November 12, 2009

SUBMITTED ELECTRONICALLY

Lucian Randolph, CEO
Planet TV Air-Tower Systems

Ms. Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: WT Docket No. 09-51 (A National Broadband Plan for Our Future); WT Docket No. 09-66 (Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless Including Commercial Mobile Services); WT Docket No. 05-265 (Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers); WT Docket No. 06-150 (Service Rules for the 698-746, 747-762 and 777-792 MHz Bands); PS Docket Nos. 06-229, 07-100, 07-114 (Service Rules for the 698-746, 747-762 and 777-792 MHz Bands); WT Docket No. 07-195 (Implementing a nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band); NOTICE OF WRITTEN COMMENTS

Dear Ms. Dortch:

Pursuant to the provisions of the Federal Communications Commission ("FCC" or "Commission"), I hereby submit comments in the above referenced proceedings. The following summary and attached presentation summarize the issues raised.

If there are questions regarding the foregoing or the attached, please contact the undersigned.

Very truly yours,

/s/ Lucian Randolph

Lucian Randolph

Attachments:
PTV Air-Tower FCC comment.pdf
PTV Air-Tower presentation.pdf

PTV Air-Tower Network
Airborne Wireless Mesh Transmitting Platform

Introduction

Forget being able to stand up to another 9/11, the simple fact is this: modern commercial electronic telecommunication and wireless network technologies are NOT capable of withstanding ANY of the known top-tier disasters or threats. Not even satellites.

Modern Threats - Like nothing we've ever experienced before

On 9/11 almost every communication system in Lower Manhattan failed in some manner. In fact, even the few government systems that continued to work, did not actually function as intended for complete emergency system command and control. According to several federal investigations and reports including the National Institute of Standards and Technology and the 9/11 Commission, approximately 3000 emergency first-responders were at "ground-zero" and it's estimated over 1000 of them had failed (or non-existent) communications equipment – leaving them outside direct command. (1) From a military perspective, one out of three soldiers being outside direct radio command during tactical operations is unacceptable. Emergency service workers should be no different as their job requires the same tactical communications needed to maintain command and control. The bottom-line reason for this communication failure was the antiquated and limited nature of current emergency services radio communication systems and technology. (2) Three years later in 2004, hurricane Katrina showed that the basic infrastructure of the emergency communication systems used by government (as well as commercial systems) were still quite vulnerable to natural disasters. (3) Even more disturbing is the now publicly recognized vulnerability (7, 9) of our entire communication infrastructure *and* our entire power infrastructure to very real threats from an EMP, (4, 5, 6) a nuclear event, (8, 10) extreme solar activity, (11) the weakening magnetic field surrounding the earth, (12) or an asteroid / comet from space. (13, 14, 15) And that doesn't count anarchists, hackers, (17, 18, 21) foreign countries (19) or terrorists (20) who have the potential and knowledge to damage or destroy all or part of our communication and power infrastructure. Although small, the cumulative probability of all of these threats creates a statistically significant chance that one of them will happen over the next 50 years. (16) All of them are bad, but the really big ones are actually the ones with the higher probability of occurring.

Technology Failures - We're still not prepared for the worst

Unfortunately, in almost every incident of extreme disaster events that involve more than a few hundred people, the present state of the current emergency services communications *capabilities* (from local to national) and the actual history of *technological performance* in these instances is woefully inadequate from a modern command and control perspective. Although our heroic first responders have done (and continue to do) considerable work preparing themselves for future large disasters, technologically we are still vulnerable to every type of failure that has occurred since 9/11 and hurricane Katrina. And even though it is hard to imagine, the new threats that we are considering *dwarf* anything like 9/11 or Katrina – and are outside the capability of emergency personnel to practice with current technology. Because the threats we are talking about would completely eliminate their entire communications network along with the power grid. More importantly, if the poo hits the fan in a big way (for whatever reason), it won't just be emergency services personnel who will be out of communication and possibly out of power. It will be the

