Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	**)**	
Revision of the Commission's	**)**	
Rules to Ensure Compatibility	**)**	**CC Docket No. 94-102**
With Enhanced 9-1-1 Emergency	**)**	
Calling Systems	**)**	

COMMENTS
OF THE
ComCARE ALLIANCE

The ComCARE Alliance hereby respectfully submits its comments in response to the Commission's Further Notice of Proposed Rulemaking[1] released December 20, 2002 in the above captioned docket.

SUMMARY OF COMMENTS

In addressing the issues raised by the Further Notice regarding telematics, ComCARE believes the Commission should be guided first by a policy objective of promoting safety, which we believe means promoting the wide deployment of telematics.

[1] In the Matter of Revision of the Commission's Rules to Ensure Compatibility With Enhanced 9-1-1 Emergency Calling Systems, Further Notice of Proposed Rule Making (*FNPRM)*, CC Docket No. 94-102, FCC 02-326 (released December 20, 2002)

Unlike wireless interconnected service there is no crisis in the provision by telematics services of location information to public safety. Thus, the Commission has the opportunity to allow the telematics industry to achieve market acceptance, to evolve technologically and to continue to work with public safety while the Commission focuses regulatory emphasis on the much more problematic challenge of implementing E9-1-1 Phase II calling nationwide. Indeed, the Hatfield Report discusses PSAP fatigue and the need at this time for a clear focus on supporting implementation of Phase II as critical to the success of that initiative.[2]

Neither during our National Mayday Readiness Initiative (NMRI) process, nor since, have we heard that the current system of communications between Telematics Service Providers (TSPs) and Public Safety Answering Points (PSAPs) is creating a safety threat. This reaction comes from both sides of the relationship. Indeed a review of the Final Recommendations of NMRI, which were developed and endorsed by a very diverse group, including 9-1-1 leaders, shows that this was not a priority concern. The focus of the relevant NMRI recommendations was to pursue a future emergency network with significantly enhanced capabilities.

We strongly believe that the primary safety concern with telematics at the current time is that most automobile companies are not yet deploying these systems. Large numbers of General Motors' vehicles and almost all Mercedes-Benz cars have telematics; most other large brands do not, and many automobile companies have not announced plans to adopt telematics or adopt it

[2] See Dale N. Hatfield, *A Report on Technical and Operational Issues Impacting the Provision of the Wireless Enhanced 9-1-1 Services* (Hatfield Report) at p. 31

broadly.[3] Only between three and four million cars have telematics, compared to more than 140 million cell phone subscribers, and a substantially larger number of licensed cars and trucks.

We strongly encourage the avoidance of regulatory action at this time. It will discourage companies from installing these life saving systems, or make them less effective by freezing technology development. We believe there is a fundamental consensus in the safety community on this point. No trauma, EMS, 9-1-1, transportation, law enforcement organization, or coalition of them, such as ComCARE, has advocated Commission regulation of telematics at this time, nor have any advocated that the Commission should regulate their side of this critical multi-sided relationship.[4]

We believe the most important safety issue confronting telematics (indeed all wireless emergency calling) is the existence of dead zones, the lack of seamless commercial wireless coverage. Even the most advanced technology is worthless if the signal cannot get through. We strongly encourage the Commission to renew its efforts, working with all affected parties, to remove barriers to that important goal.

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[3] ComCARE notes for example that Chrysler has no announced plans for embedded telematics that provide ACN or emergency services. Similarly, Toyota and Honda have not announced plans for their high volume brands although they have some penetration of their respective luxury brands, Lexis and Acura. Further Ford's Wingcast telematics joint venture with QUALCOMM recently declared bankruptcy and no specific follow-on plans have been announced although Ford expressed a general intention to continue to pursue telematics and continues to market in limited numbers its RESCU system. Ford's Volvo subsidiary recently did introduce Volvo On Call Plus telematics on some models. Volkswagen makes OnStar available on most Audi models and has announced plans to introduce OnStar on some Volkswagen models beginning this spring. Isuzu, Subaru and SAAB also offer OnStar on selected models.

[4] There is an exception. A number of parties have commented that the wireless E9-1-1 rules should apply to telematics suppliers when they offer services which directly connect to the PSTN.

The events of 9/11 made it crystal clear that we needed major changes in emergency communications. 9-1-1 and TSPs should be key participants in a modern, overall and integrated, emergency communications and information system. The recent report of Dr. Dale Hatfield discusses at some length the weaknesses of the current 9-1-1 system for any use other than delivery of wireline 9-1-1 calls. While we are pursuing that goal, clearly we need to support those who are upgrading the 9-1-1 network, as part of the broader system. We suggest it is not useful to make new, data rich technologies backtrack to conform to a system Dr. Hatfield called "antiquated".

Motivated by homeland security concerns, mass disaster needs, ITS investments, and the issues discussed above, there are a wide variety of initiatives underway in telematics and related safety technologies which ComCARE hopes will both accelerate this change, and help guide it. We look forward to working with the Commission on these important challenges.

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I. BACKGROUND

The ComCARE Alliance is a broad-based, not-for-profit national coalition of more than 90 organizations representing nurses, physicians, emergency medical technicians, 9-1-1 directors, emergency managers, transportation officials, wireless, technology and transportation companies, public safety and health officials, law enforcement, automotive companies, consumer organizations, telematics suppliers, safety groups, and others. We are working to encourage the development and deployment of life saving communications and information technologies that will enhance America's emergency response capabilities. Perhaps most importantly, we

encourage and facilitate cooperation across professional, jurisdictional and geographic lines, seeking to break down the walls that separate these agencies and professions and limit their effectiveness. A list of ComCARE's members is included as Attachment A.

"ComCARE" stands for Communications for Coordinated Assistance and Response to Emergencies. Our goal is to promote an integrated, coordinated approach to emergency communications. We promote the introduction of 21st Century information and communications technologies to the often-antiquated communications infrastructure and tools of emergency agencies. We support the development of a comprehensive, open architecture, "end-to-end system" to link the public to emergency agencies, and to link those agencies together. We seek to enhance the ability to respond to individual and mass emergencies of all types by creating a network of survival which links existing technologies in homes, businesses and agencies, smart cars and trucks equipped with telematics, warning devices, wireless telecommunications, intelligent transportation systems, homeland security functions, and advanced emergency care. This will save thousands of lives each year, substantially reduce the severity of injuries, assist law enforcement and transportation, and enhance homeland security.

A. **ComCARE Supports Deployment of Both E9-1-1 and Telematics**

The Commission's Further Notice requests comments regarding the relationship of a number of technologies, particularly wireless technologies, and 9-1-1 call centers with a particular reference to wireless 9-1-1 calling. Both the implementation of wireless enhanced 9-1-1 and the deployment of telematics have been core areas of our organization's focus since it's founding. The rapid and efficient implementation of wireless E9-1-1 was one of the reasons for the

founding of ComCARE. The 9-1-1 law[5] that we strongly supported sought to remove some of the barriers to that goal, specifically through statewide planning of integrated communications systems involving all the key stakeholders, a charge to the Commission to encourage such inclusive planning, and liability parity for wireless carriers with wireline carriers.

Since the law's passage in 1999, we have continued our strong support for E9-1-1: in advocacy, in education, and in encouraging the development of new practical ways to upgrade PSAPs so they can use E9-1-1 data (and thus request it from carriers).[6] Like the 9-1-1 law, we have called for seamless wireless networks, and opposed zoning and other legislative and regulatory initiatives which, by excluding safety concerns, perpetuate "dead zones".

Similarly, ComCARE has been both supportive of, and especially active in, the evolution of telematics, and the safety policy issues related thereto. This emerging technology offers unique capabilities to assist response agencies in identifying and responding to emergencies. By combining event data, wireless communications, and GPS, and integrating those with information at the telematics call center, telematics provides exact location, automatic crash notification, and other important information about the car and its owners to the emergency response community. In advanced implementations, telematics can include additional medically significant information. Moreover and critically, current telematics systems provide this

[5] *Wireless Communications and Public Safety Act of 1999*, Pub. L. No. 106-81, 113 Stat. 1286 (codified at §§ 222 and 251(e)) (9-1-1 Act).
[6] According to the last carrier E9-1-1status filings with the Commission, PSAPs representing significantly less than half the population of the United States have requested Phase II E9-1-1.

information to PSAPs nationwide now regardless of the state of readiness of a PSAP for Phase I or Phase II calling.[7]

B. Vision of Emergency Response with Full Telematics and Related Systems Deployed

In order to assist the Commission in understanding the views we express here, we take the unusual step of presenting a vision of what a modern emergency communications and information system should do. Our purpose is to demonstrate the extremely exciting prospects we have, and also to make clear that the topic must be addressed in an integrated, overall manner, not in the "stove pipe" manner that has characterized emergency communications in the past. We are right at the beginning of this set of fundamental changes. Beyond its intrinsic safety value, telematics already is playing an extremely valuable role as a "driver" of this change. But it is certainly not the only driver. And it is certainly not the only use of a new system which must accommodate a wide variety of sources of emergency information, and applications which act on those sources to make the data more usable by emergency personnel.

Our members and others have developed an exciting vision of an integrated emergency communications and information system linking the public to emergency agencies, and linking the agencies to each other in a seamless network. It will save lives, reduce the impact of serious injuries, enhance homeland security, conserve public safety resources, and improve transportation efficiency. This integrated network would equally serve to protect Americans

[7] For the purposes of this proceeding, it is important to note that embedded telematics are not interconnected services. Telematics connect directly to a private call center that screens the call and, as needed, contacts the appropriate public safety entity. Subscribers do not have connectivity with any other point on the PSTN. In some instances, subscribers have the option of contracting for additional interconnected service.

during both daily and mass emergencies. Here is an example of how it might work in a hypothetical hazardous materials truck hijacking by terrorists, which also involves several car crashes. The information concepts apply in most other incidents, including day-to-day emergencies, and natural and man-made disasters.

A hazardous materials truck with a commercial telematics package (GPS, two way data communications with a service provider) is hijacked. A "panic" alert from the driver notifies the national commercial service vendor, which alerts the law enforcement authorities in the area and the FBI of the threat, the hazmat contents, and the exact location and truck description. It feeds tracking data to them as well. Several minutes later, the truck crashes, causing a serious pile-up, including a number of personal automobiles with advanced automatic crash notification. Several passengers suffer serious injuries. Immediately upon impact, Advanced Automatic Crash Notification (AACN) devices located in each of the impacted vehicles are activated. Wireless calls are automatically dialed and specific crash data is sent from each vehicle, including: (1) the deceleration rate, (2) the principal direction of force, (3) whether it rolled over, (4) the type of vehicle, and (5) the exact location. The voice and data go to various national telematics service provider call centers, or truck fleet management vendors. There, additional data is added from databases or conversation with the victims (e.g. identity, gender, age, number of victims, and perhaps personal medical information). These data, run through an Urgency Algorithm[8], allow initial predictions of the likelihood of severe injury.

Where severe injury is predicted, the modern packet-switched network causes the voice connection to "bounce" off the TSP system, pick up any relevant data residing there about the

car and its owners, and go to the appropriate PSAP with the supporting data in the same package -- without the intervention of a TSP operator as is usually the case.[9] For one of the other cars, the TSP staff determines that, in fact, emergency response appears necessary. The voice call (conferencing the victim and TSP) and data are quickly forwarded to the correct 9-1-1 center.

With three other ACN alerts where the data indicate "fender benders", the TSP staff confirms this, and does not call 9-1-1, thus performing the "screening function". After determining that the cars are disabled, they do transmit that data into the local emergency information system so responders have a full picture. These are displayed on the map of the incident website, or the individual agencies' mapping product. A large number of Mayday calls are made reporting the incident. As the 9-1-1 center already knows about it, these are not transferred. However, another Mayday call from a man stopped in the traffic backup and complaining of chest pains is immediately transferred, along with the personal medical data, which shows he has a heart condition.

In the case of the hazmat truck, the exact material being transported and its quantity are included in the transmission from the fleet management vendor. Directions on how to deal with the material are retrieved from another national database as the "packet" heads for the relevant responders.

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[8] See discussion of the role of the US Department of Transportation below.

[9] If the PSAP or other emergency agency wanted to do so, a modern emergency packet network would allow the "flagging" of such a communication as a very serious event, with data proving that, and PSAP programmed systems could give such a call priority over others, such as the scores of wireless 9-1-1 calls which flood PSAPs after such events.

This data can be sent to and received by all emergency response agencies anywhere because the transmissions use standardized computer languages, data sets and communications protocols, they all have broadband access, and because there is now a national, shared location-based (GIS) Emergency Provider Access Directory (EPAD) into which the 80,000 emergency agencies in the US have entered their IP-addresses, emergency telephone numbers, what emergency information they want, and the geographical area for which they want that information.[10]

Very importantly, from the time of the first hijacking alert, the data is also sent to a number of other responder agencies that registered themselves in the EPAD to receive it, and are authorized to do so. In the case of a hazardous materials hijacking (fewer would sign up for car crash data) these include: the hazmat response team, EPA emergency response, local and state police, the FBI, the Department of Homeland Security emergency operations center, the local DOT traffic control center, its contracted tow truck operator, the closest emergency room, the ambulance provider for that area, the closest trauma center (the latter because AACN data indicated the likelihood of very serious injuries and because of the report of the presence of dangerous materials), and the city and county emergency operations centers. (All these will play a role in the response, under the usual incident command system. The difference is they will receive and be able to communicate much more complete information, much faster and more efficiently.)

The 9-1-1 dispatchers know the exact location of the crash since the event instantly appears on a computerized map in front of them. They also know that the numerous good Samaritans passing

[10] For a more complete discussion of ComCARE and its members' EPAD project, please see http://www.comcare.org/projects/epad.html . In more than two years of working on this project, we have learned that presented with scenarios and information possibilities of the kind discussed here, there is a very wide variation

by the incident and dialing 9-1-1 on their wireless phones are describing the same emergency scene. New wireless enhanced 9-1-1 (E9-1-1) location technology automatically locates each of these callers so their calls can be displayed on the same map, so those excess calls can be terminated quickly. Some of these agencies, particularly in the surrounding rural areas, do not have the budget or expertise to acquire or manage their own advanced electronic systems (e.g. computer aided dispatch). They can all see the same data however because they are authorized to have access to the shared emergency incident map website, and have broadband connections to it. (Soon these small agencies will be subscribing to much more sophisticated shared CAD, mapping, and records management systems offered by the state on an application service provider (ASP) basis.)

Based on the severity of the crash, and the additional information added from talking to the victims and personal medical information (run through a new Emergency Medical Dispatch protocol which incorporates these and the Urgency Algorithm), the dispatchers know to send advanced life support ambulances, and to call for a Medi-Vac helicopter. Similarly, based on the known effects of the hazardous material, responders are properly outfitted before they leave their stations. Hospitals are prepared for people walking in off the street with those hazmat symptoms. Using the new "just in time training system", all possible responders are notified to "click" on a URL to see a video stream of a four minute training clip on handling this hazardous material and its victims. This is followed by a secure video briefing from the county emergency management director directed at the surrounding community responders who are standing by to assist, using the same broadband pipeline and capabilities used to share other data.

