

Technical Specification Group Services and System Aspects
Meeting #10, Bangkok, Thailand, 11-14 December 2000

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Source: Chairman of Workshop
Title: Report of Workshop on Service Vision and Scenarios
Document for: Information
Agenda Item: 5

The attached document contains the report of the Workshop on Services, which was held in Oxford, UK. It is presented for information and to prompt discussion.

Source: **Chairman**
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Title: **Workshop on Service Vision and Scenarios**

Document for:

1 Opening of Workshop

Mr Fred Harrison welcomed the delegates to Oxford, a town which has considerable history. Apart from highlighting some of the attractions of Oxford, Mr Harrison indicated that there is a museum in Oxford that has some actual remains of a Dodo, the bird that became extinct. This is a poignant reminder of what happens when the industry does not keep up with evolution. Mr Harrison wished the meeting well.

The chairman set the scene as to why this workshop was being held. He added that this meeting has no mandate and so this meeting cannot make any decisions. However, there is a possibility to produce a position paper with a number of recommendations.

The chairman went on to explain how the meeting would be run. The first day would concentrate on presentations and second on formulating a view on:

- The Long-term Service Vision; and,
- Evolution towards the vision from Release 4.

2 Approval of Agenda

Document 002/00 contained a type of agenda with the titles of all the presentations and the document numbers attached. This was updated as new contributions were received. It was approved.

3 Presentations of "Service Visions"

3.1 Over-all Services Framework and Principal Requirements

The first presentation was given by BT starting with a video. One point arising from the video was that no phone calls were made; it was all use of data.

The presentation in document 006/00 went on to look at why we should base 3G on IP technology and where the starting point is:

- Start point is 2G
 separate voice and data with internet access
- 3G Release 99
 gives a higher performance and some important additional service capabilities
- 3G Releases 4 and 5
 gives the opportunity to transition to integrated multimedia service - fundamental change from telephony legacy

The presentation looked at User perspectives and the Operator perspectives. Of note was the point that Service value should increase as there is an expectation of high performance. The move to IM domain services must be a step forward, and not reduce service utility. There should be a consistent service support

when roaming in 2G networks; not all users have the same requirements, terminal and service segmentation. From an operator perspective, a managed customer transition needs to be implemented to minimise risks of churn. Also there is a pressure on tariffs to drive down costs.

The presentation introduced the term "The Walled Garden"; i.e. a Conflict of approach between internet and mobile. Internet uses open model - operators are bit carriers, mobile is just another means of access mobile prefers "walled garden" where high value services are created within operator domain. The walled garden approach can succeed only if IM domain can deliver more than internet (e.g. security, performance, roaming and VHE and customer care).

The Challenge for 3GPP is to create a world-wide mobile service which can do much more than fixed/internet and to engineer a transition from today's data/voice to mobile multimedia by exploiting the IM domain to meet users expectations.

It was questioned what was meant by the comment that we will start with 2G and that 3G will give a higher performance and some important additional service capabilities. It was answered that clearly 3G must be commensurate the capabilities of 3G and not merely be a replication of 2G services.

3.2 Results of its recent Market Forecast Study on 3G service

The presentation in document 017/00, and given on behalf of the UMTS forum, was built around study on the 3G and the potential for revenue generation. It was commented that the report is available free of charge on the UMTS website (<http://www.umts-forum.org>).

It was noted that where as forecasts integrate opinions across the industry and analyse trends, this study was based on the analysis of consumer habits and "propensity to buy". This looks at the market segmentation and why different areas of markets have different buying/spending habits. This also changes geographically and so this was a factor in the study.

The study emphasises subscriptions and revenue streams rather subscriber numbers and terminals. The number of subscribers does not always reflect the revenue source.

With the cost of licenses, each operator needs to be able to justify new services rather than augment the existing services which already have a revenue stream.

Results are available in the short term with Mobile Internet/Extranet access, customised Infoservices and MMS. At a later date, location services, mobile internet and and rich voice (including video phones) may generate some revenue.

