# Opportunities for Public Safety Agencies to Shape the National 700 MHz Public Safety Broadband Network

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- This presentation provides an overview and notes key issues to help APCO members better to assess the implications for their particular agencies .

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# Context

- FCC has in a series of proposed rulemakings attempted to consider material factors and optimize an approach to an interoperable 700MHz public safety broadband network
- PSST was designated the public safety licensee for 10 MHz of spectrum intended for use in collaboration with a commercial "D Block" licensee that (after winning an auction for another 10 MHz of spectrum to which public safety would have emergency access) would build the network facilities
- a 2008 auction yielded one bidder that did not meet the $1.3 billion reserve price, so alternative approaches are being considered
- opinion seems to be shifting toward regional rather than national licensing, and local agencies are seeking interim waivers to permit use of PSST-controlled spectrum before national approach is settled

# Context (cont'd)

- Congressional action would be required for changes such as deviating from an auction approach or providing for any direct funding of network construction
- recession and budget crises has made the funding of network assets and operations as critical an issue as ever, even as the new alternatives appear less self-supporting
- although not usually the case with waiver consideration, Friday's FCC public notice seeking comment on local agency waiver requests may be a vehicle for setting the next general direction

# PPP Concept Origins

- taken from non-U.S. and some limited U.S. cases where private sector owns or operates what government does not need to provide itself, can't afford to provide or can't provide as efficiently
  - U.S. has less experience than other parts of the world with using the public-private model
  - for-profit entity assumes responsibility for capital expenditures and operation of public purpose facilities
  - "partnership" contracts obtain commitments from the commercial entity to meet government standards, as well as control economic aspects of the relationship
    - fees paid to the government for the right to operate the project
    - limitations on rates to be charged and return on investment
    - "disaster" scenario protection of public interest in and necessary rights to the affected assets

# 700 MHz PSBN Variations on PPP

- Public Safety Broadband Licensee (PSBL) represents public safety interests, negotiates Network Sharing Agreement with D Block licensee (DBL) and administers priority network operations, but with material FCC role to approve
- DBL is selected based on auction bid, not combination of price and other criteria (due to current law)
- challenge of maintaining bidders' equal access to information while providing all information material to a bid, including as to potential NSA terms and even as material information may be evolving outside of the FCC
- most PPP situations elsewhere involve greater individualized negotiation with bidders before a "winner" is selected

# Commissioner Copp Comments

- need to resolve technical details of network before re-auction
- need to clarify roles of private and public "partners"
- FCC needs to make sure that it has the expertise it needs to contribute network, technical and operational knowledge and to play "honest broker role"
- FCC needs an economic analysis like that a large carrier or investor would perform before building a multi-billion dollar network or risking capital in a new venture
- any set of network and operational specifications needs to be put out for public comment

# Value of D Block Opportunity

- net result after assigning values to
  - estimated cost of physical build-out
  - estimated revenue to be earned from network
  - estimated financing cost
  - estimated administrative and compliance costs
  - timing of all of the above (including license term and build-out schedule)
  - (un)certainty concerning all of the above

# FCC's Third Further Notice of Proposed Rulemaking

- wide-ranging request for additional input reflecting re-consideration of PSBN approach
- preserving mandatory auction process, but considering awards to bidders for regions including a majority of the population
- some clarification of the expected role of PSST and inclusion of a more detailed outline of prospective NSA terms
- retained perspective that a solution should be as "national" as possible (consistent with original goals of universal interoperability and access)
- timing was unfortunate so far as FCC ability to act

# Lingering Public Safety Concerns

- that the mandated performance parameters may fall below what a large number of public safety agencies would prescribe were they contracting directly to build a local network (yet expensively stringent for a commercial network)
- that the geographic/population coverage mandates will not assure coverage of substantially all of the nation's population, especially if regional licenses are issued
- that development of existing or planned local networks will be unduly constrained by standards or NSA provisions that introduce delay, additional cost or material modification of locally preferred network designs
- that the parameters set by the FCC for public safety user fees imply fees that may be uneconomic for some local jurisdictions and insufficient to assure a build-out in other jurisdictions

# Concerns (cont'd)

- that the FCC's proposed draft outline of NSA terms continues to leave too much uncertainty for prospective bidders to be able to value the D Block license and to secure adequate financing of the capital required to build out the network
- that the minimum bid requirements will deter bidders that might offer an overall better network solution than the highest bidder meeting minimum requirements
- that decisions on the choice of technology (WiMAX or LTE) will be based on "lowest common denominator" performance criteria that accommodate emerging technologies but do not or cannot hold each technology to perform to its particular advantageous potential

