

To the Members of the European Parliament

New Telecommunication Techniques on copper lines

**- Pros do not outweigh contras. European Information Society endangered -
- National Security, Radio Broadcasting and other services under threat -**

Ladies and Gentlemen,

New information transmitting techniques designed to boost the volume and the speed of data are being proposed for use in Europe. The slogan is "Internet on the mains".

It is intended that high speed data transmissions be provided to private and business end users on the existing copper lines used by electricity companies and cable television networks.

ADSL¹, VDSL² and PLC³ are abbreviations for these new telecommunication systems. The users transmit data through wires used up till now only for telephone, TV and power. High speed data transmissions generate high radio frequencies up to 30 MHz. Thus the wires become antennas, radiating electromagnetic fields on these frequencies, just like a radio transmitter.

As this unwanted radiation takes place in the immediate environment of the population, the reception of existing radio services, whose frequencies are determined by international bandplanning, is disturbed or even rendered completely impossible. Long, medium and short waves broadcasting stations and low power radio stations, such as those of the amateur radio service, are denied any chance of being properly received. More importantly the range of frequencies used by military organisations (e.g. NATO) for security purposes will be adversely affected, as will frequencies used for safety of life services.

Licensed radio experimenters, members of the amateur radio service, are supporters of innovation and pursue the intelligent use of new techniques. Being in the forefront of modern techniques, amateur radio is an entry path for young people into technical jobs and also contributes to technical innovation and development. Therefore, the amateur radio service welcomes new developments of any kind, in so far as they are technically and scientifically justified and legally and socially acceptable.

By their technical skills radio amateurs, free from any pressure groups, are able to give warning of developments which may be against the national or public interest. The radio amateur service considers the above described telecommunication systems as already outdated because of their intrinsically limited data rate. Moreover, these systems can cause considerable interference to existing radio services.

Modern data transmission techniques centre around the use of optical fibre cables, with additional short distance microwave links to the users' houses. These techniques alone take into account growing data rates. Being future oriented they are economically justified.

ADSL, VDSL and especially PLC present severe technical, social, legal and economic shortcomings. The radio frequency spectrum is considered by all to be a precious and limited resource. Considerable portions of the spectrum, including those used for military, civil, intercontinental and broadcasting traffic, would become unusable over large areas of Europe. Such shortcomings are inconsistent with the shortlived benefits to the developing information society. Moreover, since copper wires radiate the signals of these data systems, neighbours can also receive and eventually decode them.

EUROCOM, the European amateur radio societies working group of the International Amateur Radio Union (IARU), wishes to warn of three dangers that have not been put forward up till now in official

¹ ADSL = Asymmetric digital subscriber line (existing telephone lines are used)

² VDSL = Very high speed digital subscriber line (existing telephone lines are used)

³ PLC = Power line communication (power lines are used)

forums. Our purpose is to avoid huge investments on a European scale in outmoded and potentially harmful developments.

These three points are

- **Considerable interference will be caused e.g. to broadcast reception and army and security communications. The inability to avoid electromagnetic interference, especially in the case of PLC, and an inadequate legal framework for resolving cases of interference are potential sources of social conflict;**
- **The freedom of information, active and passive, will be endangered by the expected interference. The very existence of broadcasting services, army and security data transmissions, emergency services, civil aviation and amateur radio (a non profit worldwide radio service for technical experimentation) are at stake;**
- **Possible eavesdropping on private data transmissions represent an uncontrollable invasion on privacy.**

The growing danger calls for urgent political measures on the European level to support the development of fibreglass networks instead of further allowing already obsolete techniques to proliferate.

The technical, economical, legal and social consequences of the latter are should be analysed, in order to alleviate the foreseeable problems due to the proposed introduction of these techniques, especially in densely populated areas.

For your convenience, more detailed information on this important matter is appended. We urge on you and your colleagues in the European Parliament and in the parliamentary committees the need to defend the interests of the endangered radio services.

We would be delighted to meet you to explain further the many aspects of this issue, as well as the need for proper defence of the radio spectrum.