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in what data agencies of similar professions want (and how they would use it). That is why it is so important for a modern network to allow them to make such determinations themselves.

On the same map identifying the location of the crashes, the emergency dispatcher is able to locate the nearest Automatic Vehicle Location (AVL)-equipped police cars, ambulances and fire/rescue vehicles, and can contact them immediately by radio or data link. Municipal agencies which cannot afford sophisticated AVL use the E9-1-1 capabilities of their staff's cell phones to track other vehicles.

Using new IP-based applications available to all the responding agencies, responding staff and vehicles are linked together within an incident "page", sharing information. The Incident Commander can create an interoperable voice and data "talk" group on the fly. The devices use Voice over Internet Protocol which overcomes voice interoperability issues. As events unfold and actions are taken (e.g. dispatching an ambulance), those are reported into the system and shared with other agencies. Thus, responding agencies, including PSAPs, need to be able to publish data, not just receive it. Whether they are co-located or not, a real time integrated incident communications system allows incident management (from hazmat to a terrorist attack) to manage and coordinate the multiple response agencies' operations centers and incident response personnel at the scene..

The large amounts of traffic information now collected by DOTs using Intelligent Transportation Systems can be shared with other agencies, and benefit from these new external data sources. Due to the integration of intelligent transportation systems (ITS) with safety, E9-1-1 location technology becomes an additional source of traffic data, providing traffic managers with real-time descriptions of traffic speeds wherever there are cell phones. This is fused with traffic data

from cameras, sensors, and other ITS installations along major roads. The crash is immediately reported, along with its effect on traffic, to the traffic operations center. Models based on past experience predict what will happen to traffic and suggest the appropriate response. Rapid DOT action causes expeditious diversion of traffic and dispatch of equipment to clear the road. The incident, diversion instructions, and suggested alternative routes are communicated rapidly to an incident website, cable TV channels, and active alerting services, including 5-1-1 and wireless subscription services.

Due to the fusion of real-time traffic and incident data, the EMS teams and other response personnel arrive quickly at the scene by avoiding traffic jams. Through access to a DOT traffic camera close to the crash, they and their dispatchers can see the scene before they arrive; it has already been remotely turned to focus on the event. While en route, they receive crucial data on their in-vehicle mobile data terminal or Personal Digital Assistant (PDA): (1) a map shows the event location, assets, traffic and other relevant information; (2) the likely injuries and severity as predicted by the Urgency Algorithm; and (3) relevant personal medical information and healthcare provider information (if not provided previously), including data such as chronic conditions, reactions to emergency medications, and primary care physician contact for the victims. The latter is from a private database service offered to telematics subscribers and others on a subscription basis. This data "pre-populates" the responder's event data record, saving time and avoiding errors.

The EMS teams know where to go and what to expect upon arrival at the crash scene. A portable hand-held video camera carried by an initial responder provides a close up video feed of the

patients and crash/crime scene, again available to all responders and their agencies. Some victims are sent to an emergency room that is closest to the crash site. The most seriously injured are evacuated by helicopter to the trauma center.

Before the hazmat team leaves its station, it has already been notified of the kind of materials that were dumped; clean up and treatment instructions are downloaded from a separate source (at EMS and the hospital as well). The team and the incident commander have overlaid on the incident map web site the fixed locations of hazardous materials in the facility, and the fact that there is a primary school within two blocks of the truck. The system map indicates that building plans for an 8-story office building adjoining the crash site and spill are available on line.[11] Even before they start, the team can select the right equipment, call for the right help, and hit the ground ready to start clean up.

Meanwhile, as patients are transported, patient injury data is entered into a mobile data terminal. A wireless connection updates the active victim file on the server, and is re-run through the Urgency Algorithm, changing the injury predictions so that new decisions on needed care are made. A patient headed for the closest emergency room is redirected to the trauma center due to the likelihood of brain injury. The medical teams at all the receiving hospitals are able to prepare, with predictions of the kinds of internal and external injuries to the victims who will be arriving. The proper staff and resources are lined up in advance. They know what injuries to look for (particularly hidden, so called "occult," injuries).

[11] Encouraging the creation of a building plan data base is the project of ComCARE member, the National Conference of States on Building Codes and Standards.

Following the event, reports are filed rapidly and efficiently by the large number of agencies involved, because they were electronically populated throughout the event by the shared system. Later, personally identifying information is stripped off the data is put into various aggregated data bases for management, research, and product improvement. This could include everything from predictive algorithm improvement, to traffic modeling, to judging the efficiency of EMS systems.

The vision described here does not need to be far off. Most of the technologies mentioned exist today and are in use in our commercial economy. The challenge is to find the right mix of public and private leadership, coordination, standards, incentives and investments to deploy the applications that will make this vision a reality.

C. The Issue is Much Broader than 9-1-1 and Personal Automobile Telematics

As clearly demonstrated in this vision, the future of emergency communications clearly involves 9-1-1 and telematics in very important ways, but the issues are broader. Most of the same questions that the Commission poses about telematics apply to a wide, and growing, range of consumer and industrial safety devices and services, and to a wider array of public agencies. Closest to telematics are what could be called "commercial telematics". These are very similar services offered to trucking companies for fleet management purposes by a number of our members and other companies. They have deployed or are developing devices and services which track trucks, and can provide data communications to and from them. These are commercial services, but in emergencies they allow the vendors' call centers to provide to public

emergency response agencies information about a truck and an incident, such as the exact location, the hazardous materials contents, and the owner. Medical profiles could also be made available for truck drivers.

It is only in the last few months that the issue of providing hazmat information to PSAPs and other emergency response agencies in real time has been proposed[12]. ComCARE's Hazardous Materials Emergency Communications Working Group made this recommendation to USDOT's units with jurisdiction over trucks and hazardous materials. In this respect the monitoring centers of these vendors perform essentially the same screening and routing functions for emergency response agencies as TSPs do. And when such information is communicated to PSAPs and emergency agencies, the data stream will be about the same as consumer telematics, and would preferably be handled technically the same way. ComCARE members demonstrated exactly this in a field exercise of a hazardous materials truck hijacking in Frederick County, Virginia on January 16, 2003. USDOT is currently conducting a field trial of trucking hazmat and emergency response technology including some of our members. We believe the Commission should be pleased at these developments, and see no reason why it would want to regulate any part of the trucking industry or its information technology vendors.

Similar opportunities to enhance safety are beginning to arise with personal medical alarms (e.g. heart monitors), and "panic buttons" (with or without GPS). Should the FCC step in and regulate the interaction of these with emergency response agencies? These are not technically or

[12] See filing of ComCARE Alliance HazMat Emergency Communications Working Group with RSPA, November 15, 2002 (http://www.comcare.org/research/news/releases/HazmatWorkingGroupFiling11-15-02.pdf). QUALCOMM and a number of our members demonstrated this transfer of hazmat data from QUALCOMM's data

operationally different than voice and data alerts from federal and state homeland security officials to the wide variety of emergency response agencies – which are not possible today, but which a modern network would allow.

And those are mostly in the future. There is a very large existing industry, the home security industry, which has worked for decades to resolve its intersection with the public emergency response community. Today, central alarm stations screen alerts from home security systems first, and if they believe the emergency is real they call a 10-digit emergency number provided to them by the appropriate local emergency responders. Indeed, when ComCARE began talking with public safety officials about Mayday/ACN, the topic that immediately arose in almost every conversation was how to avoid the false burglar alarms that had bedeviled public safety for years.

As ComCARE advocated the deployment of ACN/Mayday and similar consumer and commercial safety technologies, we came to the same conclusions as Dr. Hatfield did in his recent report to the Commission. The public safety communications and informational infrastructure is not currently capable of handling these new devices and services, particularly because the various emergency communications and information systems tend to be independent ("stove piped"), limited to a single agency or jurisdiction, and voice-centric. Dr. Hatfield focused on the limitations of the 9-1-1 system. In many important ways the same criticisms can be leveled at the rest of our emergency communications systems.

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center in San Diego to the relevant first responders in a terrorism hazmat drill in Frederick County, Virginia in January, 2003.

We have worked hard with our members and others to develop a vision and then architecture of a new kind of emergency information network that can handle telematics and similar kinds of uses, overcoming interoperability barriers and similar problems rapidly and at reasonable cost. Key principles have emerged, which the NMRI recommendations pointed to: Internet Protocol, data-centric, open architecture, fusing and sharing data from and to multiple sources, industry-based standards, adoption of commercial tools wherever possible, avoiding one-off systems, national standardization of information exchanges, local control over what information is taken or given, and in what form. These are discussed in more detail in response to the Commission's specific questions. Our members have developed prototypes of such a system and, as noted in the FNPRM, are demonstrating them in Virginia pursuant to a contract with the Virginia Department of Transportation, and elsewhere.[13]

From a policy and regulatory perspective, we respectfully suggest there is little difference between a communication to public safety agencies from (a) a home security central station reporting a fire, break in, or the like, (b) a Mayday/ACN emergency call from an OnStar or ATX, (c) a hazmat communication from a QUALCOMM, or (d) a homeland security alert from a federal agency. We do not think the FCC should seek to regulate any of these communications or any party to them, public or private. Instead, it should encourage innovation in this field.

[13] *See* John Erich, EMS Magazine: The Journal of Emergency Care, Rescue and Transportation, *Information Integration: Virginia Crash Response System* (Vol. 31, No. 2) February, 2002

D. Other Agencies: Department of Transportation Leadership on Telematics; Homeland Security

We respectfully suggest that the Commission should consult with a variety of other Federal agencies before taking any action in this field starting with the Department of Transportation, which has taken the lead on telematics safety policy issues for more than 6 years. Former National Highway Traffic Safety Administration (NHTSA) Administrator Ric Martinez led the EMS community in developing an "EMS Agenda for the Future", of which two of the top 10 priorities were communications-related.[14] Not surprisingly, those were wireless E9-1-1 and automatic crash notification. He was a leader in seeking to bring the EMS, wireless, automotive, and other sectors together.

DOT funded the initial development of an Urgency Algorithm by trauma experts. Using crash data, the Algorithm predicts the likelihood of severe injury. It is being refined and updated now with additional DOT grants to medical leaders. DOT funded the field test in Buffalo by our member Veridian of about 850 ACN equipped cars.[15] DOT, NENA, and ComCARE co-sponsored the first national conference on integrating emergency response with intelligent transportation systems in 1999. DOT co-sponsored with ComCARE in 2000 the National Mayday Readiness Initiative to address telematics policy and technical issues. USDOT grants have funded ACN research at the University of Alabama-Birmingham Medical Center, and ComCARE's work with Virginia DOT and first responders in the Shenandoah Valley of Virginia

[14] EMS Agenda for the Future, National Highway Traffic Safety Administration, US Department of Transportation, 1998

on the kinds of emergency systems we discuss herein. Last year USDOT also awarded a grant to Minnesota DOT to explore telematics emergency information delivery.

Secretary Norman Mineta, in a speech to the Intelligent Transportation Society of America in April 2001, declared that:

> "We must work collectively – with the private sector, with other federal agencies, and with state and local governments – to deploy an intelligent transportation system to save more lives. This must be a comprehensive end-to-end system of emergency notification, and response. It should indicate the location of a crash, provide data about its severity, and notify the necessary responders. Such a system will not only help to save lives at the time of the crash, but [will] also help to prevent others in the future by providing data that will allow us to build safer cars and roadways."[16]

Last year, at the announcement by General Motors and OnStar of their decision to deploy advanced automatic crash notification capability in 400,000 cars in 2003, Dr. Jeffrey Runge, a prominent emergency physician and the current Administrator of NHTSA, said:

> "If responders and the trauma center can gauge the seriousness of the crash, number of people involved, and assess their injuries, the responders can make the right decisions. They can send advanced life support the first time, rather than calling for it after they arrive. They can assemble the appropriate trauma surgical team while the patient is in route, rather than waiting until the patient arrives. . . .
>
> "I'd like to express my appreciation to GM for taking this step. I look forward to the day when all cars are equipped with devices that give responders the right information – at the right time – to save lives. But before we can get this technology into all cars, we need someone to step forward and demonstrate that it can be done. Thank you, GM, for taking the industry lead."

The kind of information systems described in the vision are needed for homeland security as much as car crashes, and any discussion of regulating inputs and outputs to that system should be

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[15] The ACN project was initiated in 1995 before commercial Mayday systems such as GM's OnStar were available. It was successful in showing that it is possible to detect serious crashes, determine accurate location, and provide notification to appropriate PSAPs using existing cellular communications infrastructure.

[16] Remarks As Prepared for Delivery, U.S Secretary of Transportation Norman Y. Mineta, ITS America National Summit, April 18, 2001, Arlington, Virginia. See http://www.dot.gov/affairs/041801sp.htm

done on both a systemic basis, and in conjunction with the new Department of Homeland Security, and related agencies such as the Department of Health and Human Services and the Department of Justice.

E. ComCARE's Activities Related to Telematics

Within ComCARE, our trauma, EMS, 9-1-1, law enforcement and other organizations have worked in an extremely cooperative way for years to address the policy, operational and technical issues which arise in their dealings with each other. ComCARE is very much involved in the integration of telematics call centers with emergency response agencies, from 9-1-1, to hospitals, to ambulance mobile data providers. Further, ComCARE members are involved in a variety of demonstration programs as will be discussed subsequently. During the same period, we have witnessed the same cooperative approach by most of these parties on a bi-lateral basis as well.

In 2000 ComCARE facilitated the National Mayday Readiness Initiative. Cosponsored by US DOT, it involved 30 diverse organizations addressing the policy issues raised by the intersection of the telematics industry and the emergency response community. The detailed recommendations that resulted from that process address many of the questions the Commission poses and are attached hereto as Attachment B. In months of discussions and innumerable drafts of the recommendations, not one party ever suggested that any federal agency should step in and

set the rules for industry, for public safety agencies, or for their relationship. Indeed, NMRI recommended a continuation of the cooperative public/private process to address these issues[17].

