THE COMMERCIAL SPECTRUM ENHANCEMENT ACT

HEARING

BEFORE THE

SUBCOMMITTEE ON TELECOMMUNICATIONS AND THE INTERNET

OF THE

COMMITTEE ON ENERGY AND COMMERCE

HOUSE OF REPRESENTATIVES

ONE HUNDRED EIGHTH CONGRESS

FIRST SESSION

ON

H.R. 1320

MARCH 25, 2003

Serial No. 108–12

Printed for the use of the Committee on Energy and Commerce

Available via the World Wide Web: http://www.access.gpo.gov/congress/house

U.S. GOVERNMENT PRINTING OFFICE

86–057PS WASHINGTON : 2003

For sale by the Superintendent of Documents, U.S. Government Printing Office
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THE COMMERCIAL SPECTRUM ENHANCEMENT ACT

TUESDAY, MARCH 25, 2003

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ENERGY AND COMMERCE,
SUBCOMMITTEE ON TELECOMMUNICATIONS AND THE INTERNET,
Washington, DC.

The subcommittee met, pursuant to notice, at 2 p.m., in room 2123, Rayburn House Office Building, Hon. Fred Upton (chairman) presiding.

Members present: Representatives Upton, Stearns, Cubin, Shimkus, Walden, Terry, Markey, Davis, Towns, Stupak, Wynn, Green, and Dingell (ex officio).

Staff present: Howard Waltzman, majority counsel; Will Nordwind, majority counsel; Hollyn Kidd, legislative clerk; and Gregg Rothschid, minority counsel.

Mr. UPTON. Good afternoon, everyone. The subcommittee will come to order. Without objection, the subcommittee will proceed pursuant to Committee Rule 4E. Without objection, so ordered. The Chair recognizes himself for an opening statement.

Today's hearing is on H.R. 1320, bipartisan legislation called the Commercial Spectrum Enhancement Act, otherwise known as the Spectrum Relocation Trust Fund Bill. I introduced this legislation which has been cosponsored by Ed Towns, Chairman Tauzin, Rick Boucher, Lee Terry, Gene Green, Cliff Stearns, Charlie Bass, Chip Pickering, Ed Whitfield, and Mark Kirk.

Lately the subcommittee has been focused on the ailing telecommunications sector. Clearly the commercial wireless industry has not been spared from the wreckage and we have been searching for ways to restore some hope.

In my view, what we need to do is to get new valuable spectrum into the hands of the commercial wireless carriers so they can bring new advanced wireless services to the consumer. This would be good for the wireless carriers, good for the equipment manufacturers, good for the consumer, and terrific for the economy.

The current context the Government already has identified, 1710 to 1755 MHz for relocation from the Government to the private sector. That sector, mostly encumbered by the Department of Defense, is considered valuable beach front property due to suitability for commercial, mobile advanced wireless services like 3G.

All the while, H.R. 1320 provides tight fiscal controls and congressional oversight of the use of the spectrum relocation trust funds by providing that none of the money may be transferred from

the trust fund to an affected agency until 30 days after OMB has submitted a report to the House and Commerce, as well as the Appropriation Committees and the Senate Commerce and Appropriation Committees.

In addition, the NTIA is required to report annually about the progress being made in adhering to the relocation time lines and relocation costs. Finally, the bill exempts the Telecommunications Development Fund, TDF, from the Federal Credit Reform Act, the practical application of which has prevented TDF from making loans without first attaining budget authority on an annual basis.

The nature of 1320 will significantly enhance the TDF's ability to make loans to rural new development projects focused on rural and under-served areas.

I appreciate my good friend Mr. Towns for his attention to that issue and I am pleased that that provision was incorporated into this bill.

As such, the bipartisan bill represents and win/win/win. This is good news for the private sector which craves certainty in the process and the consumer will praise the benefits which new services enabled by additional spectrum will afford them.

This is good for the Government agencies who know that they will be made whole when they relocate to comparable spectrum and the taxpayer who will not have to pay a dime to relocate Government agencies and will know that there is tight fiscal oversight in that regard.

As indicated above, all of this is great news for the economy. I look forward to hearing from today's witnesses and working with my colleagues to expeditiously move this legislation through the subcommittee and beyond. Right now I must say that I am going to be talking with Chairman Tauzin later today. I am looking to hopefully perhaps mark this up in the subcommittee the week of April 7.

At this point, I yield to my friend and colleague, the gentleman from Massachusetts for an opening statement, Mr. Markey.

Mr. MARKEY. Thank you, Mr. Chairman. I want to commend you for calling this hearing today exploring ways to accelerate the process for reallocating Federal users where spectrum is a very timely endeavor.

In addition, I believe that examining how FCC spectrum auction revenue is utilized after auctions occur is a vital public policy goal. We need to ensure that the money raised is spent wisely with adequate oversight. I suggest that surplus funds should be reinvested to maximize our Nation's competitiveness and to strengthen our democracy and our security.

Chairman Upton has recently introduced legislation that seeks to advance Federal user relocation. The Upton bill proposes a trust fund derived from auction revenue to pay the military and other Federal users for moving out particular bands. I have introduced similar wireless legislation that shares much common ground with the Upton approach.

I look forward to working with Chairman Upton as well as with Chairman Tauzin, Ranking Member Dingell, and other committee colleagues on fashioning a consensus approach to these issues.

The legislation I reintroduced last week, the Spectrum Commons and Digital Dividends Act, has as its purpose the advancement of three key policy goals: (1) Establishment of a Spectrum Commons composed of unlicensed bands of frequencies to be made generally available to the public; (2) creation of the trust fund of up to $5 billion to assist in reallocating Federal users to other bands; and (3) establishment of a permanent public trust telecommunications trust fund from additional auction revenue to fund education technology grants.