# Concerns (cont'd)

- that the award of the D Block license(s) will be made without giving prospective bidders the opportunity to offer additional or optional performance or other commitments in response to the requests of public safety constituents
- that a D Block license award based solely on a bidder's acceptance of basic NSA terms and on the dollar amount of a license bid (or a minor difference in the population covered by a bidder's regional licenses) will not encourage bidders to offer their best solutions to the unique requirements and challenges of a nationwide interoperable communications network that must integrate with the communications strategies , plans and budgets of each local participant

# Wear and Tear on the 2007 Concept

- time waits for no PSBN—local agencies need spectrum, are pledging interoperable new networks
- politics shift—FCC has three new commissioners (including a new chair) and Democratic majority, as well as Admiral Barrett heading PSHSB
- agendas evolve—changes in relevant committee chairmen in Congress, new Obama administration with a crowded agenda, plus technical nature of issues, likely leaves the FCC setting the next steps
- budgets bust–PSBN was to be self-supporting, but latest alternatives that move away from the original PPP structure require new funding sources at a time of federal deficits and state and local budget crises
- yet the original interoperability goals remain critical

# Commercial Carrier Perspectives

- commercial players won't have public safety as their first priority, but can be expected to act in their own business interests (and those may be coincident with public safety)
- Verizon statement on 2008 D Block auction: economics were fundamentally flawed and bidding rules (including NSA approach) created too much uncertainty
- Verizon/AT&T vs. Smaller Players—700 MHz auction of other spectrum left the "big two" in dominant positions (but possible targets of future limitations) and the others still hoping to gain a foothold, with the D Block and PSST's 700 MHz spectrum the last chance at the "beachfront"
- Each carrier faces other strategic business and regulatory/legal situations—may be best to simply understand the pros and cons for public safety (and perhaps the advantages to be realized by particular carriers of particular PSBN solutions)

# What Some Carriers Now Propose

- Verizon and AT&T recommend that the 10 MHz of D Block spectrum be given to public safety and that regional agencies be free to negotiate with commercial "partners" to create regional solutions so long as technical interoperability and other PSBN national standards are maintained
- this would likely leave these carriers well positioned to be selected for network build-outs or other solutions where efficiencies may exist in supplemental commercial service or developing shared or "network in network" facilities (and other carriers could not buy 700 MHz spectrum)
- this approach will require federal or local financial support, especially for areas that have a higher cost per user to build or operate a network that meets public safety standards

# What Other Carriers Propose

- a group of smaller providers, including Leap Wireless and T-Mobile, favor auctioning the D-Block and public safety spectrum as a single 20 MHz block for commercial use, then devoting the proceeds of the sale to achieving national interoperability
- this serves the carriers' goal of securing 700 MHz spectrum, but even the proponents concede that the proceeds of the auction would be insufficient to fund a nationwide network
- public safety loses control of its own spectrum, although there might be required sub-licensing or leasing
- might facilitate more "partnering" options on a regional basis by creating alternatives to AT&T and Verizon, but not clear whether it would create networks that could not be developed through permitted sub-licensing or leasing

# Regional License Impact

- if regional licenses go to majority bidder, geographic cross-subsidies are no longer internalized, i.e., some level of cherry-picking will have occurred
- areas with lower-return on investment that are avoided will not receive contributions towards cost from the more populous areas or lower-cost regions
- to achieve 95% or more nationwide geographic coverage, extra funding may be needed from higher user fees, government grants, low-cost loans and similar support, or local user fees may be prohibitive
- if there is not a single D-Block licensee, how much does it matter if there are 2 or 12 or 25, since all regions will have to meet minimum interoperability standards?
- administrative efficiencies may be less compelling than operational or other synergies in regional licensing

# Local Agencies Want to Move Forward with Plans

- A number of large cities and states are seeking waivers to permit local use of the PSST's 700 MHz spectrum
- PSST has expressed general support, so long as national PSBN standards are followed and the national network concept is not undermined
- PSST is working for public safety consensus, and its role will likely require better definition as the PSBN approach is clarified
- Carriers and some cities seem less clear in expressing their vision for PSST oversight/coordination of regional projects, including if the D Block 10 MHz is to be licensed to public safety.

