APCO REPORTS

ASSOCIATED PUBLIC-SAFETY COMMUNICATIONS OFFICERS, INC.
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DEADLINE CHANGED TO MAY 28 FOR SPECTRUM REFARMING COMMENTS: The deadline for filing comments on the FCC's spectrum refarming proposal has been changed to May 28. The deadline had been February 26, but the Commission decided on February 9 that more time was needed for parties to file comments in PR Docket No. 92-235. The deadline for reply comments was changed to July 14. Various dates were suggested for the extension. The Public Safety Communications Council needed additional time to conduct equipment tests and to review the planned migration to narrowband equipment. The Land Mobile Communications Council wanted an extension to give the public time to comment on an industry consensus it is developing. PowerSpectrum, Inc. needed more time to study the channeling plan impact on the potential use of its frequency-hopping, multiple-access technology (FHMA).

The refarming proposal is the most comprehensive review of rules governing the private land mobile radio allocations below 512 MHz since their inception. "The blueprint on how to increase channel capacity, to promote more efficient use of these channels, and to simplify the rules governing their use is complex and deserves the fullest cooperation between" users and the government to assure the new rules will "constructively serve the public interest," the Commission said.

To assist in that process, the Commission held a conference March 1 in Washington to publicly discuss the issues raised in the proposal. APCO President John Powell and Executive Director Ronnie Rand participated in the conference. "In order to allow commenters the benefit of information gained in this (conference), and for the reason set for by the petitioners (for an extension of the comments deadline), we have concluded that additional time to prepare comments should be granted," the Commission said. "We also believe, however, that the public interest requires us to reach a timely decision on the issues raised . . . and, thus, conclude that a long extension would disserve the land mobile radio community.

REFARMING TASK FORCE EXPANDED: The Refarming Task Force has been expanded to include Vinnie Stile, Cal Porterfield and Bob Marz of the AFC Board of Directors, Dan Hawkins from the AFC Task Force, and Glen Nash (State of California Telecommunications Division and President of the Northern California Chapter) representing the National Association of State Telecommunications Directors (NASTD).

Early position papers regarding the technical issues raised in this document (jointly developed by the Refarming Task Force and leading land mobile radio manufacturers) were filed with the FCC. APCO's initial positions have been supported by most other associations and manufacturers. The FCC appears to be giving them careful review.

HOW CAN YOU FILE COMMENTS WITH THE COMMISSION?: Several APCO members have asked how to file comments with the Federal Communications Commission regarding the spectrum refarming proposal (PR Docket 92-235): 1) Use either of two "forms" (styles) that follow -- the letter form is for very short comments, one or two pages. The more formal version with caption is for longer comments. In either case, be sure to reference PR Docket 92-235.

2) Send an original and at least four copies to: Donna R. Searcy, Secretary, Federal Communications Commission, 1919 M Street N.W. Room 222, Washington, DC 20554. If possible, send an original and nine copies so that each Commissioner will receive a copy. 3) Submit your comments by the deadline (currently February, but at press time an extension was anticipated). 4) Please send an extra copy to APCO's counsel: Robert M. Gurss, Wilkes, Artis, Hedrick & Lane, 1666 K Street N.W. - Ste. 1100, Washington, DC 20006

The letter form:

(date)

Ms. Donna R. Searcy, Secretary, Federal Communications Commission, 1919 M Street N.W. - Room 222, Washington, DC 20554

Re: PR Docket No. 92-235

Dear Ms. Searcy:

Respectfully submitted,
(name, address)

The more formal one:

Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
	)	
Replacement of Part 90 by	)	
Part 88 to Revise the Private	)	PR Docket 92-235
Land Mobile Radio Services and	)	
Modify the Policies Governing Them	)	

To: The Commission

COMMENTS OF _____

Respectfully submitted,
(name and address) (date)