In 2001 ComCARE established an ACN Committee to continue discussions of many of the issues. Meeting about once every six weeks, it includes a very diverse membership, fairly reflective of ComCARE's membership, but also parties who are not members, such as a wide variety of individual medical experts, NHTSA staff, and others. The Committee's discussions in 2001 (against the backdrop of intensive earlier discussions within and outside ComCARE) produced a consensus on the priorities of emergency medical leaders for crash data which could be provided by advanced automatic crash notification. This consensus was communicated to all the major automobile companies in January, 2002 in a letter signed by our Chair and Vice Chair, K. Sue Hoyt, R.N. and Dr. Richard Hunt.[18]

Leading telematics providers subsequently said they would provide emergency data to response agencies, but advocated a standardization of the data set that would be used to move information from them to emergency agencies. They asked ComCARE to facilitate that process. A year long public/private cooperative effort involving over 20 organizations ensued. Three subcommittees were chaired by an emergency medical, 9-1-1 data, and automobile expert respectively. TSPs representing over 95% of the deployed vehicles participated actively. In October 2002, a Recommended Vehicular Emergency Data Set in XML was produced and circulated to a wide

[17] See *Recommendations of the National Mayday Readiness Initiative (NMRI),* October 23, 2000, p. 4

[18] A sample of the letter is Attachment C. Hoyt is the former President of the Emergency Nurses Association, and a professor at the University of San Diego. Hunt is the Chair of the Emergency Department at SUNY Syracuse, immediate past President of the National Association of EMS Physicians and the President of the Advocates for EMS.

variety of stakeholders.[19] It is currently being used by technology companies in field drills and trials. OnStar announced that it would use the data set to transmit emergency data.[20]

II. Policy Comments

A. Seamless Wireless Network**: A Threshold Issue for the Commission to Address**

We think the most important telematics safety issue that the Commission can address today is seamless commercial wireless coverage. For Mayday/ACN systems or wireless 9-1-1 calls to function, there must be wireless networks capable of connecting the person or telematics device to the call center or PSAP. Without those networks in place, the Mayday device or wireless phone is useless. The vast majority of the American public can choose wireless service from one of at least four wireless carriers where they live. Network construction is proceeding rapidly. Unfortunately, in both urban centers and rural countryside, there are still areas today that lack wireless coverage, commonly referred to as "dead zones."

There are at least three reasons for the existence of dead zones: regulatory and zoning decisions, incomplete network construction and lack of knowledge of these "holes" by carrier management, and economics. There are no simple answers, but we recommend that the Commission make a major effort to find solutions to dead zones. We encourage the Commission to work with the national organizations and agencies which have become involved in wireless antenna siting decisions to ensure that they understand the safety importance of seamless wireless networks.

[19] See http://www.comcare.org/about/committees.html under ACN Data Set Working Group

We recommend some possible solutions to the dead zone concerns. The following ideas are based on the NRMI Final Recommendations.[21]

The *Wireless Communications and Public Safety Act of 1999* notes the importance of "seamless" wireless communications networks to public safety, and states that the Commission "shall encourage each State to develop and implement statewide deployment plans, through an entity designated by the governor" for emergency communications networks. The law says such deployment planning efforts should include representatives of all the relevant stakeholders (essentially like those which participated in NMRI).

NMRI recommended that a similar process be launched by states, gathering all the appropriate public and private stakeholders and agencies at the state and local level to develop their parts of the national emergency contact database (EPAD). This collaboration of stakeholders could also function as the state planning committees mentioned in the Act.

Successfully organized local and state committees for either of the above purposes could serve an additional role in helping to eliminate dead zones in several ways. Most important, they could provide a forum for government, carriers, public safety and other affected groups to discuss joint, cooperative solutions. These could fall into at least the following three categories:

> The committees could be a high level public safety mechanism by which carriers could be notified in an organized way of gaps in their networks which might be unintentional, and perhaps could be resolved without major new construction.

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[20] See ComCARE press release http://www.comcare.org/research/news/releases/ComCARE%2010-17-02%20Data%20Set%20Release.pdf

[21] See *NMRI Recommendation,* p. 22

> Such a group could provide public support for appropriate antenna siting in local zoning proceedings or legislative action. As a neutral party representing a broad set of stakeholders focused on public safety, the committees would understand the importance of a seamless wireless network and the needs of the community.
>
> Carriers could be informed of particular locations with high public safety/emergency communications needs (i.e. a stretch of highway with a large number of crashes), but no coverage or weak coverage, and the committee might come up with a collective, cooperative solution.

When dead zones perpetuated by regulatory action (or inaction) or carrier construction plans and/or oversight are corrected, there will remain dead zones due to economics. Our government has not made a decision to make wireless service ubiquitous across the United States, and to support and subsidize such a decision with regulatory policy and financial support as it did with basic telephone service decades ago. We have made a national decision to provide telephone service (wireline or wireless) where Americans live and work – but not wherever they happen to be. But that does not mean nothing can be done.

We believe the Commission should actively work with the Rural Utilities Service of the Department of Agriculture, state and local officials, and industry to address residual economic reasons for dead zones in rural areas where there is a safety reason to do so.

B. RESPONSE TO THE COMMISSION'S QUESTIONS

1. Overall Standards for Regulating

The Commission asks what general standards it should use in deciding whether to exercise whatever jurisdictional authority it may have[22]. In addressing the issues raised by the Further Notice, ComCARE believes the Commission should be guided by a policy objective of promoting safety and the proliferation of telematics first. As there is no specific authority for the Commission to regulate non-carrier communications to 9-1-1, presumably it would be doing so under its general public interest and necessity authority in the Communications Act. In this case, "public interest" should mean "safety". Our members, and essentially everyone involved in emergency response, have concluded that telematics improve safety. We suggest the Commission should make a practical analysis of the safety outcomes which result from pursuing different courses of action. What will save most lives and reduce the most injuries at the least or a reasonable cost? We suggest avoiding simplistic legal constructs, jurisdictional fights or battles between old and new technologies. Traditional arguments between vendors for a "level playing field" should have little place when talking about saving lives.

Most important, we think the Commission (and other government agencies) needs to weigh the impact its actions (indeed its proposals) may have on encouraging the rapid deployment of safety technologies. This includes avoiding the freezing of technology development by proposing specific requirements. Will regulatory action speed deployment, or retard it? Will serious discussion of regulation provide a disincentive for companies to deploy? We believe the answer

to both questions today is that serious discussion of regulation, and certainly regulation itself, will retard this important safety technology.

The recent Hatfield Report notes that the Commission has a history of adaptability in its approach to achieving its policy objectives. He urged the Commission to use its regulatory discretion where circumstances warranted flexibility.[23] We agree with that suggestion.

Unlike wireless service, where the absence of automatic location is a serious and growing problem, there is no crisis in the provision by telematics services of emergency information to public safety. Thus, the Commission has the opportunity to allow the telematics industry to achieve market acceptance, to evolve technologically and to continue to work with public safety while the Commission focuses regulatory emphasis on the broader challenge of implementing E9-1-1 Phase II calling nationwide. Indeed, the Hatfield Report discusses PSAP fatigue and the need at this time for a clear focus on supporting implementation of Phase II as critical to the success of that initiative.[24]

As noted in the Summary, neither during our NMRI process, nor since, have we heard that the current system of communications between TSPs and PSAPs is creating some sort of safety threat. Indeed a review of the recommendations of NMRI, which were endorsed by a very diverse group, including NENA's and APCO's leadership, shows that short term problems or near term fixes, to them, were not a priority concern. The focus of the NMRI recommendations was to pursue a future network with significantly enhanced capabilities. Most public safety

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[22] *FNPRM* at ¶ 12
[23] See Hatfield Report at pp. 44-46

officials who run call center or dispatch operations seem to believe that the current system works reasonably well. Telematics offer location based emergency information to PSAPs nationwide today, regardless of a PSAP's implementation of Phase I or Phase II calling. Moreover because the TSPs screen calls, the PSAP is relieved of the resource drain of responding to inadvertent or inappropriate calls. TSPs have a similarly positive view of the response of safety agencies to them.

We strongly believe that the primary safety concern with telematics at the current time is that most automobile companies are not yet deploying these systems. ComCARE believes that at this point there is no basis for the Commission to be alarmed about those companies which are deploying or servicing telematics, much less proposing regulations in this area. The concern should be about those companies that are not deploying, although we do not suggest that any agency require the installation of telematics. Large numbers of General Motors' vehicles and almost all Mercedes-Benz cars have telematics; most other large brands do not, and many automobile companies have not announced plans to adopt telematics or adopt it broadly.[25] Only between three and four million cars have telematics, compared to more than 140 million cell phone subscribers, and a larger number of licensed cars.

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[24] See Hatfield Report at p. 31

[25] ComCARE notes for example that Chrysler has no announced plans for embedded telematics that provide ACN or emergency services. Similarly, Toyota and Honda have not announced plans for their high volume brands although they have some penetration of their respective luxury brands, Lexis and Acura. Further Ford's Wingcast telematics joint venture with QUALCOMM recently declared bankruptcy and no specific follow-on plans have been announced although Ford expressed a general intention to continue to pursue telematics and continues to market in limited numbers its RESCU system. Ford's Volvo subsidiary recently did introduce Volvo On Call Plus telematics on some models. Volkswagen makes OnStar available on most Audi models and has announced plans to introduce OnStar on some Volkswagen models beginning this spring. Isuzu, Subaru and SAAB also offer OnStar on selected models.

We strongly encourage the avoidance of regulatory action at this time. It will discourage companies from installing these life saving systems, or make them less effective by freezing technology development. We believe there is a fundamental consensus in the safety community on this point. No trauma, EMS, 9-1-1, transportation, law enforcement organization, or coalition of them, such as ComCARE, has advocated Commission regulation of telematics, safety agencies, or the relationship between the, at this time.[26]

2. The Commission's Four Standards for Regulation

While we believe the broader standard discussed above should be used, the Commission suggests four narrower standards for determining whether to regulate[27].

> a. "It offers real-time, two-way voice service that is interconnected to the public switched network on either a stand-alone basis or packaged with other telecommunications services"

While the services provided by telematics service providers (TSP) are disseminated through CMRS networks, the TSP is not a wireless carrier nor do they have any control over those networks. The TSP is a user of CMRS services. Most connections in telematics are to a private call center, not interconnection with the public switched network.

> b. "The customers using the service or device have a reasonable expectation of access to 9-1-1 and E9-1-1 services"

[26] There is an exception. A number of parties have said that the wireless E9-1-1 rules should apply to telematics suppliers when they offer services which directly connect to the PSTN.
[27] *FNPRM* at ¶ 13

The Commission asks a series of questions about the expectation of customers[28]. There was a great deal of discussion of this topic during our NMRI process, led by a Consumer Practices Committee focused on exactly such questions. Public safety leaders reviewed the brochures, manuals and other sales documents of OnStar, Mercedes and others, and found nothing misleading or inaccurate. We do not believe there is a consumer expectation of access to 9-1-1 directly. Telematics consumer subscription and accompanying documents clearly state that all emergency services provided by TSPs will be handled through the TSP, not 9-1-1. The subscriber is required to sign an agreement acknowledging this fact and providing their explicit permission for TSPs to provide these services for them. The emergency button in telematics says "SOS" or is a red cross; none say " 9-1-1".

In our years of working on these issues, we have never heard a complaint from a consumer directly, or through any of our members, that they were misled about connecting to 9-1-1. We have had concerns about the public not understanding the limits of wireless coverage, but those were not due to the representations of telematics providers. In ComCARE's experience, telematics subscribers appear to clearly understand that they are contracting for a dispatch service and that embedded telematics calls are not directly routed to 9-1-1. Indeed the most common day-to-day services (e.g. door unlock, remote diagnostics, stolen vehicle location and concierge services) are all received from the call center.

In the implementation of some, if not all systems, when an emergency telematics call is placed the system provides audio feedback to the user saying something like "Calling [TSP's] Emergency Services", thus further diminishing any confusion about what is occurring.

[28] *FNPRM* at ¶ 70

Moreover, ComCARE notes that if a telematics subscriber has optional interconnected service and uses it to dial 9-1-1, the system dials 9-1-1 which is generally answered, "9-1-1. What is your emergency?" -- not the TSP's name. Thus there should be no confusion about what service the user is accessing.

We do not believe there could be an expectation of access to Enhanced 9-1-1 as only a tiny number of CMRS subscribers have such access today, although all telematics subscribers are automatically located when they call the TSP.

c. "The service competes with traditional CMRS or wireline local exchange services;"

Since telematics does not offer CMRS services, the competition aspect seems moot. Even where a telematics service company is offering its customers personal calling services, it is re-selling, not competing, with the CMRS carrier.

d. "It is technically and operationally feasible for the service or device to support E9-1-1."

We understand from our telematics members that significant modifications to hardware and software would be required to provide E9-1-1 capability with existing telematics units, adding deployment delays and unnecessary costs to this service at exactly the wrong time: when companies are trying to decide whether or not to deploy it. Such a rule, or discussion of future retrofit requirements, would likely stop new automobile company deployment decisions until the rules were clear and the technology developed.

In the future, we support applying E9-1-1 rules to new telematics handsets, to the extent suppliers allow direct access to the PSTN, including to 9-1-1, but not to communications initiated by a car to a TSP. ComCARE believes it is reasonable for the Commission to expect interconnected wireless calling services optionally available with telematics to perform similarly to conventional handsets, but with reasonable accommodation for the practical issues in achieving that goal, particularly only applying such a rule prospectively. We are concerned about the potentially counter-balancing safety concerns from delaying telematics deployment discussed in our recent filing on the OnStar petition. Devices dialing 9-1-1 directly should provide location, but it makes no sense to negatively impact the broad deployment of telematics systems which already have exact location capabilities, merely to take a formalistically consistent legal position.

Again, no safety problem has been demonstrated here. OnStar has provided data showing that the vast majority of emergencies are addressed by accessing the telematics call center, thereby taking advantage of the location-based emergency services capability, not calling 9-1-1[29]. Nor is there any reason to believe that flexibility on this matter will affect the wireless carriers' incentives to deploy E9-1-1 according to the current rules.

ComCARE believes that it is appropriate for the Commission to examine and establish a date to begin phasing-in the provision of Phase II calling by new optional telematics interconnected services to the extent that similarly situated conventional handsets would provide such information.

Our telematics members point out to us that telematics is a "service" industry, the services of which are valued by their consumer customers. Customers do not discriminate what constitutes an emergency when they push the telematics "Mayday" button between a "9-1-1 emergency" and a flat tire. They expect fast and complete response to any concerns they may raise, not just 9-1-1 emergencies. The telematics model is based upon providing adequate call center resources to assure they receive the services they expect, including emergency calling where the telematics specialist stays on the line with them until help arrives. This is quite different than the "business" of 9-1-1.

3. Technical Issues: The Hatfield Report, Telematics and the Current 9-1-1 Network

a. ACN Data

The Commission asks what data should be delivered to safety agencies[30]. For several years now, ComCARE, its members, and others in the broad emergency response community have been discussing what data will be most useful to which emergency agencies, and how best to provide that data to them, given their different responsibilities, technological capabilities, and interests.

