Keynote speech at the California State APCO Conference May 2004 by Fire Chief John L. Pinedo of the City of San Marino CA.

John has a long and distinguished career with the fire services in Southern CA and also had a 25 year career with the US Army Reserve retiring as a Lt. Colonel from the Medical Services Corp. He currently serves as president of the LA Area Fire Chief's Association, and represents the fire services on the LA County Terrorism Working Group and the LA Regional Tactical Communications System. John represents the California State Fire Chief's Association on CALSIEC, the California Statewide Interoperability Executive Committee. His distinguished fire service career includes service on the adjunct faculty of FEMA's National Emergency Training Center where he taught elements of the Integrated Emergency Management Course.

Beyond the fire service, John also served as a reserve deputy sheriff for San Bernardino County CA, retiring as Deputy Chief of Reserves after nearly 20 years of service in all aspects of law enforcement, including emergency management and the aviation squadron.

CAN YOU HEAR ME NOW? WHY NOT?
Circumventing Obstacles to Interoperability

What do we need?

They keep telling me we need interoperability, but what do they mean?

Define communications interoperability:
According to the SAFECOM definition, Communications Interoperability is "the ability of public safety personnel in different agencies or jurisdictions to communicate with each other by radio on demand, in real time."

Nice definition, but what does it mean? Simply put, it means that we need to be able to talk to whoever we need to talk to, and right now.

How much interoperability do we need?

Well, that depends upon the type of incident.

More frequent incidents are relatively **simple**; they involve a few police units and a few fire units from the same jurisdiction. These incidents are routinely fires, collisions and assaults.

First responders to these incidents need to be able to coordinate at the **line-personnel level** (police officers and firefighters).

For more **complex** incidents, from major fires and multi-casualty incidents to small-scale disasters, interoperability is best confined to multi-jurisdictional agencies of the same discipline (fire-to-fire or law-to-law).

The larger or more complex the incident, the more problematic the communications. Interop between disciplines on complex incidents is best achieved by co-locating command posts. Commanders need to meet to decide issues that affect each other's operations. This personal interface prevents line personnel from circumventing the chain of command, and allows supervisors and commanders to maintain command and control.

So, firefighters need to be able to talk to police officers on some incidents, and to other fire agencies on other incidents. What's the best way to achieve that?

Given today's technology, what is the best solution?

A trunked, open-architecture, standards-based radio system. That's the conclusion of the experts who have studied this issue, and, despite my reluctance to rely upon anything controlled by a computer, I have come to agree with the experts.

Especially in the radio-rich urban centers, we need more channel capacity. Without increasing the available spectrum, that means we need to use the spectrum we have more efficiently. That's where the computers come in.

Trunking our channels will not only mean better spectrum efficiency, but it will provide more dynamic channel assignment for single or multiple incidents.

I am a strong advocate of simplex or "direct" communications between units at the incident scene. Not only does simplex communication between units minimize the missed messages caused by those who rush their mics, but it allows us to communicate with personnel below ground level and inside

buildings where repeaters don't penetrate. Simplex also frees up the repeaters for what they do best: wide-area communications.

In addition to the benefits of on-scene simplex communications in a trunked system, the CA fire service needs to maintain its VHF high-band capabilities. VHF high-band is simple, provides good range over a variety of terrain without sophisticated infrastructure (which is important in a state famous for devastating earthquakes), and VHF is widely used by federal, state, tribal and rural fire agencies. And more importantly for the many rural and volunteer fire departments that protect much of our state, VHF radios are inexpensive.

Since we're talking about the benefits of VHF for the fire service, we should consider refarming all public safety frequencies by discipline statewide like Kern County did. That would assure that all fire agencies are on one band, and all police agencies are on another band. Since communications between agencies of the same discipline are essential during our frequent disasters, this refarming could provide important interoperability without requiring more spectrum. Then all we need is an on-demand connection between the police and fire networks.

Forgive me for listing training last among our needs, because it should probably be first. In fact, if radio users were better trained, we might not need some of the things we think we need. When was the last time you were asked to teach firefighters or police officers how to use the radio system you carefully designed and diligently maintain? As much as we depend upon our radios to enhance our safety, most firefighters and police officers know only two things about a radio: how to make it irritatingly loud and how to make it transmit. The rest is of little or no interest to them, at least until the radio won't work.