Yours sincerely,

Enc : Annex

Annex

EUROCOM's contribution on the risks and dangers of the propagation of obsolete telecommunication techniques

1. Interference

Providers and users of the new telecommunication techniques use existing cable networks. Nearly all these lines and cables suffer from insufficient shielding. The resulting unwanted radiation of electromagnetic energy, especially in the vicinity of the end users, transforms the lines into radio transmitters. With power lines (mains) the effects are dramatic.

All the radio services and appliances using the same frequencies are affected by this radiation. The interference is not a theoretical consequence of parallel frequency use: it has been proven in pilot projects.

Interference and compatibility problems with other cable networks and with domestic and entertainment electronic appliances can also be expected. The legal framework for dealing with the various aspects of this new form of interference is absent from national law on electromagnetic compatibility and will not be implemented soon. Civil claims and product liability proceedings are among the foreseeable consequences.

In our opinion, the interference from these data systems will extend over wide stretches of the frequency spectrum. The interference experienced in several European countries with television copper cable networks leads to the conclusion, that parallel use of terrestrial frequencies in cables will always cause compatibility problems. Moreover, this system is unable to satisfy the growing demand for higher datarates. Alternatives avoiding these problems and capable of considerably broader transmission bandwidths, to answer the rapidly growing communication and information exchange demand in Europe, exist, making use of lightconduction over a fibreglass cable network, combined with microwave links to the end user.

2. Freedom of information and freedom of radio broadcasting

The permit to operate such telecommunication systems on copper cable networks constitutes an unjustified offence against the freedom of information, active as well as passive, according to article 10 of the European Convention on the Human Rights.

This Convention is not limited to a set of ratified statements, it covers also the fundamental community rights within the European Union. The right of freedom of information guarantees the right to access all free sources of information. This is one of the foundations of democracy.

The parallel frequency use by the new data transmission systems ADSL, VDSL and especially PLC causes damages to radio broadcasting, emission as well as reception (listeners) and to the amateur radio service, which is also protected by the freedom of information in the sense of article 10 of the Human Rights Convention, as well as to other radio services. Broadcast bands are severely disturbed by the strong interference caused by ADSL, VDSL and PLC on long, medium and short waves. This will considerably limit the individual freedom of information from international and European sources. The freedom of information of foreign fellow citizens living in the European Union will be seriously harmed.

The harmful effects on radio services - threatening the very existence of broadcasting and amateur radio - cannot be justified since other and more appropriate techniques exist to achieve the goal, i.e. better and faster datatransmission. Fibreglass technology, as already shown, is technically and economically much more appropriate, especially in the long run.

The European Court of the Human Rights in Strasbourg has repeatedly insisted on the deep significance of the free access to information throughout Europe.

The Court has also pointed out, that a country cannot be satisfied by simply protecting the liberty of broadcasting against state influence. Instead, a positive position shall be adopted by insuring access to broadcasting for all existing opinions, thus offering exhaustive information.

This position of the European Court is a clear indication, that a limitation of the freedom of information and broadcasting by allowing datatransmission on copper cables cannot be justified, the broadcasting services being finally threatened in their very existence.

Amateur radio, a duly by the international radio regulations recognized and protected radio service, is threatened immediately, no minimum standards being defined for this experimental service.

3. Data protection

Moreover, it has to be considered, that the unwanted radiation will enable the interception and the use of personal data transmitted by the new ADSL, VDSL and PLC techniques. This points towards data protection problems. An efficient legal framework for the protection of the Union citizen does not yet exist in these matters.

4. Summary

Considering the seriously increasing danger of this new technology, political measures are necessary to support the introduction of fibreglass techniques and to discourage the development of already obsolete methods.

Technical, economical, legal and social consequences should be examined, to alleviate the problems that will rise in regions where the introduction of the obsolete techniques is already going on.

Among these measures, only frequencies that do not interfere with broadcasting, military, security, cvil aviation, safety of life services and amateur radio should be authorized. The unwanted radiation field strengths for data transmission should be lowered considerably for the protection of the radio services and other radio applications. Moreover, unwanted radiation standards should be developed for telecommunication facilities and networks to protect the radio services and other radio applications.

Radio waves ignore country borders and the introduction of the new techniques threatens the whole of Europe. Therefore, in the name of all parties concerned, we call for a regulation at the European level. In restricted circles of the CEPT, NATO and the European Broadcasting Union, the risks of data transmission on the mains have already been questioned.