



BRAN254d0321xx

Chairman of ETSI Project Broadband Radio Access Networks
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TO: 3GPP SA
CC: [3GPP CN2](#) ~~This is intended for SA plenary~~

Date: 14th (or: 21st) September 2001 ~~xxth of sept.~~

Dear Sirs/Madams,

ETSI Project BRAN wishes to elaborate further on the matters brought to your knowledge in the Liaison of 27th June 2001 (BRAN24d114/SP-010403).

~~Regarding~~ In the the issue of establishing an interworking solution between ~~HIPERLAN/2~~ and UMTS, ETSI ~~project~~ BRAN has identified two fundamentally different types of possible solutions whose differences lie within the level of ~~integration.~~ integration. The most essential requirements identified were

~~USIM authentication~~ authentication ~~For the UMTS integration we did agree on USIM authentication,~~ mobility between UMTS and ~~HIPERLAN/2~~, service continuity, and preservation of the applied security level in UMTS. Further information regarding these solutions and their requirements can be found in TR 101 957 Ver. 1.1.1.

It has been decided during the June 2001 meeting that only one of the two solutions will be considered. One This solution (“loose coupling”) is generally defined as the utilisation of ~~HIPERLAN/2~~ HiperLAN2 as a packet based access network complementary to current ~~3G~~ UMTS networks, utilising the ~~3G~~ UMTS subscriber databases but without any user plane Iu type interface, i.e. avoiding any impact on the SGSN and GGSN nodes, see Figure 1. Security, mobility and QoS issues are addressed using IETF schemes.

An alternative The solution (“tight coupling”) involving a tighter giving the tightest integration to UMTS of the two was is based on integration at the Iu interface, allowing ensuring all mechanisms of the UMTS core network to be reused. It has been decided during the June 2001 meeting that this

~~solution will no longer be considered. The intention was to show them which solutions we have considered. But no hard feelings if this is removed.~~

~~The other solution is defined as the utilisation of HIPERLAN/2 as a packet based access network complementary to current 3G networks, utilizing the 3G subscriber databases but without any user plane Iu type interface, i.e. avoiding any impact on the SGSN and GGSN nodes. Security, mobility and QoS issues are addressed using IETF schemes.~~

~~Further information regarding these solutions and their requirements can be found in DTR/BRAN-020003-1.~~

~~ETSI project BRAN wishes to suggest one preferred architecture for HIPERLAN/2 and UMTS interworking based on the former of the studied solutions, specifically for R5 incorporating a HSS entity to be used for interworking between HIPERLAN/2 and 3GPP. This preferred architecture reduces the need for standardisation and the impact on 3G networks to a minimum. The architectural solution with its IETF defined interface towards 3G networks has the advantage of being generically suitable for all WLAN technologies.~~

