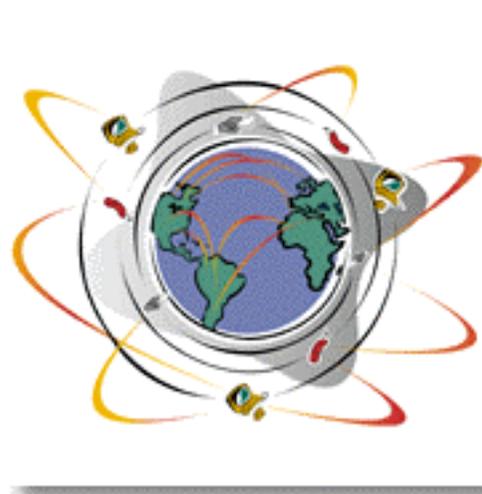




*All IP: Issues Requiring
Direction and Decision*



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Introduction

- The next generation core network should:
 - *allow for rapid creation of new services (voice/data/multimedia) leveraging the creativity of independent software vendors to the fullest*
 - *be based on a technology with the best cost/performance curve*
 - *allow voice and data traffic to be combined into one network, with all the associated operation benefits*
 - *be “access-agnostic”*
- Success of 3GPP depends upon the standards it produces evolving to exploit opportunities for new innovative services and applications that will be readily available via Internet and via technology associated with Internet



What is the All IP Architecture?



- an architecture is suited to exploiting opportunities for new innovative services and applications that will be readily available via Internet and via technology associated with Internet
- it means supporting IP terminals, H.323 or SIP call control and providing ready access to services/applications available via the Internet
- it means that the protocol model and transport mechanisms are based on IP
 - *it does not mean throwing away or discarding investment in circuit switched technology*