I believe that the Congress and the Administration should work together to promote economic growth in the high tech sector. Certainly the existing wireless industry is posed to introduce new services and could contribute to future economic growth and job creation.

Moreover, high tech manufacturers, entrepreneurs, and the proverbial kid in the garage could make more robust use of wireless communications if sufficient spectrum were available in unlicensed form for the general public. Many of such entrepreneurs have given innovation in recent months with Y5 technology and we rated unlicensed applications.

As we push to make available for licenses for wireless companies, we should also support making more spectrum available for unlicensed use for the general public. It will enhance economic growth and entrepreneurial activity to have additional wireless platforms for innovation and wireless experimentation.

In addition, we believe that when the FCC does decide to proceed with auctions as a means of granting licenses for use of the public's airways, the public deserves to reap the benefits of the sale of licenses to its airways. These benefits should not only manifest themselves in the offering of new commercial services or the temporary infusion of cash into the Federal treasury as under current law.

I have proposed that the public should also enjoy the dividends that can be reaped by reinvesting money raised into a digital dividends trust fund. This fund will generate interest and that interest could be used in the form of grants to promote educational technology projects, software R&D, teacher training, and digitizing for online access to the important cultural assets held in our Nation's libraries and museums among other initiatives.

Investing surplus auction revenues in this manner is a wise investment. It supports the educational infrastructure of our country. It will help to better prepare our citizens for an information rich knowledge-based economy. An educated citizenry is indispensable to our democracy. Educating citizens so they possess the necessary skill set in the digital area will make us a more secure and more productive country.

This is not something that we should put off or postpone. Even in the midst of our country's most perilous moment during the American Civil War, Abraham Lincoln signed into law the Land Grant College legislation which spoke to a brighter, more hopeful future for the country.

The legislative initiative before this subcommittee has an opportunity to support our military, promote wireless innovation, and in-

vest in educational technology simultaneously. I encourage the committee not to miss this opportunity to act on all three agendas.

Mr. Chairman, I thank you for this very important hearing.

Mr. UPTON. Thank you, Mr. Markey.

Mr. Shimkus.

Mr. SHIMKUS. Mr. Chairman, I will defer my opening statement.

Mr. UPTON. Ms. Cubin.

Ms. CUBIN. I submit my opening statement for the record.

Mr. UPTON. Without objection, all member statements in their entirety will be included as part of the record.

Mr. Terry.

Mr. TERRY. Defer.

Mr. UPTON. Mr. Stearns.

Mr. STEARNS. Thank you, Mr. Chairman, for holding this hearing. I have an opening statement. As a cosponsor of this legislation, I fully support this approach toward relocation costs and the certainty it provides for both the industry and the Department of Defense.

I commend your work and I also commend the NTIA, the FCC, and DOD, along with the private sector in working together as Ms. Victory has pointed out. She coined an expression "one spectrum team." I also want to highlight what I believe to be a key statement in Mr. Price's testimony, which is that spectrum is core enabler. While the word enabler is used primarily in the defense world, it is no less applicable to our commercial world. Spectrum, or rather the efficient use and management of spectrum, enables our industry, our economy to continue to benefit from technological advances and delivery of services that consumers demand.

I might add other nations are working incredibly hard to challenge the U.S. in just those areas. Flexibility and efficiency are the lynch pins of spectrum reform. Having said that, one of the greatest arguments that underline spectrum policy is that of scarcity.

Spectrum users operate under a zero sum mentality. The amount of spectrum used means that must less for my use. However, we may not have to operate under the scarcity arguments much longer. New technologies can transfer data with less bandwidth and are not fair from our reach.

Mr. Price mentions in DARPA's work on neXt Generation communications to provide dynamic access based on time, frequency, and location. Another technology is wavelength to vision multiplexing. Essentially this technology allows for different wavelengths to transmit along a single optical fiber. The result is increased bandwidth and flexibility of fiber optic system.

So, Mr. Chairman, I believe we are taking a good first step in this legislation to provide an amount of certainty to spectrum policy. I look forward to working with you and other members of the subcommittee as we continue to focus on spectrum management reform. Thank you, Mr. Chairman.

Mr. UPTON. Thank you, Mr. Stearns.

Mr. Dingell.

Mr. DINGELL. Good afternoon, Mr. Chairman. Thank you for holding the hearing. Welcome to the panel. Mr. Chairman, I want to commend you for the work you have done crafting this legislation. I fully support the goals of the bill.

The American consumer has benefited handsomely from recent advances in wireless communication services. I wish to work with my colleagues to make additional spectrum available so that consumers can benefit from the next generation of wireless services known as 3G.

To accomplish that goal, Congress must replace the current scheme where the auction winners must pay twice, once at auction and then again to move the Government users with a sustainable, predictable funding mechanism to facilitate the movement of Government spectrum users to new spectrum bands.

While making this change we must also ensure with the ability of our armed forces to protect the security of the United States is not harmed in anyway. I am concerned, however, that the legislation proves to lack sufficient accountability and sufficient congressional oversight over how the proceeds will be deposited in the trust fund and then how they will be expended.

Under this legislation once the auction proceeds from the sale of an agency's spectrum are deposited in the trust fund, they are really then appropriated and may be spent. Spending is subject only to an accounting of costs by the Office of Management and Budget and the National Technology and Information Administration and a brief 30-day notification period for the relevant committees of the Congress.

Indeed, other than any report detailing the cost incurred in Government users a 30-day notice of this committee and the appropriators will receive is the only nod toward congressional resettlement in this bill. I believe as the hearing goes forward we will see some of the things that need to be looked at by the Congress but possibly, or probably, will not under the legislation.

