

DA Subject

ROUTING AND TRANSMITTAL SLIP

Date
10 October 1988

TO: (Name, office symbol, room number, building, Agency/Post)

Initials Date

1. DIRECTOR OF COMMUNICATIONS		
2.		
3.		
4.		
5.		

Action	File	Note and Return
Approval	For Clearance	Per Conversation
As Requested	For Correction	Prepare Reply
Circulate	For Your Information	See Me
Comment	Investigate	Signature
Coordination	Justify	

REMARKS

FYI

DO NOT use this form as a RECORD of approvals, concurrences, disposals, clearances, and similar actions

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OPTIONAL FORM 41 (Rev. 7-76)
Prescribed by GSA
FPMR (41 CFR) 101-11.206

**EXECUTIVE SECRETARIAT
ROUTING SLIP**

TO:

	ACTION	INFO	DATE	INITIAL
1 DCI				
2 DDCI				
3 EXDIR				
4 D/ICS				
5 DDI				
6 DDA		X		
7 DDO				
8 DDS&T				
9 Chm/NIC				
10 GC				
11 IG				
12 Compt				
13 D/OCA				
14 D/PAO				
15 D/PERS				
16 D/Ex Staff				
17				
18				
19				
20				
21				
22				
SUSPENSE			Date	

Remarks

Executive Secretary

9 Aug 88

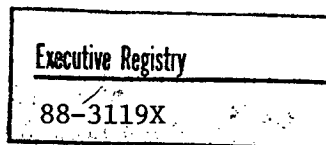
Date

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GE Mobile
Communications

August 5, 1988

*James M. Erikson
Manager Direct Sales
General Electric Company
Mountain View Road, Lynchburg, VA 24502
804 528-7450, 87569 7450*

TO: Key Federal Government Executive and Manager

RE: PROPOSED FEDERAL TELECOMMUNICATIONS
STANDARDS 1023, 1024 & 1044

Dear Federal Executive and/or Manager:

General Electric Mobile Communications (GEMC) began encouraging the establishment of a standard for voice encryption and trunking in mid 1986 and has since attempted to keep key government executives and military managers informed as to its on-going developmental status as well as our position on this subject.

GEMC's major concern has always been that the standard should reflect and promote state-of-the-art technology, cost effectiveness and provide a well planned and useful standard for the end user as well as the land mobile industry for the next ten to fifteen years. Unfortunately, these concerns have not been fully focused upon and it appears that the existing, embedded-outmoded technology base alone may be the driving force for this proposed standard.

As an example, in the area of trunking, to date, no manufacturer appears to be planning to upgrade its customers' nontrunked radios. Consequently as government agencies move to trunking (installations are now taking place in some cases), the embedded technology base is threatened with incompatibility and premature obsolescence.

Although the dominant manufacturer in this area has implied upgradeability (in other than trunking) it has yet to quote publicly any pricing for this. Historically the cost of upgradeability will most likely exceed the cost that a prudent manager would want to expend on older radios versus the purchase of newer ones.

GEMC has consistently maintained that a single standard with steps in it is the best approach and that this single standard should address voice encryption (classified/sensitive) as well as trunking since all of DOD and a good portion of non-DOD Federal customers who buy trunking require voice encryption. However most, do not require classified (Type I) encryption.

Thus, the approach of publishing FS1023 then FS1024 and ultimately FS1044 (for trunking) as proposed by the LMR Subcommittee while trunking systems are currently being installed by the government seems illogical and ill-advised. The interoperability problem of DES FS1027 will only be repeated. Couple this with some end-user requirements for simulcast (simulcast under FS1023 would be a much more expensive way to go) one must ask why is the government pushing for a standard that will not serve its needs and as Tom Jones' report (enclosed) states, will create an unregulated monopoly by one manufacturer, as well.

Federal Executive and/or Manager

August 5, 1988

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GEMC looks forward to working with you or any members of your staff to help resolve these issues so that a true industry-wide standard is established. In our continued efforts and belief that informed policy and decision makers such as yourselves will protect and insure that a standard is developed that is beneficial to the government, we are providing you with the following information:

- A white paper which specifically addresses comments made by the study entitled "Impact Assessment of Proposed Federal Standard 1023" by Lloyd Thomas Jones of the Institute for Telecommunications Sciences (ITS) of NTIA.
- A copy of the above referenced study, should you not have received same.
- A synopsis of FCC rules change report & order 87-112. Shows where the FCC is planning to examine the technical aspects of compatibility for the public safety spectrum under the "National Public Safety Plan".
- A copy of a Freedom of Information Act Request to John Fernandez, Chief Councils Office, NTIA/ITS requesting information to explain inconsistencies and lack of backup data in the above mentioned study.

GEMC is willing in order to shorten the time to develop a standard for voice encryption (FS-1023) and to create a level playing field for all qualified manufacturers, GEMC was and continues to be willing to license to the Federal Government use of its proprietary protocols at no cost. This offer was formally made on November 11, 1986 in a letter to the NSA from Mr. E. Hood, Vice Chairman of General Electric. The objective was to allow the government to provide these protocols to any or all manufacturers who supply radios under a Federal government procurement, resulting in interoperational radios and systems.