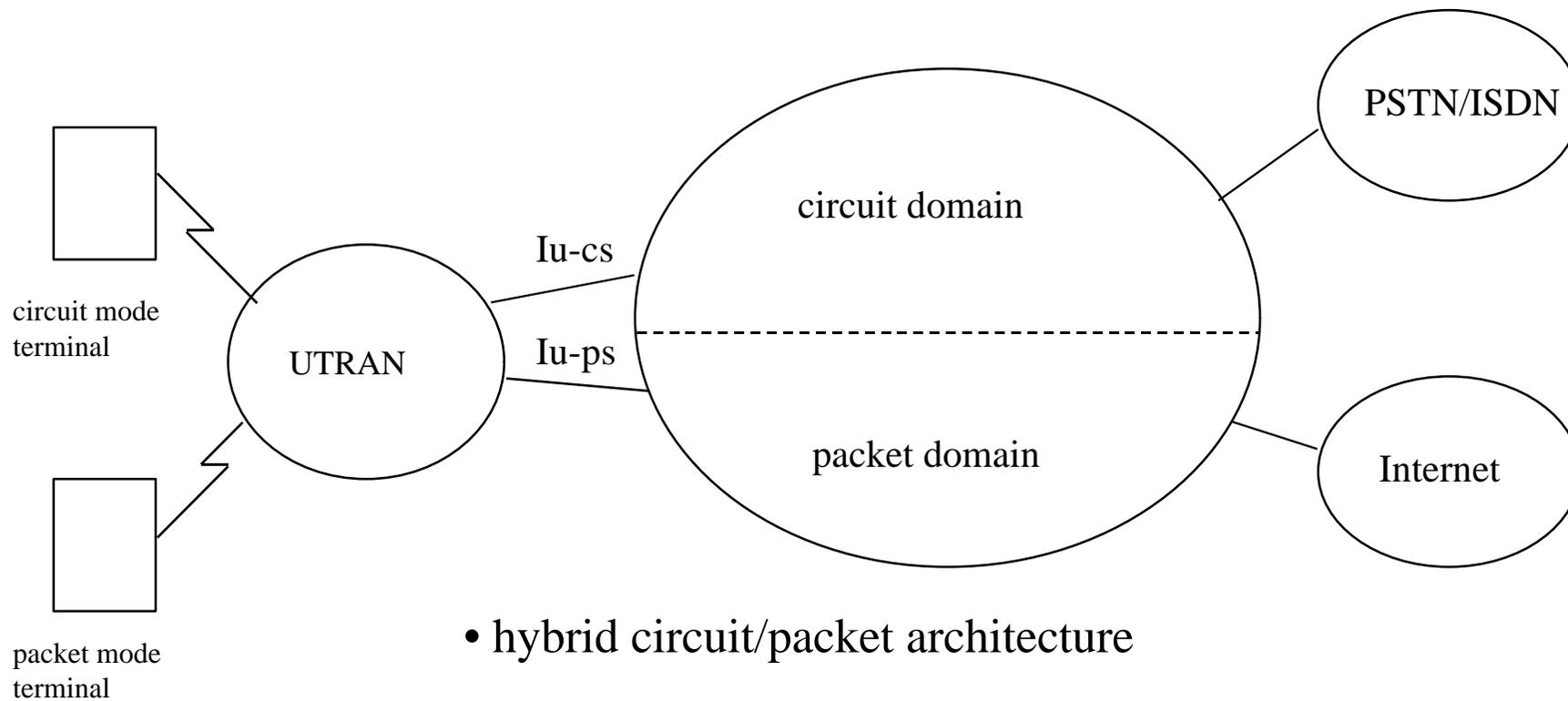
Hybrid Circuit/Packet Vs All IP



- many operators (particularly those deploying Release 99) will implement a hybrid circuit/packet network and will continue to support circuit switched terminals via 3G MSCs
- however it must be possible for new operators to deploy pure “All IP” means that protocol model and transport mechanisms based on IP
- new operators will want to support Release 99 circuit terminals (call control based on 04.08, circuit mobility management) as well as IP terminals (H.323 or SIP call control, packet mobility management)
- this means that the standard must enable networks to be built that support circuit switched terminals