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[29] See OnStar Petition filed December 3, 2002 Docket 94-102 at 8-9. There is a simple solution if a PSAP receives a call from such a source, and the driver does not know where he or she is. They can be instructed to push the telematics Mayday button.
[30] *FNPRM* at ¶¶ 74 – 75

The trauma and emergency medical experts in this field have a strong general consensus on what crash data from a car will be most valuable in predicting severe injuries.[31] However, there is also a consensus that significant real world testing in the field is required to hone the current (six year old) version of the Urgency Algorithm so it is a more accurate predictor of severe injury. ComCARE and its members are exploring other sources of data which we believe, when combined in a new comprehensive algorithm (with or without crash data), will provide much more specific and powerful predictive tools to help the emergency medical system care for patients in emergency situations. These include (1) oral information gained at the TSP and PSAP (e.g. age, gender, and emergency medical dispatch protocol questions), (2) personal medical data from subscription services (e.g. diabetic with heart condition allergic to three medicines), and (3) on-scene or in-transit patient vitals signs measured by EMTs (Healthcare provider and insurance information should be of significant assistance for care, efficiency, and economic reasons).

The desire for emergency information varies, not just by profession, but also by community. In some communities, PSAPs want only location and call back number, whereas the medical institutions want as much data as possible, and the transportation agency wants something in between. In other communities the opposite may be true. In still others, the technology capabilities vary significantly, imposing practical limitations.

Two additional questions arise: to which agencies should the data be sent, and when? While emergency voice calls should clearly be sent to PSAPs, the agency audience for emergency

[31] See Letter of K. Sue Hoyt, RN and Richard Hunt, MD, January 2002, to automotive companies reflecting that consensus and asking for rapid deployment of advanced automatic crash notification (Attachment C).

telematics data is much broader. Our diverse membership, the NMRI process and recommendations, and our general experience around the country have made crystal clear that emergency telematics information is desired by a wide variety of emergency agencies, not simply PSAPs. Most want notification when the PSAP is contacted, so they can begin preparing, rather than waiting for a telephone call from a PSAP.[32] In other communities, having the PSAP be the data hub, as well as the voice dispatch hub, is desired.

Even if there were one "correct data package", ComCARE believes that if the Commission were to decide it has jurisdiction to regulate this area, it is premature to do so, and it should probably exercise its discretion not to enter this fluid and evolving area. It is important to recognize that the available data will be a function of the capabilities of the automotive product in which the system is integrated and that these capabilities vary considerably today, in important part because the underlying automotive sensing technologies are still evolving. Although OnStar has announced that later this year it will do so, the telematics industry has not even launched the first vehicles that will deliver data beyond location and the fact that an airbag has deployed.

All this has caused us to conclude that there is no "one size fits all" solution, and indeed any attempt to impose one would be counterproductive. Instead, modern information technology allows the expression of state and local preferences and capabilities, while still using overall national standards which allow interoperability.

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[32] Very few PSAPs have the ability to transmit data to other agencies.
[33] See Letter of K. Sue Hoyt, RN and Richard Hunt, MD, January 2002, to automotive companies reflecting that consensus and asking for rapid deployment of advanced automatic crash notification (Attachment C).

The discussions of how to integrate these data sources have only just begun. We suggest the Commission should (along with other agencies such as USDOT) actively encourage this learning and experimentation process to continue, and certainly not interfere with it by suggesting the imposition of regulations on any of the parties. ComCARE would be delighted to include Commission staff in all of our Committee and project discussions on these matters if they so desire, or to provide regular briefings. We believe the Commission has experience and insights to offer that will assist in the evolution of this complex issue, but it is primarily an emergency response issue.

b. Ensuring the Delivery of Emergency Data

There is a good deal of current discussion about the best way to deliver the emergency information to the various emergency response agencies which want it, and what the role of TSPs should be in emergencies. At times this debate gets confusing when phrases like "direct delivery to PSAPs" are used. This discussion began during the National Mayday Readiness Initiative. There was then (and we believe now) a complete consensus of our members and other safety organizations which have considered the issues in any depth, that when a telematics subscriber pushes the Mayday button the call should go first to the TSP – never directly to the PSAP.[34] Similarly, there was a complete consensus then (and we believe now) that a communication initiated by an ACN event (air bag deployment or the like) should go to the TSP first.[35] In both cases we know from OnStar and ATX that a very high percentage of incidents

[34] Today, about 60 percent or more of such calls are not forwarded to emergency response agencies.
[35] Today, about 40 percent of automatically initiated telematics calls are not forwarded to emergency agencies.

were not "9-1-1 emergencies", and that thus both safety officials and TSPs want to continue to provide that "screening function".

The NMRI participants and our members recognize, and hope, that in the future we will have sufficient field experience and testing with advanced automatic crash notification to be able to predict with a high degree of accuracy when serious injuries are probably involved[36]. When we reach that point, a feed to emergency response agencies of both voice and data uninterrupted by an intervening TSP operator should be done (but even then, as noted below, it does not make sense to exclude the TSP, and indeed a modern network would allow both PSAP and TSP to be involved). The discussion in NMRI, and ever since in our ACN Committee, has been how to get sufficient telematics units into the field and funds for medical-based research so we might reach this point of confidence in the technology to predict severe injury. The Final Recommendations of the NMRI process stated:

> "9. Direct delivery of telematics emergency calls and data to PSAPs should be accomplished when the affected parties agree that it is feasible and will enhance public safety.
>
> 10. 'Direct delivery of telematics calls and data to PSAPs' simply means that the intervention of a human being at a private call center would no longer be required. Special data residing on a call center server (e.g. personal medical information) could still be "picked up" and added to the data being sent to a PSAP or EMS agency if the subscriber had paid a TSP for such a service." [37]

In discussions about "direct connections to 9-1-1" or "being part of the 9-1-1 network", it is often forgotten that "9-1-1" is simply the number used by the public to enter the world of emergency response. Thus, it always includes a call taking function. Beyond that, there are

[36] Current telematics systems (which do not measure the severity of the crash) cannot do this.
[37] See *NMRI Recommendations*, p. 7

wide variations in organization and operations, reflecting the different decisions and needs of the thousands of separate jurisdictions in the United States. In some communities, 9-1-1 call taking is combined with dispatch for one or all emergency functions (police, fire and EMS). In other communities it is only call taking, and each of the functions handles its own dispatch. In these cases, 9-1-1 call takers verbally or by computer transfer the information, or switch the call to the correct dispatch organization. Some of law enforcement, fire and rescue agencies have asked TSPs to call directly to them if the TSP knows the nature of the emergency, and have provided their direct numbers. This is also the case for home security in many communities. Thus the assertion that "direct connection" to a PSAP, or connection on a 9-1-1 trunk, will invariably save time or be more accurate, would appear to require further scrutiny.

The Commission asks how TSPs can correctly decide to which PSAP, local emergency authority, or emergency service provider they route the emergency information, and how might the Commission address issues arising from this role, particularly with regard to relaying or routing information, including callback and location information. The NMRI process and then ComCARE spent a great deal of time on this issue. NMRI recommended a shared, not for profit directory of all emergency agencies. ComCARE has worked on developing that ever since and has deployed a working prototype. This provides a useful tool for a wide variety of homeland security and daily emergency purposes.

It is not necessary today for telematics. It is a solution for tomorrow, when they will need to route significant amounts of data to multiple agencies. There seem to be effective systems today as the two leading TSPs have spent significant resources to develop their own PSAP directories

of emergency telephone numbers. Telematics call centers are equipped with modern geographic information systems designed to help locate cars on a map, as well as nearby business and emergency agencies at the local, state and federal level. TSPs have the ability to determine which PSAPs and law enforcement agencies will have jurisdiction at any incident latitude and longitude to a high degree of accuracy. TSPs have discussed this ability with almost every emergency agency in the USA and asked them to provide them with the telephone number they would like TSPs to use to reach them when they have an incident in their jurisdiction.

NENA also offers a PSAP directory through its commercial partner, Intrado.

c. Integrating Telematics Voice and Data Delivery

The Commission asks whether the telematics industry should be required to conform itself to the current 9-1-1 network[38]. We believe Dr. Dale Hatfield's report to the Commission provides the best answer. While the focus of Dr. Hatfield was enhanced 9-1-1, he engaged in a detailed discussion of the weaknesses of the current 9-1-1 network. In strong language he criticized the current network's ability to handle anything other than wireline 9-1-1 calls, noting it continues to be one of the major stumbling blocks to wireless E9-1-1 deployment, and also would be a problem for telematics and other new devices and services. To quote him:

> "One over-arching issue that immediately emerged in my inquiry is that the existing wireline E9-1-1 infrastructure, while generally reliable, is seriously antiquated. Indeed, it turns out that the existing wireline E9-1-1 infrastructure is built upon not only an outdated technology, but also one that was originally designed for an entirely different purpose. It is an analog technology in an overwhelmingly digital world. Yet it is a critical building block in the implementation of wireless E9-1-1.

[38] *FNPRM* at ¶ 67

> "From a national policy perspective, this latter observation is troubling for a number of reasons. It is troubling because it means that the additional network elements and functionalities necessary to handle the increasing volume of wireless E9-1-1 calls are being built upon a platform or foundation that has serious limitations in terms of speed, scalability, and adaptability. Additionally, it is troubling because these limitations not only burden the development of wireless E9-1-1 services, but they will also constrain our ability to extend E9-1-1 access to a rapidly growing number of non-traditional devices (e.g., PDAs), systems (e.g., telematics) and networks (e.g., voice networks that employ Voice-over-the-Internet Protocol -- VoIP). Finally, it is troubling because of uncertainty surrounding the willingness and ability of Public Safety Answering Points ("PSAPs") to pay for wireless E9-1-1, let alone the other, long term upgrades to the local exchange carriers' networks and their own customer premises equipment necessary to provide E9-1-1 access to these emerging devices, systems, and networks.[39]"

Our experience, and the comments received by the Commission on the Hatfield Report, would seem to indicate a very broad consensus that Dr. Hatfield was correct, and that 9-1-1 needs the most modern of technology, not a system of 1970s vintage. Therefore, in the absence of a demonstrated safety problem, why even consider requiring telematics or any other new service to integrate "backwards" into this old network? Instead, we should use telematics as a reason to move forward to develop and deploy a modern 9-1-1 network. For homeland security and day-to-day emergency reasons, emergency response agencies must be at the forefront of communications and information technology.

There appears to be a developing consensus as to what this network would look like, although there is not agreement on the next steps to reach it. We need to break down the communications walls between agencies and across boundaries. We suggest the new emergency network should be packet-switched, handling voice and data using internet protocols. It needs to be robust and secure, and based on open architecture and industry based standards. It should use standardized

[39] Hatfield Report, page ii

data sets adopted by all emergency agencies. It needs to be able to route telematics calls, E9-1-1 calls, and indeed all emergency messages via IP address. It needs to, and can, break down the technological digital divide between urban and rural, which these technologies uniquely allow.

Safety is primarily a state and local function. In the future, rather than expressing that federalism strength inefficiently with "stove-piped", "one-off" systems, the modern network should allow agency users far more choices (by reducing prices through the creation of national markets for applications and device developers), and flexibility in what information they wish and applications they select. In other words, safety should follow the communications and information technology path blazed over the last 20 years by our commercial economy.

We are just at the beginning of this process. The problems in implementing the PSAP and LEC parts of wireless E9-1-1 documented by many parties, including Dr. Hatfield, initially flagged the need. Because of its potential for data rich feeds, telematics has underlined the problem, as the NMRI Final Recommendations clearly state. And indeed, we believe that these are only two parts of a much bigger issue. The events of 9/11 made it crystal clear that we needed major changes in emergency communications. 9-1-1 and TSPs should be key participants in an overall, modern, and integrated emergency communications and information system. Pushed by homeland security concerns, mass disaster needs, ITS investments, and the issues discussed above, there are a wide variety of initiatives underway which ComCARE hopes will both accelerate this change, and help guide it. But now is not the time for government regulation of either technologies or the relationships between the public and private sectors, particularly for a single part of the broader emergency network.

d. Implementing Activities

In asking the Commission not to regulate telematics and related services, we are not suggesting that there are not serious issues to be resolved. However, there are a plethora of public and private activities related to these issues, and they have gone far beyond simply discussions. ComCARE has worked closely with telematics providers, NENA, APCO, EMS and trauma organizations and others to investigate closer integration of telematics and emergency response services. In addition to taking part in tests and trials of new technology to address these issues, our safety and telematics members are addressing this area with a number of independent manufacturers of telephone, data switching and services, and routing and terminal equipment, some of which have proposed solutions that have or will be taken to these emergency organizations for their input and suggestions.[40] TSPs are currently evaluating a number of proposals that have merit in improving communications with emergency agencies, including PSAPs.

Another public/private cooperative effort has been the ACN Data Working Group, facilitated by ComCARE and referred to above. Over 20 public and private organizations participated in developing a recommended Vehicular Emergency Data Set (in XML) for use in vehicle emergencies. The three subcommittees were led by the Chair of NENA's Data Committee, the designated leader of EMS data standards for the National Association of EMS Physicians and the National Association of State EMS Directors, and a leading telematics engineer. The data set

[40] NENA's Technical Committees are currently considering and ranking three quite different ways of linking TSPs and PSAPs in the future.

has been circulated to all interested groups and is now being used in the field by service providers.

A series of field trials are underway related to telematics. Some are described below.

(1) Greater Harris County. Ford (cars), Veridian (ACN device), Greater Harris County 9-1-1 (9-1-1), Cross Country (TSP monitoring) and Intrado (data system) have partnered in a trial of 500 police cars in Houston. They are demonstrating Intrado's system for delivering ACN voice and data to PSAPs, and for having the voice arrive at the PSAP on a 9-1-1 trunk line.

(2) Minnesota. USDOT's Public Safety Program has given a large new grant to the Minnesota DOT to explore similar issues, including possibly using an Internet based mapping web-based service called CARS developed to show road closure and construction information as a shared incident website. This new grant follows on an active history in this and related fields. Several years ago, Minnesota developed and deployed a crash notification system with Veridian called Mayday Plus, to provide more rapid and better-informed emergency response to highway crashes and emergencies in Minnesota. During this operational test, the Mayday Plus System routed emergency data and voice calls from vehicles in distress to 9-1-1 emergency dispatchers at the Minnesota State Patrol and Mayo Clinic. The system provided 9-1-1 dispatchers with ACN data, including location and crash severity data from in-vehicle devices. It also allowed motorists to manually notify authorities about emergencies, and even summon help in the case of mechanical breakdowns. The data pinpointing the location of mechanical breakdowns was also provided to

the Minnesota State Patrol so they could be aware of potential traffic problems resulting from these disabled vehicles.

(3) New York City. An integrated incident management data system involving a wide variety of city and state agencies is being tested in New York City today by Veridian, one of our members, supported by both New York DOT and USDOT grants.

(4) Virginia. With a grant from USDOT, awarded and managed by Virginia DOT, ComCARE has worked with the emergency response and emergency management leaders in Virginia's Shenandoah Valley, and with our technology members, to design and deploy the new kind of integrated, interoperable emergency communications system we discuss in these comments. The core infrastructure of the system was deployed in January by a team of ComCARE members which had won a VDOT procurement for that purpose, and is now being used as a test bed for other applications and drills which use it. These have already included a drill of a terrorist hazmat truck hijacking, and a series of simulated telematics and other emergency events. A major bio-terrorism drill is scheduled for the near future. We would be delighted to brief the Commission on this overall project.