<u>APCO OFFICIALS TOUR PUBLIC SAFETY COMMUNICATIONS IN CHINA:</u> At the invitation of the Ministry of Public Security, APCO President John S. Powell, APCO Executive Director Ronnie Rand and Board members Frank Huggins and Steve Proctor have returned from a 15-day tour of the People's Republic of China. Their stay in China, funded by the People's Republic of China, included visits to Beijing, Shanghai, Nanjing, Guangzhou and Xian. In each of these cities they conducted professional exchanges with local, regional and national leaders in the Ministry. Since the normalization of relations with the West, the People's Republic of China has made great strides in introducing western technology into its infrastructure. We have seen large 800 MHz trunking systems in operation at several locations. Our discussion topics have included 9-1-1 (1-1-0 in the People's Republic), education and training, frequency management, Project 16 trunking and Project 25 Advanced Technology development.

Two days after their return from China, President Powell and Executive Director went to Washington to participate in hearings on spectrum refarming at the FCC and spectrum allocations at NTIA. As a member of the public safety panel at the Private Radio Bureau hearing on Docket 92-235, President Powell had an opportunity to reiterate APCO's concern on key points of this important action. The panel was followed by a manufacturers panel consisting of members of the Telecommunications Industry Association. Because APCO's positions on refarming have been jointly developed, we presented a fairly unified front. Major points discussed by these panels included:

• A fairly rapid move to 12.5 kHz channels is appropriate in all bands above 150 MHz; it is too early to tell what the "very narrowband" channeling should be (5 or 6.25 kHz or some other width). Several panelists

suggested 220 MHz will be a good test bed for 5 kHz channels and the FCC should delay a final decision until systems have been installed and operating there for a year or two.

- Interleaving of non-public safety channels into our blocks at 150-174 mHz and limiting power based on HAAT will be disastrous for public safety, which needs all of its existing blocks.
- The FCC should consider a minimum 10-year amortization period for radio equipment; it is appropriate to require changes in urban areas earlier than for rural areas. The need for interoperability and forward/backward compatibility are paramount. APCO Project 25 was discussed and given high marks by both FCC members and the industry. Importantly, Private Radio Bureau Chief Ralph Haller stated his bureau's interest in APCO's concerns and their willingness to work with both users and industry to resolve as many of the issues as possible.

NATIONAL TELECOMMUNICATORS WEEK RESOLUTIONS MOVING THROUGH CONGRESS: Resolutions designating the week April 12 as National Public Safety Telecommunicators Week were introduced into Congress on March 8 by Senator Joseph Biden (D-Delaware) and Representative Edward J. Markey (D-Massachusetts). Both were instrumental in last year's passage of the resolution. At this writing, Celesta Wiley, administrator-governmental affairs at APCO Headquarters, was spearheading the effort to contact members of Congress, urging them to become co-sponsors. Letters were to be sent and phone calls were to be made to Congress members urging adoption of the joint resolutions.

Speaking from the Senate floor, Senator Biden said, "Last year, by passing this same resolution, the Congress finally gave the public safety telecommunicators the recognition they so richly deserve . . ." The resolution adopted last year resulted in a proclamation being issued by the President. It was the first year after several attempts that APCO was successful in gaining the special honor for the nation's telecommunicators. Senator Biden introduced Senate Joint Resolution 56 for himself and Senator Orrin Hatch (R-Utah). Senator Biden is Chairman of the Senate Judiciary Committee, and Senator Hatch is its ranking member. House Joint Resolution 138 was introduced by Representative Markey. Both Biden and Markey were instrumental in last year's successful adoption of the resolution, assisted by Representative Constance A. Morella (R-Maryland).