civilian population. In fact, the larger the threat to the infrastructure of the emergency services communication technology, the larger the simultaneous threat to the power-grid. Threats from extreme EMP, nuclear, solar magnetic or asteroid events are capable of shutting down the entire electrical grid in North America and keeping it down for a very long time. So in a massive disaster emergency, not only could the entire population be without power but they could also be without any type of communication. Which is exactly the worst case scenario. And these are not hypothetical scenarios based on distantly small probabilities. Recent studies show there is a ten percent chance of an asteroid 30 to 50 meters in diameter hitting the Earth in the next 50 years. The ECS and DHS vulnerability reports from last year as well as the EMP Commission report clearly show that the threat from even a moderate nuclear detonation in the atmosphere could cause an EMP that would eventually remove almost all fixed asset telecommunication systems including tower based wireless equipment and transmitters, unshielded landline support electronics and most low orbit satellites. If placed correctly, the EMP would potentially shut down both the telecommunication and the power grid over the entire North American continent. The report also calculates that any direct attack on a satellite by a nuclear weapon will take all unshielded satellites offline – even high orbit geostationary satellites that are considered last line backup. A continent wide EMP could take decades to recover from.

What's Being Done - A new communication network for first-responders

To address these issues, several long-term and far-reaching initiatives have been set in motion at the federal level. The first involves television. Analog television broadcasting in the United States ended on June 12, 2009. As part of that transition, the FCC held out a large chunk of radio spectrum in the 700MHz band. This spectrum was intended to provide a nationwide emergency services broadband network. It also included a new emergency radio communication network and the infrastructure for both had to be impervious to natural or man-made disasters – and they had to cover the entire country. A simultaneous effort led by the DHS involves designing a new multi-band radio for emergency services personnel that could use this new 700Mhz spectrum recovered from the TV transition. The new radios are expected to cost between $4-6k each (which is normal for a radio of this type). In addition to the 700MHz spectrum, they would also have the capability to access all other emergency services radio frequencies (and even the military spectrum frequencies). The FCC prepared an auction for the 700MHz D-block (the emergency services block) and anticipated one of the large telecoms would purchase the spectrum and provide the (massive) build-out needed to deploy the network. In the summer of 2008, most of the last of the spectrum recovered from the TV transition was auctioned off by the FCC for use by telecommunication companies and others. The telecom giants (AT&T and Verizon) bought most of it to start building out their own wireless 4G broadband networks (which will be primarily piggybacked on their existing 3G networks). Smaller independent and regional carriers bought the rest to build out their wireless broadband networks, too.

Then Something Happened - Nothing

However, the 700MHz emergency public services spectrum had a minimum bid of $1.3 billion dollars. Not one telecommunication company placed the minimum bid... not AT&T, not Versizon, not anyone. There were several reasons for this including the egregious terms of the bid and the unrealistic technological expectations of the FCC. But the most important reason none of the major telecoms placed a bid is because there is no commercial broadband technology that is capable of providing a service impervious to natural or man-made disasters *and* is capable

of covering every inch of the country – not even satellites. Not under the types of threats outlined in the beginning that we now *know* we are under.

And the big telecoms know it, too.

The ESTR-Com - Emergency Services Tactical Remote Command System

In fact, there is only one technology that is capable of this feat. And that technology is the ESTR-Com system by Planet TV (pronounced estercom). This patent-pending system was developed by Lucian Randolph from systems he designed for use by military special operations and is based on the AWACS. Commonly used now, AWACS is an airborne system used to provide battlefield and theater-wide radar and communications. The system routes all radar, reconnaissance and communications through airborne assets and requires no permanent ground-based infrastructure. Hence the usefulness in battle – nothing that happens on the ground or sea can disrupt air communication. Therefore, command and control can be maintained. Like AWACS, the ESTR-Com uses an airborne mounted radio transmitting system. But rather than transmitting to and from other planes and ships, the ESTR-Com system uses special, two-way video "walkie-talkies" called PVC's (Personnel Video Communicators) that are issued to each individual involved in any aspect of emergency services (police, paramedics, firefighters, hospital and medical emergency personnel). Other larger tablet devices called MCT's (Mobile Command Terminals) and larger desktop BCS's (Base Command Stations) are all connected via an adaptable digital command system to each individual PVC. The Mobile Command Terminal is used in the field or vehicle to monitor and command a set of PVC's and the Base Command Station is installed in existing command and administration headquarters, hospitals and other facilities where logistical database or digital government resource access is needed. The devices and systems are hardened, data-capable, self-contained and (unlike any commercial technology available anywhere in the world) the ESTR-Com does not require any ground-based backhaul or networks to operate in emergencies – because the entire infrastructure is mounted inside a plane. In an emergency, even if the ground station equipment goes offline, the ESTR-Com equipment can communicate point-to-point between units on the ground by using only the airborne transmitting plane.

