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of Transportation

United States
Coast Guard



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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

6 January 1994

Before the Federal Communications Commission
Washington, D.C. 20554

In the Matter Of)	
)	FCC Docket No. 94-102
Revision of the Commission's rules)	
to ensure compatibility with)	RM-8143
enhanced 911 emergency calling systems))	

COMMENTS OF DOCKET FILE COPY ORIGINAL

THE INTERAGENCY COMMITTEE ON SEARCH AND RESCUE
(ICSAR)

The Interagency Committee on Search and Rescue (ICSAR) is made up of seven federal agencies having responsibilities under the United States National Search and Rescue Plan. The FCC is a member of the ICSAR and has certain regulatory and operational obligations which align FCC concerns with those of ICSAR. In reference to the subject NPRM, ICSAR requests the FCC to note:

The great importance of timely notification and accurate location information to effective, efficient, lifesaving search and rescue (SAR) operations;

That an extremely high price is paid in lives and property needlessly lost in responding to distress situations where inadequate information is available;

That current distress alerting systems have a high rate of false alarms which are difficult to control because of a lack of identification in their transmission; and

That distress alerting and locating via mobile radio services (including Mobile Satellite Service) offers great potential in easing the burden and risk on SAR forces as well as the potential for saving many lives providing that identification and sufficient location information is available to SAR forces.

BACKGROUND

Since its formation in 1973, ICSAR has promoted improvements in the means available for distress alerting, and has since established the Distress Alerting Working Group as its focal point of activity in this area. Because of the Committee's

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charter and makeup, its view of distress alerting has mainly excluded alerting in developed areas where wired telephone is ubiquitous.

Rather, ICSAR has concentrated on alerting from remote areas - where airplane crashes and maritime mishaps usually occur, and where injured or unequipped persons can encounter life-threatening situations. The alerting devices with which we have been most concerned are radiobeacons operating through the Cospas-Sarsat satellite system. These are one-way transmitters specialized to their purpose, in contrast with the wireless telephone which has many more uses besides calling for help.

With the advent of widespread use of cellular telephones, the distinction between remote area and developed area distress alerting is blurred somewhat because cellular phones have access to 911 and can be used in fairly remote areas. The Coast Guard was the first to feel the effect of this, as cellular telephones began to be used in marine emergencies. Cellular telephones are being used increasingly for alert in emergencies that have customarily been considered SAR situations. ICSAR therefore has a vital interest in this proceeding, and applauds the Commission's concern for the availability of effective emergency communications access to enhanced 911 by the public. We agree with the Commission's observation that given a wireless telephone that has access to the Public Switched Telephone Network (PSTN), the expectation of the public is to have the ability to reach emergency services much like they have come to expect from wired telephone service.

The Committee has been monitoring with great interest the development of Mobile Satellite Service (MSS) systems with capability to provide voice and data service to hand-held terminals. Because their users can communicate from virtually anywhere, we expect that these systems will be widely used in the future for distress alerting. The emergency communications capability of the systems has been prominent in the proposers' filings before the Commission, and in their advertising.

The ultimate objective of distress alerting is to provide information about an incident that threatens safety of life to the entity with the capability to provide assistance. A major challenge in the use of MSS systems, as discussed further below, is to identify the proper responding entity (e.g., sheriff's department, fire and rescue squad, Coast Guard) for a reported remote area emergency. In most of the country, it is possible to contact these entities through established 911 systems. A 911 Public Service Answering Point (PSAP) essentially aggregates all responding entities within a locality. It is logical for any system with the function of routing MSS distress calls to make use of this existing aggregation. In this connection, the problem of routing calls to the proper responding entity becomes one of routing calls to the PSAP nearest to the distress. Thus the ICSAR's interest in enabling remote area distress alerting

via MSS systems becomes aligned with the Commission's interest in providing effective 911 service via wireless communications systems. The main thrust of the NPRM applies to services in developed areas, but since we assume MSS systems are included in the term "wireless", then it must be recognized that it deals with a universal 911 service independent of locality.

UNIQUE ASPECTS OF MSS SYSTEMS

The capability of providing an enhanced 911 service with MSS systems presents a fundamental difficulty not present in wired or terrestrial wireless systems. The problem derives from the fact that MSS links with the PSTN are provided via one or a few gateway ground terminals over the entire U.S. Therefore, a call placed from a mobile terminal at any given location will probably reach earth at a point distant from its origin. To employ MSS systems for 911 service, it is necessary to identify the PSAP that is local to the caller, and then forward the call from the gateway ground station to the PSAP.

Knowledge of the location of the caller is thus doubly important for distress alerting using MSS systems. Not only is it needed to direct the emergency response, it is essential to route the call to the appropriate PSAP or Rescue Coordination Center (RCC). Accordingly, ICSAR strongly supports the proposed requirement for geolocation information to be provided for wireless systems, including MSS systems.

