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Ms. Magalie Roman Salas, Secretary
Federal Communications Commission
Office of the Secretary
445 - 12th Street, S.W. - Room TW-A325
Washington, D.C. 20554

RE: CC Docket No. 02-46

REPLY to “pulver.com comments on the Hatfield E911 Report”, dated October 30th, 2002

Dear Ms. Salas,

This is to reply to the following comments presented by Pulver.com:

1. Positioning indoors and multi-story buildings

Pulver.com: “traditional wide area location technologies....do not address 3-dimensional positioning, which is required for pinpointing location in multi-story buildings. The accurate determination of only longitude and latitude coordinates of an individual in a multi-story building would be insufficient because an emergency team may have to waste critical time searching every floor.”

2. VoIP using 802.11(Wi-Fi)

Pulver.com: “There is no doubt that voice calls over wireless LANs could complicate the task of locating emergency callers.”

Ekahau’s reply:

This filing supports both of the above views, 1 and 2.



Ekahau's view

Locating cell phone users in multi-story buildings in general, and in particular when VoIP enabled wireless handsets are used, is a very clear obstacle in getting the full benefit out of the future wireless E911 related systems and services.

The current positioning technologies, EOTD, CELL-ID or A-GPS can not pinpoint the location inside of the building with an accuracy that can tell the difference between the floor levels - which is an imperative in finding people in emergency. On VoIP: for example Qualcomm released the plan for CDMA+Wi-Fi chipsets for the cell phone use in July 2002. Other chipset manufactures are following very soon, since "free" calls over IP is becoming a very attractive proposal. Must be also noted, that Wi-Fi networks are already being deployed with a city-wide coverage, making the VoIP use even more beneficial – and at the same time creating a bigger problem for the traditional E911 positioning technologies.

In April 2002 Ekahau, Inc. (www.ekahau.com) released a product that addresses exactly the problems presented in pulver.com comments. The Ekahau Positioning Engine™ (EPE) is a software based product that can pinpoint the location of PDAs and Wi-Fi enabled VoIP and cell phones with an average of 1 meter accuracy indoors and 20 meters outdoors. The patent-pending technology is based on signal strength (RSSI) mapping within the radio network coverage area. No proprietary hardware is needed in addition to the standard wireless Wi-Fi network, making Ekahau technology very cost-effective and easy to implement.

The Ekahau technology has also been successfully piloted in a wireless carrier GSM network. In August 2002 Ekahau performed a trial with one of the major US carriers in Manhattan NYC to pinpoint the legacy GSM handset locations. The trial analysis showed 27 meters accuracy with 67% confidence, which performance easily meets all FCC E911 mandate requirements.

The next generation Ekahau technology will enable accepting location information from both Wi-Fi and carrier networks, creating a foundation for a hybrid model to accurately position the combination of GSM+VoIP handsets outdoors and indoors. If the indoor location information from privately owned local area networks will then be passed to the wireless carriers or if this "higher level of indoor security" will be promoted to building owners by the security/police/fire people, is still to be investigated.



Conclusion

This filing is very much in support of pulver.com comments and suggests that the advisory organization, as recommended by the Hatfield Report, will be created as soon as possible to investigate different options for wireless E911 indoor accuracy. Ekahau has proven that technology for accurate indoor positioning is there already, and believes that without a full evaluation of Ekahau and other similar technologies, the E911 mandate will not be complete.

Respectfully Submitted,
Ekahau, Inc.
Antti Korhonen
CEO

November 28th, 2002