After the necessary number of Congress members sign on as co-sponsors, the measure will be marked up for a Senate-House vote.
The Joint Resolution wording is:

> ***Whereas*** over one-half million dedicated men and women are engaged in the operation of emergency response systems for federal, state and local government entities throughout the United States;
>
> ***Whereas*** these individuals are responsible for responding to the telephone calls of the general public for police, fire and emergency medical assistance and for dispatching such assistance to help save the lives and property of our citizens;
>
> ***Whereas*** such calls include not only police, fire and emergency medical service calls but those governmental communications related to forestry and conservation operations, highway safety and maintenance activities, and all of the other operations which modern governmental agencies must conduct; and
>
> ***Whereas*** America's public safety telecommunicators daily serve the public in countless ways without due recognition by the beneficiaries of their services: **Now, therefore, be it**
>
> ***Resolved*** by the Senate and House of Representatives of the United States of America in Congress assembled, that the week beginning April 12, 1993, is hereby designated as "National Public Safety Telecommunicators Week." The President is authorized and requested to issue a proclamation calling upon the people of the United States to observe that week with appropriate ceremonies and activities.

Senator Biden, in introducing the resolution, said, ". . . there are over one-half million people who serve our nation as public safety dispatchers. These dispatchers respond to our telephone calls requesting emergency assistance from police, firefighting and emergency medical services. These men and women are the unsung heroes that protect our homes and families and ensure swift response to emergencies. Today, I rise to introduce a joint resolution to designate the week beginning April 12, 1993, as National

Public Safety Telecommunicators Week. Police, fire and EMS communication officers rank among our most committed public servants -- and rarely do they receive their due praise. Working behind the scenes, all hours of the day and night, these professionals form the vital link between citizens in need of assistance and emergency personnel. Undoubtedly, their expertise saves lives that might otherwise be lost in those critical minutes before emergency officers arrive on the scene. Though we are all familiar with programs such as 9-1-1 emergency service, the individual behind the phone is seldom noticed. At some point, each American will probably be touched with an emergency and will depend on those men and women who operate the emergency response system. However, for far too long we have failed to show gratitude to public safety telecommunicators. This resolution honors the dedication and professionalism of these invaluable public servants."

"Last year, by passing this same resolution, the Congress finally gave the public safety telecommunicators the recognition they so richly deserve. In fact, this measure was supported by a bipartisan coalition of 53 senators, and I hope we can achieve the same sweeping support again this year. Once again, we must show our sincere appreciation to the public safety telecommunicators for dedicating their careers to the protection of our lives. I would also like to thank Congressman Markey for once again introducing this important resolution in the House of Representatives. I look forward to working with him to guarantee the passage of this measure, and I encourage all of my colleagues to co-sponsor this important resolution."

MIEURE RUNNING FOR ELECTION TO APCO BOARD OF OFFICERS: Taylor "T.G." Mieure, a member of APCO for 20 years and a three-term President of the Illinois Chapter, is a candidate for election to the office of APCO Second Vice President. The election will be held during the 59th APCO Annual Conference & Exposition August 8-13 in New Orleans.

Mieure has a long career in law enforcement and communications, serving many positions with the Lake Forest and Gurnee (Illinois) Police Departments beginning 21 years ago. He was a telecommunicator for six and one-half years and a police officer for 14 and one-half years. He currently is a police officer with the Gurnee Police Department, assigned as the senior officer at the Gurnee Mills substation, which is in the world's largest outlet retail mall. He also is a member of Gurnee's Emergency Telephone System Board which governs Enhanced 9-1-1 in Gurnee and is in the process of building a new communications center.

For the past few years, he has been chairman of the APCO Operating Procedures & Training Committee, which rewrote the APCO SOP manual and last year assisted in passage of the Congressional Resolution for National Public Safety Telecommunicators Week. Mieure developed a telecommunicator training program for the Lake Forest and Gurnee communications centers, law enforcement computer training programs for the two departments, the Gurnee police 800 MHz radio and mobile data terminal project and co-developed the Gurnee police in-house computer project.