There are several technical issues that need to be resolved in interfacing MSS and 911 systems. The salient issues follow. These are not all within the scope of the subject NPRM, but should be considered by the Commission in future inquiries.

A geographical database identifying the responsible PSAP for any given location, to be used in call routing;

Means for accessing a PSAP from outside its local service area;

Means for transmitting the calling terminal's location and identification to the PSAP, and for the location to be displayed to the 911 operator; and

Establishment of a technical standard for MSS system interfaces with the PSTN that can be accepted nationwide, since this is the service area of those systems.

RESPONSE TO FCC QUESTIONS AND STATEMENTS IN THE NPRM

(1) Page 17, Footnote 40

"We seek comments on whether mobile satellite services, among others, should be subject to requirements for enhanced 911 compatibility."

ICSAR fully endorses inclusion of the MSS in this requirement for the reasons stated above, i.e., the great potential for life saving and the expectations of the public users of the system.

(2) Page 18 & 19, Paragraph 38

"Our initial view is that mobile radio services offering access to real-time voice services provided on the public switched network may be an appropriate definition" (for services subject to compatibility requirements with enhanced 911 services)."

ICSAR supports the FCC analysis except for exclusion of non-voice MSS systems. ICSAR notes that the Commission includes voice equivalent service for the hearing impaired using text telephone or TTY. We believe that non-voice MSS systems will be used for distress alerting, even though they are currently incompatible with 911 systems and may involve some time delay. We understand that these systems will provide two way messaging capability (allowing the PSAP operator to query the distressed party) and that in most cases messages will be received in near-real time. Message delivery to PSAPs could possibly be accomplished by making messages compatible with the hearing impaired systems or by facsimile.

"What are the social, economic and other costs of including or excluding various categories of mobile radio services from any 911 compatibility requirements that might be developed? What are the costs and benefits of requiring any or all of the various 911 features?"

ICSAR believes that overall public good is the dominant factor in answering these questions. We do not believe that sufficient data is available to conduct a reliable cost benefit study. However, our opinion is that the benefits would far outweigh the costs when one includes the effective cost of lives saved and emergency services resources saved. We also feel that the cost of implementing a reasonable set of requirements, when passed on to the users, would represent a very small portion of tariffs, and thus should not stifle new system development and operation.

Another consideration in the decision to require enhanced 911 compatibility for wireless service is the impact on emergency response to the wired telephone community. Absent the essential tools provided by enhanced 911, handling of an increasing number of 911 calls from the wireless services will be cumbersome and time consuming. Therefore, due to limited resources, wireline E911 emergency calls could be adversely affected.

"What time frame would be appropriate for requiring such features?"

The timetable proposed in the NPRM appears to be reasonable.

(3) Page 20, paragraph 40

"While we do not anticipate adopting extensive technical standards for enhanced 911 operation -- industry standards-setting committees are better equipped to address precise technical requirements for enhanced 911 compatibility -- we propose that general performance criteria be adopted."

ICSAR disagrees with the Commission's view that only general performance standards be adopted by Federal regulation. While "extensive technical standards" may not be required, it is absolutely essential in the case of the interface between the MSS systems and the PSTN that national standards are adopted for message content and format. Otherwise, the MSS systems will be left with the formidable task of adapting to the possible numerous standards developed for each region. There is no doubt that industry standards setting committees are better equipped to address these standards, however, the standards should be developed on a national basis and adopted by FCC rules.

(4) Page 21, paragraphs 42 & 43

"The term "grade of service" refers to the percentage of calls between the mobile transmitter and the PSAP that are blocked either within the radio or the wireline network. Our initial view is that federal standards are not warranted at this time. We seek comment on this assessment."

ICSAR disagrees with the Commission's view that federal standards are unwarranted. We see no other way to ensure adequate "system" performance. We also urge the FCC to adopt system requirements for functions like total transmission time and database availability.

(5) Page 21, paragraph 44

"We seek comment on our proposal to require that, one year after the effective date of the order adopting rules in this proceeding, originating 911 calls must be assigned priority over non-emergency service calls. This priority would be assigned at the handset and would extend to placing the 911 call at the beginning of any queue for calls waiting to be placed in the mobile radio network."

The ICSAR agrees that priority handling must be given to 911 calls. Recent natural disasters have repeatedly shown how mobile communications in the vicinity can be quickly overwhelmed by non-emergency calls. As discussed above, however, national system performance requirements may have to be adopted to make this requirement effective.

While it is not a part of this NPRM, the ICSAR urges the FCC to adopt standards that would also provide emergency responders with priority handling of calls during national disasters.