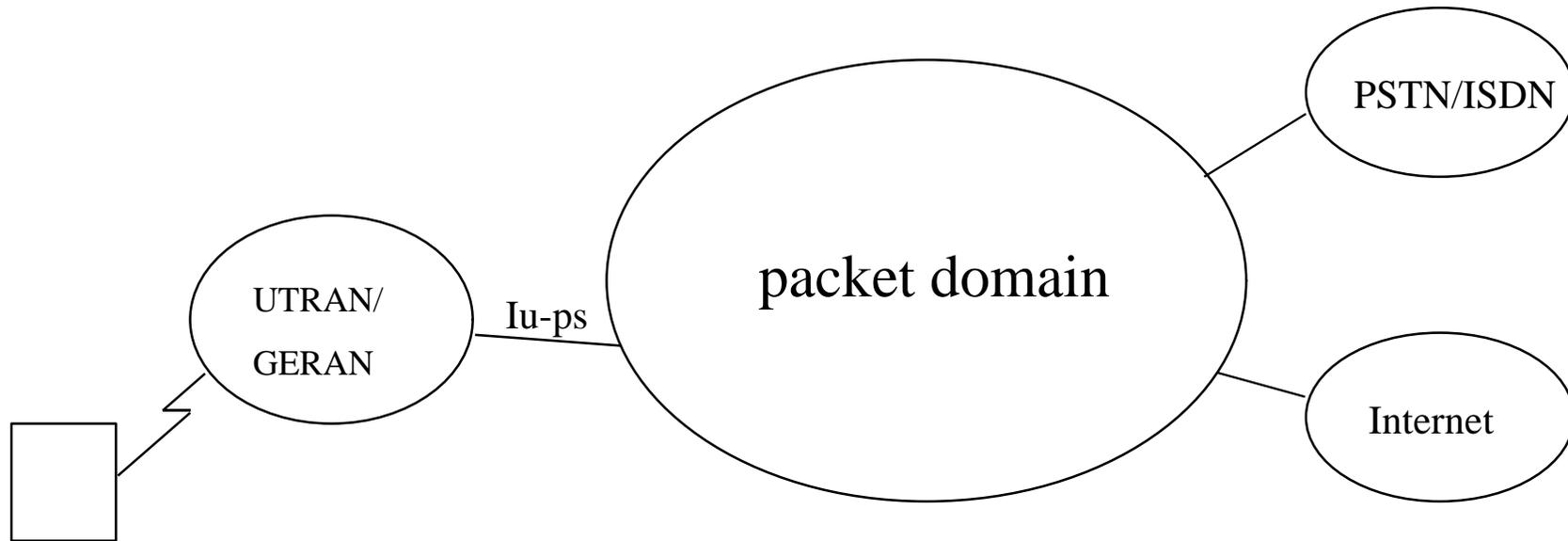
Release 99 Architecture - Hybrid



- hybrid circuit/packet architecture
- 2 separate domains - circuit and packet



Pure “All IP” Architecture



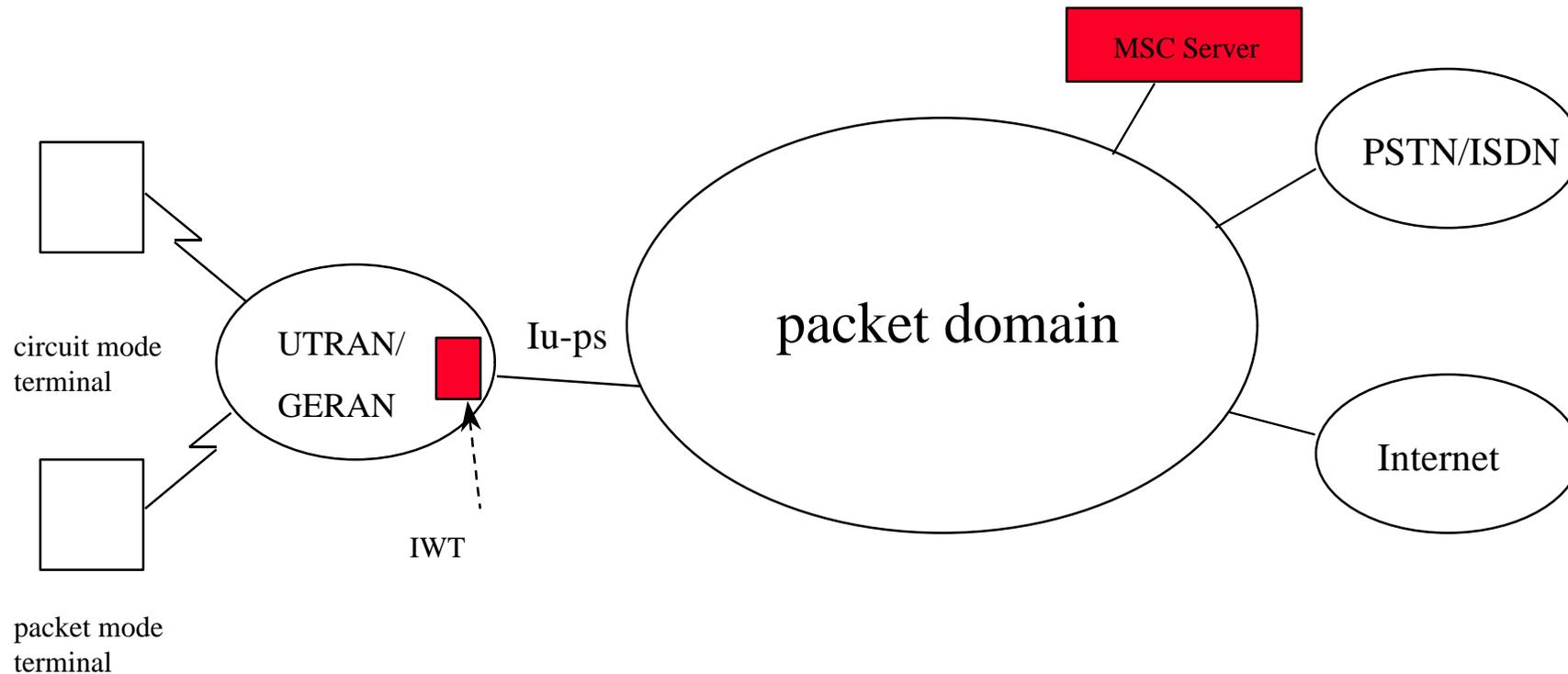
packet mode terminal

long term vision

- call control H.323 or SIP
- no support for circuit mode terminals



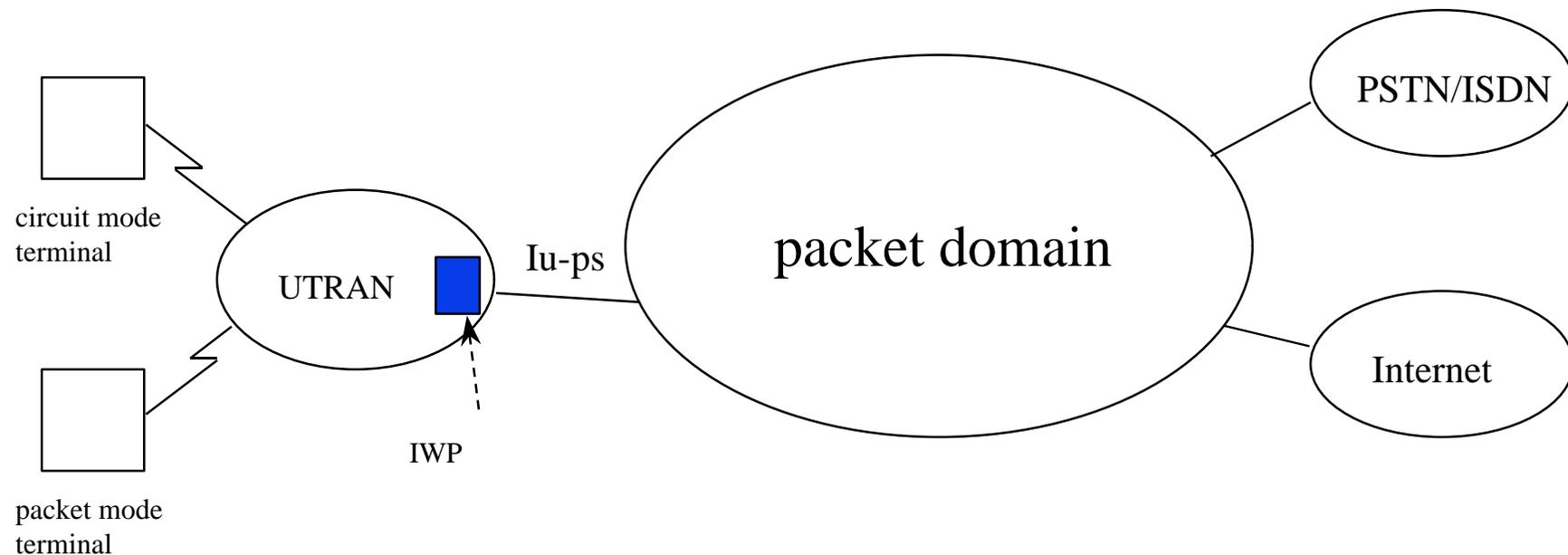
Support of circuit mode terminals (1)



- MSC Server supporting 04.08 CC and cs MM
- IWT provides transport of 04.08 CC and circuit MM over IP



Support of circuit mode terminals (2)



- No need for an MSC Server
- IWP provides protocol interworking maps cs MM to ps MM (cs CC to H.323 or SIP)



Convergence



- it is intended that one “All IP” network will be developed by 3GPP to support GERAN (GSM EDGE Radio Access Network) as well as UTRAN
- ANSI-136 operators have selected GERAN as their 3G radio access network
- ANSI-136 operators generally have no plans to support circuit mode via GERAN
 - *the standard therefore needs to allow deployment a pure “All IP” architecture, i.e. no circuit mode terminal support*
- GERAN/UTRAN + common “all IP” architecture will facilitate terminal roaming worldwide
- enables services and applications to be developed in a uniform way irrespective of the particular air interface technology used



Decisions Needed - Direction



- agree that resources should be focused on standardisation of the “All IP” architecture
 - *our emphasis, going forward to Release 2000 and beyond, is in developing the packet domain (the IP domain)*
 - *several standards releases will be needed to realize a complete packet architecture (in the interim hybrid circuit/packet networks will be needed)*
 - *going forward that we expect the circuit domain to be increasingly less dominant, eventually being superseded by the packet domain*



Decisions Needed - Scope and Release Planning (1)



- decide if the scope of “All IP” includes the support of circuit mode terminals
 - if **no** then assume that operators wishing to support circuit mode terminals are required to deploy hybrid circuit/packet networks
 - if **yes** then S2 must decide architecture approach - e.g. via MSC Server or via cs/ps protocol interworking at RNC
- if scope includes support of circuit mode terminals then decide whether circuit mode terminals shall be supported by the first phase of the “All IP” network (I.e. Release 2000) or whether circuit mode terminals should be supported via a later phase (I.e. by Release 2001 or later)



Decisions Needed - Scope and Release Planning (2)

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- if we are to have hybrid networks, then common service platforms (circuit/packet) are needed in order to provide the same service (e.g. voice) in a domain independent way
- **S2 in collaboration with S1 must decide the architecture related to common service platforms**
 - *SA should give some direction regarding reuse and evolution of platforms already developed for Release 99*

