that 3GPP has a duty to support CN evolution for both UMTS and GSM radio access, as well as UMTS-GSM roaming and handover.

While a common evolved CN and UMTS radio access are being developed, GSM radio access is also evolving to meet user and system operator needs, for example with the development of EDGE and AMR. The current organization and split of work places common CN evolution with 3GPP TSG's while GSM radio matters remain with SMG. This presents some challenges, because the benefits of common evolved CN will depend in some cases on harmonized and closely coordinated evolution of GSM and UMTS radio access.

Current split of work and organization

The current 3GPP Terms of Reference include GSM Core Network evolution but not GSM RAN evolution. In practice this has led to the transfer of a large fraction of GSM specifications to 3GPP TSG's, with the main exception of 05 series and other GSM radio-related specifications. It has also led to practical joint operation of SMG STC's with corresponding 3GPP TSG's, for example SMG1/SA1 and SMG12/SA2. Reflecting the Terms of Reference, SMG2 is continuing to work as an SMG STC, and not as closely associated with 3GPP TSG's.

Issues related to the current organization

These steps of transfer of specifications and practical joint operation can be expected to yield much of the desired common services and CN evolution. At the same time, separate

specification and organization of GSM radio access presents some issues and problems that could lead to divergent CN evolution and services evolution for GSM and UMTS. Common services with harmonized user perception should be provided for both GSM and UMTS radio access, in those cases where both radio access methods both can support the services. This however requires very close coordination of GSM radio development with common system architecure and CN development.

Examples of radio-related issues requiring such coordination are:

- Handover between UMTS and GSM radio access
- Roaming between UMTS and GSM service areas, including network selection and cell selection
- Harmonized security methods
- Harmonized speech handling, including TFO and codec enhancements such as WB-AMR
- Harmonized QoS management, depending on RAB definitions
- Common allocation of functions between RAN and CN to enable common CN evolution

Some practical organizational issues can make this coordination more difficult, including

- The requirement for multiple technical groups to treat the same problems
- Potentially unclear division of responsibilities, particularly as new work items are planned and where the evolution of GSM radio access may be involved.
- Slower and more time-consuming communication among the technical groups working on common developments.

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Requirements for solutions

Some actions could be considered to address these issues. Such steps should meet these requirements:

- Achieve the close coordination discussed above
- Support all the work areas that may be considered in future work planning
- No delay to Release 99
- Timely solutions for initial Release 2000 planning and preparation as well specification activities in year 2000

Potential Solutions

Enhance current organization

Clarify that 3GPP Terminal , Core Network, and System Aspects TSG's must all support requirements of evolved GSM radio access to ensure common services and Core Network evolution. The practical steps could include

- Joint meetings of SMG radio-related STC's (primarily SMG2 and its work groups) with 3GPP TSG's
- Coordination groups to assure that the GSM radio access matters are fully considered
- Joint Release and WI planning between 3GPP SA and SMG radio-related STC's (SMG2 and others), under the lead of 3GPP SA.

- Consider further consolidation or practical joint operation of SMG STC's with 3GPP TSG's

Change organization

Include GSM radio access in the Terms of Reference of 3GPP TSG's.
- This would effectively move the work of SMG2 and other radio-related STC's into 3GPP
- Organization within 3GPP should be considered. One option is formation of a new GSM RAN TSG.
- Handling of maintenance activities as distinct from development activities should be considered.

Discussion

These solutions need not be mutually exclusive, and a well-planned combination might meet both near-term and long-term requirements. A near-term solution can meet the needs for completing Release 99 without delay and preparing for Release 2000 work. A longer-term solution could address the situation for year 2000 and beyond.