The Cost Factor - The least expensive answer is also the best

By covering the country with a network of these airborne transmitting planes (called Air-Towers) we can create a wireless mesh over the entire continental United States. The individual planes are modified long-loiter highly fuel-efficient FAA certified jets based on a Cessna Citation CJ1. As counter-intuitive as it may seem, keeping up to 250 of these planes in the air 24/7 is actually cheaper than *any other alternative* for providing complete continent wide coverage for any type of universal emergency services communication or broadcasting system. All other terrestrial based technologies (such as tower or structure transmitting) require far more money, time and resources (in terms of build-out to cover the whole country) than the Air-Tower system. Current estimates to build-out a tower based system are a minimum of $20 billion (and up to a decade or more to deploy). The actual costs are probably closer to $40 billion. Plus, maintenance costs on wireless tower equipment is significant and the problem of broadband backhaul presents even more cost. Enhancing broadband capable backhaul (a necessary and unavoidable problem for all tower based systems whether using preexisting towers and infrastructure or new construction) introduces a new level of vulnerabilities for emergency services from the choke points created by new wireless network backhaul equipment. Space-based satellite systems are no better in terms

of price and performance. Satellites cost upwards from $3-10 billion each and you need dozens of them. Plus, although space is infinite, the number of satellite parking spots is finite. Satellites (both by nature and spectrum limitation) also have the *smallest total capacity* of any type of wireless system or solution. When combined with the high total cost for deployment, satellites offer the least value to capacity ratio. By contrast, the Planet TV Air-Tower system will cost $6 billion to cover the entire continental United States. And it would only take five years to completely deploy. This puts 250 planes in permanent FAA approved ultra-high orbits over the country 24/7, including all metropolitan, rural and remote areas. In fact, in just the first two years, the Air-Tower system will cover the top 50 population centers in the entire continent. The plane is so small at this altitude (41k feet) they are virtually invisible and totally silent. The planes fly on an eight hour shift (plus one hour out and one hour back to base) and there are three shifts of planes (3 x 8 = 24 hours a day coverage). This is 750 planes total – 250 in the air and 500 on the ground at all times. This number of planes and this type of traffic is not unusual for any airline.

R^3 Un-equalled Advantages - Resistant, resilient, redundant

An airborne wireless mesh has unique and incomparable advantages over any terrestrial or space-based platform. First, any maintenance and repair issues will be detected and corrected each day because the planes are serviced for duty once every 24 hours and all service is in the normal aircraft hangar. Maintenance on a wireless tower is always a remote service, the most difficult and expensive kind of service. Maintenance or repair is a non-starter for a satellites. Second and most importantly, the ESTR-Com system is the only system that is resistant up to a nuclear or EMP event, and the only *guaranteed* system that is resilient after a nuke or EMP. The reason for this capability has to do with the transient nature of the platform. Unlike both towers and satellites, which are permanent installations, the PTV Air-Tower planes are constantly cycling in and out of duty. The very nature of the system is based on multiple layers of backup. The system is like a very low-flying satellite constellation where the satellites are brought down to the ground every day. The Air-Tower planes fly at 41,000 feet altitude which is far above most weather and they can fly around anything that reaches into their orbit path by side-stepping up to nine miles from orbit center. At this height, a single plane can transmit to over 15,000 square miles, far greater than any land-based transmitter. Unlike satellites, which are based from several hundred to over 22,000 *miles* in altitude, the close position of the Air-Tower plane to the ground (41k feet) means the signals are not significantly affected by weather. And unlike terrestrial towers, nothing that happens on the ground can take the Air-Tower offline. It is this resistant, resilient and redundant capability is fundamental as a national emergency communication network and is unique to the Air-Tower.

The Future of Emergency Communication - Currently in limbo

Because of the failure to attract a large telecom interested in providing the emergency services broadband network in the summer of 2008, combined with the economic collapse last fall, and the administration change over the winter, the 700MHz project has been in limbo. During that time, rather than trying to come up with a solution to the entire problem, the major telecoms have been lobbying to have the project broken into regional pieces. They want to allow local governments to make individual deals to deploy an emergency services network with regional carriers (such as AT&T or Verizon). Not surprisingly, both AT&T and Verizon have been pushing

their newest network protocols which will be on the new 4G network that each of them are building out – which are different of course.

In the words of one FCC insider, “It’s become a holy war of network technology.”