GEMC has continued development of digitized voice since that time and has achieved an improved level of voice quality using a technique defined as Residual Excited Linear Predictive Coding (RELP). This method was demonstrated to NSA on 6/17/88. The offer made in 1986 is now expanded to include the proprietary RELP coding method, utilizing the most current technology available.

Trunked radio systems available today are also proprietary and raise the interoperability question again. GEMC is willing to release its proprietary protocols to the Federal Government, contingent upon it being accepted as a standard. The Federal government may then provide these protocols to any or all manufacturers who supply radios to Federal, State and Local government users under normal procurement policies.

Federal Executive and/or Manager

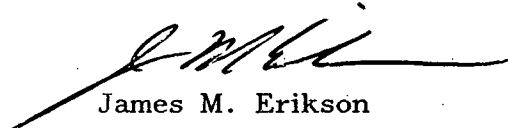
August 5, 1988

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Please contact the undersigned or Kathryn Nicosia if we can provide you with any additional information, meet with members of your staff to discuss these issues, provide an executive briefing or a detailed technical briefing for you or your staff.

GE MC looks forward to a state-of-the-art and economically sound standard for voice encryption and trunking that will benefit all, manufacturers, end-users and tax payers.

Sincerely,



James M. Erikson

JME/dd

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GENERAL ELECTRIC MOBILE COMMUNICATIONS
COMMENTS ON
"IMPACT ASSESSMENT OF PROPOSED FEDERAL STANDARD 1023"
A STUDY BY LLOYD THOMAS JONES
OF THE
INSTITUTE FOR TELECOMMUNICATION SCIENCES
NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION
FOR THE
NATIONAL COMMUNICATIONS SYSTEM

GEMC
AUG. 5, 1988
804-528-7450

GEMC Overall Assessment of Report

The preface of the report states that it is the aim of the report to assess, ". . . the economic and technological ramifications associated with the adoption of proposed Federal Standard 1023 entitled Telecommunications: Interoperability Requirements for Encrypted, Digitized Voice Utilized with 25 Khz Channel FM Radios Operating Above 30 MHz".

GEMC must conclude after reading this report that the report is insufficient, inconclusive and devoid of economic or technological data to support a hypothesis that ". . . the proposed standard provides an acceptable means of satisfying established Government requirements". Likewise the reference in the report's introduction of R. F. Carroll Jr.'s Assistant Commissioner of GSA letter of July 5, 1978 which highlights that, "it is essential that Federal telecommunications standards be promulgated with due consideration of product availability and economic and technological impact" has only been alluded to with words such as "probably", "overwhelmingly", "thinking", "possible", "merely", "satisfactory", "interest", "seriously consider", "believe", "perceived", "minimal", and "reasonable".

These are not the words of a scientific report, let alone a report addressing the disciplined study of economics and/or technology. Unlike the studies which the ITS and NTIA are known for, this report contains vaguenesses and unsubstantiated statements with basically no backup. It is for this reason, GEMC must ask the following specific questions: (Note 1)

- What were the questions asked of company representatives referenced as A,B,C,D and E under Section 4 p.6, Results of Verbal Survey.
 - What are the dates, names, addresses and telephone numbers of each point of contact from Company A, B, C, D and E.
 - What were the written materials sent or notes taken during these above mentioned conversations.
 - What is the information concerning the use/modification of radios by the Bureau of Alcohol Tobacco and Firearms (ATF) to include individuals contacted telephone numbers and how the modification was done.
 - What type of analysis was used in addressing the economic ramifications of FS1023.
 - What else did Mr. R. F. Carroll, Jr.'s 5 July 1978 letter say.
 - What are the other detailed cross-referenced material concerning the companies spoken to that are referenced in this report.
 - How was it determined that the "proposed Federal Standard 1023 contains the necessary detailed information to insure interoperability between digitally encrypted radio (operating with the same key) regardless of the manufacturer."
- 1) FOIA request dated 5 August to John Fernandez Chief Councils Office/ITS has asked some similar questions (see attachment).

- What are the facts that back up the statement that VOCODER technology as well as advances in transceiver and modulation technology ". . .developments are not far enough along to support standardization at this point in time."
- What suppliers have expressed interest in providing FS1023 radios and which individual made the statement.
- Which manufacturers, per the report, will provide the needed encryption modules today.
- How did the report conclude and who are the: "sources that perceive the economic impact of the draft standard to be minimal and positive".
- What analysis identifies ". . .the 80 - 90% or more of the Federal market for encrypted digital voice radios" that are at 12 Kbs CVSD and explanation of how this existing base of radios should affect the impact of the standard.
- What evidence is there that the total base is economically upgradeable to FS1023 type radios.
- What specific price quotes were obtained to prove the economic upgradeability of the above mentioned existing base of radios.
- What was the rationale used by the Department of Commerce/NTIA or ITS that the granting of a monopoly to one manufacturer was OK, or that it would only be a short term monopoly.
- What is the justification rationale to disregard the Competition and Contracting Act by granting a short term monopoly.
- Why was there no supervisory review or staffing of this study by ITS management and/or NTIA/Department of Commerce management prior to publication of this study.