Of note was the comment that corporate access for Mobile Internet/Extranet access generally is understood to generate revenue in airtime. This is not so, and many services can be built on top of this access. Moreover, the corporate access is the dominant revenue source for the early implementer. From infotainment, revenue streams are available from airtime and subscriptions.

It is estimated that 160 billion will be generated on these new services by 2010, but that this will be eroded by competition; i.e. the pie will be divided into more portions, although it should be noted that the pie itself will be bigger.

Some caution was given regarding the view of multimedia in 3G. In 3GPP there is some confusion between multimedia and video telephony.

Some key points were:

- 3G is more than addition of mobile to the internet;
- Early entry into the consumer market is important;
- Significant revenues can be generated without mobility premiums;
- Mobile portals are an additional source; and,
- The benchmark for 3G in other markets (e.g. the financial market) will be the Internet.

Of note was a statement that 42% of corporate employees have a laptop and are portable. However, only 5% use GSM to transfer data. To emphasise this, there was a challenge to the meeting asking who was connected during the meeting via GSM; the answer was nobody. This is a gap that needs to be closed.

It was also commented that to achieve this goal, ease of use is significantly important; plug and play is paramount. Speed is imperative, as is QoS, and alignment with the Internet Multimedia must be achieved.

There was a comment from the audience that the definition of multimedia is important, and there is a misalignment between SERG of the GSM Association and 3GPP. The speaker concurred with this and that some work needed to be done to achieve some commonality.

It was asked about the status of Location Services. Mr Crew indicated that perhaps LCS is more important in the short term. It was clarified that the study was conducted over different nationalities and the actual buying habits which may have affected the results. Nonetheless, the study maintains that LCS will not be a major revenue generator in the early stages. The point is that 3G license holders will require a revenue stream very quickly and an installed base of mobiles is required for LCS services; the first person to buy a video phone will have nobody else to talk to.

3.3 Evolution to IP multimedia Services

Document 005/00 contained a presentation from Nokia.

In GSM all services were standardized and practically all services were in the MSC (and terminal). This resulted in systems that inter-worked well and most of the functionality within standards was implemented.

In GSM phase 2+ (1996-1998) the new services, features and improvements to GSM phase 2 were market driven. The concept of yearly releases within ETSI SMG was introduced in order to allow yearly MAP releases. There were a large amount of Work Items, that were largely independent. The toolkit based services did not replace standardized ones and of the many new features, not all widely deployed .

3GPP Release 5 gives a new System architecture:

CS Core Network domain	- Traditional GSM type of telephony
PS Core Network domain	- GPRS, QoS aware IP bearers
IP Multimedia CN subsystem	- IP multimedia services (SIP)

There is the opportunity to start from "clean sheet". There will be some services equivalent to GSM services New terminals required, and there will be simultaneous registration and use of both CS and IM services. But IM and CS services will independent - no interactions at CN.

For the roaming service scenarios, negotiation based on legacy protocols and service offering based on roaming agreements and mapping between IM and CS services for roaming will be impossible. There will be no traditional handover between CS and IM; service continuity to be provided by other means.

IM supporting terminals most likely to support many radio interfaces and media types, also CS services are likely to be supported. However, some customer segments will still be satisfied with terminals not supporting IM services.

For service creation in R5, it is understood that all new services shall be based on capabilities / toolkits. This means that there will be no standards guidance for IM service implementation and a multiplicity of solutions to offer a given service.

A toolkit based approach is the only way to provide IM services, but the following questions need to be answered:

- Which mechanisms and toolkits should be selected?
- Role of "VHE toolkits" versus "Internet tools"?
- How is intelligence distributed between UE and CN?
- What is interworking between toolkits?
- What are the open interfaces?

3.4 Multimedia Services

A demonstration of multimedia services was provided by Ericsson. Essentially the demonstration revolved around a game quake. This was adapted to provide first a video phone connection followed by a virtual tour of a new area of Stockholm. There was video, speech and data transfer.

