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IEEE 802.11  
Wireless Access Method and Physical Layer Specifications

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**High Speed Data Services**

for

**CCIR TG 8/1 (FPLMTS)**

Background Information

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**Introduction: What is FPLMTS?**

The CCIR (International Radio Consultative Committee) is an international standards-setting organization which is a component of the ITU (International Telecommunications Union), which is chartered by the United Nations to provide global administration of international telecommunications matters. The Task Group 8/1 is a component of CCIR Study Group 8 (which deals with land mobile radiocommunications) and is chartered with the development of technical standards (known officially as Recommendations) for the FPLMTS (Future Public Land Mobile Telecommunication Systems).

“Future Public Land Mobile Telecommunication Systems (FPLMTS) are third generation mobile systems (TGMS) which are scheduled to start service around the year 2000. They will provide access, by means of one or more radio links, to a wide range of telecommunication services supported by the fixed telecommunication networks (e.g. PSTN/ISDN), and to other services which are specific to mobile users.”<sup>1</sup>

**Current Status**

At the present time, the vast majority of activity (and interest) in FPLMTS is focused on definition of *voice services*, such that the FPLMTS is primarily targeted for providing voice telephony in a wide variety of environments. As a voice-primary telecommunication service, FPLMTS will also readily offer low-rate data services, especially as implemented for ISDN. It is generally taken that FPLMTS may be conceived to be “wireless ISDN”, and as such, is focused on providing point-to-point voice and data services at bit rates up to 2 Mbit/sec. Such services have been proposed with widespread agreement.

In the second half of 1991, several advocates of high speed data services (aka wireless LAN) set forth to influence FPLMTS to include provisions for high-speed (i.e. greater than 2 Mbit/sec) data services. These efforts have been successful in gaining the adoption of such concepts within the current draft Recommendation FPLMTS.SRVC, which is the TG 8/1 definition of services to be supported on FPLMTS. This document was output from the second international meeting of TG 8/1, January 1992 in San José, Costa Rica, as a Draft Recommendation.

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<sup>1</sup> CCIR TG 8/1 Document 8/51-E: Draft New Recommendation: Services Supported on Future Public Land Mobile Telecommunication Systems (FPLMTS) [FPLMTS.SRVC]

Not surprisingly, the introduction of "high speed data services" generated significant controversy. The "services" working party at Costa Rica was deeply engaged in debate over the appropriateness of inclusion of these services in FPLMTS. Arguments against inclusion of high speed data services included:

- Wireless LAN is essentially a *private* local communications service, and therefore falls outside the purview of FPLMTS (insofar as the "P" in FPLMTS should preclude private systems).
- Inclusion of these new services would substantially jeopardize the timely completion of the definition and implementation of *traditional* (i.e. ISDN-like) FPLMTS services. It was felt that the progress of FPLMTS could not tolerate the inevitable delay which the definition of these new services would introduce.
- The radio spectrum requirements for these new services had not been included in the estimates presented to WARC-92.

Arguments in favor of inclusion of high speed data services included:

- Highly portable computing and data communicating devices are entering the market at a rapid pace. The needs of these classes of users (of such devices) will not be adequately addressed by the services currently proposed for FPLMTS.
- By not including high speed data services in FPLMTS, the committee takes the risk of designing a system which proves irrelevant for a large body of users in the future.

After much debate, a compromise position was reached, which resulted in the inclusion of "services to be considered for later phases of FPLMTS." The following text was added to the FPLMTS.SRVC document:

8. Services to be considered for later phases of FPLMTS

The CCIR recognizes that it is important to consider emerging and new requirements of services to be included within FPLMTS. However, to enable Phase 1 of FPLMTS to be implemented in the near future, its scope is limited to those services requiring user bit rates up to approximately 2 Mbit/s.

Phase 2 is envisaged as augmenting Phase 1 with new services some of which may require user bit rates higher than 2 Mbit/s.