(6) Page 22, paragraph 46

"We seek comment on the specific technical and cost considerations affecting the implementation of an ALI requirement for enhanced 911 service to wireless customers that would include detailed location information."

ICSAR believes that an ALI requirement is essential. While location plays a critical role in emergency response for 911 calls originating from terrestrial wireless systems like cellular, it is absolutely necessary in the case of MSS wireless systems whose cell size can span the continent. Without location information it is impossible to route distress calls originating from MSS systems. As discussed earlier, a call originating in one part of the country will likely be received by a satellite gateway ground station, possibly thousands of miles away.

(7) Page 24, paragraph 49

"We seek comment on our proposal that wireless base stations be capable, within one year after the effective date of the order adopting rules in this proceeding, to route 911 calls with sufficient location information to permit connection of the mobile station to the PSAP closest to the mobile caller."

ICSAR fully agrees with this requirement. In the case of wireless emergency calls originating within the MSS systems, there also needs to be a national data base of PSAPs and RCCs, with clearly defined geographic areas of responsibility so that the call can be routed to the appropriate PSAP or RCC. ICSAR would like the Commission and anyone responding to this NPRM to comment on how this may be accomplished. In the interim, however, until a national database can be established, we recommend that MSS carriers establish their own database of known PSAPs and RCCs within their services areas, and route emergency calls to the appropriate PSAP or RCC based upon available defined geographic areas of responsibility.

(8) Page 25, paragraph 51

"In the third phase, we propose to require that, five years after the effective date of the order adopting rules in this proceeding, the mobile station be located within a 3-dimensional environment within a radius of no more than 125 meters...We request comments on the feasibility of this approach..."

ICSAR concurs with the need to have detailed location information sufficiently accurate that the rescue or emergency service provider can effectively carry out their mission. The accuracy specified would appear to be adequate for search and rescue

purposes. Many SAR operations currently depend on a homing signal from emergency beacons to pinpoint the distress site. Usually location to within 125 meters could partly offset this homing requirement. It should be noted that such accuracy is only effective if the emergency responders carry self-locating equipment at least as accurate. Readily available GPS-based locating devices are consistent with this accuracy.

(9) Page 25, paragraph 52

"We request comment on the technical and economic feasibility of wireless services to provide the capability to return calls placed from mobile radio transmitters to a 911 emergency number immediately."

ICSAR fully supports this requirement. A call-back capability would allow rescue forces or emergency service providers to talk to the victim during the rescue. This can contribute greatly to the chances of survival. This capability can also assist in guiding responders to the site and apprise them of the current situation.

(10) Page 27, paragraph 54

"We propose that within one year of the effective date of the order adopting rules in this proceeding, radio services must be capable of permitting access by individuals with speech or hearing disabilities through means other than mobile radio handsets."

ICSAR concurs with this requirement, and observes that this means of communication would allow terminals of non-voice MSS systems to communicate with a 911 operator. Because of this, the Commission should reconsider its position of not requiring non-voice systems to be compatible with enhanced 911 systems.

(11) Page 28, paragraph 55

"Comments are requested as to whether it may be appropriate, within 30 days after the effective date of the order adopting rules in this proceeding, to require equipment that does not meet the proposed requirements to be labeled... "

ICSAR recommends that the suggested labeling be placed on the package and instruction book of the equipment and not on the equipment itself due to the length of the statement. A shorter statement might be used on the equipment as follows: "If you dial 911, you must provide the operator with your location and telephone number."

ICSAR recommends, in the case of MSS systems that do not provide location information with the call, that the service provider provide operator services to handle emergency calls, and, when information can be obtained from the caller, to route the call to the appropriate PSAP or RCC.

(12) Page 28, paragraph 56 & 57

"We seek comment on the necessity for, and implications of, imposing privacy requirements on information transmitted to local exchange carriers and PSAPs in the delivery of 911 emergency services."

ICSAR believes that privacy requirements must be waived for 911 calls. To do otherwise would deny emergency services personnel the very information necessary to respond in an efficient manner and would seem contradictory to the concept of the 911 service. This would be particularly the case in SAR operations where points of contact and other information about the distressed party are used to validate the need to launch SAR facilities.

(13) "We ask whether other steps need to be taken to ensure the American public continues to have access to effective 911 services... We seek comments on whether we should impose uniform requirements."

ICSAR believes that certain uniform requirements should be mandated by the Commission to ensure effective provision of 911 services, especially by MSS systems. Requirements for any digits to be dialed in addition to 911 will likely result in confusion, especially in stressful situations, and should therefore be avoided. In connection with priority handling of 911 calls, uniform standards should be applied to all elements of the 911 networks. Also, as stated previously, uniform national standards should be developed for message formats, protocols, signaling and other technical aspects to allow MSS providers to route calls on a national basis.



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