# Moving toward Common Ground?

- most public safety interests seem to support granting the 10 MHz intended as D Block commercial spectrum to public safety rather than holding a re-auction (or if a re-auction is not viewed as practical), largely consistent with the Verizon/AT&T preferences
- the multiple waiver requests of local agencies to use PSST spectrum seems to put momentum on regionalized licensing, but doesn't guarantee that result
- Verizon and AT&T prefer that cities and regions determine best way to use spectrum and build their own systems or to negotiate with the private sector spectrum and network arrangements, subject to following common design and interoperability standards
- PSST supports local waivers, but not at the expense of a viable nationwide interoperability

# Common Ground (cont'd)

- to the extent that LTE is chosen as the 4G technology for the PSBN (and it is gaining endorsements from PSST and others), there may be additional efficiencies gained from 20 MHZ of adjacent spectrum as opposed to only 10 Mhz
- could permit use of new spectrum where radio systems are in need of replacement (e.g., NYC would use 700 MHz to minimize downtime of critical systems being replaced and has proposed a "proof of concept" of LTE as part of a 700 MHz in-building coverage network)

# FCC Seeking Comment on Waivers

- **Timing.** Exceptions interfere with ability to make rules?
- **Authority to Operate.** How does the PSST ownership of its license affect the options so far as sublicensing, leasing or other arrangements to use the spectrum?
- **Existing Early Buildout Rules.** Which original rules that contemplated a D Block licensee (building or acquiring any regional project) should apply? What measures are needed to ensure that such early build-outs would be integrated with a future national network or regional networks? Should interoperability with future networks be required, including any associated costs that may be incurred? What about costs that might be incurred for such integration or interoperability?
- **Narrowband Operations.** Who funds necessary relocation of narrowband operations if no DBL?

# FCC Seeking Comment (cont'd)

- **Sufficiency of Pleading.** How much justification needed for FCC to act?
- **Interoperability.** The Commission tentatively determined that "rely[ing] solely on local and state entities to build their own networks in the 700 MHz public safety broadband spectrum" was not feasible, and risked "balkanized networks incapable of even minimum interoperability." But do LTE endorsements and current work to develop recommendations for LTE-based technical, governance, and operations standards to support interoperability suggest otherwise? What conditions need to be specified and satisfied to assure interoperability (see next slide)?
- **Mutually Exclusive Waivers.** Some of the petitions overlap. Who gets priority and what is the obligation to coordinate regionally?
- **Enforcement.** How to enforce rules and should they be uniform?

# These Interoperability Conditions?

- adoption of a **common air interface** among waiver candidates
- common technical and organizational **governance structures** or other mandatory collaboration to ensure interoperability as networks evolve
- adoption of interoperability **standards** developed by NPSTC task force
- "proof of concept" or other showing of **interoperability capability** among waiver candidate systems
- **roaming capability**, e.g., that a "foreign" public safety user would be able to obtain network access on the host network through a dynamic roaming arrangement
- **ability to share broadband applications**
- **scalability** of interoperability solutions
- **future interoperability** with future national or regional networks, regardless of geographic or technical configuration
- any **other common standards or capabilities**

# Economic Considerations

- "The entire premise of the Public Private Partnership is that public safety users lack sufficient financing to meet their needs....[and to] result in an interoperable broadband network…on a nationwide basis….[rather than a] commercial network supplemented by a patchwork of regional arrangements… to the extent that local or regional public safety users are able to finance network modification required to meet their needs."
- original PPP concept assumed usage fees would compensate DBL for PSBN capital and operating costs, with DBL realizing indirect benefits of economies of scale and expansion of markets

# Economic Considerations (cont'd)

- will someone show public safety the money?
  - expanded grants , general or targeted for this purpose
  - incentives to carriers, monetary or otherwise
- capital or operating cost support or both? By caps or cost-sharing?
- possible intra-public safety cross subsidies (was that the original PPP plan?)
- USF-type funding tax on carrier revenues (not?) permitted to be passed through to users (which users and services?)
- income tax increases or surtax as proposed for health care
- element of national sales tax justification

# Hinting at Future Negotiations

- contract arrangements for projects pursued by the agencies seeking waivers will have to address FCC conditions as well as anticipate the impact of further evolution of the PSBN situation
- early deals may be models for regional arrangements, lessons in what not to do or obsolete in light of national solution
- interoperability may be easiest to tie down

Thanks for your attention and participation.

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