Unfortunately, Mr. Chairman, it is my experience with Government agencies, and particularly with the Department of Defense, that indicates a bit more oversight is necessary here to ensure scare Federal dollars are being spent wisely and in a manner that is consistent with what the Congress intended.

Indeed, this committee passed oversight investigation have found many examples of wasteful spending by agencies, particularly the Department of Defense. I would also like to see if that is possible assuming that the auctions generate sufficient revenues to create a second trust fund with the proceeds devoted to improving the technological abilities of those schools and our teachers.

The quality of this Nation's schools and their ability to ready students for the information economy of the 21st century is essential to our country's security and its economic future as anything else we will examine this year. I know that Mr. Grossman is here to discuss this very issue and I look forward to receiving his testimony.

Mr. Chairman, your bill is a fine starting point. I look forward to working with you to improve it. In particular, to ensure that the Congress is able to fulfill its institutional responsibility to make certain Federal dollars are property accounted for. I believe we can resolve these concerns and work together to enact this important consumer bill.

Mr. Chairman, I thank you for your recognition and I yield back the balance of my time.

Mr. UPTON. Thank you.

Mr. Walden. Mr. Towns.

Mr. TOWNS. Thank you very much, Mr. Chairman. Let me begin by first thanking you for holding this hearing. In order for the American carriers to compete with foreign rivals, they need specific bands of spectrum. The great thing about this, Mr. Chairman, they are willing to pay for it.

In a time when even industry comes to the Government simply looking for a handout, this is the time many of them coming looking for a handout, it is heartening to know that we are trying to pass legislation that does something beneficial for business and, at the same time, make it easier on the American taxpayer at the same time.

Another important provision of this bill, Mr. Chairman, is the Telecommunication Development Fund. The language in H.R. 1320 will allow the TDF to extend loans to startup technology and telecom companies in rural and under-served areas across the country without being held to the standards of the Fair Credit Reform Act.

I would like to thank you, Mr. Chairman, and also Ms. Wilson from New Mexico, for working with me to correct a drafting oversight stemming from the original language in the 1996 Telecommunications Act. Not only would this be a boom to small business, but would also spare innovation and investment. Both are desperately needed.

I know that Ms. Wilson has seen the benefits of the TDF in her own district and with this correction more entrepreneurs can benefit as well. This is long overdue. There are those that will criticize this effort as being too narrow in scope and that there is not enough oversight on the monies that are going to be given to the new trust fund.

I will go on record as stating that I am open and willing to work with all of my colleagues to improve this bill when possible and want to ease the concerns of my colleagues as well.

Mr. Chairman, we need to ensure that not only can our wireless carriers compete in the global marketplace by rolling out advance services, but we also need to ensure that the Department of Defense has adequate levels of spectrum to keep our whole land safe and to operate in times of peace and in war.

Once again, I look forward to the testimony of the witnesses and I look forward to working with you, Mr. Chairman, and anybody else who feels that we can strengthen this bill. On that note, I yield back.

Mr. UPTON. Thank you.

Mr. Stupak.

Mr. STUPAK. Thank you, Mr. Chairman, and thanks for holding this hearing. The attempt to free up spectrum for commercial entities to provide advanced technology such as 3G has been something that has created much debate and even more uncertainty. I am pleased that this subcommittee is working toward addressing this issue and that the chairman has generated a proposal to create more certainty for all parties involved to facilitate the process.

I think there are many important issues that need to be discussed in relation with this subject. The current situation in Iraq

with our troops ever more in harm's way truly brings home how important it is that we protect the ability of the Department of Defense to secure its spectrum needs.

It appears that it will be possible to do that while providing commercial entities with more certainty as to the cost that they will incur in acquiring the needed spectrum at a more defined timeframe. I am supportive of these goals.

However, I do think some additional discussion would be useful. Should additional parties such as the Congressional Budget Office also be involved in the relocation cost estimate? Should Congress have more oversight over use of the auction funds that go to pay the relocation costs? Should a trust fund be established so that rather than depositing extra revenues received from the auction above the relocation cost into the general treasury, such funds are allocated through specific priorities, such as assisting public safety?

I believe that alternative technologies such as wireless offer a promising future to bring advanced technologies to rural and remote areas of the country such as my district. I look forward to hearing from the witnesses today in discussing H.R. 1320 and other proposals to promote this goal.

With that, Mr. Chairman, I will yield back the balance of my time.

Mr. UPTON. Thank you.

Mr. Davis. Mr. Davis defers. Okay. That concludes the opening statements from the members on the subcommittee.

[Additional statements submitted for the record follow:]

PREPARED STATEMENT OF HON. PAUL E. GILLMOR, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OHIO

I thank the Chairman for the opportunity to examine current spectrum management policies; specifically concerning advanced wireless technologies and their potential impacts on spectrum demand and allocation.

After reviewing H.R. 1320, the Commercial Spectrum Enhancement Act, I applaud Chairman Upton's initiative to create a Spectrum Relocation Fund (SRF) that would finance the repositioning of federal government spectrum operations that are transferred to a different frequency band.

In particular, I am pleased that this proposal aims to provide potential auction participants with greater certainty regarding the cost and timeliness of spectrum relocation, essentially accelerating commercial availability of additional spectrum for companies to deploy third-generation mobile telephony services to consumers.

Current law has resulted in less assurance, as potential licensees pay once to win an auction, and again to negotiate with, and pay for a respective government agency's spectrum relocation. Such an environment affords prospective buyers little incentive for not only future participation, but investment.

That being said, I welcome the well-represented panel, and look forward to hearing your testimony further touching upon current law, oversight issues concerning participating entities, and fiscal disciplines within the Committee's proposed legislative solution.