4. Other Technical Issues

a. Impact on E9-1-1 Deployment

The Commission asks whether the pace of deployment among PSAPs in requesting E9-1-1 Phase I and Phase II capability from wireless carriers would have any effect on approaches it might take were it to impose those requirements on telematics[41]. This is a serious issue as PSAPs representing a majority of Americans have yet to request Phase II. Any further burden forced upon PSAP managers at this time can only slow the deployment and implementation of Phase II E9-1-1. Imposing E9-1-1 requirements upon telematics will also slow the growth and development of telematics services among the automakers, which at some point may become a market place motivator to the wireless industry to more rapidly deploy E9-1-1.

b. Transition to Digital Technology[42]

Almost all telematics systems have been analog to date, as it was the only way to provide national coverage and ubiquitous in-band transmission of data. That must now change due to the accelerating shift to digital services. The transition from analog to digital technology is certainly one of those circumstances where flexibility is reasonably justified. With its analog phase-out decision, the Commission has created a situation where it is imperative that the telematics industry achieve as rapid a conversion as possible to digital technology so as to minimize the potential number of units that will be disabled if and where carriers end or minimize analog

[41] *FNPRM* at ¶ 72
[42] *FNPRM* at ¶ 72

service. Because of the slow pace of Phase II implementations there would seem to be a clear public interest in facilitating the conversion of a technology that provides location-based emergency information to PSAPs nationwide, irrespective of their implementation of Phase I or Phase II. Moreover this capability would seem particularly valuable in rural areas where both implementation and accuracy issues exist. Again, we ask that a practical weighing of safety benefits and costs guide the Commission's decisions.

c. Unsubscribed Telematics Devices

ComCARE believes that there should be no obligation imposed to provide telematics call center based services to unsubscribed telematics units[43]. This is one of those ideas which sound like good safety policy – until one considers the real world consequences. As we noted above, a critical safety issue with telematics today is whether the other automobile companies will deploy it, which has a great deal to do with how they expect to make it financially successful. All the companies know that safety and security is the number one selling point for telematics (although it is not clear to all of them that revenue from these services justifies a major investment in telematics). If an obligation to provide telematics safety services for free were imposed by the Commission, it would eliminate the incentive of an automotive manufacturer and TSP to deploy telematics in the first place. Indeed, serious discussion of the prospect of such a requirement by the Commission will likely cause automobile companies to hold off any deployment decision they might otherwise make.

[43] *FNPRM* at ¶ 73

III. Jurisdictional Questions

The Commission asks a series of questions about its jurisdiction[46]. We are not experts in such matters, so we will not comment generally on the topic. More specifically the Commissions asks whether the 9-1-1 Act of 1999 can be read to give the FCC jurisdiction over telematics service providers[47]. ComCARE was the primary outside coalition involved with the development and passage of that legislation. Certainly, encouraging telematics was a motivating reason for the legislation, as is made clear in the legislation's Findings. But having the FCC regulate (a) telematics, (b) the intersection of telematics and emergency response agencies, or (c) emergency agencies' receipt of emergency information was never discussed in any of our meetings with members of Congress advocating for the bill, or, to our knowledge advocated by any member of Congress or other organization. The focus on the FCC in that law was in encouraging the deployment of E9-1-1 through encouraging the states to bring together all the relevant stakeholders to plan and deploy coordinated state emergency communications systems.

We continue to believe that the Commission can play an extremely valuable role in using its expertise and "bully pulpit" to help encourage the deployment and integration of these new technologies in non-regulatory ways.[48] We pledge our assistance to the Commission in such efforts.

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[44] See OnStar Petition filed December 3, 2002 Docket 94-102 at 8-9

[45] ComCARE notes that some in the public safety community have expressed concerns about the "all calls" rule. However, until it is changed there would appear no obvious reason for the Commission to make an exception in this instance.

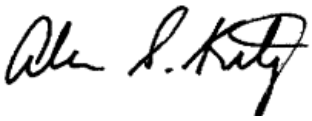
[46] *FNPRM* at ¶¶ 76-80

[47] *FNPRM* at ¶ 78

IV. Comments on Other New Technologies: Personal Medical Data and Devices

Personal medical information services enroll, securely store and schedule a subscriber's "headline" personal medical data and healthcare provider information. Using modern wireless and wireline data networks such as those discussed above, this data (or the fact of its existence and how to retrieve it) can be delivered to emergency responders, including the PSAP, the responding ambulance and treating hospital in real time. This service assists in the delivery of enhanced medical care closer to the time and point of incident and in-transit to the hospital, while concurrently increasing billing efficiency and reimbursement for emergency medical services provided.[49] As with telematics, we see no reason for Commission action at this time related to this service. As noted above, it is representative of a wide variety of new data sources and data base services which may be offered to PSAPs and other federal, state and local emergency agencies in the near future.

Respectfully submitted,



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Telephone: 202-429-0574, Fax: 202-296-2962

Dated: February 18, 2003

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[48] We believe this is what Congress intended in the 9-1-1 law when it instructed the Commission "to encourage" the states to take the lead in planning and deploying integrated emergency communications systems.

[49] Our members Roadside Telematics Corporation and Health Tracer are involved in this market, and are working with others to demonstrate their services as part of broader integrated field trials.

ATTACHMENT A

ComCARE Alliance

COMMUNICATIONS FOR COORDINATED ASSISTANCE AND RESPONSE TO EMERGENCIES

Medical, Public Safety and Government Members

Academy of Medical-Surgical Nurses
Air & Surface Transportation Nurses Association
American Association for the Surgery of Trauma
American Association of Critical-Care Nurses
American Association of Nurse Anesthetists
American Burn Association
American College of Emergency Physicians*
American Heart Association
American Public Health Association
Assoc. of Women's Health, Obstetric and Neonatal Nurses
Brain Injury Association
City and County of Denver
Coalition for American Trauma Care*
Eastern Association for the Surgery of Trauma
Emergency Information Infrastructure Project
Emergency Nurses Association*
Fraternal Order of Police
Indiana Wireless Enhanced 9-1-1 Advisory Board
International Association of Emergency Managers*
International Brain Injury Association
John Jane Brain Injury Center
Journal of Trauma
Los Angeles County (CA) Sheriff's Department
Mothers Against Drunk Driving (MADD)
National Academies of Emergency Dispatch
National Association of EMS Physicians (NAEMSP)*
National Association of EMTs
National Association of Governor's Highway Safety Representatives
National Association of Orthopedic Nurses
National Association of State EMS Directors
National Association of State Nine-One-One Administrators (NASNA)*
National Brain Injury Research, Treatment and Training Foundation*
National Conf. of States on Building Codes and Standards
National Flight Nurses Association
National Volunteer Fire Council
North American EMS Employee Organization Network
Orange County (FL) Fire/Rescue Department
Orthopaedic Trauma Association
Partnership for Public Warning
Professional EMTs and Paramedics
Society of Pediatric Nurses
Tennessee Emergency Communications Board
University Transportation Center for Alabama
Virginia Department of Transportation (VDOT)
WSU Center to Bridge the Digital Divide

Technology, Telecommunications and Transportation Members

Airbiquity Inc.
American Automobile Association (AAA)*
ATX Technologies*
Cellular Telecommunications & Internet Association (CTIA)*
Centurion Solutions
Cingular Wireless*
Criticom International
Delphi Corporation
DICE Corporation*
Econolite Control Products, Inc.
EMSystem, L.L.C.
ESRI
Ford Motor Company*
Gannett Fleming, Inc.
General Devices
GPNS Corporation
HealthTracer
HGI Wireless, Inc.
Intel Corporation
Intelligent Transportation Society of America
InterTrak Tracking Services L.L.C.
Lockheed Martin
LoJack Corporation
Medic Alert
Med-Media, Inc.
Mercedes-Benz*
Mobile Foundations, Inc.
Navigation Technologies
NetCompliance, Inc.
Nissan Technical Center of North America
OnStar*
Optimus Corporation
Orillion Corporation
Ortivus US, Inc.
Page Update
PowerLOC Technologies, Inc.
Prepared Response, Inc.
Qualcomm*
Roadside Telematics Corporation
Rural Cellular Association
Spatial Technologies Industry Association (STIA)
Spill Center, Inc.
Statewide Public Safety Networks
Televoke, Inc.
TRW*
Veridian Engineering
Vonage

* Board of Directors Member

ATTACHMENT B

RECOMMENDATIONS OF THE NATIONAL MAYDAY READINESS INITIATIVE

October 23, 2000

I. Summary of the Issues and Recommendations

A. Background

Automobile companies are rapidly deploying millions of vehicles with increasingly advanced abilities to detect, collect and wirelessly transmit crisis-related voice and crash data at the push of a button or the deployment of an airbag. The next generation will use increasingly sophisticated crash data to predict the severity of injury and thus assist emergency responders in sending the appropriate care, as well as reducing response times. This will save lives and reduce severe permanent injuries. But the technologies present a challenge for public emergency response agencies, and now is the time to prepare. Private sector call centers (which initially receive the calls and data from these "Mayday" devices) and the nation's 6000+ Public Safety Answering Points and other responders must be capable of communicating quickly and efficiently with one another.

The National Mayday Readiness Initiative (NMRI) is a public-private partnership of more than twenty national organizations which have been meeting since May to develop and address the primary issues that arise in the dealings between private Mayday "telematics service providers" (or "TSPs", such as OnStar, ATX Technologies, AAA Response) and the nation's public emergency response agencies. The Initiative is co-sponsored by the United States Department of Transportation and the ComCARE Alliance, and is supported by DOT funds and a grant from General Motors/OnStar.

B. What Are the Issues?

Several key issues resulted in or emerged from the NMRI process. First, when citizens dial 9-1-1, or have a crash or push the Mayday button in a telematics-equipped vehicle, they expect appropriate, rapid response. Our top priority is efficient, fast and accurate communications in emergency situations between the public, TSPs and public emergency response agencies, so that the appropriate emergency response can be rapidly dispatched.

All of the issues affected or contributed to that basic goal in some way; many affected the intersection between these public and private entities, which should be transparent to the public.

Second is training. It is critical that private call center operators be trained properly, including familiarity with the operating procedures of the emergency response community and the standards created and adopted in the nation's 9-1-1 centers. Similarly, the public safety community needs to be educated about how Mayday works (and how more sophisticated Automatic Crash Notification will work in the future). Private and public responders need to be able to effectively communicate with one another by speaking the same language. Standard operating procedures need to be developed for different situations they will face together.

Third, all private call centers, 9-1-1 centers and other emergency response agencies at the local, state, and federal level need to be able to communicate easily with one another, for both voice and data. Currently, this is not always the case for voice, and almost never the case with data. The service providers have each tried to develop their own data base of 9-1-1 agency 10 digit telephone numbers. Both 9-1-1 and non-9-1-1 agencies (e.g. hospitals) want data notification of severe crashes when they occur. But there is no national emergency contact database from which any appropriate public safety agency can obtain the correct phone number, email, URL and other pertinent information about other such agencies in America, including 9-1-1 centers, trauma centers and hospitals, law enforcement and transportation agencies, and others. And there is no clear process by which these agencies can register on such a data base to be alerted of various events to which they may need to respond.

Fourth, our emergency response agencies are too often operating with outdated technology. Many lack intelligent workstations, high speed data communications links, and access to the Internet. Our response agencies are ending up on the wrong side of a digital divide. A major effort needs to be undertaken at all levels of government to provide them with 21st Century capabilities.

Fifth, TSPs need to describe properly how their Mayday devices work in conjunction with wireless systems and the emergency response community. Ambulances are not "automatically dispatched", and an automatic crash notification cannot occur without a wireless connection from the car.

Sixth, automobiles are capable of producing increasingly sophisticated crash data, from which emergency medical experts believe the probability of severe crash injuries can be predicted. (More sophisticated crash detection systems are called "automatic crash notification" or ACN). However, there has not been a process in which the parties can agree on what types of ACN data can be reasonably captured and transferred to PSAPs and other appropriate entities (transportation entities, EMS and trauma facilities), now and in the future. Nor is there a technical standards coordination process involving all the relevant parties.

Finally, these disparate parties identified the absence of a national forum for education and issue resolution between them, now and over time as the technologies rapidly change.

C. Key NMRI Recommendations

1. We support a new emergency telecommunicator training standard reflecting Mayday and ACN. Public or private training programs used by TSPs should comply with it, as part of an accreditation program. Training will ensure a common language between private call center staff and the emergency response community. A training module reflecting the advent of Mayday and Automatic Crash Notification (ACN) will be developed and offered as an addition to existing training programs for PSAPs. Over time it is expected that standard operating procedures, "scripts" and checklists will be developed for use between the public and private call takers.

2. We need a national program to create an up-to-date set of linked electronic emergency contact directories, containing full contact information for all public and private emergency response agencies in the United States. A critical element will be the database of telephone numbers for 9-1-1 dispatch centers, but our recommendation is much broader. The program should also include telephone/fax numbers, addresses, email and URLs of all other emergency response and related agencies: hospitals, law enforcement and transportation agencies, FEMA, telephone carriers, Mayday providers, and the like. It will allow, for the first time, the notification of all emergency responders in a small or large area of individual or mass disasters.

    - Contact information will be available on a "need to know" basis only to appropriate agencies, and certified private call centers, not the general public.
    - Decisions on what agencies should be listed and automatically contacted in various circumstances will be made at the appropriate federal, state or local level; those agencies will have the primary responsibility to keep the database up-to-date.
    - The database will be supported by user fees and government grants.

3. Call centers (or any other similar actor) must be able to manually or automatically transfer voice and a package of data (e.g. crash description, location coordinates or map, victim's phone number, personal medical data, URL for more complete data) to any 9-1-1 agency in North America, and to send copies of some or all of that information in real time to other relevant agencies (e.g. trauma center; traffic operations center; State Police). Short and medium term improvements should be studied and implemented by expert organizations.

4. We recommend a campaign to educate the media, government, and the public about the challenges facing emergency response, and the role and benefits of emerging Mayday and ACN systems. These benefits cannot be achieved without wireless service, so we recommend as part of this campaign, a cooperative effort between

government, the wireless industry and safety groups to address barriers to full wireless coverage.

5. Guidelines for accurate advertising and marketing of telematics services should be established and enforced along the lines we recommend.

6. Continuing working groups of law enforcement, transportation and TSP representatives will develop guidelines for handling non-life threatening information dissemination, and for other incidents involving law enforcement such as stolen vehicles where appropriate use of the technology could provide significant public safety or property recovery benefits.

7. Similarly NMRI's Sophisticated ACN Committee will continue its efforts to determine what types of crash data can be reasonably captured and transferred to PSAPs and other entities (transportation, EMS), now and in the future, and how an accurate urgency algorithm can be developed and kept up to date.