EMERGENCY MEDICAL SERVICE RADIO SERVICES RULES ANNOUNCED: (The following report is from APCO Counsel Robert M. Gurss): Emergency medical service (EMS) providers finally have their own radio service and radio frequency allocations, a goal long-sought after and supported by APCO. They will no longer be lumped into the much broader Special Emergency Radio Service (SERS), which includes such varied services as veterinarians, handicapped persons, disaster relief, school buses, beach patrols and other services. The FCC released the text of its Report and Order establishing the new Emergency Medical Radio Service (EMRS) in February, along with specific rules governing the new service.

The new EMRS, unlike SERS, will be included in Subpart B of Part 90 of the Commission's rules, which includes all Public Safety Radio Services. Thus, should the Commission decide to consolidate the radio services (as is proposed in PR Docket 92-235), EMRS would be consolidated with other Subpart B services (i.e., the Police, Fire, Local Government, Forestry-Conservation, and Highway Maintenance). The following is a brief overview of the rules for the new EMRS.

Eligibility — New Section 90.27 of the Commission's rules limits eligibility in the EMRS to "persons or entities engaged in the provision of basic or advanced life-support services on an ongoing basis." The Commission's intent was to exclude from eligibility those entities "engaged only tangentially in the

provision of emergency care." Non-governmental entities are eligible only if their application is accompanied with a statement from "the governmental body having jurisdiction over the state's emergency medical service plans indicating that the applicant is included in the state's emergency plan or otherwise supporting the application." Note that the eligibility provisions limit use of EMRS frequencies to the "transmission of communications essential for the delivery or rendition of emergency medical services for the provision of basic or advanced life support." Entities eligible for EMRS will still be eligible for SERS frequencies. The opposite is not true, however, because SERS licensees will not be eligible for interservice sharing of EMRS frequencies.

Frequency Allocations — Most of the frequencies allocated to EMRS were taken from the SERS frequencies used by entities now eligible in EMRS. These include 10 paired UHF channels in the 460 MHz range (the MED channels), and five simplex VHF channels in the 155 MHz range. A somewhat controversial reallocation was made of four 453 MHz channels now used for one-way medical paging. A number of hospitals and medical paging firms had objected to this proposed reallocation. In response, the FCC "grandfathered" existing paging licensees for five years, and stated that permanent grandfathering would be granted on a waiver basis if a licensee demonstrates that other EMRS channels are available and that the public interest would be served by allowing it to remain on the 453 MHz channel. Other frequencies allocated for EMRS include four 458 MHz channels (on a shared basis with other Public Safety Services), the 150.775 and 150.790 MHz channels (without current low-power restrictions) and the 460./465.525 and 460./465.550 channel pairs. Finally, five narrowband pairs were allocated for EMRS in the new 220-222 MHz band. Of course, entities eligible in EMRS will also be eligible for shared and pooled public safety channels in the 150, 450 and 800 MHz bands.

Frequency Coordination — As it had proposed, the FCC certified International Municipal Signal Association/International Association of Fire Chiefs (IMSA/IAFC) as the frequency coordinator for EMRS, since it already coordinates most of the SERS channels reallocated to EMRS. APCO did not object to the selection of IMSA/IAFC, though it told the Commission that it would be willing to coordinate the EMRS frequencies if IMSA/IAFC was unable or unwilling to do so.

A number of governmental agencies had raised concerns that IMSA/IAFC (which, unlike APCO, does not use local frequency advisors) would not give adequate consideration to regional emergency plans. In response, and consistent with APCO's suggestion, the Commission stated in the Report and Order that it expects IMSA/IAFC "to verify that all applications are compatible with existing regional and local emergency medical plans." APCO members involved with EMS are requested to notify APCO staff and officers of any problems that may arise with the new EMRS rules, allocations or frequency coordination procedures. This is especially important in light of the pending "spectrum refarming" proceeding (PR Docket 92-235) which could radically alter current frequency allocations and coordination procedures.