There was a wireless lan was provided for this at 11Mbit/s, but at no time was there more than 28Kbit/s being used (for the data element; voice was not included). GPRS would be sufficient. It should be noted that the background was available locally before the demonstration.

It was asked how will the small screen cope with such a demonstration. The answer is that there is a possibility for the mobile to be directed to another screen via, perhaps, bluetooth. Nonetheless, the capability of the screen would probably suffice.

3.5 UMTS Services Vision and Standardisation Approach

A presentation was provided by Nortel on UMTS Services Vision and Standardisation Approach in document 013/00. Generally, the Internet has provided a wealth of infotainment and commerce. There is a demand for rapid access to information. Moreover, personalisation of the services is important. The conclusion is that whilst the Mobile Industry is patting itself on the back, there is a lot still to be done.

For some time, the industry has looked for the killer applications. It should be noted, however, that killer applications are not predictable. So the key is not to predict, but rather to provide capabilities to allow killer applications to be developed. The most successful applications will be evolutionary, but proven value will drive the technology.

Some future applications are:

Person-to-person communication; e.g. voice, chat, mail, personalised chat, shared calendars, shared whiteboards, video and still photos.

Information, Entertainment and Ecommerce; these should be mixed media, personalised, location based, with integrated charging, local caching and based on service hosting.

Business Services; e.g. mobile office, file sharing, calendar and contact management, presence management, field-service/fleet services and telemetry.

There are a number of success factors. There will be fierce competition and so rapid service design is imperative. UMTS will be integrated in social and business life. It will be based on a highly personalised service environment.

The presentation gave some mapping of services to the types of consumers; i.e. basic consumer, savvy consumer and business user.

In order to achieve rapid deployment, modularisation is imperative. The users can be categorised as CS users, SIP users and CS/SIP users, and migration of users between modes is important as is the ability for some limited roaming of the SIP users into legacy networks (at least in the medium term).

On the terminals, there will be a wide variety of physical forms. Some of these will be specific (e.g. an MP3 player getting music from the WEB) and some will be flexible (e.g. a organiser phone). Flexibility and modularity are the keys for mobiles.

So, in order to achieve the goals, the standards need to concentrate on:

- Standards Activities
- Open interfaces to allow modular services eg
- Charging
- Subscriber profile
- Location
- Presence
- Define interworking and selection between IM and CS
- Specify an open protocol for UMTS multimedia browsers
- Open the terminal model

In conclusion it was noted that Standards should provide modular service enablers and let market experience drive standards. It is better to take small steps quickly rather than taking big steps slowly and personalisation and velocity will be key to success. Looking back, the standards should maintain legacy services as they are the best way of providing legacy services, but focus new features on pushing new horizons

It was questioned if the API is sufficient to allow modularity and flexibility. The answer was that APIs in themselves are not enough. Better still, the positioning of APIs in the overall structure will allow more rapid service development. This is a lesson from the Internet; if sufficient access is given the new services will be developed quickly.

3.6 Service Framework & Principal IM Requirements

Document 007/00 contained another BT contribution on Release 5 - Service Framework & Principal IM Requirements.

The initial IM constraints will be non-ubiquitous IM coverage, and terminal availability. The requirements from this will be that IM users will be supported when they are outside IM coverage, and that interworking between IM and non-IM systems is supported.

Service Continuity is required for the provision of services to the user seamlessly when there are changes to the network and terminal capabilities available for supporting them. It was noted that in this context, seamlessly means that the user's experience of the service is maintained, however with a possible change in QoS and capability.

The CS Service Environments of 2G and 3G are characterised by 24.008 Call and Service Control. The Principal difference is Radio Technology. This means that 3G to 2G continuity, for CS based services, there is a requirement for:

- 3G service set is essentially the same as for 2G
- the call/service control protocols and procedures are the same (24.008);
- hand-over/roaming mechanisms between GSM and UTRAN should be sufficient.