Again, I thank the Chairman and yield back the remainder of my time.

PREPARED STATEMENT OF HON. BARBARA CUBIN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF WYOMING

Thank you, Mr. Chairman.

I would like to thank you all for coming Today to share your views with the Subcommittee on H.R. 1320, the Commercial Spectrum Enhancement Act. We clearly have a broad "spectrum" of knowledge represented by our witnesses Today and I look forward to hearing your thoughts about streamlining the reallocation of premium-located spectrum for the next generation of wireless services.

One of the things the federal government is good at is erecting barriers and creating bureaucracy. This is often done under the auspices of the "public good" or "fairness." Unfortunately, in Washington, the law of unintended consequences has a way of turning good ideas into dubious legislation. That being said, it's nice when an opportunity comes along that allows us to unwind some of the bureaucracy, reduce undue barriers and give the economy a shot in the arm. That's what I hope this bill will accomplish.

In these times of budgetary strain, fiscal discipline is more important than ever before. This bill can help achieve that sort of discipline by fully offsetting the costs government agencies will face when relocating to different parts of the spectrum to make room for the evolution of wireless technology that will benefit all Americans. It will also ensure that those who bid in good faith for this spectrum have up-front certainty that their winning bid will result in access to the frequency band they are seeking. H.R. 1320 will create a mechanism for this migration of spectrum that observes the important role of federal agencies, preserves Congressional oversight, and offsets the cost of relocation—all while freeing-up spectrum that will allow companies to deploy advanced wireless solutions.

Should this bill pass, I would expect to see improvements in the wireless service provided in my state of Wyoming, because in addition to streamlining spectrum migration, H.R. 1320 will also make technical corrections to the treatment of the Telecommunications Development Fund (TDF). This fund was designed to promote access to capital for small telecom businesses, stimulate technology development, and promote telecommunications services to underserved rural and urban areas. However, the law of unintended consequences has struck again by limiting the scope of services the TDF can provide because it has been mistaken as a federally backed fund, instead of a conduit of private capital. This bill corrects that.

The Commercial Spectrum Enhancement Act is based on recommendations from President Bush. Chairman Upton has garnered a bipartisan endorsement for his bill. I am interested to learn if our witnesses Today support it as well.

I look forward to hearing your testimony and welcome you to the Subcommittee.

PREPARED STATEMENT OF HON. W.J. "BILLY" TAUZIN, CHAIRMAN, COMMITTEE ON ENERGY AND COMMERCE

Mr. Chairman, thank you for convening this hearing today. I commend you introducing H.R. 1320, the Commercial Spectrum Enhancement Act of 2003 and I look forward to working with you to move that bill through this committee and the House of Representatives.

Congress needs to pass H.R. 1320 to facilitate the deployment of advanced mobile data services to consumers. Last year, the Bush Administration and the FCC reached a landmark decision to make the 1710-1755 MHz band and the 2110-2155 MHz band available for so-called third-generation wireless use. And I commend them for reaching that agreement.

However, there is one catch. Federal government agencies, especially the Pentagon, currently use the 1710-1755 MHz band for important and, often, national security-related operations. So relocating the government agencies from this band to an equally vibrant spectrum band is critical.

But the current system for relocating government spectrum users is fatally flawed. Under this system, a commercial entity has to win a licensee at auction. And then the commercial entity has to negotiate with the affected agency regarding the price and the timeline for the agency to move its spectrum operations to another band.

This system gives a potential auction participant no certainty concerning the final price tag for relocating a government spectrum operation and the timeline for such a move. And it gives the agency no real incentive to relocate its operations.

H.R. 1320 would drastically change that dynamic. Potential auction bidders would have absolute certainty before they even entered an auction regarding how much they would have to pay to be able to utilize spectrum reallocated from government to non-government use. These bidders would also have greater certainty regarding the timeline under which they could begin commercial operations in the band. And affected government agencies would have certainty in the sense that there would be a trust fund that could be used for no other purposes other than to pay their relocation costs.

As a result, H.R. 1320 is a huge win for consumers because it would put spectrum to commercial use much more quickly than the current process.

I want to say a couple of things about what H.R. 1320 is not. H.R. 1320 is not a gravy train. It is not a gravy train from which Members can siphon off money

for one pet project or another. This money is put in a trust fund and separated from the general fund of the Treasury so that auction proceeds from auctioning spectrum currently occupied by government agencies can be used to relocate those agencies to different bands.

Once the relocation is completed, all the proceeds, and I do mean all the proceeds, should go back to the Treasury. There should be no other mandatory-type spending created by this legislation. If Members have good ideas for pet projects, even technology-related pet projects, we should consider those issues outside of the debate about H.R. 1320 and they should let our friends at the Appropriations Committee know about them so that they can find a funding source for these projects.

Trust funds are not to be entered into lightly. We need one to relocate government spectrum users. We don't need one for other purposes.

H.R. 1320 is also not an attempt to hamstring the Administration concerning how the money is spent for relocation. H.R. 1320 includes responsible, commonsense mechanisms to ensure that the funds for relocation are spent in a rationale, timely manner. Congress is not overstepping its boundaries in this legislation, nor is OMB or NTIA given too much control over how the money is spent.

I look forward to working with Chairman Upton and the Administration to ensure that affected agencies have the flexibility to relocate their spectrum operations in a timely, cost-effective manner. But I also hope that no one expects Congress to hand any affected agency a blank check and to expect no accountability.

Mr. Chairman, thank you again for holding this hearing and for introducing this important legislation. I look forward to the testimony of our witnesses.