The following are new service objectives identified for inclusion in Phase 2:

- 1) support of the high data rate needs of portable computing users, and
- 2) support of enhanced multimedia communications requirements (e.g. providing voice, video and data simultaneously to a user).

Other service objectives may be identified in the future work of the CCIR and CCITT.

In addition to this new section, the FPLMTS.SRVC document was modified to include a number of less dramatic (but nonetheless significant) changes which are generally in support of the needs of computing and multimedia applications.

### What Next?

Given that the needs of portable computing and multimedia applications are now recognized in the FPLMTS services Draft Recommendation, where may we expect this to lead? At the very least, we can observe that a major step has been taken toward including high speed communications in FPLMTS, and that for this success to have a lasting result, continued involvement by the computer industry must occur. In fact, it is crucial for the level of activity on the part of the computer industry to *increase substantially*, if we are to stand a realistic chance of success in the end. As it was previously noted, the vast majority of participants in Task Group 8/1 are representatives of national PTTs or private telephony service providers. While many are sympathetic to the needs of the computing industry, *this is not their issue*. The success of the high speed data initiative depends on increased involvement in Task Group 8/1 by representatives of the computer industry.

Note that the *definition* of high speed data services has not been undertaken. The work to date has resulted in an articulation of the *need* for some services (to support portable computing and multimedia communications), but the text of the FPLMTS documents includes almost nothing as to the form such services may take. *This is the work to be accomplished in the coming year.*

### The Process

CCIR Task Group 8/1 holds international meetings on a somewhat regular basis (currently every 8-10 months). The first TG 8/1 International Meeting was held in May 1991, in Alexandria, VA

(USA). The second TG 8/1 International Meeting was held in January 1992, in San José, Costa Rica. The third TG 8/1 International Meeting is scheduled for mid-October 1992, in Sicily.

The majority of activity transpires in the interim between international meetings. Since the membership of CCIR TG 8/1 is (predominantly) based on national delegations, it is typical for the national delegations to hold preparatory meetings on a regular basis. These national meetings allow the delegations to review written contributions (prepared by members of the delegation), so that an agreed *position* can be reached. These positions are then articulated in written contributions, submitted to the CCIR TG 8/1 international meetings, and advocated by that delegation.

Since the membership of CCIR TG 8/1 consists of *national delegations*, the most straightforward means of influencing the work of CCIR TG 8/1 is for "delegates" from the computer industry to participate in the work of their respective national delegations. This ensures that contributions to FPLMTS will flow through the preparatory process on the basis of accepted procedures, and therefore will arrive at CCIR TG 8/1 international meetings as *national contributions*, which can be accepted as formal input to the work of the international meeting.

The author is personally familiar with the procedures of the United States national delegation, and has also participated in the first two CCIR TG 8/1 International Meetings. The U.S. delegation meets on a monthly basis, on the average. Meetings are held in Washington D.C., typically on Friday mornings, from 9:30 a.m. to 12:00 p.m. The members of the national delegation are encouraged to progress their work outside the meetings, as the meetings are brief, and generally restricted to the review of written contributions. It is presumed that the delegations of other countries progress their work in a similar manner.

## Conclusions and Recommendations

The "high speed data services" initiative is important to the members of IEEE 802.11 in that FPLMTS may represent our best chance at deploying high speed wireless networking on a globally consistent basis. The WARC-92 (February 1992 in Madrid, Spain) identified 230 MHz of spectrum in the 1.8 - 2.2 GHz range from which national administrations should consider allocation of frequencies for FPLMTS. The inclusion of high speed data services within FPLMTS would allow the manufacture of wireless communicating equipment which could potentially operate in many different countries within frequency bands that are consistent from country to country.

The computer industry is encouraged to support the "high speed data services" initiative through active participation in the national delegations of CCIR Task Group 8/1. Participation by many representatives, involved in the delegations of many countries, offers our best opportunity to influence the development of FPLMTS in a manner favorable to the needs of computing users.

All interested parties are encouraged to contact the author for further information, or to indicate interest in this activity:

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