There appear to be no major service issues.

The presentation then went on to the 3G IM Service Environment which is:

- Characterised by SIP Call and Service control;
- Describes the full set of operator specific and customised services available to the IM user.

The IM service environment needs to provide new advanced multi-media services, provide basic voice, provide QoS no worse than existing CS domain and be capable of supporting all of the user's real-time services. It should inter-work with users of the CS domain, PSTN, ISDN and other IM Systems, support a range of addressing techniques - including MSISDN numbers for calls from PSTN and CS users, and allow flexible charging scenarios. And it should do this all at reduced cost!

The 3G IM to CS Continuity is required when there is no IM coverage during the initial IM roll-out and to support international roaming (3G IM users roaming to 3G CS and 2G networks). The Objective is to maintain as much as possible of the IM user's service environment using CS domain capabilities (2G or 3G).

In summary, the IM service environment is required to:

- be capable of satisfying all of the users' real-time service requirements;
- interwork with other networks (PSTN, Internet etc);
- use 2G and 3G CS capabilities when there is no IM coverage.

It was commented after the presentation that no assumptions should be made about the user and their capabilities. There are some users that are aware and those that are not.

Some different realistic call scenarios that could be experienced in mixed IM and CS environment were presented in document 008/00.

There was a comment that it should be clear where the service environment is. In document 007/00 the service environment is towards the user; i.e. embodied in the MMI. However, the call scenarios appear to put the service environment back in the terminal and network. This was answered that whilst the user is the key element in the service definition, it should be recognised that the implementation of that service over different domains will impact on it.

3.7 Structures leading to successful UMTS applications

Document 015/00 contained a presentation on the structures leading to the successful implementation of UMTS applications. The presentation indicated that the three major factors are:

- The drivers for new services (e.g. megatrends)
- The evolution of the business scenarios (value chains)
- The enablers in the technology field (e.g. architecture)

New services emerge only if architectures, tools and mechanisms are in place which enable their creation in the right business scenario (business practice, value chain). The classic "teleservices" will continue to be offered in the single-role service model, but new services will evolve in a multi-role value chain. The reason for this could be because exciting applications include many facets, could be very specific high tech features and/or have very specific content information.

So, New, exciting applications will be enabled by the IMS; currently only part in UMTS, which meets the

requirements of the multi-role model to a large extent. However, in order to foster multi-role applications, openness toward 3rd party is key.

For service provisioning, service mechanisms should be devised for those applications, which are to be expected by the IMS. Voice-centric service provisioning mechanisms such as CAMEL are not adapted for the IMS and would not be an enabler for the multi-role value chain community. But CAMEL will continue to play role at CS and PS (IP connectivity).

Voice will continue in the future will be, to a large extent, provided in single role service relation between network operator and end customer. The circuit-switched network domain is best suited to satisfy quality, availability and interoperability. However, to reduce CAPEX/OPEX the CS architecture should evolve to allow a consolidated network and compressed voice transport. The IMS subsystem and CS domain serve complementary business scenarios and provide complementary services. Interworking requirements such as "interdomain handover" should be considered low priority.

3.8 CAMEL

A presentation provided by Vodafone in document 005/00 dealt with the issue of Home network operator control of services in an evolving environment. It is clear that CAMEL services provide capability for Home Network Operator control of services in the circuit-switched domain and that CAMEL phase 3 has added the possibility for control of packet bearers using GPRS control of mobile-originated short messages. It is understood that CAMEL phase 4 will provide Call Party Handling capability, support for Optimal Routing, and control of mobile-terminated short messages.

Vodafone thinks that it is critical to maintain the capability to provide enhanced services. Moreover, service continuity during the evolution from a CS to IM environment is critical and, if there is a radical change of control paradigm, a large cost will result from the adaptation of the databases etc. in order to maintain continuity of services.