GEMC had hoped that the report would have used adequate scientific analysis to answer the foregoing questions. However, as stated, GE has provided NCS material including studies conducted by the Federal Government (NTIA) and data on testing done by Dynastat, Inc. a well known independent lab for GEMC. This information and data was obviously ignored in the preparation of this report. In addition, the report minimizes the over 200 plus comments made by the following class of individuals:

- LMR Manufacturers
- IEEE Land Mobile Radio Engineers
- Other interested parties who represent some of the leading communications companies and corporations in America, ie, AT&T, GTE, Hughes/General Motors, United Telecom, McCaw, Harris, Sony, E Systems, COMSAT and Pactel to name just a few.

GEMC spent time at the NCS reviewing all of the comments that were submitted prior to April 25. GEMC then reviewed additional comments that the NCS allowed to be submitted after the closing date for comments. Again, these comments were 95% or better in favor of the position which GEMC has taken.

In ignoring these comments, the report on p. 5 paragraph 3.4 Survey Forms, quotes ". . .but most merely submitted the checklist. . ." and states GEMC led the respondents.

To say that leading LMR Communications Engineers, Senior Management of LMR telecommunications companies, leading Technical Directors of various state or local entities could be lead by GEMC or in fact in many cases, could be lead by a competitor is beyond the scope of imagination. The people who commented are all professionally knowledgeable and responsible representatives of their industry with titles such as; President, Vice President, Senior Vice President, Chief Scientist, Chief Bureau of Communications Engineers, Vice President of Development, Vice President of Engineering, Division Vice President of Development, Vice President of Engineering, Division Vice President-General Manager to name just a few.

Many of the checklists submitted to NCS had written notes in addition to statements checked and in some cases not every response was checked as being in agreement with GEMC's position. Likewise, there were a number of letters which were in fact unsolicited by GEMC which were also favorable to our position. There was no letter that totally supported the standard as written, in fact, even Motorola's letter stated that clarifications were needed. The reports' ignoring of this data is unscientific.

As stated in our cover letter and past communication, GEMC has remained consistent in all official communications that "a single standard with steps in it is the best approach and that this single standard should address voice encryption (classified/sensitive) as well as trunking since all of DOD and a good portion of non-DOD Federal customers who buy trunking require voice encryption, however most do not require classified (Type 1) encryption. The report references companies A thru E, however GEMC could not find its official position within any of the above mentioned companies that were cited.

GEMC's official position still is that there is a desperate need for a standard for voice encryption and trunking and that once a Government standard is in effect GEMC will at that time make a business determination as to what action it will take.

To do otherwise would not be in any business' best interest. Thus, GEMC must still wonder which other companies can be so committed to making products for the FS1023 standard when only two manufacturers (GEMC being one of them) entered the market to produce DES products.

The author states "the standard contains no technical requirements that will give one manufacturer an unfair competitive advantage over another". Yet the author goes on to say "the standard would lead to a short term monopoly by one manufacturer for Land Mobile radios employing Type 1 encryption". GEMC must again ask what is the author's definition of short term and how the report can use DES purchases which caused. . "effectively a monopoly to that user" as justification for setting up another monopoly only this time using a Federal Standard to do it.

This is the reason for a standard and should not be the justification for another monopoly. The past short term monopoly cost the government millions of dollars as brought out by the GAO Report (to: The Chairman, Subcommittee on Civil and Constitutional Rights, Committee on the Judiciary, House of Representatives) on the cost of the FBI's Radio System. The government and the LMR industry truly need an open standard that all manufacturers can build to.

Additional technical points to consider:

- A Telecommunications standard at 9.6 Kb/s brings both price and performance advantages in systems design.
- Simulcast at 12 Kb/s is more complex than 9.6 Kb/s thus 25% degradation in site dispersal capability, compared to 9.6 Kb/s. (This is a law of Physics.)
- The practical effect of this is with 9.6 Kb/s rate, simulcast sites could be spaced up to 25% further apart than with 12 Kb/s baud rate. This is a greater dollar savings for the end user who needs simulcast.
- Motorola, GE and others have worked jointly with the National Public Safety Planning Advisory Committee (NPSPAC) to present to the FCC the possibility of using 25 KHz bandwidth channels to get nearly the same level of efficiency as 12.5 KHz channels. The FCC has concurred with this approach and has issued report (#87-112) to implement (see attached synopsis). This same approach would be impossible if the FS1023 12 Kb/s standard is instituted.

In closing, this report, we find, has little economic analysis or scientific technical facts to conclude that Draft Standard FS1023 is in the interest of the government, all manufacturers, end users and taxpayers.

To create another barrier of entry for other manufacturers by issuing a standard that no business manager could justify would result in a true monopoly -- this is not the way to go.