Unfortunately, the losers in this war will be emergency services personnel and first-responders if any of these “holy grail” 4G technologies is implemented. Because, no commercial network communication system can provide the required capabilities under extreme and large-scale emergency conditions (no matter what they say). But if history is an example, it will take ten years to prove that it doesn’t work. Then it will take another ten years to get the spectrum back. And during those twenty years, we will have an emergency services communication system that is just as susceptible to the threats mentioned in the beginning. And the giant telecoms will have made hundreds of billions of dollars over that time period from this spectrum. Also, if this nationwide spectrum is broken up, there will be no incentive to cover the wilderness portions of the country. And there may be no incentive to cover the rural sections of the country – just as there has been no incentive to provide broadband service to most rural communities. And the reason there won’t be any incentive is because their networks don’t cover these areas and customers now. Both AT&T and Verizon (as well as every other broadband provider) are building out their new network by overlaying it on their existing networks. They say *after* they have finished that, they will build new towers to cover the rest of the country. This is a long term promise backed by an industry with no history of fulfilling promises. And even if other telecoms tried to cover these areas, they couldn’t do it without digging cable trenches, stringing wires or planting radio towers all over the countryside. Plus, the cost of any other proposed system would start at three to four times the price of the PTV Air-Tower system and more likely be five to ten times as expensive.

$6 billion over six years versus $20 to $40 billion and decades.

ESTR-Com - The Only Communication System Capable of Withstanding Top-tier Threats
Most importantly, these other proposed plans will not have the ESTR-Com system which provides complete protection against failure from anything short of a nuke or EMP – and can bounce back in 27 minutes after a nuke or EMP (the time it takes for a new wave of planes to hit altitude). In fact, the civilian nuclear resilience capabilities are unmatched. In a true nuclear event emergency, all telephone, television, radio and internet transmitting towers will be taken offline by the EMP (electro-magnetic pulse). The extent of the EMP damage is directly related to the height of the explosion or pulse. Any device detonated over a metropolitan area would destroy all electronic devices far beyond the actual damage area. Modern tactical military theory says that a large scale attack on our country could be preemptively begun by a high-yield detonation of a device in orbit above the U.S. continent. This would disable all civilian communication satellites in addition to the continent wide destruction of active electronics. This is why all of the telecommunications systems will be taken offline in a nuke or EMP event. In fact, the government is currently designing and implementing the new nuclear-hardened Executive command communication system to replace the aging Cold War system that was decommissioned in the 1980’s. However, this system is only for the President and the military and perhaps some level of the federal government. No plans exist for a communication system for the general public. The complete coverage and nuclear resilient capabilities of the Air-Tower

system offer a nationwide public address system that can be operated at any level from local (for extreme weather for instance) to the national level (for instructions or messages from the President after a nationwide disaster). However, PTV Air- Tower Planes can also broadcast television and radio to the entire continent. If the land-based stations go offline after a nuclear or EMP event, we can use their spectrum as part of the national information distribution capability (along with the Emergency Broadcast Channel). Tower transmitters (and satellites) will take decades to repair or replace. The Planet TV Air-Tower planes can be back into the air and at full super-cell transmitting capacity in only 27 minutes. Major areas covered by the center of the super-cell will have transmission capabilities in under 15 minutes. Few (if any) television or radio transmitter equipment is protected (or protectable) against an EMP or nuke. No civilian or commercial satellite provider is shielded against a nuclear or EMP event. Our system allows the government (all the way up to the President) to speak directly to the civilian population after any large scale disaster up to and including a nuclear event. No other technology can offer this capability. It can also be used to maintain emergency government communications.

Secure Platform for Other Uses - Numerous capabilities can ride on the infrastructure
In addition to the one-of-a-kind advantages for implementing a nationwide emergency services communications network like the ESTR-Com system, the Air-Tower system also provides a platform for several other uses that the FCC and other federal agencies and departments are currently exploring. The most important of these is the BTOP (Broadband Technology Opportunity Program) which has already given over $4 billion in grants to push broadband access into rural and under-served areas of the country. The BTOP program has another $2.5 billion in grant money which will be awarded early next year. The BTOP guidelines clearly state that preference will be given to proposals that cover the greatest geographic areas. The nationwide wireless mesh platform of the Air-Tower system offers the capability of creating a seamless roaming data network from the cumulative spectrum of small regional wireless carriers. These carriers have invested in new spectrum to expand 4g data services but are incapable of offering roaming data services to their customers. This is because the large telecoms have no incentive to enter into reasonable roaming agreements with these small carriers. This effectively limits the ability for small companies to enter the market and reduces competition for the large carriers. This is like the early situation with cell phones and the Air-Tower network can eliminate this problem completely. The FCC is also exploring wireless network options for the “smart grid” that it is developing. DISA (Defense Information Systems Agency) is actively seeking redundant commercial satellite communication services and they expect to spend $5 billion over the next ten years on it. DHS is interested in the airborne optical assets capability over the southern wilderness border areas and they too have alloted money to address this capability.

