

AT&T
Proposal



4430 Rosewood Drive
Pleasanton, CA 94588
www.att.com

(415) 999-2325
kathy.carlson@att.com

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Clement Ng
Bay Area Urban Security Initiative
10 Lombard St
Suite 410
San Francisco, CA 91444

Dear Mr. Ng:

AT&T is proud to respond to these additional questions as the second round of the RFI submitted by the Bay Area Urban Security Initiative on behalf of the San Francisco Bay Area Region, the City and County of San Francisco, the City of Oakland and the City of San Jose ("the Bay Area"). It is with this spirit of partnership and innovation that AT&T proposes a solution for the Bay Area's Bay Area community that will provide access to high speed wireless broadband.

As set forth in our RFI, AT&T does not readily participate in ARRA funded opportunities absent clear delineations of its responsibilities. While AT&T is excited about the possibility of providing Bay Area with a workable solution to meet the public safety needs of the community, it is not and will not be an applicant or co-applicant for ARRA funds. The structure that is proposed by AT&T is one in which AT&T serves as a "vendor" of the services proposed in its RFI response. While AT&T would expect to work closely with Bay Area in the provision of these services, if AT&T is selected as the successful bidder, nothing in AT&T's response should be construed to imply that AT&T intends to be an applicant or co-applicant for Broadband Technology funds, or that it intends to become a sub-recipient of such funds. If this solution is determined to be eligible for Broadband Technology funds, the obligations associated with such a grant will be those of Bay Area, except to the extent the ARRA imposes obligations on "vendors" under the program.

With this response to Part Two of the Bay Area's RFI, AT&T seeks to further clarify our vision for the Bay Area community. Our goal is to collaborate with the Bay Area UASI in the design and deployment of an interoperable LTE network dedicated to Bay Area, meeting and exceeding their requirements, minimizing their costs and reducing time to deployment. We believe that this can be accomplished using standards based equipment, low cost commercially available devices and the advanced technologies that AT&T offers its commercial subscribers.

You will find our answers to your additional questions in the document that follows. AT&T looks forward to the oral presentations on February 23, 2010.

Sincerely,

Kathy Carlson
Senior Sales Manager
AT&T Government Markets
4430 Rosewood Dr
Pleasanton, CA 94588
(415) 999-2325
kathy.carlson@att.com

Questions Posed by Part Two

Address how your company would structure a partnership with the Bay Area participants in the San Francisco Bay Area UASI Region

AT&T proposes that the Bay Area utilize AT&T's vast network experience to provide them a managed service that takes the responsibility of designing, building, managing and operating a next-generation, 700 MHz wireless broadband network. Today, AT&T designs, builds, deploys and maintains a broadband network that supports millions of customers. Our expertise in deployment is evidenced by the 350 city rollout of our 3G network in just 48 months. Our ability to offer Bay Area grade service delivery will be backed up by a service level agreement that provides metrics for user accessibility, retainability, mean time to repair and outage notification.

AT&T's proposal is to utilize a Leveraged Network Model to deliver a managed service solution to the Bay Area, as contained in our response to the BAY Area's original RFI on pages 7 through 20. While there are other models, and AT&T is flexible to accommodate other arrangements, we believe that our model is the best.

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Describe how your company would address the National Bay Area Telecommunications Council (NPSTC) Broadband Task Force Recommendations

AT&T supports the NPSTC recommendations and they are pillars of our Leveraged Network proposal to the Bay Area. AT&T served on the BBTF. We are proud to say that AT&T contributed significantly to the NPSTC process.

The Bay Area should understand that certain features recommended by the BBTF, such as SMS, VOICE, and Location Based Services (LBS) may not be initially supported by devices offering LTE on Band 14 alone. As noted in the BBTF report to NPSTC, the BBTF recognized this situation and allowed for enhanced features in future releases. However, should the Bay Area follow AT&T's recommendation for a multi-mode device, which AT&T plans to offer, these features will be supported because our devices will be backwards compatible to UMTS (HSPA) and GSM.

Address how your company will assume technology risk involved with the following:

- **Future requirements for interoperability with a national network**

AT&T maintains that a standard based approach consistent with 3GPP and that recommended by the BBTF be followed.

- **Future impact of the D-block on the 700MHz Bay Area Broadband Frequencies**

As indicated in our initial response, LTE will provide the Bay Area considerable flexibility in upgrading their network should they choose to initially deploy with the licensed Bay Area allocation and add the D block allocation at a later time.