APCO PROJECT 25 . . . AN EXPLANATION AND UPDATE: (The following article written by APCO member Steve Adler of Motorola, who serves on the Project 25 committee, is reprinted from the APCO Bulletin): On January 15 APCO Project 25 adopted a system architecture and the Common Air Interface (CAI). This is a major step toward the vision of the APCO 25 public safety digital radio system. The architecture of the APCO 25 system includes the standards suites outlined in the initial APCO 25 requirements statement. The APCO 25 requirements statement identified the CAI and the four elements (suites) called Trunking, Encryption, Data and Sub-System Interfaces. The APCO 25 public safety system architecture includes provisions for each of those elements.

The APCO 25 system ushers in a new era in Land Mobile Radio communications systems. This is the era of open system architecture. It can be compared to the emergence of the personal computer in the home computer industry as an open standard. This important event paved the way for an era of compatible hardware and software products from a wide variety of personal computer manufacturers, but it also formed a bounded path for continued compatible personal computer technology advancements over that decade.

The specification activity of APCO Project 25 focused on the first major interface called the Common Air Interface. The lengthy work fleshing out the user requirements led to the system architecture. The system image of the new architectural standard is now visible; i.e., we can see the number of system interfaces and components which give the system "substance" and "shape" regardless of what brand or

manufacturer the system carries. The adopted APCO 25 specification documents include the description of each of these interfaces in terms of the seven-layer Open Systems Interconnection (OSI) standards model. The specification activity of APCO Project 25 is completing the further detailed description of each interface. A defined RF sub-system and each interface is explained in general terms below. The six open system architecture interfaces are: 1) Common Air Interface or CAI, 2) Data Port Interface, 3) Inter System Interface, 4) Telephone Interconnect Interface, 5) Network Management Interface and 6) Host and Data Network Interface.

APCO 25 Open System Interfaces

The APCO 25 system is a standard system. This means that the system architecture defines the position of each open interface. This is illustrated in the diagram at right. The open interfaces are indicated by blue labeled lines. Note that while not all interfaces are open, the critical interfaces ARE open. It is intended that equipment on either side of an open interface may be supplied by any manufacturer. APCO Project 25 system architecture includes the definition of an RF Sub-System. This is described below; then, each of the open interfaces is examined, one at a time.

RF Sub-System

The RF sub-system is an infrastructure, bounded by five open APCO 25 interfaces and three standard computer-network gateway interfaces. It is any collection of site equipment, be it single-station or multiple station, and single site or multiple site. The only requirement is that the station equipment support the common air interface, and that it contain all necessary control logic to support call-processing and the open inter-system interfaces. These RF sub-systems become the building blocks for wide-area system construction. Re-gardless of the RF sub-system configuration, it will connect with any other equipment or RF sub-systems regardless of THEIR configuration.

Common Air Interface

The first major goal of the APCO 25 system standard is the common air interface. Mobile and portable equipment from any manufacturer may be freely combined in any APCO 25 system. A base line of radio features will be guaranteed for any APCO 25 system to work through any manufacturer's APCO 25 radio. The APCO 25 system architecture provides a minimum set of features; however, it is designed to permit open competition by manufacturers who design in value-added features to differentiate their products. Each RF sub-system manufacturer may augment the basic APCO 25 feature set to include new features which may be supported only on that manufacturer's mobiles and portables to provide the added value. This new term, "RF sub-system," is defined by the APCO 25 open-system architecture. Site equipment is of variable density with the requirement for one common air interface, whether there are multiple stations or only a single station at any site. Essentially, there will be no equipment technical difference in an APCO 25 system as known today by the categories "conventional," "encrypted" and "trunked." The only difference between conventional, encrypted and trunking WILL BE in the supported feature set and access method, and NOT in the mobile/portable radios, or RF sub-systems (stations controllers, etc.) in digital APCO 25 compatible systems.

Data Port Interface

Both mobiles and portables will support a port through which laptops, terminals or other radio peripherals may be connected. It is required that protocols be supported on this open interface which are, in turn, passed transparently into X.25, SNA or TCP/IP computer networks at another open interface on the fixed equipment side. Transparency of the "pipe" is listed as a requirement, and it is expected by federal government users that application layer standards emerge for the connection of various peripheral devices such as fingerprint and retinal scan imaging devices.