Business Opportunities To Pay For It - Government contracts and commercial services
Although AT&T, Verizon and Clear Channel are the largest single holders of spectrum covering the greatest area, the best model to offer an unrivaled coast to coast broadband service will be to emulate the Cellular-One model from the 2G cell phone era. By organizing the independent spectrum holders under a unified over-reaching transmitting platform, Cellular-One was able to create an organization that competed with the large telecoms. Using the same strategy, we can extend each spectrum holder’s reach to the maximum geographical limit allowed by law. This provides the ability for regional carriers to begin offering nationwide roaming data services. This has not been possible to date because the major carriers have had no incentive to offer reasonable

roaming agreements to smaller spectrum holders. Utilizing the Air-Tower infrastructure we can create cooperative roaming agreements between regional carriers by extending their spectrum ranges until they are contiguous with other small carriers. On remote areas not served by any other spectrum holders, we can offer service using public spectrum. Additionally, aerial imaging services for news, science and other groups have always been limited by capacity or capability. This is an under-served niche market and new capacity and capability has historically produced new customers and new revenue. On-demand and/or real-time aerial imaging services have *never* been available commercially. This is a new and hugely profitable market because no one else can provide this capability. DHS has interest in this highly profitable service. The complete coverage over wilderness areas also creates the possibility of offering an emergency wilderness communication service that would function like "OnStar" for your body. It's called OnPlanet and it will create huge goodwill and public relations – because it will work to find lost people.

The Gold Mine - A new television distribution model

The most important and profitable commercial application of the Planet TV Air-Tower Network project is also the one that has actual history to support it – and the one that proves the concept has been acceptable to the FCC in the past. Just after WWII, the FCC and Westinghouse (a research and manufacturing titan of the time) developed Stratovision. This was an airborne television transmitting tower mounted on a B-29 and used to broadcast live television programming. The FCC actually considered using a series of these planes in orbit above the country as a means of providing the fastest way to cover the country coast to coast with television service. It never happened because AT&T got together with the only two television networks that existed in 1949 (CBS and NBC) and convinced the FCC that a system of independent stations with their own transmitting towers would be better and would eventually cover the entire country as well. Well, anyone who lives in rural America knows that's just not true. Over 60 years have passed and free over-the-air television is still not broadcast to most rural areas in the United States. And it took the FCC over 60 years to get the spectrum back from the television networks. The 700MHz D-block spectrum deal includes a 10MHz slice for commercial use by whatever group provides the emergency services network system. This is just enough spectrum to provide a wireless television broadcast system (exactly like the Stratovision system the FCC found useful in 1949). Only with modern technology, this is enough spectrum to offer several hundred channels of digital TV programming.

A-La-Carte - It's French for pick and choose your TV channels

And the type of television service to provide is an a-la-carte programming system. According to an Arbitron study, over 141 million cable or satellite users have said that they would actually prefer (and would switch) to a provider who offered individual channel subscriptions instead of packaged bundles of channels (which are the justification of large bundled cable package rates). Most television viewers in America only watch between 12 and 24 channels and a hand-full of those are usually the big six (ABC, Fox, etc.). Most cable companies bundle several hundred channels now and monthly cable service runs from $80 to $120 per month on average. The movie channel networks and the professional sports leagues will be prime candidates for content distribution deals because their customers already pay individually for this content. We are simply offering their customers the chance to only pay for the premium content (and not the normal unwatched and unwanted content that they are required to pay for under bundling). A-la-carte television subscriptions are based on the idea that if you only want to watch HBO, you

shouldn't be required to pay for NBC. However, all television subscription services in the U.S. require (at minimum) a basic bundle of programming for a set price. And to get access to the "premium" channels (like HBO) you must have this minimum package. Although desired by 2 out of 3 actual customers, none of the cable or satellite television subscription companies offer this service – in any capacity.