8. The nature of Mayday and ACN is that a wide variety of parties are involved in developing, sharing and using crash and related data. A technical standards coordination effort should be initiated so that all the appropriate stakeholders are involved in relevant standards which affect their responsibility. This should be led by an organization such as ITS America or US DOT and should include contacting the standards leaders in the relevant bodies (i.e. SAE, ITE, IEEE, TIA, NENA, APCO, ASTM) to insure coordination and inclusion of groups which typically would not participate in technical standard setting, such as leaders in emergency medicine.

9. The NMRI process should be institutionalized in a non-profit consortium, with equal public and private representation by the key stakeholder organizations.

    - The Mayday Consortium will carry out the NMRI recommendations directly and in cooperation with others, and provide a forum for resolving unfinished issues and new ones as they arise in the future.
    - It will accredit TSPs based on training, operations, and advertising practices, and widely advertise to the emergency response community and the general media and public which companies have received accreditation.
    - It will provide the coordination and leadership to develop an emergency contact database, and govern access to it by private entities.
    - Before commencing, a detailed plan will be developed for the Consortium by all the stakeholders, including a business model, bylaws, Board structure, membership and terms, and details of the other matters discussed here. The stakeholders will review existing channels of communication and public/private processes to coordinate among governmental and private interests.

The following detailed recommendations are in five sections, and reflect the considerations of our working committees. They are (1) emergency information and operations; (2) training and protocols; (3) incident management and law enforcement; and (4) public education and business practices; and (5) proposed consortium. Additional recommendations are in process.

II. Emergency Information & Operations

A. Vision

1. Public safety needs the most modern telecommunications capabilities, developed and deployed with the speed, reliability, accuracy and security that are so vital when lives are at stake.

2. We recommend a public education program on 9-1-1 and emergency response, and a concentrated effort to upgrade its capabilities.

3. "9-1-1" needs to be instituted as <u>the</u> public emergency telephone number in all parts of the United States, consistent with the recently expressed intent of Congress.

4. The explosion and safety promise of telematics and wireless, and the conjunction of Mayday and wireless Enhanced 9-1-1 issues, represent additional and compelling reasons why the capabilities of public safety and public emergency communications must be upgraded in the near future.

5. Outside of emergency communications, modern telecommunications is rapidly moving away from the traditional circuit switched network systems to data-driven, packet-switched systems, using Internet Protocol. Outside of emergency communications, modern computing is moving away from on-the-desk intelligence and towards intelligence in networks. The sharing of information in real time among all affected entities is the hallmark of a modern telecommunications system.

6. A modern emergency communications system may save public safety significant amounts; certainly its aggregate social benefits outweigh its costs.

7. Many of the same communications and computing capabilities which are necessary or desirable in addressing individual emergencies are equally valuable for mass disasters.

8. Many of the same communications and computing capabilities which are necessary or desirable in addressing individual and mass emergencies are also valuable for commercial purposes. We actively encourage integrated and multiple use systems and platforms; "purpose-built" platforms and systems tend to be more expensive and slower to deploy.

We recommend achieving the following as soon as possible:

9. Ultimately, emergency telematics calls should receive the same priority and treatment as any wireless 9-1-1 call as it arrives at a PSAP.

10. Emergency communications must give equal importance to voice and data, and agencies should not be restricted in the size or type of data which can be attached to voice calls and messages.
11. All emergency agencies need to be connected in a seamless network using the most modern telecommunications in a manner consistent with the speed, reliability, accuracy and security necessary for public safety purposes.

12. All government and private entities with emergency response missions will be expected and encouraged to provide policy and financial support to develop this communications and database capacity.

13. National emergency networks, and all emergency and public response entities, need to have a series of important tools and capabilities, including:

    - 24X7 high speed digital links to the public networks, including the Internet.

    - Intelligent workstations.

    - Information (voice and/or data) put into the network in any location should reach the right agency(ies) in any other North American location. Accredited or authorized call centers (and any other similar actor) must be able to manually or automatically transfer voice and packages of data (e.g. crash description, location or map, victim's phone number, personal medical data, URL for more complete data) over secure networks to any PSAP in North America, and to send copies of some or all of that information in real time to other relevant agencies (e.g. trauma center, traffic operations center, State Police).

    - INC should establish the digits 9-1-1 as an NXX or exchange code in every number plan area (NPA, a.k.a., area code) in North America. A 9-1-1 telephone number in the format NPA- 9-1-1-XXXX would be assigned to each PSAP and each municipality (and use technically restricted to only approved users).

    - Emergency agencies should have Internet and email addresses.

14. Effective tools need to be used to protect privacy, enforce "need to know" and prevent unauthorized access or use of the emergency networks or databases.

15. While preserving state and local flexibility as much as possible, the system should allow systemic software upgrades, and standardization, rather than the current system where intelligence is often localized and tied to proprietary hardware and software in "one off" systems. The latter results in significantly higher per unit (call taker or dispatcher) costs for public safety agencies. Nothing in this section precludes local decision making and choice.

16. We encourage extensive field testing of sophisticated ACN systems, including research funded by the Federal Government, to confirm initial findings that such systems can function without significant levels of false positives, that crash data can distinguish between serious crashes and "fender benders", and indeed can predict the probabilities of severe injury. (Our ACN Committee is developing detailed recommendations in this regard.)

17. Direct delivery of telematics emergency calls and data to PSAPs should be accomplished when the affected parties agree that it is feasible and will enhance public safety.

18. "Direct delivery of telematics calls and data to PSAPs" simply means that the intervention of a human being at a private call center would no longer be required. Special data residing on a call center server (e.g. personal medical information) could still be "picked up" and added to the data being sent to a PSAP or EMS agency if the subscriber had paid a TSP for such a service.

19. TSPs should meet certain operational standards and be accredited if they have done so. These standards should be drawn from similar efforts where appropriate (e.g. UL, NFPA 1221), and will include:

    - Full time operations ("24X7")
    - Appropriate infrastructure and facility redundancy to guard against service interruption
    - Staff training, as described below

20. Proper voice access to PSAPs, proper routing and the transfer of location and other information to PSAPs were all issues of concern to NMRI members. Nothing is more important to the NRMI participants than rapid, correct access by the public to the right public response agencies in cases of emergencies.

21. We discussed proposed offerings by two companies that can be made available, relatively soon, to address issues of concern. There was some level of debate over their various strengths and weaknesses. It appears that both may offer substantial improvements over the current system. The NENA technical committees are engaged in a careful review of these and other offerings to determine the requirements and standards to be followed for routing and interface purposes. NENA is also engaged

in an effort to define the method and the attributes of non-traditional signals that are recommended for emergency calls made from telematics and other non-traditional sources.

22. We strongly encourage private sector competitive enhancements to the process of delivering increasingly sophisticated emergency information to the appropriate entities. We compliment and encourage companies which seek to be business successes while helping the public and public response agencies address emergencies.

B. Database

1. There is today no comprehensive national emergency directory of the full range of emergency agencies (including telephone, street and internet addresses) for use by parties ranging from private telematics service providers to the President of the United States in situations ranging from individual car crashes to mass emergencies.

2. The consortium should work with all relevant public and private parties to ensure the creation and maintenance of an accurate, up-to-date, set of interconnected electronic directories of the relevant 9-1-1, public safety, transportation, law enforcement, EMS, carriers, call centers and similar entities, including: telephone and fax numbers, street and internet (email and URL) addresses, and jurisdictional boundaries. Many such directories already exist in whole or in part for some portions of this universe of agencies or information. Before commencing activity in this area the consortium should carefully review such existing directories and activities by agencies and the private sector. And it should develop a careful and detailed business plan.

3. The 10 digit numbers listed in the directory must be used only for emergency calls; administration numbers should also be separately listed. PSAPs and others need to maintain a telephone number(s) for 10 digit emergency calls.

4. This directory would be available to accredited parties and/or appropriate public and private entities granted access, but <u>not</u> to the public. The directory would be made available only on a need to know basis (i.e. not all of it would necessarily be available to all users). In addition to accredited telematics service providers, local and long distance telephone operators are examples of non-government entities that would warrant access to parts of the directory. Some primary uses of the 10 digit telephone number portion of the directory would only be temporary until such time as these calls could gain access to the 9-1-1 network.

5. The adoption of various improvements in delivering telematics calls to emergency responders (such as the proprietary offerings discussed at some length in our proceedings), will not eliminate the need for an accurate and up-to-date directory of 9-1-1 PSAP service areas and telephone numbers. Among other things this directory would provide a method for out-of-area emergency call placement, where dialing 9-1-1 either would not connect with the proper PSAP or where dialing 9-1-1 failed due to congestion or equipment failure.

6. Some of the necessary data for a national database already exists in multiple places; in other cases there is significant entry, compatibility and translation work to be done. Ultimately, this will not be a single directory or data base in the traditional sense. Instead, it is anticipated that it will be a tightly compiled, distributed system, which is stringently and aggressively managed with a coordinated set of directions.

7. Key functions will be to make data on different servers and systems compatible, to make the appropriate entities aware of the system and its capabilities, and to make it "user friendly" in enabling seamless information sharing. The consortium should clearly define roles, responsibilities and resources needed to create this database. In addition, it should fully explore and list data sets each sector of government and the involved private sector organizations might expect from each other.

8. The consortium will work with the various stakeholders, particularly those with portions of the database, to develop both templates for data entry (so different agency and geographic data bases will work with each other) and a process by which affected agencies will be made aware of the directory, its contents, its benefits to them, and the necessity of entering the appropriate data and keeping it current. Government grants will be sought and applied to these purposes.

9. The database will be maintained on secure servers where it will only be accessed by authorized parties as needed. The security provided will be consistent with the requirements established by government regulations pertaining to the respective types of data (e.g. medical records) and best commercial practice, taking all necessary steps to protect the database from unauthorized access and contamination (intentional or unintentional).

10. Decisions on what agencies should be listed, and which should be automatically contacted in various circumstances should be made at the appropriate state or local level (assuming the owner of the relevant data agrees), and those agencies will have both the ability and responsibility to keep the database up to date.

11. The costs of building and maintaining the database will be appropriately shared among the public and private users. As it will provide a new capability for national and state governments to notify all affected federal, state and local response agencies (and relevant private organizations) rapidly and easily in mass disaster and weather situations, grants from national security agencies, NOAA, and FEMA should be solicited and provided.

12. The data base will be managed by a non-profit public/private organization which will be representative of the affected public and private stakeholders. It will be responsible for the development, maintenance, use and funding of the database. It will have the power to contract with private entities to perform a variety of the necessary functions. It will be held responsible for the quality and reliability of the database, and for accomplishing this mission in the most cost effective way possible.

It will work closely with the federal, state, local and other agencies represented in the database.

Note: One member disagreed that this function would best be done by a non-profit, public/private organization. It suggested that a commercial entity could manage this system to the required service levels as an addition to existing commercial operations at a cost that is lower than would be incurred by a "purpose built" organization.

C. Moving from Voice Only to Data Transmission

Moving from the current system where voice dominates to one where significant amounts of possibly relevant data are also available (and indeed may be either linked to voice communications, or come from multiple locations) raises a number of challenges and issues.

1. No one responder or facility may need all of the data all of the time, and sifting through a large amount of data to find those items of real value may waste time and, conceivably, slow down the emergency response we are trying so hard to expedite.

2. There is a wide range in the technical capabilities of public agencies. Some are installing or outsourcing the latest in telecommunications and data capabilities; others do not have intelligent workstations or access to the Internet. Under the best of circumstances, the upgrading of public safety capabilities will occur over time, and unevenly across the country.

3. There is also a great diversity in agency practices, which can be expected to apply to the new technologies like telematics and ACN as well. Some agencies will want large amounts of data; some communities will want data shared with different agencies; circumstances and ground rules for sharing will vary state to state, and city to city.

4. Data services need to reflect both this range of capabilities, and the particular desires of the affected community. It is generally impossible for national or regional services like telematics or wireless to accommodate individual jurisdictional desires directly. They need uniform standards and outputs. Modern IP and server technology allows systems to be created which will let recipient agencies tailor informational output to their needs.

5. Thus, PSAP telecommunicators, trauma surgeons and traffic managers could view/download only those pieces of information they need, want, or are allowed to see, ignoring the rest. Various levels of detail could be available. A PSAP telecommunicator should have the option of viewing the data in the form of a map with pre-formatted supportive text, or of downloading the raw data to his or her CAD system (which might, for example, convert the data into the closest address).

6. Whatever other information is provided, to ensure a call back capability, each communication from a TSP should provide a response agency with the call center staff person's name, or operator number, 24X7 call back number and electronic address where the data can be found (if applicable). Standard practices may also require other information for telematics calls in the future.

7. Beyond the direct delivery of a voice call to 9-1-1, which other emergency response agencies receive what information are decisions which must be made at the state and local level. Private call centers cannot be expected to convene that decision making process, or even participate in it. That decision can be enabled by a Web-type system for entry and updating by government agencies which wish to be notified, and made possible economically by automatic messaging, or a single shared web site.

8. In the near term, use of the Internet could be an improvement in the delivery of emergency call related data, and this could be made available relatively quickly and cheaply. TSPs could load any particular crash and location data they chose (and emergency responders want) onto a secure website, and any PSAP (or any other appropriate agency, such as a hospital) with a CRT terminal and access to the Internet could access this information. TSPs appear to be willing to provide all available crash-related data, consistent with their technical ability to deliver it, and contractual terms with their subscribers and automobile companies.

9. If electronic addresses were available, instant messaging could be used to notify the appropriate PSAP (or any other agencies) that information about an incident in its area was available by clicking on the attached icon or URL. The phone number of the victim/caller could be used as the identifier to pull up the correct screen(s), when agencies accessed the secure website.

10. Some members expressed concern about the security and reliability of use of the Internet, believing data to PSAPs should only be automatically provided (no manual query of secondary data bases) and then only over a private, secure network. In addition, the time constraints of non-automatic information provision, and availability of the Internet to all agencies, may be obstacles.

D. Technical Standards

The NMRI process identified a wide variety of changes in methods, procedures and/or standards of emergency communication driven by the new wireless and automotive based technologies. These will affect many stakeholders. Neither NMRI or the Consortium should be technical standard setting groups. A variety of such groups exist, and indeed a number were ably represented in our process.

The nature of Mayday and ACN is that a wide variety of parties are involved in developing, sharing and using crash and related data. But standards are being set without necessarily including all the affected parties. We should first review the following

standards and others, and identify those changes in methods, procedures and/or standards which are necessary to achieve the goals set by the NMRI participants.

Then a technical standards coordination effort should be initiated by a consortium or other existing forum so that all the appropriate stakeholders are involved in developing relevant standards which affect their responsibility. The recommendations of this process should be implemented by an appropriate organization such as ITS America or US DOT. This organization should then contact the standards leaders in the relevant bodies (i.e. Council of Standards Making Organizations, SAE, ITE, IEEE, TIA, NENA, APCO, ASTM, ITSA) to insure coordination and inclusion of groups which typically would not participate in technical standard setting, such as emergency medical service leaders.