~~Details of this architecture are described in Appendix A (or: Bran25dxxx)~~

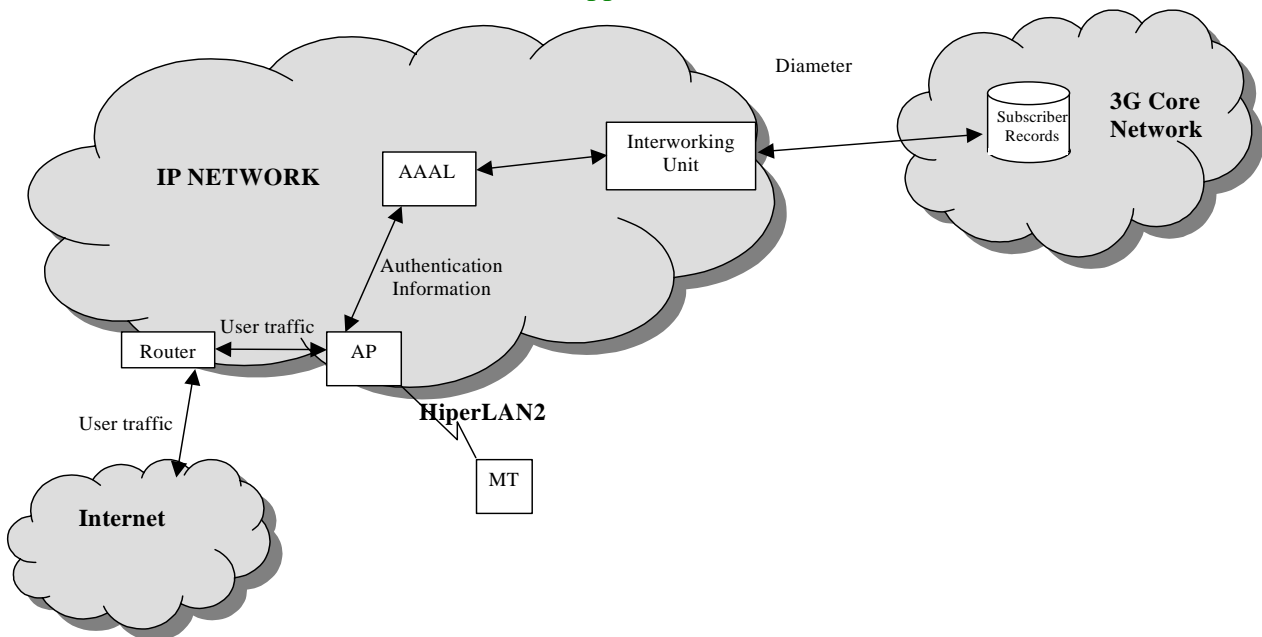


Figure 1 Basic Interworking Architecture

~~To illustrate what impact the interworking between HIPERLAN/2 and UMTS might have on 3GPP, a system architecture that may support R5 is given in Appendix A. This appendix (or: contribution) briefly discusses the interworking in a manner that meets the requirements outlined above. It should be pointed out that this is not the final architecture from the ETSI BRAN group. The group is additionally working on other HIPERLAN/2 - UMTS interworking solutions.~~

Project Timeline of HIPERLAN/2 - 3GUMTS Interworking

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ETSI BRAN has decided to release two stages, termed R1 and R2, of the interworking solution. The initial release R1 is planned to be approved at the BRAN #26 meeting in early December. R1 shall contain the limited functionalities of authentication with its associated security mechanisms providing integrity and confidentiality. Additional functionality identified as mobility support and service integration will be features of the second release. R2 is planned to be up for approval at the BRAN #28 meeting in mid of April 2002.

Conclusion

ETSI BRAN hopes that this liaison will help to introduce the concept of HIPERLAN/2 – UMTS interworking and highlight the level of work that needs to be done. ETSI Project BRAN wishes to start a joint process of achieving this interworking goal and therefore wishes guidance from 3GPP for the continuing process. ETSI BRAN will be more than willing to clarify any questions about this activity.

Sincerely

Jamshid Khun-Jush

Appendix A

HIPERiperLAN/2 UMTS R5 with HSS UMTS R5 Suggested The preferred Interworking Architecture

This architecture for HIPERiperLAN/2 and UMTS interworking is based on the loose coupling solution, specifically for R5 incorporating a HSS entity. This architecture reduces the need for standardisation and its impact on the UMTS networks. The architectural solution with its IETF defined interface towards the UMTS networks has the advantage of being generically suitable for all WLAN technologies.

This appendix (or: contribution) briefly section discusses one a system architecture that may support interworking between HIPERLAN/2 and UMTS R5 in a manner that meets the requirements outlined in the above liaison (or: 3GPP SA liaison) set above. It should be pointed out that ETSI BRAN is additionally working on other HIPERLAN/2 3G solutions, which do not have so much of an influence on the HSS of R5 and this is not the final architecture from the group.

~~I don't understand what other solutions you are referring to here. This is the loose coupling for R5. There is no point in maintaining the IWU when its functionality is incorporated in HSS. I believe you are not referring to the tight coupling when this will very much influence SA2.~~

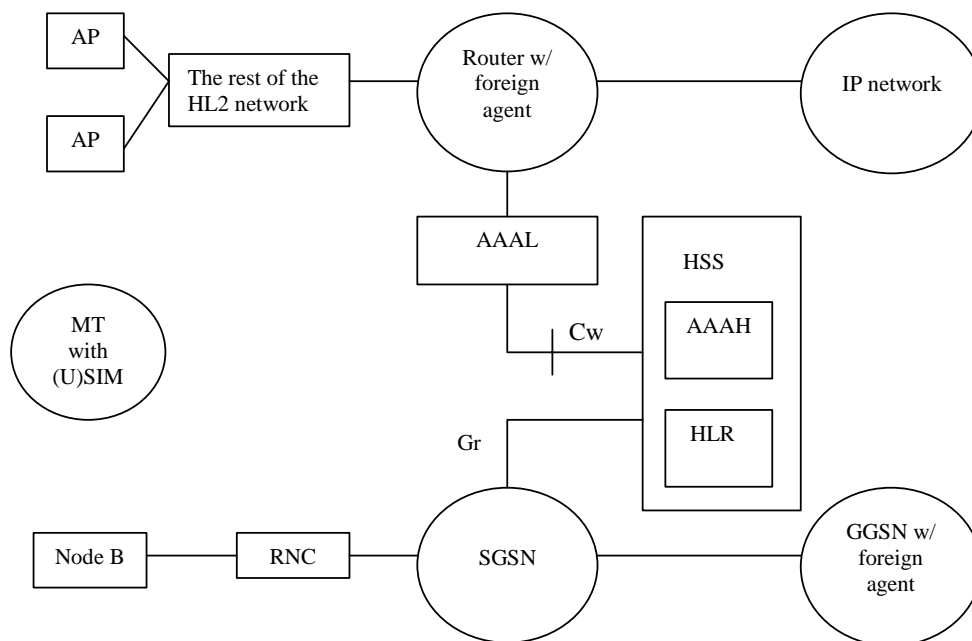


Figure 24. UMTS R5 HSS Interworking System Architecture

The HIPERiperLAN/2 network in the Figure 2 above is made up of the Access Points termed AP and a “black box” termed “The rest of the HIPERiperLAN/2 network”. The access points provide the air interface of HIPERiperLAN/2 whilst the black box will may maintain the mobility aspects between the APs.

