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Subject: Frequency Bands for EP-BRAN HIPERACCESS

Introduction

The group within the BRAN project, tasked with writing interoperability standards for HIPERACCESS broadband wireless access equipments, is undergoing a decision making programme regarding the many technical and organisational working assumptions for issues to be addressed in the HIPERACCESS standards. Preferred frequencies for HIPERACCESS is one such issue. As one of the first steps, the BRAN project realises that resolution of this issue is important not only for its own work, but also for groups considering the frequency management, spectrum engineering and harmonisation aspects of frequency allocations consistent with the needs of HIPERACCESS.

The HIPERACCESS group, whilst considering target areas of spectrum, agreed at the October 1999 meeting that HIPERACCESS, in the first instance, will target high frequency ranges. Only in these ranges is it anticipated that there is sufficient spectrum to accommodate the needs of HIPERACCESS. It is likely that future variants of HIPERACCESS may take advantage of lower frequencies to deliver specific services targeting smaller market requirements.

The BRAN project recognises the potential of HIPERACCESS as a Multimedia Wireless System and the value of the ongoing CEPT work regarding MWS which has already resulted in the ERC Decision for MWS in the 40.5GHz to 43.5GHz band.

Additionally the liaison from ETSI TM4 "New MWS Work Item and support for HIPERACCESS Co-existence Standardisation" is noted and commented upon.

Preferred Frequency Bands for HIPERACCESS

HIPERACCESS systems could be a choice for the provision of Fixed Wireless Access applications in a number of frequency bands in the range 3-60GHz. The BRAN HIPERACCESS group has chosen to focus initially on systems suitable for use in the band 40.5GHz to 43.5GHz.

Other strong candidate frequency bands as choices for subsequent work, include the 24.5 – 26.5GHz and 27.5 – 29.5GHz frequency bands.

These choices are consistent with the ERC Decision mentioned above, the recent ERC Recommendation on preferred frequency bands for Fixed Wireless Access and the new work item within ETSI TM4 regarding co-existence parameters for MWS in the 40GHz band.

Having taken the decision to focus initially on the 40GHz band, BRAN HIPERACCESS believes that the new TM4 work item detailed above can accommodate the co-existence requirements for HIPERACCESS in this band. Subsequent BRAN work to address other frequency bands may require further assessment of TM4 standards or work items in other bands.

Subject to the outcome of the forthcoming WRC, future opportunities for HIPERACCESS in the 31.8GHz – 33.4GHz band would be of great interest. Opportunities might also exist for operation in the 38 GHz frequency band in other regions.

Spectrum Estimation for HIPERACCESS

The HIPERACCESS group has been addressing the issue of spectrum requirements for a full deployment of HIPERACCESS in any given area. This is a difficult task involving many tentative assumptions regarding anticipated penetration, market considerations, deployment scenarios, system characteristics along with an appropriate methodology for estimation. The results of the estimation process are particularly sensitive to many of these issues.

As an example, preliminary estimates to date have identified upper requirements ranging from 1.4GHz to 3GHz for full HIPERACCESS implementation depending on just two sets of reasonable assumptions which differ only slightly regarding modulation techniques and customer traffic requirements.

The HIPERACCESS group will continue to address these issues as further technical decisions are made which will refine the expected traffic models and reference scenarios.

Help from CEPT SE19

The HIPERACCESS group is considering channel bandwidths and frequency duplex arrangements as part of the decision processes scheduled over the next two meetings. It would help this process if CEPT SE19 could provide some initial candidates for possible frequency band arrangements in the 40GHz band, together with an indication of any constraints brought about by other systems and services that might also use the band.

Sincerely,

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