PREPARED STATEMENT OF HON. ELIOT ENGEL, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW YORK

Mr. Chairman: Thank you and let me extend my thanks to the panelists for being here as well. In reviewing this proposal, two things came to mind: A) Good Idea B) When is the mark-up?

I commend the chairman and my good friend, Mr. Towns, for putting together a sensible bill that will provide a direct revenue stream for agencies to move from one area of spectrum to another.

The reality is that our present technology means we need to better exploit frequencies below 3 Gigahertz. For years, federal agencies were allocated large swaths of spectrum, which in real estate terms, was swamp land. Well, times change and massive geological changes occurred and now these agencies have a great deal of beach front property.

However, the agencies have never been provided the resources nor incentives to use their spectrum more efficiently—quite frankly there was little need. Like I said, times change.

The stumbling block has been cost—who pays and how. Subjecting the needs to replace communications satellites to the annual appropriations process is not certain enough. Providing a stream of funding outside that process, similar to the nation's transportation programs, is a proper and fitting solution.

I would also like to bring up the issue of public safety spectrum. This Committee has discussed the issue and I know my staff and the Chairman's staff have discussed the issue. I believe that this one area of spectrum management we must move quickly to resolve.

Mr. UPTON. We welcome our panel. We will start off with Nancy Victory who is the Assistant Secretary for the National Telecommunications and Information Administration, followed by Mr. Stephen Price, Deputy Assistant Secretary for Spectrum, Space, Sensors, and C3 Policy at the Department of Defense; Mr. Steven Berry, Senior VP for Government Affairs at the Cellular Telecommunications Industry Association; Mr. Lawrence Grossman, Co-Chair of the Digital Promise project.

We welcome all four of you to our panel this afternoon. I would make a note that your complete statements are part of the record and we would like to limit your remarks as we did ourselves to no more than 5 minutes.

Ms. Victory, welcome.

STATEMENTS OF NANCY J. VICTORY, ASSISTANT SECRETARY, NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION; STEVEN PRICE, DEPUTY ASSISTANT SECRETARY FOR SPECTRUM, SPACE, SENSORS, AND C3 POLICY, DEPARTMENT OF DEFENSE; STEVEN K. BERRY, SENIOR VICE PRESIDENT FOR GOVERNMENT AFFAIRS, CELLULAR TELECOMMUNICATIONS INDUSTRY ASSOCIATION; AND LAWRENCE K. GROSSMAN, CO-CHAIR, DIGITAL PROMISE PROJECT

Ms. VICTORY. Mr. Chairman and members of the committee, thank you for the opportunity to testify before you today on H.R. 1320, the Commercial Spectrum Enhancement Act. I very much appreciate the opportunity to address the important issue of spectrum management and specifically the proposal authorizing the creation of a spectrum relocation fund.

As this committee knows, spectrum has become a critical asset underpinning modern defense systems, homeland security, public safety, everyday commerce and, of course, communications between friends and family. To cope with the burgeoning uses of spectrum and the increasing forms of beneficial wireless technologies and devices, we must figure out ways to better manage the radio spectrum.

Managers of the spectrum my agency, the National Telecommunications and Information Administration (NTIA), and the Federal Communications Commission (FCC) must have the tools to react quickly to changes in technology and usage and to ensure that the allocation of the spectrum addresses the current need.

I therefore enthusiastically support legislative action authorizing the creation of a spectrum relocation fund. Such a fund will streamline and shorten the process for reimbursing incumbent users to facilitate their relocation to new spectrum and thus expedite the opening of the original spectrum to new services and technologies. I commend you, Chairman Upton, for introducing H.R. 1320, which embodies a relocation fund mechanism. This is a significant step toward improving spectrum management.

As the committee members may be aware, the President's fiscal year 2004 budget contains a similar initiative and the Administration recently re-transmitted the legislative language to Congress. Although there are differences in the details of H.R. 1320 and the Administration's proposal, they both are designed to streamline the mechanism for compensating incumbent users, while providing more certainty to private sector auction participants about the actual costs of accessing the spectrum on which they are bidding.

Legislation establishing a relocation fund mechanism is sorely needed. Under existing law, Federal entities must negotiate directly with auction winners for the relocation costs. This is problematic in several ways.

First, the negotiations required under this approach will be significantly time-consuming and resource-intensive, depleting the resources of both government incumbents and auction winners.

Second, to the extent classified or secret systems must be relocated, full and fair negotiations between government and the private sector will be difficult at best.

Third, because the negotiation process will necessarily take time, and cannot begin until after the auction is complete and the license is issued, deployment of the new service is likely to be delayed several years after the close of the auction.

And finally, the current process leaves completely uncertain for potential bidders the actual costs of deploying their new service, not to mention leaving uncertain for incumbents the time in which and extent to which their costs will be recouped.

I am, therefore, pleased that this committee is considering the necessary statutory change to authorize use of a spectrum relocation fund. The fund is a spectrum management tool that is fully consistent with the types of forward-looking mechanisms that NTIA and the Administration believe are necessary to improve our management of the radio spectrum.

In order for a relocation fund to function effectively and to address the concerns with the current process, we believe it must be designed consistently with three overriding goals:

First, the legislation must provide for full reimbursement of all reasonable expenses the incumbents incur in relocating to new spectrum. Such full reimbursement is not only required by the Strom Thurmond National Defense Authorization Act, but is also necessary to ensure that Federal agencies can carry out their critical missions.

Toward this end, it is important that any relocation fund legislation fully define the costs that are eligible for reimbursement and that this be a comprehensive list of the types of costs reasonably incurred by the incumbents in completing the transition.

