

TR22.976

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TSG-S1 TR22.976

**Study of Release 2000
Services and Capabilities**

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Target of the S1 R 2000 ad hocs



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- The ad hoc group concentrates on the services aspects of Release 2000 and especially on the PS Domain and IP multimedia services. The ad hoc will prepare reports, specifications and CRs for the S1 plenary. The target is to have a common understanding on what needs to be standardised in order to support IP Multimedia services (with supplementary services, service capabilities, features etc.). Work is to be based on existing GPRS/PS domain services.
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- **Release 2000 requirements overview**

- hybrid architecture (evolved Release 1999 network)
- new capabilities:-
 - IP based call control
 - realtime (including voice) services over IP with end-to-end QoS
 - GERAN (support for GSM radio including EDGE)
 - new services created with toolkits (CAMEL, MExE, SAT, OSA)
 - backwards compatibility with Release 99 services
 - no degradation in QoS, security, authentication, privacy
 - support for inter-domain roaming and handover



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- **Definitions and domains (Ch. 3)**

- basically consistent across S1 and S2
- GPRS used instead of PS connectivity services

- **High level vision (Ch. 4)**

- phased network and services evolution
 - evolved Release 99
 - support of IP multimedia services
- User perspective of services (Ch. 4.5)
 - transparent enabling mechanisms (e.g. toolkits)
 - new services and enabling mechanisms developed and deployed
 - Release 2000: services without having to use CS n/w capabilities



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- Simple classification of services (Ch 4.6)
 - Services, call control and transport (Ch 4.7)
 - Main high level requirements (Ch 4.8)
 - backwards compatibility with Release 99 services
 - capabilities to enable CS services as equivalent IM services
 - not all Release 99 CS services as IP multimedia services
 - compatibility and access independence with other IP services
 - same (or greater) QoS as Release 99 GPRS and CS services
 - no reduction in privacy, security, or authentication
 - support of roaming and service continuity
 - respect spectrum efficiency
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- Main high level requirements (contd.)
 - simultaneous realtime and non-realtime IP multimedia services
 - support QoS parameters for realtime packet bearers
 - negotiable QoS for IP multimedia services
 - support interworking between the packet and circuit switched services, and with PSTN, ISDN and Internet.
 - integrated O&M
 - charging and billing
 - flexible addressing schemes
 - enable Release 99 UE to provide Release 99 services in Release 2000 networks
 - allow a Release 99 CS UE to use services of "MSC servers"
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- IP Multimedia services high level requirements (Ch. 4.9)
 - new service capabilities to support IP multimedia services
 - handling of individual media components
 - services more personalised
 - services more aware of user context
 - consistent behaviour regardless of access
- QoS high level requirements (Ch. 4.10)
 - negotiable at call/session setup and during call/session
 - network support for UE that only support PDP context activation
 - support for QoS based pricing



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- **Release 2000 services (Ch. 5)**
 - IP multimedia services
 - CAMEL phase 4
 - MExE Release 2000
 - LCS with UTRAN
 - Wideband AMR speech codec
 - Global Text Telephony
 - No Release 99 services deleted



- **Virtual Home Environment (Ch. 6)**

- transparent to the transport mechanisms used to support services
- services created using standardised service capabilities (i.e. MExE, USAT, OSA and CAMEL), and other “toolkits” (i.e. LCS, SoLSA)
- leverage use of non-3GPP IP toolkit mechanisms
- improved support from MExE, USAT, OSA and CAMEL
- toolkits co-operation to provide enhanced IP multimedia services
- as there is a large variety of toolkits the interworking of services divided between terminals and networks needs to be further studied
- improved personal service management



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- **Service continuity and new services (Ch. 7)**

- Services and subscriptions (Ch. 7.1-7.2)

- general requirement to allow simultaneous use of independent services (i.e. basic, GPRS, IP multimedia, OSS)
- HPLMN able to decide on service delivery when roaming
- subscription information to include preferences for service delivery controlled by HPLMN and/or subscriber
- serving network decides service delivery technology based on subscription information
- serving network conditions at call setup time may modify delivery mechanism (within service profile limits)



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- Release 99 services supported in Release 2000 (Ch.7.3)
- Compatibility with evolving IP multimedia services or "GSM" services need to be evaluated case by case. (Ch.7.4)
- No detailed specs on supplementary services implementation (Ch.7.5)
- Roaming requirements (Ch.7.6)
- Service continuity ("Handover") (Ch. 7.7)
 - between CS services and IM Services
- Naming and addressing (Ch. 7.8)
 - further work needed
 - some sort portability will be required
 - both IPv4 and IPv6 shall to be supported



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- **Service capabilities to support existing/new services (Ch. 8)**

- VHE's CAMEL, MExE, SAT and OSA toolkits to be used to create alternative, personalised call handling services tailored to the user requirements
- The following options shall be available to enable service delivery:
 - capability toolkits enhanced to control IP multimedia services, which will allow applications to be deployed in a vendor independent manner
 - a framework that enables toolkits not standardised by 3GPP to be used to deliver services (e.g. adoption of IP recommendations to facilitate the IP applications)
 - registration mechanisms which allow the network to understand the limitations of the mobile and thereby take appropriate actions.



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- **Feature List (Annex A)**

- Determines whether services are Release 99, Release 2000 (essential or desirable) or Release 2001+.
- CS domain not included
- IP multimedia services, GPRS, Interworking, Supplementary services, Network services, etc.

- **Case study of CF (Annex D)**

- examination of the Call Forwarding service to show how Release 99 services can be supported by Release 2000 service capabilities