Have you ever tried to explain to a battalion chief or police captain something important about your radio system, only to be summarily dismissed with comments like, "Don't bore me with the details, just get to the point."? And when you do cut to the chase, the response is often, "Nice idea, but we can't afford that right now."? How much do you think that manager really understands about your request?

We teach firefighters how buildings are built, so they will understand what makes those buildings fail. We hope that will prevent unnecessary injury and death. Yet firefighters face the threat of burning buildings far less often than they use their radios.

If they knew more about their radios and the network that connects them, they would surely realize increased safety through more reliable communications.

What are the obstacles?

So, what are the obstacles to improving the state of our public safety radio systems? According to Project SAFECOM, they include all the usual villains: **lack of spectrum, funding, cooperation and standards**.

We know there will never be enough **spectrum** for everyone if we continue to operate as inefficiently as we have. That's one of the reasons for narrowbanding. Unfortunately, our refusal to voluntarily adopt more efficient spectrum management practices has led to the decreased audio quality that also comes with 12.5 KHz narrowbanding. And the digital signals required for 6.25 KHz narrowbanding degrade the coverage we currently enjoy even more. Still, many agencies refuse to consider pooling their frequencies in a trunked system.

The **cost** of a nationwide public safety radio interoperability network has been estimated at $18B to $50B. Such a system

across CA could easily cost $5B-$7B if 700 MHz were the platform. That kind of money is not easy to find. And those figures do not include the cost of subscriber units.

Cooperation between radio system operators is rare. Fortunately, CA enjoys some of the best such shared systems, but most of the state lacks the cooperation needed for complete radio interoperability. Until we all agree on a uniform vision of what we need, there is little incentive to share what we have.

The struggle to establish **standards** for open-architecture radio systems lasted many years and caused much heartache. Our free market capitalist economy is the envy of the world, but it prolonged that struggle significantly. Rather than focus on the needs of the public safety user, industry was concerned about the bottom line, and perhaps they should be. Why give up market share when it might mean financial ruin? Who is holding the safety net for corporate America?

What should we do to circumvent the obstacles?

So, now that we understand what we need and why we don't have it, **what should we do in order to get it**?

The first order of business in the formation of any partnership venture is **governance**. You may have already heard this at home, but here it is again: "How you do it is just as important as what you do."

Governance: So, here is how I recommend you do it:

1. shared governance is essential:
2. all stakeholders at the table (physically present)
3. equal voice (hear them out)
4. compromise (everyone must give AND get)
5. encourage outside-the-box ideas (like boundary drops and shared facilities)
6. building relationships is just as important as building systems

Let me emphasize the importance of those relationships to the kinds of successes that Don Root and Bob Sedita will discuss in their presentations tomorrow.

1. We need to build relationships long before an incident, and follow-up after the incident to repair or reinforce those bonds.

2. We must include all disciplines, technicians, system managers and dispatchers.

3. We need to value/honor/praise communicators/system techs/mgrs

4. “Great relationships require frequent communication.”

Once you have established the ground rules for your partnership, the rest is a matter of leadership:

1. find a real leader; someone with power, position, or charisma (Gov. Arnold)
2. define and agree on the goal; compromise if needed (“bigger” agencies need to “give up” something to set the example; after that happens, everyone will participate)
3. “adopt” a credo; ours is “WE CAN DO this!” (Gov. Arnold)
4. bring all the stakeholders to a round table
5. identify needs and obstacles for each stakeholder
6. think outside the box, ie, refarming freqs
7. rank the importance of this project among all others, esp for allocating money in a realistic way

8. develop short-term and long-term solutions
9. work quickly to implement short-term solution
10. be persistent about progress toward the goal
11. keep all stakeholders involved by keeping them informed (even if they don't want to be)
12. talk it up and celebrate every milestone
13. continuously reevaluate and adjust the plan accordingly

Excellent examples of all these principles will be presented tomorrow by Don Root in his presentation about the Statewide Interoperability Executive Committee and by Bob Sedita who will share the interoperability successes of the LARTCS.

I strongly encourage you to hear what they have to say.

Finally, I implore you to keep the faith. No one is better qualified than you are to keep the public safety community focused on effective solutions for interoperability.

Now, as never before, we **are** listening. Keep talking, stay focused on the goal, lead your organization, and be positive about the results.

If, when I ask, “CAN YOU HEAR ME NOW?” your answer is a resounding “YES,” then we are finally making the right connections. And, if you like what you are hearing, then stay tuned, because your reception is about to improve dramatically.

CAN YOU HEAR ME NOW?..... GOOD!!