Vodafone suggests, therefore, that subscribers will not be easily convinced to invest in a new (IM) system if the services they have come to rely on are no longer available and that services which subscribers depend on are maintained during the evolutionary process.

This was general agreement that the issue of CAMEL is important. However, the question asked by Vodafone of what will replace CAMEL is probably the crux of the reason for this workshop. A great deal of effort could be put into the elaboration of CAMEL for IM may not be appropriate.

The question of effort is just one element of the role of CAMEL. The other elements are to identify the goals. Managed transition is important, but care should be taken to ensure that the transition does not take over. The final comment was that whilst the statement that something is required is appropriate, we should really get on with defining what actually is required.

3.9 Serving 3G all IP Terminals

Document 016/00 contained a presentation from Telrad Networks on roaming between 3G and GSM. A great deal of the terminals sold will be Multi-Generation; i.e. GSM, R99 and all IP. So, when roaming to all IP PLMN with all IP UMTS capable terminal, it was questioned if:

- Is it possible to serve roamer as all IP UE if its Home PLMN is GSM?
- Is it possible to serve roamer as all IP UE if its Home PLMN is R99 UMTS?
- Is it possible to provide services based on terminal capabilities rather than home subscription?

If yes, it was commented by Telrad that both subscribers and operators will benefit from it.

The issues are:

- If it possible to assign GGSN for a terminal which Home PLMN subscription is CS only (GSM or R99)?
- Is it possible to assign a S-CSCF for a terminal with GSM Home PLMN?
- UMTS R99 Home PLMN?
- Is it possible to provide the roamer with all IP services?
- What is the impact on roaming agreements and billing?

The general comment was why this should be provided. There are a number of reasons ranging from the cost of implementation to the ability to write roaming agreements as to why this is not appropriate. The

document was noted.

3.10 Operational Aspects of IP Multimedia Services

Document 011/00 contained an input on the Operational Aspects of IP Multimedia Services in two parts, a powerpoint presentation and a document. 3GPP R4, R5 and beyond, is about providing end-users with access to rich and exciting IP services such as streaming and interactive services, in addition to surfing/web browsing.

The UMTS IP multimedia terminal will perform a more significant role in serving the user than the traditional mobile terminals. It will be taking advantage of the advances in terminal technology to support the end-user and perform services on behalf of the end user. There will also be possibilities for the terminals to make use of external devices – such as video cameras, display devices etc.. These capabilities will enable support of various rich applications made available due to the IP transparency and will increase and enrich and end-users experience.

The system should make it possible for a richer personal communications experience to the end users with better quality and more flexibility than what is possible today in the Internet, while allowing for more opportunities to generate additional revenue for the operators.

Looking in the communication rear-mirror, the end-users moved from using telephony on their fixed phones, to use telephony on their mobile phone. Thereafter end-users started using Internet applications on their PC terminal. Same as once for telephony, people will want to move from the PC terminal to their mobile terminal at least for some of the existing Internet applications. In addition the mobility aspect will most certainly attract other not yet invented applications, not necessarily applicable to the PC world. Such applications may also change people's communications behaviour in a similar way as the introduction of SMS has done to younger generations of end-users.

The last slide of the presentation indicated that it is not probable to re-implement existing services. This was questioned in regard to those networks that do not have a legacy network. It was answered that the business case for not having at least part of a CS based network would not work in light of the potential for attracting roamers.

3.11 Orange (IM) Service Vision

The presentation from Orange was provided in document 014/00. The term Lifestyle companion was coined for a service that adapts to you, independent of:

- access method used (e.g. voice, SMS, etc.)
- type of network
- type of use
- type of user (e.g. people, machines)

This means that the same service is provided between different domains with handover/roaming between domains and service capabilities, not services.

This caused some considerable debate. Essentially there are were two schools of thought, those who did not put much faith in the user and those who believed that the user can distinguish between applications and can act accordingly.