The eNode B products can support up to 20MHz LTE FDD (20x20). In the event the Bay Area initially deploys at FDD 5MHz (5x5) and subsequently adds an additional 5MHz (5x5), the Bay Area can purchase activation keys from AT&T to increase channel bandwidth from 5 to 10 or even up to 20MHz. The upgrade is managed by license keys that will enable the larger bandwidth already available with the eNode B. This methodology makes the upgrade process simpler and avoids having to perform site visits and costly hardware upgrades.

All LTE devices should be able to support 20MHz bandwidth, but will operate on any of the smaller LTE bandwidths and the bandwidth is indicated to the device upon registration on the network.

End users should perceive no change after the upgrade from 5x5 to 10x10. Depending on the configuration, additional capacity can increase the user throughput. Theoretically, sector throughput doubles when channel size is doubled.

- o Future requirements of any other governing body that imposes requirements on waiver or license holders

AT&T maintains that any new entity that may be involved in requirements and standards follow the 3GPP Industry standards as the BBTF did. This is critical to insure both interoperability and economies of scale. AT&T has recommended to the BBTF and NPSTC that the envisioned Emergency Response Interoperability Center become a member of both the 3GPP and ATIS standards organizations to maintain parity between Bay Area and commercial networks.

Describe how your design will leverage existing public assets

ATT's proposal supports co-location of Bay Area equipment with AT&T equipment within AT&T facilities or Bay Area facilities. AT&T acknowledges that there may be instances where Bay Area will require their private RAN equipment to be hosted within Bay Area facilities. Further, AT&T is open to the discussion of whether the Bay Area should locate AT&T commercial equipment and Bay Area dedicated RAN equipment within Bay Area facilities. AT&T will work with the Bay Area to find the best model. We outlined our plans in this regard in our response the Bay Area's original RFI and provided pictures of existing facilities as well as diagrams of possible co-location configurations.

Address the grant match requirement

To the extent any portion of this project may be funded in whole or in part with grants, loans or payments made pursuant to the American Recovery and Reinvestment Act of 2009 ("ARRA"), AT&T and the Bay Area will need to reach mutual agreement on AT&T's participation. AT&T will not participate as a grant applicant or co-applicant, nor will AT&T accept any obligations or conditions associated with any funding source that the Bay Area may chose.

While AT&T is committed to providing services that will facilitate the deployment of the Bay Area 700 MHz LTE network to reach underserved or un-served communities, AT&T does not intend to be an applicant or co-applicant for grants made available under the

American Recovery and Reinvestment Act, or to engage in a partnership to seek such grants.

In the event that the bay Area is awarded grants with a match requirement, they will bear the sole responsibility for addressing the match requirement. AT&T maintains that there is significant material value to the assets being shared with Bay Area in our proposed Leverage Network Managed Service Offering. We are prepared to quantify that material value to the extent that such a process would assist the Bay Area.

Address the grant National Environmental Protection Act (NEPA) and National Historical Preservation Act (NHPA) requirements

AT&T complies with all NEPA and NHPA / SHPO requirements as needed on a site by site basis before any installation of AT&T equipment is performed on premises. We are required to receive NEPA approval on all sites and historical study approvals on any sites over 45 years in age or any site that has been designated as a historic landmark.

Address issues of system operation, management, sustainment and ownership.

This question was addressed in great detail, beginning on page 49, in AT&T's response to the Bay Area's original RFI. We have reiterated a few highlights below and we encourage you to review this section in the original response.

AT&T has proposed a dual model; one option offers the Bay Area the opportunity to purchase equipment through AT&T. AT&T would operate and manage the network for a monthly managed service fee. AT&T offers Sustainment, which will be paid for through an annual maintenance fee. Assuming that the Bay Area has, or can identify a source of the financial resources necessary for a capital expense, this model will offer a lower recurring fee schedule and a lower Total Cost of Ownership.

AT&T noted in our initial response that broadband networks have significant sustainment requirements, which could easily become a burden to Bay Area's network team. Major software upgrades that occur at least annually as well as monthly or quarterly maintenance releases, there are also "point releases", designed to mitigate bugs or vulnerabilities. AT&T will perform lifecycle management requirements for an annual sustainment fee.

Alternatively, the Bay Area could choose to lease some or all of the requisite hardware, thereby reducing the initial capital required to deploy the network. Naturally, this will result in higher recurring fees as the Bay Area will have to retire the cost of the RAN

equipment through lease payments. The recurring service, management and maintenance fees would be comparable to the purchase model, with the addition of a lease payment resulting in higher Total cost of Ownership.

Thirdly, the Bay Area could choose a managed service model. Such a model will avoid a large capital outlay and lease payments, but will necessarily result in a higher monthly managed service fee.