1. NENA technical committees should determine the method by which the 9-1-1 networks and PSAPs will interface with data sent by cars.

2. Similarly, voice and data access and transfer methods (e.g. SAE "Onboard Land Vehicle Mayday Reporting Interface" standard (SAE J2313) is intended to address the vehicle to center communications. It is a first step toward getting all mobile devices and call centers communicating in a standard format. We believe it needs EMS and 9-1-1 input. The NENA technical committees will report on the methods available for the interface of the data to the PSAPs.

3. IEEE P1512 center to center standard is now final. It is a Base Standard for Incident Management, Public Safety, and Hazmat message sets between centers. It is being enhanced with more application specific information. One NENA member has been involved with this standard, but no EMS members. There is a subcommittee working on Mayday issues on these standards.

4. ANSI/SIA's MSD-01 is an example of a procedural standard that is critical to the interaction between third party call centers and PSAPs.

5. See IACP's "Response To Mobile Security Alarm Devices". It was drafted by IACP and SIA representatives in 1999, and can be found at www.iacp.org in the Private Sector Liaison Committee (PSLC) section. Although not a standard, it is an useful policy statement that should inform future standard development.

6. NENA is working on a Non-Traditional Signal Standard for E9-1-1 calls to PSAPs. NENA has just compiled, and is circulating a Draft Discussion Paper on Non-Traditional Signals to PSAPs that define and explain the technological aspects of E9-1-1 and non-traditional signals.

7. Other SAE standards to be considered for relevance to NMRI concerns include:

J2366 Intelligent Data bus (within vehicle only)
J2353 Data Dictionary for Advanced Transportation Information Systems
J2354 Interactive Traffic Information Services

J2369 Broadcast Traffic information Services
J2371 Information report on Location reference message sets
J2540 Strings and Lookup tables
J2256 In-vehicle Navigation System Communication device message sets

8. The following are IEEE standards which should be considered:

1455 Standard for message sets for vehicle/roadside communications
1488 Standard for Data Dictionaries
1489 Standard for Data Dictionaries for Intelligent Transportation Systems
P1512.a Data Dictionary
P1512.1 Traffic Management centers message sets during the course of a highway incident.
P1512.2 Public Safety centers message sets during the course of a highway incident.
P1512.3 HAZMAT message sets during the course of a highway incident.

9. TIA has a variety of standards under development which may affect the issues addressed
in NMRI. Finally, a series of Underwriters' Laboratories, National Fire Protection Association and Security Industries Association standards should be considered.

UL 827 -- Central Station Alarm Services
UL 636 -- Holdup Alarm Units & Systems
UL 639 -- Intrusion Detection Units
UL 1023 -- Household Burglar Alarm System Units
UL 1037 -- Anti-Theft Alarms & Devices
UL 1069 -- Hospital Signaling & Nurse Call Equipment
UL 1635 -- Digital Alarm Communicator System Units
NFPA 70 -- National Electric Code
NFPA 72 -- National Fire Alarm Code
NFPA 101 -- Life Safety Code
SIA Audio Verification -- Two Way Voice Command Set Standard
SIA Control Panel -- False Alarm Reduction Features Standard
SIA Digital Communications -- Receiver to Computer Interface Standard
SIA Digital Communications -- SIA Format Dialer Protocol Standard

III. Training and Protocols

A. Training Standards and Programs

1. Mutual understanding is needed between public responders and Mayday call-takers. Private call center operators need training on the language and procedures of the public safety community. Likewise, the public safety community needs to be aware of the expanding Mayday market, how accredited TSPs operate, and the coming of Automatic Crash Notification (ACN).

2. The APCO Project 33 *training standard* (9-1-1 Telecommunicator) will be updated to reflect the advent of Mayday and ACN. A new standard will be promulgated to address the emergency training needed for TSPs. The suggested standard changes and the suggested new standard are attached.

3. Public safety training organizations need to update rapidly their training programs to meet this new standard, including material about telematics, private call centers, Mayday and ACN. In consultation with public safety, TSPs should amend and update their training courses to meet the standard.

4. We are exploring the proper and most efficacious approach to providing private call center trainers the emergency knowledge they need so they can teach courses which meet the new standard.

5. A training module about Mayday, ACN technologies, and the operations of certified TSPs will be developed and offered to PSAP trainers as an addition to existing training programs for PSAP staff.

6. The compliance of TSPs in meeting the standard through their training programs will be audited. TSPs and their trainees will be able to submit prior training completion for partial credit toward meeting the standard.

7. From time to time the standard operating practices and training practices will be reviewed and updated to reflect new technology and service practice developments.

B. Operational Guidelines

1. On an on-going basis, we will develop consensus guidelines and specific suggested procedures for addressing common situations that TSPs and public agencies encounter. These will be circulated for use by appropriate public and private call taking organizations.

2. We agreed that a procedure will be set to ensure that PSAPs know that they are dealing with a certified TSP. Similarly, the group agreed that if an airbag deploys and a certified Mayday call taker cannot establish a voice connection with the victim,

the proper action for the Mayday call taker is to call a PSAP. PSAPs should expect and cooperate in handling such calls, including informing the TSP of the dispatch of emergency response units.

3. We note that these guidelines will govern the dealings between trained and certified staff on both public PSAP and private TSP sides of an emergency call, rather than the usual general public to PSAP interaction.

4. As a starting point, the following national standard definition of situations in which TSPs should call PSAPs is suggested:

> "A call center operator, with appropriate training and certification, under the circumstances reasonably believes that emergency assistance (police, fire, or ambulance) may well be required."
>
> Or, "A telematics customer has requested 9-1-1 and there is no reason for the appropriately trained and certified operator to believe that is inappropriate."

IV. Incident Management and Law Enforcement

A. In General

1. All emergency agencies should be connected in a seamless network using the most modern telecommunications in a manner consistent with the reliability, accuracy and security necessary for public safety purposes. This, and numerous other recommendations discussed above, equally apply to non-emergency/non-collision situations as they do to life-threatening emergencies.

2. Modern computer and communications technology clearly allows real time notification of multiple agencies of incidents and other events in which they do, or may, have an interest. For example, we can share crash and other emergency data in real time with non-9-1-1 agencies. We recommend taking advantage of this new capability.

3. Law enforcement agencies are already connected together through messaging systems like NLETS (the National Law Enforcement Telecommunications System) and databases linkages like the National Crime Information Center (NCIC).

4. Law enforcement, transportation and other similar agencies should be connected to TSPs and each other in a national network, relying in part on the national emergency contact database previously recommended. That directory of telephone, street, and internet addresses will assist in the real-time notification of incidents. The recommended consortium will work with the various stakeholders to develop both templates for data entry and a process by which affected agencies will be made aware of the directory, its benefits to them, and the necessity

of entering the appropriate data and keeping it current. Government grants will be sought and applied to these purposes.

5. Each state needs to organize the relevant stakeholders (e.g. EMS, transportation, law enforcement, Weapons of Mass Destruction, FEMA, etc) into a coherent process in which those agencies determine (a) which agencies (b) want what data (c) under what circumstances, and (d) how they should receive it.

6. Once this has been determined, procedures must be developed so that agencies have to qualify/be certified to have access to specific data sets. This will preserve privacy and commercial rights. (For example, a treating hospital would probably have access to a Mayday subscriber's medical history, provided by the telematics service provider with the subscriber's consent, but a State DOT would not have access to that information. It would only know there was a high speed crash at a certain location and the type of car involved.)

B. Incident Notification and Management

1. Accredited private call centers must have the proper phone numbers, and electronic addresses for automated notification, to contact various incident managers.

2. In developing the National Emergency Database, a default should be set for various types of incidents as to who to contact and if it is necessary to contact a PSAP. As some agencies will want data to know that an incident has occurred, but not the voice call to go with it, there should be different defaults for voice and data. Thus, call centers could use the default, but it could be changed by state and local agencies for their jurisdictions.

3. Similarly, there might be different default parameters (again controlled by the local information recipients) to determine the distribution of incident information based on time of day, area of town that incident occurred, special circumstances in the location of the incident (concert, sports event, etc.)

4. These default parameters need to be editable by different state and local jurisdictions. State and local agencies need to be able to access the emergency database to set their own information requests based on local needs.

5. There clearly is commercial value in such incident information. Beyond getting assistance to subscribers in 9-1-1 situations, the stakeholders did not discuss the economic terms of these transactions, other than the general conclusion that the economic value should be controlled by the owners of the information.

C. Law Enforcement Intervention

1. Regardless of the type of incident, a security system needs to be developed so that TSPs know they are dealing with legitimate law enforcement agencies. Every law enforcement agency and TSP should have an electronic code ("secret handshake") that enables both parties to easily recognize one another. This code can be created by using a public key-

private key system for communications between TSPs and law enforcement. Several such products are now available.

2. NMRI discussed at length specific incidents in which protocols or standard operating procedures need to be developed for law enforcement intervention with TSPs. NMRI members are developing suggested incident protocols for TSP/agency dealings on:

    - Pursuits
    - Stolen vehicles
    - Missing persons
    - Alleged crimes in progress
    - Quarantined areas

3. A task force on these issues of law enforcement agencies and TSPs needs to continue to meet as part of the recommended on-going efforts. Other similar issues suggested for future treatment are:

    - Medical emergencies
    - Bio-hazards
    - Bomb threats
    - Disabled vehicles

4. TSPs will work with law enforcement to propose language to include in subscriber service agreements which explains the circumstances for possible law enforcement intervention with their Mayday Service Provider. The subscriber agreement should have a section asking the subscriber if they grant permission to the TSP and law enforcement to take certain actions to preserve life and property.

D. Post Crash Use of Crash Data: Aggregate and Individual Data

1. Use of Aggregate Crash Data. Aggregated data from Mayday/ACN devices offers a variety of exciting possibilities for improving safety. Not only will the data be useful for helping victims in individual incidents, but it can be aggregated into a database to be used for analysis by both the public and private sectors. Specific approaches are being developed by our ACN Committee and include: (a) improving the ability of such devices to predict injury; (b) car design; (c) early warning of defects and other crash causes; (d) notice to traffic, law enforcement and others of the locations of crashes. Such uses would not require disclosure of individual identities. The speed of collection and quantity of crash data would far exceed any other resource available today.

2. Use of Individual Crash Data. Led by our law enforcement members, we strongly believe privacy concerns based on the use of crash data in post crash law enforcement are misplaced, and should not be used to delay the deployment of sophisticated ACN.

- Decades of crash investigation experience and technique development mean that law enforcement does not need Mayday or ACN data to know generally how fast a driver in a crash was going, where or whether the brakes were applied, and so on. Such information is essentially already available, in public (i.e. the scene of a crash). Mayday and ACN devices make post crash investigation easier, faster, more accurate and less expensive, both for crash victims and law enforcement, but they do not create qualitatively new information which did not previously exist, or make it available to parties (e.g. law enforcement) which would not otherwise have access to it.

- The big difference from the past is that with Mayday and ACN the crash information is provided in real time to agencies which can save the lives of people in the car.

E. Notification and Communications During Regional and Local Disasters

1. The national emergency database previously recommended would include all public and private agencies with responsibilities during emergencies. This would allow agencies like FEMA and NOAA a nationwide emergency two way communications capability (starting with a data network) which does not currently exist. Agencies from any point in the US would be able to notify other agencies anywhere else in the country of potential emergencies – and notify commercial entities which can in turn notify the public. This would include terrorist attacks, severe weather warnings, hazardous materials spills, and any other mass disasters, as well as sharing the individual emergencies which were the focus of NMRI.

2. Certain more limited capabilities do currently exist for notification of certain types of threats, including the Emergency Alert System (EAS), and the National Oceanic and Atmospheric Administration's (NOAA) "All Hazard Warning Network, " and local "sigalert" systems. However, none of them allows the President of the United States, the director of FEMA, or the Governor of a State to instant message all emergency responders in a region alerting them of a disaster, much less be able to reach most of the public, much less to have two way communications. In such a situation, the current method of notification is through a "telephone tree", commercial broadcasts, and more limited agency networks.

3. Reaching the public in such emergencies presents another set of challenges. This is more or less possible depending on the particular technology. New communications technologies, ranging from telematics to wireless phones, PDAs and pagers, to the Internet create and allow new channels of emergency communication to the public.

4. We do not recommend any technology regulation, indeed that would be counterproductive. But we strongly encourage the private sector to develop and expand service offerings and technical capabilities which will allow localized emergency information delivery. There are several companies that deliver emergency warnings to the public over the landline telephone network, and wireless and paging companies are beginning to offer "short message services". We believe those companies would readily cooperate when notified of emergencies.

5. A very useful first step will be to organize the emergency contact database system so all telecommunications outlets could enter their contact information and keep it up to date for

such notification purposes. For example, in addition to TSPs, Internet Service Providers, wireless telephone instant messaging service providers and others should be notified in real time of emergencies so they can in turn notify their subscribers -- if they have that capability. Standard Operating Procedures would need to be developed cooperatively between government and industry for such purposes.

6. TSPs should be notified by various government agencies of weather and other events which may affect their customers. And such TSPs should seek to develop (or have OEMs develop) the ability to notify their customers of existing incidents through the vehicle (text to speech systems in the car, Satellite Radio, etc)

7. We encourage the Department of Defense' NCS, the US Department of Commerce and the Federal Emergency Management Agency to play a leadership role in this area.

F. Providing traveler information on highway conditions

1. We need to take advantage of 5-1-1, E9-1-1 and other technologies which will allow gathering and/or dissemination of emergency and incident information to the traveling public to enhance safety, transportation efficiency, and their driving convenience. There are currently services offered by many public traffic operations centers and private companies which deliver traffic information to consumers. The new technologies and sharing of incident information should significantly improve the quality of this information. US DOT and ITS America can be expected to play a leading roles this area.

V. Public Education and Business Practices

A. Public perception and expectation of current emergency response systems

1. A public education campaign on 9-1-1 today is needed, both to set public expectations correctly, and to build greater support for upgrading emergency response capabilities.

2. "Safety Sells", but people are not informed as to how emergency response really works. There is too often a lack of understanding that "9-1-1" or emergency response is not just one central organization that dispenses help, but instead involves a chain of private and public capabilities, and in this case cooperation between private entities and those public agencies.

3. The public must know the benefits of telematics and 9-1-1, but also how they work, especially the interaction between private and public entities. They need to know that response may not always be immediate. This will create proper public expectations.

4. We recommend that a standard brochure be produced by the consortium and given to all telematics purchasers by TSPs educating them about how the "emergency response chain of survival" works. This idea is similar to the one followed by CTIA. (A brochure about advice on safe use of phones is required material in the box of all new wireless handsets.) The recommended brochure would describe the emergency response system, the role of private call centers, the benefits and limitations along the chain of survival, and any other pertinent information. Language used in the brochure should also be posted on TSP websites.