It is also important that estimates of the costs be collected in advance of the auction and that the legislation ensure, through an auction reserve price or other mechanisms, that the fund will contain and preserve sufficient monies to cover the actual reasonable relocation costs of the incumbent users.

Second, it is essential that the process by which the Federal agencies draw down monies from the Fund be streamlined and relatively rapid. As my colleague from the Department of Defense, Stephen Price, will elaborate, the establishment of a relocation fund provides little gain if the process for drawing down monies takes as long and is as resource intensive as the individual negotiations with auction winners would have been.

Obviously, controls must be put in place to ensure effective money management. Providing agencies with mandatory spending authority for the relocation payments means that agencies can begin the relocation process almost as soon as the auction receipts are paid into a fund.

Finally, in order to be effective, a spectrum relocation fund mechanism must provide certainty—for auction bidders as well as for the incumbents. Legislation establishing the fund must ensure that the entities bidding for spectrum are not subject to additional relocation costs for the incumbents beyond the amount they pay for the spectrum at auction.

By spelling out the relocation and draw down process, a centralized managed fund will provide incumbents with certainty and predictability as well. Predictability of process also will permit incum-

bents to minimize any temporary out-of-pocket costs—a big concern for busy agencies with tight budgets.

Although H.R. 1320 differs in its details from the Administration's proposal, the bill is generally consistent with these three goals. I look forward to working with the committee to resolve any differences between the bill and the Administration's proposal and to help the committee produce legislation embodying the most workable and beneficial relocation mechanism.

Mr. Chairman and members of the committee, I thank you again for your leadership in bringing this issue up so early in the 108th Congress and for providing me with the opportunity to testify today. I would be happy to take your questions.

[The prepared statement of Nancy J. Victory follows:]

PREPARED STATEMENT OF NANCY J. VICTORY, ASSISTANT SECRETARY FOR COMMUNICATIONS AND INFORMATION, NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION, DEPARTMENT OF COMMERCE

Mr. Chairman and Members of the Committee, thank you for this opportunity to testify before you today on H.R. 1320, The Commercial Spectrum Enhancement Act. I am Nancy J. Victory, Assistant Secretary for Communications and Information at the U.S. Department of Commerce. Although I have previously had the honor of testifying before this Committee, this is the first time that I have had the opportunity to address the important issue of spectrum management. I very much appreciate the opportunity to offer the Administration's views on means to improve spectrum management generally and specifically on the proposal authorizing the creation of a spectrum relocation fund.

Spectrum has become a critical asset underpinning modern defense systems, homeland security, public safety, everyday commerce and, of course, communications between friends and family. To cope with the burgeoning uses of spectrum and the increasing forms of beneficial wireless technologies and devices, we must figure out ways to better manage the radio spectrum. Managers of the spectrum—my agency, the National Telecommunications and Information Administration (NTIA), and the Federal Communications Commission (FCC)—must have the tools to react quickly to changes in technology and usage and to ensure that the allocation of the spectrum addresses the current need.

I therefore enthusiastically support legislative action authorizing the creation of a spectrum relocation fund, which will streamline and shorten the process for reimbursing incumbent users to facilitate their relocation to new spectrum and thus expedite the opening of the original spectrum to new services and technologies. I commend Chairman Upton for introducing H.R. 1320, which embodies a relocation fund mechanism. This is a significant step towards improving spectrum management.

As the Committee Members may be aware, the President's Fiscal Year 2004 Budget contains a similar initiative and the Administration recently re-transmitted the legislative language to Congress. Although there are differences in the details of H.R. 1320 and the Administration's proposal, they both are designed to streamline the mechanism for compensating incumbent users, while providing more certainty to private sector auction participants about the actual costs of accessing the spectrum on which they are bidding. I look forward to working actively with the Committee as it resolves these differences and crafts legislation embodying the most workable and beneficial relocation fund mechanism.

I. NTIA'S ROLE IN SPECTRUM MANAGEMENT

As you know, NTIA has the crucial responsibility for managing the radio communications spectrum used by the Federal government agencies in satisfying their missions. In this role, my agency fills thousands of frequency assignment requests from Federal agencies each year. As the tremendous demand for spectrum increases, however, NTIA must not only respond to frequency requests, we must also engage in planning and coordinating current and future spectrum use requirements among the agencies. Additionally, because so much of the spectrum is shared between the government agencies and the private sector, NTIA works closely with the FCC, the other co-manager of the spectrum, on overall spectrum management process and policies.

NTIA's laboratory, the Institute for Telecommunication Sciences (ITS), located in Boulder, Colorado, supports these efforts. ITS performs a wide range of engineering

and research activities that directly and indirectly affect radio spectrum utilization and efficiency, and that thus help to improve spectrum management and use. ITS is the primary telecommunications research laboratory involved in the development and application of radio wave propagation measurements, studies, and prediction modules. Many of the propagation models in use today, in the United States and around the world, are derived from its work. Through ITS, NTIA continues to improve our understanding of radio wave transmissions to enhance spectrum use.

NTIA's role as manager of the Federal spectrum is especially important today with respect to defense, public safety, and homeland security. Today's military relies heavily on spectrum to accomplish specialized and critical missions. Indeed, information gained from wireless systems is a pivotal weapon in times of war. Domestic training on those systems and operations and protections here at home are critical to keeping our nation safe. It should not be surprising, then, that forty percent of the 280,000 Federal frequency assignments authorized by NTIA have been provided to the Department of Defense (DOD) for national security purposes. Likewise, public safety and homeland security are also obvious concerns to NTIA. In this regard, NTIA has a most important role in facilitating use of spectrum and ensuring network viability. Following the events of September 11, NTIA operated 24-hours-a-day, 7 days-a-week to fill frequency requests by federal agencies for law enforcement, special operations, and search and rescue operations at the World Trade Center and the Pentagon. We stand ready to do so again, if circumstances require it.

