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2001April 17, 2002

Federal Communication Commission
Washington, D.C.

Reference: FCC Proceeding No. 98-153
Ground penetrating Radar/ Subsurface Interface Radar

Gentleman:

I am writing to comment on the proposed rules governing Ultrawideband transmitters, as outlined in FCC Proceeding 98-153.

I am a professor at Tohoku University, Japan, and teaching and working for radar and remote sensing technologies. I have organized academic conferences on Ground Penetrating Radar (GPR) in Japan, in order to promote mutual exchange of technical information about GPR.

The effective use of frequency resources is important in electromagnetic communication and in the application of wireless engineering including various kinds of remote sensing systems.

Over the past ten years, Ground Penetrating Radar (GPR) has been used very successfully for many applications in Japan. In many dense urban areas in Japanese cities, GPR has been widely accepted as a powerful tool for detecting buried pipes and cables, which have played significantly important roles for safety. GPR is also widely used for detection of voids under pavement, which often cause serious accidents due to sudden collapses of motorways. This is a typical road problem, which often happens in Asian countries. Without these effective monitoring tools for preventing possible accidents, it is difficult to keep society safe.

In order to use GPR usefully and effectively, we have given tutorial lectures at universities, and academic societies. The radio interference problem is without doubt, one of our key issues for using GPR. We have several GPR manufacturing companies in Japan. And all the Japanese commercial GPR systems have passed the domestic rules for small power equipment, and they are carefully designed so as to not radiate unnecessary power into air. As far as I know, we have never heard about any problem caused by the use of any GPR system in Japan. At the same time, many GPR surveys are carried out with the help of GPS systems for accurate positioning. This technique is especially important in many archaeological surveys, which are one of the most popular applications of GPR in Japan.

We think that the debates in the FCC concerning ET Docket 98-153 are very important for the further sound use of GPR systems. They should be carefully considered for keeping the important function of GPR in our lives. Due to its possible influence outside the US in the future, we think the FCC rules must be carefully considered for their impact on the safety uses of GPR. Again, it has to be understood correctly, that GPR is very different from other UWB devices, which transmit electromagnetic waves into air. GPR causes no problems to other radio communication devices, and without GPR, it is difficult to keep our lives safe not only in Japan, but in all the countries in the world.

Motoyuki Sato
Professor, Tohoku University
Chair, 6th International Conference on Ground Penetrating Radar, 1996

I circulated this letter to those who are working for GPR in Japan. Those people whose names are listed below have agreed with my comment. All of them have individually replied me by e-mail.

Tetsuma Toshioka
OYO Corporation, Tsukuba Technical R&D Center
GPR researcher and user for Geotechnical/Civil Engineering purposes

Satoru Miura,
Kenichiro Tsuyuki
Technical Research Institute, Kajima Corporation
GPR user (also research engineer) for Civil Engineering

Kazuhiko Masumoto
(GPR user for Civil Engineering)
Japan Nuclear Cycle Development Institute (JNC) Tono Geoscience Center

Hideki Saito
OYO Corporation
GPR user for Civil Engineering

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Dr.Toshiki Watanabe,
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GPR user for research and education

Prof. Ikuo Arai
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GPR user for Civil Engineering

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GPR user for Civil Engineering

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Masaharu Inagaki	Walnut Ltd.	GPR user forgeological survey
Ryoji Saito	Walnut Ltd.	GPR user forgeological survey
Koji Shin	Walnut Ltd	GPR user forgeological survey
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Hideaki Miyata Walnut Ltd. GPR user for geological survey
Yoko Sasaki Walnut Ltd. GPR user for geological survey
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Hideki Hayakawa, Osaka Gas Co., Ltd.,
GPR user for gas pipe construction and maintenance

Masaru Tsunasaki, Osaka Gas Co., Ltd.,
GPR user for gas pipe construction and maintenance

Akihiko Chiba
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Sumiko Consultants Co. Ltd.
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Shigetaka Matsumoto
Cable Engineering Group
KDDI R&D Laboratories Inc.
GPR user for cable ducts construction engineering of a telecommunication carrier

Dr. Shin'ichi Kuramoto
National Institute of Advanced Industrial Science and Technology
Institute for Marine Resources and Environment

YUSAKU TERADA
Road Management Technology Center
GPR user for Civil Engineering
Sinkhole Detection
We are preventing cave-in of roads with GPR technology

Seiichiro KURODA, PhD.
National Institute for Rural Engineering
Application for Hydro-geology and Hydrological processes Monitoring for water and solute in soil
Geo-environmental problem Soil moisture mapping for agriculture

Shuhai Lin
Graduate student of Exploration Geophysics
Laboratory, Kyoto University.

Takashi Ohkawara
Geophysical Surveying co.,ltd.
GPR user for Civil Engineering

Satoshi Maekawa
Oyo Corporation
GPR user for Civil Engineering

Takaharu Nakauchi, The Japan Gas Association.
GPR user for gas pipe construction and maintenance

The Japan Gas Association (JGA) is an organization of city gas utilities whose purposes are the sound development of the city gas utilities and contributions to the promotion of industry and the advancement of culture. (<http://www.gas.or.jp/indexe.html>)