B. Accuracy of Advertising and Marketing Practices

1. In marketing communications presenting telematics services, steps must be taken to ensure that advertisements are presented in a manner that is realistic and do not paint a picture of a "magic call for help" that immediately sends assistance. Telematics is sometimes portrayed as such by its own advertising.

2. There needs to be detailed description of the telematics service in automobile/telematics owner manuals covering the following points:

    - There must be a detailed description of the process of a Mayday call. The manual needs to identify in one location what each participant in the response process does, and when—from the customer, through the wireless carrier, to the Mayday call-center, to public safety. The brochure mentioned above should accomplish this as well.

    - The public must know that the telematics service provider (TSP) is there to assist getting help to the victim., but that they do not actually dispatch. Reference should be made to "contacting a public safety agency" to bring about that dispatch, and, that the decision of how and what to dispatch in terms of response equipment involves the public safety agency. Also, reference to the "nearest" emergency services provider implies that the Mayday service will always and accurately know that. Until other developments succeed, "nearest" may not always be accurate.

    - It is important that the customer understand the distinction between manual and automatic activation and how both are handled by the TSP.

    - It is important that the customer understand what constitutes an emergency and how an "emergency" activation is processed in comparison to a "non-emergency" activation.

    - In referencing emergency services, TSPs should avoid words that "simplify" and "instantly automate" the process—or, say things like "this is all you have to do." That kind of description builds customer expectation for consistency

and accuracy that may not always exist. Materials should speak to the service as it is "designed" to work, or "normally" operate.

- A reference material section on service limitations should also address the relationship between the Mayday provider and public safety agencies. The latter is an essential communications link in a Mayday call flow—and, the efficacy of that link may affect the Mayday service level. Also, the limitation section should note that "contacting the closest PSAP" is based upon "best available information."

- Materials should mention that service is dependent on wireless communications, that wireless does not serve everywhere, and even where service exists it may be stopped or interrupted by various factors.

3. We felt no need now to get involved in making specific recommendations concerning customer subscription agreements. This will be worked out individually by the sellers of these services.

4. Similarly, although all the parties believe that the privacy of consumer information is a critical issue and should be protected, no action by NMRI seems necessary at this time.

C. Wireless Coverage and Deadzones

For Mayday, ACN systems or wireless 9-1-1 calls to function, there must be a wireless network capable of connecting the person or telematics device to the call center or PSAP. Without that network in place, the Mayday device or wireless phone is useless. Over 95 percent of the American public has wireless service from at least two wireless carriers where they live, and most have four or more wireless choices. Network construction is proceeding rapidly. Unfortunately, from urban centers to rural countryside, there are still areas today that lack wireless coverage, commonly referred to as "Dead Zones." There are at least three reasons for the existence of dead zones: regulatory and zoning decisions, incomplete network construction and lack of knowledge of these "holes", and economics. There are no simple answers, but we recommend the following as possible solutions to the dead zone concerns.

1. The *Wireless Communications and Public Safety Act of 1999* notes the importance of "seamless" wireless communications networks to public safety, and states that the Federal Communications Commission "shall encourage each State to develop and implement statewide deployment plans, through an entity designated by the governor" for emergency communications networks. The law says such deployment planning efforts should include representatives of all the relevant stakeholders (essentially like those participating in NMRI).

2. NMRI has recommended that a similar process be launched by states, gathering all the appropriate public and private stakeholders and agencies at the state and local level to develop their parts of the national emergency contact database. This collaboration of stakeholders could also function as the state planning committees mentioned in the Act.

3. Successfully organized local and state committees for either of the above purposes could serve an additional role by helping to eliminate dead zones in several ways. Most important, they would provide a forum for government, carriers, public safety and other affected groups to discuss joint, cooperative solutions. These could fall into at least the following three categories:

- The committees would be a high level public safety mechanism by which carriers could be notified of gaps in their networks which might be unintentional, and perhaps could be resolved without major new construction.

  - Such a group could provide public support for appropriate antenna siting in local zoning proceedings or legislative action. As a neutral party representing a broad set of stakeholders focused on public safety, the committees would understand the importance of a seamless wireless network <u>and</u> the needs of the community.

- Carriers could be informed of particular locations with high public safety/emergency communications needs (i.e. a stretch of highway with a large number of crashes), but no coverage or weak coverage, and the committee might come up with a collective, cooperative solution.

VI. A Recommended Mayday Consortium

A. Summary

Along with the existing telematics service providers, new companies will continue to enter the market in years to come. As the key issues of NMRI have been raised and addressed, it has become clear that an entity capable of judging compliance with the developed standards and recommendations of NMRI needs to be created. We recommend creation of a non-profit public/private Mayday Consortium with a similar make-up to the NMRI membership. The Mayday Consortium we recommend will seek to ensure, on an on-going basis, that TSPs are aware of and comply with the guidelines established by it now and in the future. The consortium will give a TSP a "Seal of Approval" if it complies with the provisions suggested here and by the other Committees. This "Seal" could then allow various benefits to TSPs, including broad notification of public safety agencies of that status and access to the database of emergency contact information recommended previously.

B. Consortium Structure

We propose forming a consortium of private sector companies, such as the telematics service providers, and public stakeholders, such as APCO, NENA, NASNA, IACP, DOT, ACEP and other public response agencies. Private sector members will constitute 50% of the consortium and the remaining 50% will be from the public sector. Equipment suppliers, technical standard groups (such as SAE and IEEE), trade associations (such as CTIA or the Alliance of Automobile Manufacturers) and government advisory groups (like ITS America) could be invited to participate as advisors or associate members of the consortium. The Consortium would support itself with user fees on members and government grants.

Like NMRI, the focus of the consortium will be on issues raised by the dealings between its stakeholder members, or which affect multiple members, rather than those which are internal to them, or affect primarily or only them. And it should take all necessary steps to avoid duplication of effort by other bodies, whether or not they are members. In the technical standards area, the consortium should seek leadership from its expert members, and primarily perform a coordination and encouragement role, including and especially ensuring that standards which affect multiples of its members have their input.

Where a need for new standards within the scope of the consortium is identified, such work will be "farmed out" to existing standard setting organizations selected by a majority of the consortium members. Standard practices would be approved by the consortium, and then public comments/complaints would be invited, tracked and resolved in an open forum.

Before commencing, a detailed plan would be developed for the consortium, including a business model, bylaws, Board structure, membership and terms, and details of the other matters discussed here. Obviously, any member of the consortium would be free to state its disagreement with any proposed consortium decision, would not be bound by consortium decisions, and could resign its membership at any time.

C. Suggested Functions of the Consortium

1. The Consortium will be the accrediting body for TSPs, providing a "Seal of Approval." Develop specific requirements that TSPs must meet to receive certification (e.g. Meet advertising guidelines, properly train their call takers, operate a 24x7 call center)

2. It should review and approve the new training standard, review and approve TSP training programs developed by TSPs and training entities, and create a training module on Mayday, ACN and TSPs for PSAP trainers to use.

3. It will work with other parties to ensure the creation and maintenance of, and then determine access to, the data base and systems recommended above.

4. It should create a standard brochure for TSPs to give to Mayday subscribers about how the public response system works, where Mayday fits in it, and where certified TSPs fit.

5. Lead a public education campaign on how the public response system works, what 9-1-1 needs; how Mayday/ACN benefits the public, and the functions of these technologies and of certified TSPs.

6. Widely advertise certification of a TSP by the consortium to the public safety community and consumers.

7. Develop a process for consortium members to work with the wireless industry to minimize the number of "deadzones" in carrier networks.

8. Continue the consideration and resolution of issues raised in NMRI but not yet solved, and additional issues in the future which broadly concern or affect the stakeholder membership.

NMRI Participants

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Robert Ohm, Vice President -- Operations, **AAA Response**

Dr. Richard Hunt, **American College of Emergency Physicians;** Incoming President,

National Association of EMS Physicians; Vice Chair, the **ComCARE Alliance**

Joseph Hanna, Immediate Past President, **Association of Public-safety Communications Officials, International (APCO)**

John Ramsey, Executive Director, **APCO**

David Bubb, Director, APCO Institute, **APCO**

Gary Wallace, Executive Director, Public Affairs, **ATX Technologies**

Robert Thompson, Director, Government Affairs, **ATX Technologies**

John Keller, Office of Special Projects, **California Highway Patrol**

Sue Wright, 9-1-1 Program Manager, **California Highway Patrol**

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Mark Shonk, Denver Police Communications, **City and County of Denver**

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ATTACHMENT C

Sample (individual letters were sent to all CEOs of major automobile companies).

January 3, 2002

Jürgen E. Schrempp
Chairman of the Board
DaimlerChrysler AG
70546 Stuttgart
GERMANY

Dear Sir:

Last year nearly 42,000 people died and one quarter million people were seriously injured on America's roads and highways. Auto crashes rank among this nation's leading causes of death and injury.

Over the last three years our diverse Alliance has devoted a great deal of time to develop consensus positions from the experts in trauma, emergency medicine, EMS systems and other related emergency response professions on the most desirable in-vehicle emergency information and communications capabilities. These positions have been educated by detailed conversations with all affected parties, including public safety groups and the automobile and technology industries, which are well represented in our Alliance. We are writing to communicate our views, and to ask you to lead in making these lifesaving technologies a reality.

We are extremely grateful that OnStar, Mercedes-Benz and ATX Technologies are enhancing public safety by deploying and serving vehicles equipped with telematics systems known as Automatic Crash Notification/Mayday (ACN). Specifically, OnStar systems are deployed on more than 2 million vehicles. Mercedes-Benz is the first car company in North America to equip 100 percent of its new passenger vehicles with ACN.

By helping speed emergency response to the precise location of the emergency, emergency medical and trauma experts agree that these systems reduce response time and can improve emergency triage and treatment. The chances for survival and avoidance of permanent injury are greatly improved. These systems are equally valuable for responding to other emergencies, from reporting criminal behavior to heart attacks.

But we could do so much more to save lives if automobile systems gave us more sophisticated crash data. And, frankly, we think the discussions about telematics should be about how to positively improve public safety, rather than merely how to reduce driver distraction.

We strongly encourage the deployment of more advanced ACN technologies in future vehicle models in order to further reduce crash deaths. In addition to the current latitude/longitude and voice connection, there is a clear consensus that emergency

responders should be provided with information about the severity of the crash. This will allow a prediction of the severity of the injuries sustained. With that information we could make a more educated response, not just a faster one. Even the most technologically advanced emergency department or trauma center will not be able to save the life of a seriously injured crash victim without early intervention with the appropriate care (both in what we dispatch to the scene and where we send the victim for care).

Medical and engineering trauma experts have already developed and preliminarily tested an "Urgency Algorithm" predicting severity of injury based on crash metrics. Of the 27 million vehicle crashes that occur every year, approximately 250,000 involve life threatening injuries. An updated version of the urgency algorithm would allow emergency responders to distinguish life-threatening crashes and focus on them, thus improving triage, transport and treatment decision making.

Any algorithm, however, is only as accurate as its data inputs. Based on medical research and expert consensus, we believe the ACN data points discussed below are the most important, and strongly encourage you to take those steps, now, which will incorporate this data capability in your cars as soon as possible. Given the relatively long lead times in the auto industry, you can postpone the decision as to whether and how to implement and/or market such capabilities. But unless you act now to install the data generation capability, both your company and public safety will lose a great opportunity.

We also believe that the marginal costs of installing this capability are relatively small if you have already installed a telematics system in a car. In some cases your company may be installing sensors or accelerometers for other reasons (e.g. a "smart" air bag), so the only engineering issue would be connecting that data source to the communications capability in the car.

But while the marginal costs are small, the safety value increase is very substantial - and that should produce a market place advantage for you. We specifically request that you install capability in your cars that produces the following data in the event of car crashes, in addition to the current voice, location, and unique identifier.

1. Delta Velocity or Crash Pulse. The "acceleration time history of the occupant compartment of a vehicle during a crash," is a critical data element. Ideally, this would not be a simple number but the measurement of the forces in all three dimensions during the span of the crash event.

2. Principal Direction of Force (Frontal, Sides and Rear). Probability of injury to the driver and passenger(s) varies greatly with the direction of force impacting a vehicle. 50 percent of auto fatalities do not involve a frontal crash, so a simple airbag deployment will not even trigger an ACN system.

3. Rollover. Whether and how many times a vehicle rolls over during a crash is a strong indicator of the severity of injuries and a leading indicator of ejection. Nearly 25% of all occupant fatalities are from vehicle rollover accidents.

4. Restraint Use/Deployment. It is a well known that there is a direct correlation between seat belt use and the likelihood of serious injury, and this is part of the Urgency Algorithm. Most vehicles already display restraint use internally ("seat belt warning" light). Transmitting this information via ACN would indicate whether the driver was wearing a seat belt at the time of a crash.

5. Occupants. Reporting whether additional seats in the car were occupied and whether those occupants are belted inform the emergency personnel of the potential number of victims for whom help must be sent, and their location in the car (along with other data) helps predict injury.

It would also be beneficial to give consumers the option of storing personal and pertinent medical information (e.g. age, weight, height, blood type, medications, allergies, recent medical history) and add it (or notice of its availability) to the ACN data report in the event of a crash.

We need extensive field experience with these data points and an updated urgency algorithm to gain the full benefits of this new information. And we may discover that additional data points would be useful. Some of these may already be available; others may have to await later phases of automotive development. These might include measurement of ejection, entrapment, occupant weight and placement, occupant movement, door openings, directional heading, and enhanced crash pulse.

One of our automotive members raised a fair concern a few years ago. He said: "If I got my company to install the most sophisticated ACN systems it wouldn't help the public, because there is no system to deliver that information to 9-1-1, EMS and hospitals." In short, the public safety communications infrastructure in our country does not handle the sharing of data well, if at all.

ComCARE and a number of its leading members have taken up that challenge, and made great progress over the past few years through a variety of initiatives, programs, standards and technology developments and deployments. The best summary of progress is that such concerns need no longer be a reason for automobile manufacturers to delay installing sophisticated ACN technology. While we have far to go to deploy a 21st Century emergency communications system, our technology members have clearly shown how Internet-based technologies can share crash data in real time with any authorized party.

ComCARE and its members will continue to work with all parties to perfect new Automatic Crash Notification technologies, the various data elements produced from ACN, and how they can be implemented into the emergency medical services system. We will continue to advocate for them, and to educate the government, media and the public about their value.

ACN gives the automotive, medical and emergency communities an important new tool to dramatically improve public safety. We are delighted with Mercedes-Benz involvement in ComCARE and look forward to working closely with your company in the future. Thank you for your commitment. We appreciate your leadership.

Sincerely,

K. Sue Hoyt, MN, RN, CEN
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Past President, Emergency Nurses Assn.

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