AT&T welcomes further discussion and exploration of these models as well as additional suggestions from the Bay Area. A hybrid of the models discussed may best suit the Bay Area.

Regardless which model the Bay Area chooses the Managed Service Offer (MSO), as proposed by AT&T, delivers unique advantages to the Bay Area. Our proposal will deliver a private RAN, utilizing dedicated 700 MHz public safety spectrum, offering the latest technology, providing dedicated RAN access, and supporting Bay Area's mission while allowing Bay Area network personnel to focus on mission critical voice networks.

Address how your company would work with the San Francisco Bay Area UASI Region to develop a mutually agreeable contract for the delivery of project milestones

The AT&T Mobility Project Management team will work with the Bay Area, as well as internally with the AT&T's organizations responsible for Sales, Business Care Services, Engineering, Vendors, Marketing, Product Realization, IT, National and Regional Network teams, and other organizations to coordinate the planning, execution and delivery of AT&T products and services. Project Management Institute (PMI)-certified and Project Management Professional (PMP)-globally credentialed team members bring experience and industry best practices to the project teams they lead. A professional Project management team, focused on flawless execution, differentiates AT&T from our competitors. A cross-functional team, managed through a proven, structured, scalable and repeatable process allows AT&T to deploy products and services to our business customers with the highest quality in the industry.

Standard Project Management (PM) tools and processes increase quality by reducing activation errors and rework. Professional project management enables quicker deployments and faster realization of services for our customers.



Address the issues with priority access and preemption

The Bay Area will not need priority access to the RAN due to its use of its dedicated radio spectrum. The devices used by the Bay Area will operate on 700MHz spectrum allocated to public safety as well as AT&T commercial spectrum. These devices will be provisioned with a unique Mobile Network Code (MNC), thereby ensuring that only public safety can access the Bay Area RAN. By deploying a sufficient number of Bay Area eNB in the defined geographical areas, we can completely avoid the main bottleneck of cellular networks—the Over the Air (OTA) segment. The use of dedicated Mobile Network Code (MNC) will enable the Bay Area devices to lock onto the Bay Area LTE network before looking to roam on another network.

Should the Bay Area want priority features for its dedicated spectrum, LTE has a capability called Policy and Charging Control Function (PCRF). In a shared EPC, policy and charging control mechanisms is an option to enforce policy regarding traffic prioritization within the LTE Gateways (P-GW). This Policy and Charging Control (PCC) architecture has two major functional elements, the Policy and Charging Rules Function (PCRF) and the Policy and Charging Enforcement Function (PCEF).

The PCRF maintains the rules for network operations and filters the resource requests against policy rules and makes decisions about network performance. These rules and decisions are also based on subscriber profiles. The policy decisions are then sent to the PCEF which then enforces them by blocking, allowing and prioritizing packets for a service data flow.

Pre-emption: Access Class Barring: Access Class Barring is a possible method to bar access to the Bay Area network in times of crisis and high demand. Devices may be initialized with Access Class category in the general user ranges for normal service priority users for emergency services. In addition cell sites support Special Network Commands that may require access barring at any specified level. In time of crises it is possible to issue commands that restrict access to, for example, to priority users only.

Address Disaster Resiliency

As indicated in our initial response, all of AT&T sites are built to meet or exceed local building codes and comply with wind loading and earthquake guidelines. Sites are physically secured with both facility and perimeter security systems. Many sites considered critical for continued operation during power outages have on-site generators and fuel capacity for many days of continued operation. Identification of these “critical” cell sites can be discussed under a non-disclosure agreement at a later time. For a sample of AT&T sites and existing coverage footprint that AT&T offers the Bay Area, please see

the Appendix of our original proposal. AT&T is prepared to discuss this in greater detail as part of oral presentations.

With the allocation of 700 MHz as Bay Area licensed channels, the Bay Area will be able to stand up temporary communications anywhere in its licensed coverage area without regard to the commercial operator's network status. AT&T can work with the Bay Area on establishing a satellite backhaul connection to its switching centers, or it can arrange for local provisioning through any IP connection.

Address the Issue of Job Creation

While AT&T is not able to commit to the job creation reporting obligations imposed upon applicants, co-applicants and sub-recipients under the ARRA, AT&T does anticipate the need for incremental human resources to support the deployment of a Leveraged Network solution for Bay Area. This may create jobs at AT&T or with its potential sub-contractors. It is also possible that positions would be shifted from other geographic areas, or that AT&T and/or its subcontractors will use contract labor. While AT&T believes that an effort of this scale will result in the creation of jobs, it can not specifically quantify the extent to which that is the case