3.12 3G Services, Internet Access and Service Toolkits

Motorola provided a presentation in document 012/00 leading on from the UMTS presentation (017/00). It was noted that mobile phones will be fully internet integrated providing seamless internet access and multimedia services. By 2003 more people will be seamlessly accessing internet multimedia services via wireless devices than PCs and other fixed devices. New operator/3rd party IP multimedia communications, with new personalised IP multimedia communications, will be rapidly developed to differentiate operators, reduce "churn". Generally no services standardised, but enabled using 3GPP services toolkits (MExE, OSA, CAMEL, USAT) and IP/IT toolkits.

Having set the scene, the presentation goes on to extol the virtue of the toolkits to be used, in particular MExE. However, the most prominent point is that the mobile services need to be fully compatible with the internet. Moreover, some form of compatibility negotiation is required between the mobile and the network/service, to ensure that an interaction is possible and/or compatibility is ensured. This point was brought home by the fact that there was an incompatibility between the output of the PC and the projector

causing the display to be blurred.

3.13 T-Mobil Service vision

A short presentation was provided by T-Mobil on their service vision in document 018/00. The point was made that CS is the same as packet switched with very, very good QoS and very stupid resource management. The two existing QoSs are best effort and ultimate (CS).

The point is that a user will want to talk to someone else. It is a voice call they will make and it will be charged on a per minute basis. Is it possible, after all, to have be charged less by being quiet on a packet based voice call? A user will make a call to someone and identify them by whatever we decide.

There was a comment after the presentation that, whilst from a user's perspective a call is a call, from an engineers point of view, someone needs to decide how to do it. This is exactly why this workshop is necessary; to determine how to do what the user doesn't know they want to do.

3.14 AT&T Service vision

The vision of AT&T was provided in document 019/00. The presentation highlighted some quotes from 22.976. This was interesting since the quotes largely followed the general understanding of the workshop.

The presentation went on to indicate a number of service exmples for the IM domain that highlighted the vision of AT&T.

In conclusion, the vision is to define new services that support existing capabilities while enhancing them in compelling new ways. The vision is NOT to re-implement legacy services; IM Services must be more than CS services re-implemented over the IP domain. Services are overlapping sets of inter-operating capabilities and co-ordination and Interoperability between 'domains' is key. IM Services will give the service provider the capability to provide to their end user more powerful and exciting services than is possible with non-IM technology.

The message given was essentially the same as that given when 22.976 was not approved; i.e. that AT&T do not want to re-implement existing services, but that some capabilities in the CS domain are required in the IM domain. The implementation of those services are, however, dependant on the implementation medium.

3.15 Terminal and SIM aspects

A presentation on Terminal and SIM aspects was provided in document 009/00. It was stated that the goal is to develop UE architecture to best harness growth of IP based applications. This means to use IP LL techniques within the UE, between components (objects) of the UE and use IP applications, not legacy applications (e.g. SIP not 04.08, MMS not SMS or IP control not AT commands).

The presentation went on to provide the requirements in order to implement one particular scenario; that of connection of a PDA via a mobile to the network. Both the connection to the IM domain and the CS domain is dealt with.

4 General Discussion

The second day was given over to general discussion and on formulating a view.

It was proposed to narrow down what should be achieved for the services. It was noted that Internet access was listed as a part of R5, but in fact a major issue is SIP based services.

An opposing view was that an important conclusion is that the future of IP based services is not limited to SIP based services based on the IM subsystem. This is a part of what is to be achieved but not exclusively. The meeting then made a review of the presentations.

4.1 Review of presentations and key points

BT - The evolution of services into the all-IP era (006/00)

The attention of the meeting was brought to a slide that indicated:

- Service value should increase

- Expectation of high performance
- Move to IM domain services must be a step forward, and not reduce service utility
- Consistent service support when roaming in 2G networks
- Not all users have the same requirements, terminal and service segmentation

It was asked if all the elements of the above are taken as read. It was questioned if the above should be provided exclusively in the IM domain? Is there continuous CS and IM domain? Do we provide a service exclusively with the IM domain, or are we looking at a future, which has both IM and CS domain support.