The Future Is Now - The opportunity is here

And this technology is not science fiction. This system exists right now and has hundreds of hours of testing and performance data to prove it works. The Air-Tower system is cheaper, faster to deploy and environmentally less-intrusive than any other alternative. Plus, it has a lower carbon footprint for build-out, operation *and maintenance* than any other potential system that has been developed (or proposed) to address this capability. Also, because the long-range highly fuel efficient jets fly at 41,000 feet and use the 700MHz spectrum to connect the ESTR-Com equipment with each other, they will outperform tower and satellite transmitting systems. Because at an altitude of 41,000 feet, the 700MHz spectrum (which is the same as the high UHF channels) has unique propagation characteristics that can reach deep into buildings, basements, valleys and even canyons. Neither satellites nor towers can equal this. Best of all, this system is independent of anything on the ground or any other network. If the internet goes down, it does not affect our system. If the phone systems (cell or landline) go down, if the power is disrupted, if bombs are going off or planes are crashing down… our system is unaffected. Just like the military AWACS, our system sends and receives all communication through the private secure IP network riding on the wireless mesh covering the United States. The ESTR-Com uses technology and systems that are capable of functioning during anything up to and including war – because they were designed from the same systems that we actually use during war. Most importantly, short of a nuke or EMP, the system cannot be taken offline by anything… And the Air-Tower system is the *only guaranteed* system that is resilient after an EMP or nuclear event. Nothing in the commercial market even comes close.

The Planet TV Offer

AT&T spent a record $42 million in lobbying last year and Verizon was not far behind. The point of this lobbying effort has been to convince the FCC that multiple regional commercial markets are a better provider for emergency services communication than a single dedicated nationwide network provider. This is the same type of argument used against Stratovision in 1949. But the stakes are much higher than just television coverage for all Americans. The very security of our country could depend on a functioning national emergency communication network and none of the alternative systems can provide the protection that the Planet TV system can.

Planet TV requests that the FCC, DHS, Congress and the President determine that the Air-Tower infrastructure and the ESTR-Com system are the correct use of the 700MHz D-block spectrum.

Planet TV is prepared to negotiate the $1.3 billion bid for the license and we will pay for the deployment of the entire Air-Tower infrastructure.

The Air-Tower system is also the best solution for the coast-to-coast deployment of broadband under the BTOP. Planet TV will offer a matching funds deal for the $2.5 billion in remaining BTOP money. No other company has offered anything like that and it will serve to effectively

double the buying power of the the governments last $2.5 billion to $5 billion – and it would guarantee universal broadband coverage.

Planet TV will cover the cost of building and deploying the nationwide Air-Tower network and will make the ESTR-Com hardware available to emergency service groups as upgrades and replacements for their current radio communication gear. This is the same plan that will have to be implemented to deploy any of the new DHS multi-frequency radios recently designed for possible use by emergency services personnel.

Manufacturing and Investment Co-partners - To make it happen

Lucian, the inventor of the technology portfolio represented in the patents and head of the Planet TV company, has directly coordinated the technology providers needed to manufacture the software, equipment and electronics. These include SAS, the largest private software company in the world, whose institutional and government software systems are needed to data mine into existing communication infrastructures in *every* emergency services organization from coast to coast. Lucian has also spoken directly to Cessna. The economic collapse has opened up almost half of their yearly output. This means they should be able to provide up to 150 Citation Jets per year from now on. In addition to several specific patents pending on the entire system, over $30 million and over ten years have been spent in the creation of the Air-Tower system and the portfolio of Lucian's technology represented in the ESTR-Com.

Planet TV has also developed the large financial and investment deployment funding needed to implement a project that is on scale with the creation of the Interstate Highway System. Several institutional finance groups (including several foreign governments) have expressed a desire to provide the financing needed for the matching funds offer to the government as well as general medium to long range loans to cover the cost of the planes and infrastructure. If we are successful with the lobbying efforts, then we will spend a billion dollars per year for planes and equipment for the first five years and close to half of that from that point forward. The vast majority of all money spent in the deployment of this project is in the cost of the planes.