Inter System Interface

This is a key open interface to the RF sub-system. It is the interface which permits RF sub-systems to be interconnected into wide-area networks. As currently defined it is flexible, as wide-area systems may be built as only a few large RF sub-systems, or as many smaller RF sub-systems. This permits the system to be configured by a system designer who sets the blueprint regarding tight multi-site, high-performance, sub-systems or as loosely coupled, single-site systems. It also provides a common meeting place for RF

sub-systems of different technologies (TDMA, FDMA, CDMA, micro-cell, etc.) and even different RF bands. Although a given mobile or portable radio may roam freely only between systems with the standard APCO 25 digital common air interface, the APCO 25 inter-system interface has the potential to bridge a gap even wider, such as between a user's private radio network and a user's private telecommunications network.

Telephone Interconnect Interface

The APCO 25 RF subsystem will support an open telephone interconnect interface to a telephone network. APCO 25 requirements exceed historical Land Mobile Radio (LMR) interconnect interfaces, as both analog AND ISDN telephone network interface support are required. Here is, along with the open inter-system interface, an avenue for future enhancement of functions within the guidelines of the open standard. We anticipate, and expect, future capabilities to be continually forthcoming through extension of the standards such as witnessed across the last decade on personal computer equipment (new display adapters, new hard disk interfaces, faster CPUs, all within a compatible framework).

Network Management Interface

APCO 25 adopted a uniform network management interface to all RF sub-systems, regardless of manufacturer. Within any manufacturer's RF sub-system, all five classical elements of network management must be supported according to a single selected network management scheme. The APCO 25 network management task force has not yet selected a network management scheme. It is expected that one will be selected that will bring with it the ability to manage RF sub-systems with available network management system equipment. In addition, a major user's existing network management system, including computer and telecommunications equipment, may well be able to encompass APCO 25 radio systems as well.

Host and Data Network Interfaces

Perhaps the most complex interfaces are those for host computer and/or data network connectivity. Four different types of data connectivity are spelled out in the APCO 25 requirements. These include a native open interface for connecting host computers, as well as the requirement to support three different flavors of existing computer network interfacing. In practicality, this might easily collapse to only three different interfaces if the host computer native interface is selected to be one of the other three interfaces (such as TCP/IP). Recent interest by the federal government participants has suggested that this connectivity be expanded to include the GOSIP standard interface connectivity, currently used by federal host computer systems.

Actually of more significance to this physical interface is the logical requirement of APCO 25 that, in the case of the three network interfaces, communications to radio-linked data ports must be indistinguishable from communications on those networks to any other logically addressable device. Essentially, every radio may support a computing device which is (logically from the standpoint of an existing application) indistinguishable from pre-existing fixed computing devices. While radio IS different, getting started with data may be as easy as connecting a computer in a vehicle and "logging in" to any host applications already in existence on the network. The APCO 25 system is defined by a set of open interfaces. Guided by the APCO 25 user requirements, there is the need to complete the definitions of each of these interfaces.

The APCO 25 system will not only serve our collective needs for years to come, but will be used to serve user needs in many other markets, to the mutual benefit of all. One example is the data capability. Areas such as the APCO 25 open data peripheral interface and host / network fixed interfaces could well spawn new and improved data applications and peripherals. The APCO 25 system also provides a long term migration forwards to newer technologies. Of the APCO 25 open interfaces, only one of the six has to do with the specifics of the common air interface.

The establishment of SIX open interfaces will facilitate the migration to new RF transmission technologies which may be achieved without modification to the other FIVE open interfaces. Just as APCO 16 has focused on the evolution of Public Safety trunked systems, APCO 25 has laid a solid foundation for Digital Radio Systems for Public Safety.

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