Some pertinent questions and comments were:

Is it a move from CS to IM or is it an augmentation of the domain?

One question was if there is a chance that anyone will run a purely IM domain?

We should not re-implement what has been done already in the CS domain.

Is IM complementary to the CS domain?

Do we do everything from one domain or from either; are services composed solely by IM or a mixture of CS+PS+IM?

Another point made was the use of terms that mean different things to different people. For instance voice over IP evokes different responses to different people. The terms should really be properly defined and VOIP is a good place to start.

Also, it was indicated that two camps exist in the meeting; those that want full CS/IM interworking, and those who do not.

UMTS Forum - Results of its recent Market Forecast Study on 3G services (017/00)

The key points from the UMTS presentation were:

The benchmark for 3G will be:

- internet performance (Ease of use, Speed (latency, not necessarily bandwidth) quality)
- Services (especially infotainment)

Terminology has been confused.

It was pointed out that Internet performance should be available with R4.

In relation to the Infotainment, it should be noted that these services will not be defined by the standards committees, but that support for the possibility to define them should be built in. Work should be put into the APIs and how accessible they are.

From Nokia (005/00) the main points were:

Is there simultaneous IM and CS registration?

There will be no traditional handover IM to CS/PS domain.

There is a hybrid model in relation to home versus visited if roaming is to be supported.

- 3GPP shall:
- Avoid fragmented markets
 - Maintain economies of scale
 - Ensure free circulation of terminals

There will be interworking between toolkits.

Ericsson - Demonstration

The presentation combined 3V's, Voice, video and virtual reality.

The virtual reality is potentially outside the IM subsystem.

There needs to be mechanisms for end-users to integrate components.

Nortel - UMTS Services Vision and Standardisation Approach (013/00)

It was proposed to send slide 6 to SA1.

Future Success Factors for UMTS

- Fierce competition and innovation
 - Rapid services design, build and deployment
- Addition of Very different services from GSM today
 - New technical solutions and challenges
- UMTS becomes integrated in social and business life
 - Services driven by social and cultural factors
- Highly personalised service environment
 - Not just a few "standard" services

Changing role and approach for standards

These could be a checklist against which SA1 should apply each CR or other output. There were some problems with this principally because SA1 will not know what to do with this, but also because not everyone agrees with the principles.

It was decided to create a document based on the principles for forwarding to SA1.

There was a comment that the point that "Very different services from GSM today" as a success factor may give the wrong view to SA1. Better would be to say "Addition of very different services from GSM today".

Slide 9 also highlighted a key point that was made in the meeting; i.e. that the APIs should be standard, and put in the correct place. Easy access to APIs is pivotal. Some of the questions were:

- Which APIs are needed?
- What are the endpoints of these APIs?

On slide 12 there was a point that the range of terminal types is important. This point was also brought out in the BT contribution on Terminals.

BT- Over-all Services Framework and Principal Requirements (007/00)

Initial IM constraints:

IM coverage will not be ubiquitous and it will take time to reach CS level. Therefore there is a requirement for IM users to be supported when they are outside IM coverage

Terminal availability will be limited and IM-user to IM-user calls will be limited. Therefore, there is a requirement for interworking with non-IM systems

There was a problem with the term IM-user. What is an IM-user? This will need to be clarified if this point is adopted. Alternatively, it may be possible to change the term from IM-user to IM-subscriber.

A counter-point was that perhaps this is a little specific and that the question is "How do we deal with different coverage of 3G?"

The issue refined to: service environment, coverage dependant/Terminal dependant, subscribed-to vs Available.

Other points were that:

there should be de-coupling of services from domains;

Real-time interactive → CS only.. No.

Service continuity..... see the output document.

On the subject of QoS, there was a significant debate on the nature of VOIP. A point made in relation to the demonstration from Ericsson, was that if in a virtual reality, the ability to have stereo would make it easier to locate someone. It is quite possible that people will accept higher call setup delays for the benefit of stereo sound.