Bottom Line - No one else comes close

No other telecom group has offered to build the nationwide network or to pay for it.
No other telecom group has offered to match funds for national BTOP coverage.
No other audio/video or data technology can equal the performance of the ESTR-Com platform.
No other wireless network technology can withstand the threats that the Air-Tower can.
No other solution can cover the entire country for the price PTV can.
No other network offers resistance, resilience and redundancy like the Air-Tower.
No other company offers as many secondary uses to maximize the infrastructure.
No other system offers the capabilities of the Air-Tower Wireless Mesh Network.
No other business will create up to 10k new American jobs from this government effort.

Emergency services capabilities, by nature, should be based on worse-case scenario planning and not a function of the technological limitations of their equipment. It makes no strategic sense to deploy a system to provide emergency services communication and data services utilizing technology that is known to be incapable of handling a large scale top-tier disaster – especially when a cheaper, greener and better performing system exists right now.

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Detailed Footnotes At End Of Document

ESTR-Com* Scenario for firefighters

*Emergency Services Tactical Remote Command System

The night is dark and moonless. In the back area of an industrial park still under-development, the bottom floor of a large unoccupied four-story office-warehouse is burning. The sound of sirens pierce the blackness as the flashing lights of a fire-engine and a ladder truck screech to a halt on opposite ends of the burning building. As the firefighters unload and begin to remove their equipment and hoses from the trucks, the Fire Captain jumps out of the cab of the fire-engine holding a large computer tablet called a Mobile Command Terminal (MCT). He quickly walks over to a table in a Command Area just set up by his men and sits with the computer touch screen tablet. On one side of the large MCT screen are two columns of individual windows connected to forward looking video cameras on special two-way video conference radios called Personnel Video Communicators (PVCs) that are attached to the front harness of each of the firefighters on scene. The windows show the Captain live video from the front perspective of each firefighter. When combined with individually selectable voice communication, this gives the Fire Captain complete tele-presence capabilities with each of his men. The Captain quickly divides the windows into two groups by touching a window and dragging his finger across the screen to a new location. After he gets the two groups, he taps an onscreen icon to open a two-way live audio connection to both groups and begins to verbally assign the groupings and team leaders.

In addition to the camera on their chests, the firefighters are also wearing small wireless bluetooth headphones in their ears under their helmets and their respirator face-masks have wireless bluetooth microphones which are all connected to the PVC. When the audio connection is made from the Fire Captain, he sets the line to automatically open both ways (full-duplex) for the entire group, so it is not necessary for the individual firefighters to use their hands to answer (or hear) the Captain. In fact, when the Fire Captain divided them into groups, the members of each team were also automatically connected (as a team) with live duplex audio to each other (but not to the other team). The Captain can use the MCT to directly open and close any audio or video connection individually and he can remotely control the front reconnaissance cameras (and most other functions) of any of the PVCs without assistance from the wearer. When the individual team members respond with their verbal acknowledgements, the Captain hears them on his headset and when they speak, their individual windows glow on the MCT so he can see who is talking. The Fire Captain then selects two single windows and opens a private video link with the two team leaders. When the team leaders hear the video call alert, they stop and tilt the PVC mounted on their chests forward to reveal the back of the unit with the video conference screen.

The unit is covered with a clear dome casing in the front to protect it from heat and dirt, but it tilts forward and down from the attachment plate on their chest harnesses. This allows them to continue to use both hands for work and only have to look down to video conference with the Fire Captain using a smaller video camera and flat screen monitor on the backside of the PVC unit. As both team leaders look down into the PVC, they see the face of the Fire Captain looking

into the camera on the Mobile Command Terminal on the other side of the fire-engine at the command table. The rest of the men continue to work preparing the equipment. The Fire Captain looks at the building and sees that the fire appears to be contained on the first floor in the back of the four-story structure. He then quickly looks back at the video image of the two team leaders on the MCT and tells the them to both set up on the back corner of the building and to wait for his order before entering the building. He also tells them he will have the blueprints for the building in their PVC units in a moment. Both team leaders nod their agreement and close their PVC units back into the upright forward reconnaissance position. They immediately both begin giving audio orders to their teams without touching their radios. Because they are on two independent com groups, each team member hears only the instructions from their correct team leader.