The HIPERiperLAN/2 network is connected to IP networks through an IP router. IETF protocols solutions are used to integrate the HIPERiperLAN/2 network with UMTS. The Cw interface identifies the interface between the WLAN Interworking architecture and UMTS.

Authentication is performed utilising through the IETF's AAA protocols functions. The Home AAA server (AAAH) is a part of the HSS and the Local AAA server (AAAL) is part of the WLAN interworking architecture. One of the functions of HSS is to link together the different identities of users, thus enabling the network to treat that user as one and the same with respect to billing, service network functionality etc. An identified area of concern for the authentication is the sequence numbering of the authentication vectors. A problem would arise if IMSI were used for both HIPERLAN/2 and UMTS. See Bran24d103 (ref. Bran24d103)

A solution can be found reusing the methods already adopted by 3GPP for authentication of identities related to UMTS IP Multimedia. The IM authentication can reuse the AuC algorithm to generate authentication vectors, but since it is separated from the CS/PS authentication it is implemented in a separate instance in the HSS and in a new application on the UICC. Following this method there is a need for a WLAN application to be implemented in HSS and UICC as sketched in Figure 2. This solution avoids impacts on existing procedures and allows the use of WLAN identities in the NAI format. (Ref. See Bran24d103)

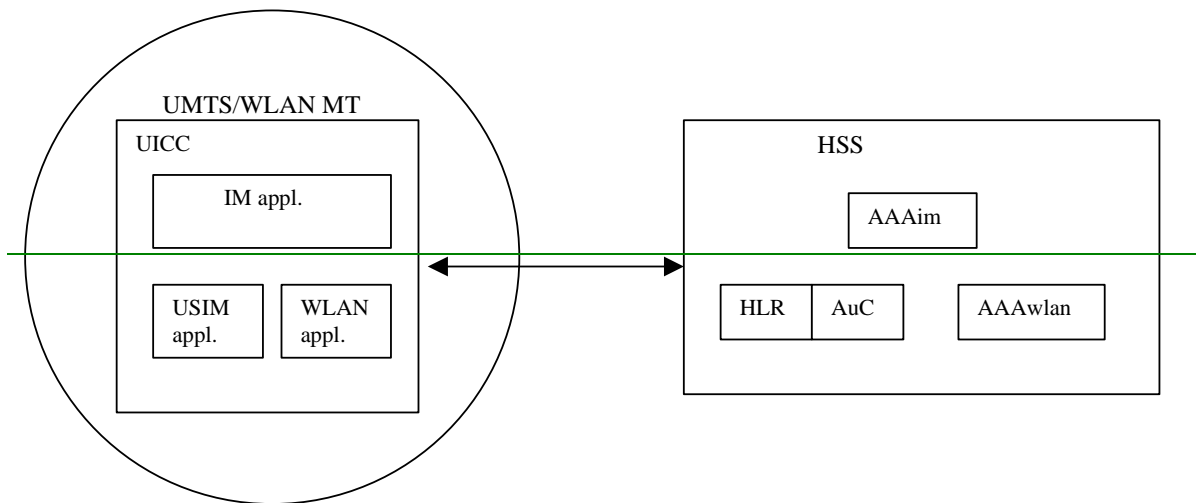


Figure 2 Additional Authentication functionality.

The Project timeline of HIPERLAN/2—3G Interworking

ETSI Project BRAN has decided to release two stages, termed R1 and R2, of the interworking solution I have not seen any closing plenary minutes myself, but this was agreed on at the meeting and is mentioned in Bran24d112. The first release is planned to be approved at the BRAN#26 meeting in early December. R1 shall contain the limited functionalities of authentication with its

~~associated security mechanisms providing integrity and confidentiality. Additional functionality identified as mobility support and service integration will be features of the second release. R2 is planned to be up for approval at the BRAN#28 meeting in mid of April 2002.~~

~~Conclusion~~

~~ETSI Project BRAN hopes that this Liaison will help understanding the concept of HIPERLAN/2—UMTS interworking and the level of work that needs to be done. ETSI Project BRAN wishes to start a joint process of achieving the aim of interworking and wish therefore guidance for the continuing process. ETSI project BRAN will be more than willing to clarify any ambiguity or questions that may come up.~~

~~Sincerely~~

~~Jamshid Khun-Jush~~