Note there is a significant difference between the way that telecommunications industry and the IT industry treat multimedia. In the telephony world, the speech and video are sent independantly and combined at the destination. In the IT industry the speech and video are combined together. An example is the "shockwave" application that does just that.

It's voice, Jim, but not as we know it.

Mobile communications, the final frontier. These are the voyages of the committee 3GPP. It's 12 month mission, to seek out new killer applications, to implement services in the minimum of time with full flexibility and at minimum cost to the user. To boldly go where no mobile has gone before.

BT - Call Scenarios looking at realistic call scenarios involving calls between IM and CS based users (008/00)

The Key points are:

The list of the scenarios is not exhaustive, but important and demanding scenarios need to be considered.

How do users registered on the IM subsystem interact with users registered on CS?

Siemens - Structures leading to successfull UMTS applications (015/00)

New exciting applications,

Multirole
Right API's are appropriate
CAMEL is not considered the right service mechanism for IM.

Vodafone - Home network operator control of services in an evolving environment (004/00)
The main points were two questions that were not provided in the document provided. It was revised and provided in document 021/00. They are:

The types of services that we offer in the CS domain via CAMEL will need to be considered in the IM-Subsystem.

SIP has been adopted by IETF, so who will standardise the new protocols?

Telrad - 3G All IP PLMN Serving 3G All IP Terminals with CS only Home (016/00)

The proposal from Telrad is Technically feasible but where is the business case for it?

Ericsson - Operational Aspects of IP Multimedia Services (011/00)

IP-Multimedia = new services.

User migration; not service migration.

Service interaction should be user controlled and potentially set in the Terminal.

Orange - Vision of Services (014/00)

same services between different domains

handover/roaming between domains

service capabilities, not services

Motorola - 3G services internet access and service toolkits (012/00)

Legacy services in IM can be created using the toolkits.

Maintenance is required on certain legacy services in the CS domain for compatibility reasons.

T-Mobil - T-Mobil Service vision (018/00)

Users care about applications and not transfer mechanisms.

There is a terminology issue; there is no IM Domain but IM Subsystem.

APIs should be standardised on the application level and the protocol level and anyone using IM domain should be fined.

AT&T - AT&T Service vision (019/00)

Provide integration of voice and data.

This implies support of voice in the IN Domain (fine of 10p).

Personal mobility offered by SP based architectures.

BT - Terminal and SIM aspects (004/00)

Support of multiple objects at the UE is required.

How to enable secure call control from outside the MT needs to be considered.

How does the scheme work when there is no IP multimedia?

5 Identification of common points, identification of deviations

5.1 Design options for IM Subsystem and Issues

An input was provided in document, which tried to summarise the provision of services by the IM subsystem or by the CS and PS subsystems.

There was some confusion on the parameters for the table in the document. There was no decision on the headings for the table as there was no agreement on what is meant by service provision in a CS/IM domain.

The first column represents a situation whereby the capabilities of the CS domain are a subset of the IMS. Then second column represents a situation whereby the some of capabilities of the CS domain are provided in the IMS, but not necessarily in the same form as in the CS domain. Finally, the third column, provided for completeness, represents the scenario whereby the IMS provides a services that do not overlap with the CS domain. The three columns were provided in graphical form.

There was some confusion regarding what is being represented. The interaction is not actually brought out. A number of services may well be replicated in the IMS, but will be implemented in a completely different way, which will not allow for interaction.

Conversely the interaction between the services could be minimal.

In the end, it was clear that the middle two columns are the future and that the outer columns will not be implemented. There was some agreement on this. The shaded area represents the areas where more discussion is required.

The document was issued as document 022/00.

6 A.O.B.

It was decided to have a separate email exploder. This was agreed as was the presentation of documents 022/00 and 023/00. It is expected to have substantial discussion on this in the near future.

7 Close of Workshop

The workshop was closed.