Back at the table, the Fire Captain taps another icon and connects to the on-duty dispatcher at the Fire Department headquarters. The dispatcher opens a video link on a large touch screen monitor and computer called the Base Command Station (BCS). When the video link opens on the Fire Captain's screen, he requests floor plans for the building. The dispatcher uses a similar touch screen attached to her BCS to contact City Hall Records via a direct secure connection to another BCS located at City Hall. The BCS system tunnels directly into the existing legacy database and retrieves the floor plans for the burning building. The dispatcher then drags the documents onto the icon for the Fire Captain's' MCT, which is one of many Fire Department MCT and PVC icons on her huge touch screen monitor. When the documents arrive on his MCT moments later, the Fire Captain quickly opens the document and prepares to drop the floor plan onto the PVC units of all firefighters on scene. But just as he is about to distribute the documents, two flashing windows pop onto the MCT screen. Two volunteer members of his firehouse have responded in private vehicles that are just pulling into the back section of the industrial park. The Fire Captain stops the floor plan transfer and opens an audio link to both of the new arrivals by tapping a couple of buttons on screen. They both answer on the same bluetooth headsets that the other firefighters have (because the ESTR-Com equipment is issued to all Emergency Services personnel from all departments of the government and is to be operational at all times). He tells them to join their teams and get a sit-rep (situation report) from their team leader. He then drags each of their windows into the appropriate team grouping linking them to their appropriate live communication groups. Then he transfers the floor plan to everyone. Moments later, all the members of the two teams hear an alert on their PVC's as built-in geo-positioning software has oriented the floor plan to their location and placed it on their screens. The team leaders also see the arrival of a new member to each of their teams on their PVC screen. Both leaders use the open audio com to tell their teams (which are now spread out from the trucks to the back of the building) to stop and look at the new documents on the PVC units. Each team member stops where they are, tilts open their PVC units and looks at the floor plan on their PVC screens as the Team Leaders separately go over their entry plans.

Suddenly, the Fire Captain hears someone screaming from the building. As he looks at the dark unlit building, he sees someone on the roof waving their arms. He immediately uses the MCT to call one of the teams to return to the ladder truck. Then the Fire Captain quickly contacts

dispatch again and tells her that someone is on the roof. He then requests aerial assets to get an overview of the scene. The dispatcher taps on her keyboard requesting immediate deployment of aerial imaging assets. When the system confirms authorization, it sends the geo-positioning data from the MCT to the ESTR-Com imaging system. At that exact moment 41,000 feet above their heads, a custom Air-Tower jet slowly circles in an unending vigil over the city providing a secure and unbreakable connection for all of the video, audio and data communication with all of the emergency services personnel below. Beneath the fuselage of the plane, a large dome begins to rotate around as the guidance and tracking systems lock in on the requested location coordinates. Within minutes of the request, the MCT in front of the Fire Captain shows an ultra-high definition and rock steady infrared image of the burning building in front of him as the picture zooms in from an altitude of over 7.75 miles the air. From this perspective, the Fire Captain can see the infrared images of each of his men as one group remains on the back side and the other group is quickly surrounding the ladder truck a few hundred feet away from him on two different sides of the building. He can also see the infrared image of two people on the roof of the building against the south side and can see that the heat signature from the fire is located on the opposite corner of the building from the victims. He quickly opens an audio channel and tells the ladder team the location and visual number of the victims. Then he tells the ground team the exact location of the infrared fire signature by marking the floor plan document on the MCT with a glowing icon for fire. It immediately shows up on all of the floor plan documents on all of the PVC units. A few minutes later when he sees that all of the equipment is in place and ready, he sends an audio only All-Call to begin operations. Team One enters the back of the building and engages the fire and Team Two moves into position to retrieve the two victims on the roof.

All of the firefighters on scene have returned their PVC units to the upright forward reconnaissance position and the Fire Captain can now watch from their chest cameras as each of the two teams confidently move into action. When the ground team enters the back of the building, the Fire Captain can see the fire is intense and appears to be in the office section of the building. As he watches he can see the first team deploy their hoses and begin to get control of the fire. On another other window on the MCT, he watches the video from the chest camera of the first firefighter from the ladder team as he quickly approaches the ledge of the building and pops onto the roof. In front of him on the dark open roof are two elderly men who were trapped by the fire when the room outside the stairwell caught on fire (and the fire escape door was unfinished and blocked closed). The Fire Captain switches the reconnaissance camera to night-vision and the dark roof opens up in a green haze. He watches from the other chest cams as several firefighters arrive on the roof and begin to help prepare the men to be removed.

Two homeless people will be rescued tonight. And the building will be saved.
And not one firefighter will be injured...

At one time, this scenario would have been limited to Hollywood special effects.

But the ESTR-Com system, is real.