However, NTIA's spectrum concerns are not limited to defense and homeland security efforts. As the advisor to the President on telecommunications policy, my agency also recognizes its role in ensuring the availability of spectrum to meet the telecommunications needs of U.S. industries and consumers. The wonders of wireless technology continue to improve all of our lives—at home, at work and at school. Wireless has also been a continuing area of growth and innovation for our economy. Spectrum must be made available so this growth and innovation can continue and our economic security can remain strong. The Department of Commerce looks forward to continuing to work with the FCC to evaluate asserted requirements for spectrum of both federal and non-federal users and to consider technology and other creative solutions where available. The problem, of course, is balancing all of these important, but competing, demands for spectrum when the spectrum itself is a finite resource.

II. RECENT PROGRESS IN SPECTRUM MANAGEMENT

Currently, there is a strong sense among virtually all stakeholders—government and private sector alike—that our system of spectrum management is in need of modernization. We must look for new and creative ways of managing spectrum that not only protect current users' systems, but are also flexible to accommodate new technologies that enter the market. That is why last year NTIA hosted a high-level two-day Spectrum Summit that brought together leaders in the spectrum management community with those from industry to try to figure out how to make the process better and more transparent. FCC Chairman Michael Powell, his FCC colleagues, Federal agency representatives, private sector wireless service providers and manufacturers, technologists, economists and analysts participated in the event. The purpose of the Summit was to explore new innovative ideas to develop and implement spectrum management approaches that would encourage spectrum efficiency; that would provide spectrum for new technologies; and that would improve the effectiveness of the domestic and international spectrum management processes. Throughout the course of the two days, several themes or concepts continued to be touched upon by the panelists. As a result of those discussions, NTIA developed several basic goals or principles designed to guide our actions to achieve improved spectrum management:

First, the U.S. government must work together as "One Spectrum Team" in its approach to spectrum. As spectrum becomes scarcer domestically and globally, it becomes increasingly important to improve communication among the agencies engaged in spectrum management. Our country's spectrum needs are too important to be undermined by internecine squabbling between and within branches of government. As the head of NTIA, I have been committed to building a foundation of trust, collegiality and cooperation in our dealings within the Federal government and in our interactions with the FCC, the State Department and Congress. Chairman Powell at the FCC and Ambassador David Gross at the State Department have embraced this approach and have helped to develop an action plan to facilitate the efficient functioning of the nation's spectrum management team at home and abroad. As part of this plan, NTIA and the FCC recently executed a new Memorandum of Understanding to guide our interagency coordination. I am pleased to note that Jan-

ice Obuchowski, the new U.S. Ambassador to World Radio Conference 2003, has recently been added to this team. Ambassador Obuchowski has the full support of my agency in the important WRC preparations.

Second, there is the need to modernize our spectrum policies so that they are forward-looking. A concerted effort needs to be made to eliminate unnecessary government micro-management of spectrum uses. This means taking a fresh look at legacy policies, rules, and restrictions to assess their ability to accommodate emerging technologies or spectrum needs. Current practice requires users to seek permission from either NTIA or the FCC before changing the services offered over their licensed frequencies. This process can impose time-consuming approval processes that can engender lengthy delays. We need to look at policies that permit flexibility of uses and technology. This is essential to ensure that government does not block innovation. For example, NTIA has supported the FCC's proposal to allow secondary leasing of spectrum to third parties. We will be exploring whether and to what extent this could work for government users.

Third, we must pursue policies that encourage spectrum efficiency and that discourage spectrum waste. NTIA has long advocated the use of more spectrum efficient technologies. For example, NTIA has developed—and the Federal agencies are now implementing—a transition to narrowband technology to relieve congestion in the land mobile radio bands used by the Government. Under NTIA regulations, Federal agencies must convert to narrowband technology in one VHF land mobile frequency band by 2005 and in two others by 2008. Narrowbanding, where technically possible, holds great promise for increasing the number of channels available to all users of spectrum. We will also be examining other policies to encourage spectrum efficiency. In doing so, however, we must be mindful not to let essential reliability needs be sacrificed for efficiency. This is particularly important for critical communications, such as those for defense and public safety.

And finally, we must develop spectrum policies that ensure the deployment of robust wireless networks that are prepared for the worst of crises and that are able to deliver the best of services to the government, defense and public safety communities as well as to the American people. Attention to national security and homeland security is critical. In prior years, this may not have been a primary consideration. In today's world, it is all too important. The wireless networks of today and tomorrow must be robust and capable of functioning well, especially under the stress and strain of an emergency situation. The Department of Commerce is working hard to make sure its policies and requirements promote such operation. We have also been working with particular spectrum user communities to solve technical challenges to such improved operations, such as with respect to interoperability among public safety providers.

III. INDIVIDUAL SPECTRUM MANAGEMENT CHALLENGES CONTINUE

Last year's Spectrum Summit was a success. But it was only the start. Since the Summit, NTIA has made significant progress in achieving its goals for more efficient and effective spectrum management policies that we hope will provide more opportunities and certainty about the path ahead. The Spectrum Summit shed light on many issues and it continues to guide our policymaking. However, at the same time that we were working to improve our spectrum management policies overall, we faced several immediate spectrum allocation challenges.

Third Generation Advanced Services (3G). For NTIA, 3G posed the question of whether and how the federal government could make frequencies available for Third Generation advanced wireless services in the United States. With guidance from the President, the U.S. Department of Defense, the FCC, NTIA, and the private sector sat down and had honest discussions on what was doable and what was not. As a result of these candid discussions, NTIA and the FCC announced that an additional 90 MHz of spectrum would be made available to accommodate advanced mobile (3G) services and articulated a plan for accomplishing this. One of the basic premises of this plan was that the allocation would be technology neutral and thus the private sector could decide the technology that would ultimately be used. It was also imperative that the spectrum provided not be generation-specific, thus enabling the marketplace to determine whether the spectrum is going to be used for 2G or 3G or 4G or whatever lies ahead. I would like to note that one of the bands identified for 3G services, the 1710-1755 MHz band, is occupied with government users that are entitled to reimbursement for relocation expenses. The spectrum relocation fund mechanism under consideration would provide a critical means for facilitating the transition of these government users and accelerating the deployment of 3G operations.

Unlicensed Operations in the 5 GHz Band. Early this year, the U.S. Government and the private sector reached an agreement on how to make an additional 255

MHz of spectrum available for unlicensed use in the 5 GHz band—resolving another complex spectrum management issue that posed a potential barrier to deployment of devices using the 802.11(a) Wi-Fi technology. For nearly a year, the players at the table could not agree on the technical parameters that would permit sharing between the new unlicensed devices and incumbent operations. Finally, government and industry were able to find common ground and a consensus approach—fortunately, in time for the recent CITEL (Inter-American Telecommunication Commission) preparations for the World Radiocommunications Conference negotiations. We look forward to working with our colleagues in the other Western Hemisphere countries, as well as in countries around the world, to achieve a mobile allocation in the 5150-5350 MHz and 5470-5725 MHz bands that is consistent with protecting the operations of incumbent users.

IV. A SPECTRUM RELOCATION FUND IS A NEEDED SPECTRUM MANAGEMENT IMPROVEMENT

The foregoing discussion provides some indication of the spectrum management challenges we face and the direction in which my agency thinks we need to proceed in order to improve how we manage the radio spectrum. Passage of legislation creating a spectrum relocation fund is consistent with and necessary for improved spectrum management. While existing law provides for reimbursement for federal entities relocating to new spectrum to make way for new services, the current process is time-consuming and frought with uncertainty for both incumbents and new entrants.

Existing Reimbursement Procedures. By way of background, the Strom Thurmond National Defense Authorization Act for Fiscal Year 1999 provides that Federal users are entitled to reimbursement for their costs of relocating to accommodate non-Federal users of the spectrum. At the direction of the Act, NTIA in June 2002 promulgated rules formalizing the reimbursement procedures for new licensees to compensate federal agencies that relocate their operations to make frequency spectrum available for commercial use. Under these rules, auction participants are given an estimate of a Federal agency's cost to relocate prior to an FCC auction. Once the participant becomes a winning bidder at an FCC auction, the winning bidder is then required to negotiate with each affected Federal agency in their new license area and pay the agencies directly for their actual relocation costs. This amount that the winning bidder pays the federal agencies is thus separate from and in addition to the amount paid at auction for the spectrum.

There are a number of problems with the current process. *First,* the negotiations required under the rules will be significantly time-consuming and resource-intensive, depleting the resources of both government incumbents and auction winners. *Second,* to the extent classified or secret systems must be relocated, full and fair negotiations between government and the private sector will be difficult at best. *Third,* because the negotiation process will necessarily take time, and cannot begin until after the auction is complete and the license is issued, deployment of the new service is likely to be delayed several years after the close of the auction. *And finally,* the current process leaves completely uncertain for potential bidders the actual costs of deploying their new service, not to mention leaving uncertain for incumbents the time in which and extent to which their costs will be recouped.

Many of these same concerns were recognized by commenters in NTIA's rulemaking proceeding to adopt the current rules. In fact, private sector users participating in the proceeding overwhelmingly recommended that auction proceeds be used to pay for expenses incurred by the Federal entities as a result of relocation. However, as NTIA noted when adopting those rules, current law requires that new non-Government licensees directly reimburse Federal entities for relocation costs. In the absence of a statutory change, auction proceeds cannot be used to reimburse Federal entities for relocation costs.

A Spectrum Relocation Fund Addresses Problems with the Current Process. I am therefore pleased that this Committee is considering the necessary statutory change to authorize use of a spectrum relocation fund. This is a significant step forward to facilitating the transition by incumbents, to speeding the deployment of new technologies, and to providing more certainty and predictability for all involved. The fund is a spectrum management tool that is fully consistent with the types of forward-looking mechanisms that NTIA and the Administration believe are necessary to improve our management of the radio spectrum.

In order for a relocation fund to function effectively and to address the concerns with the current process, it must be designed consistently with three overriding goals:

Full reimbursement of all reasonable expenses. First, the legislation must provide for full reimbursement of all reasonable expenses the incumbents incur in relocating to new spectrum. Such full reimbursement is not only required by the Strom Thurmond Act, but is also necessary to ensure that Federal agencies can carry out their critical missions. Toward this end, it is important that any relocation fund legislation fully define the costs that are eligible for reimbursement and that this be a comprehensive list of the types of costs reasonably incurred by the incumbents in completing the transition. This will provide certainty and predictability for the incumbent users, as well as ensure that the fund can be administered efficiently. It is also important that estimates of the costs be collected in advance of the auction and that the legislation ensure, through an auction reserve price or other mechanisms, that the fund will contain and preserve sufficient monies to cover the actual reasonable relocation costs of the incumbent users.

A streamlined mechanism for drawing down funds. Second, it is essential that the process by which the Federal agencies draw down monies from the Fund be streamlined and relatively rapid. The establishment of a relocation fund provides little gain if the process for drawing down monies takes as long and is as resource intensive as the individual negotiations with auction winners would have been. Obviously, controls must be put in place to ensure effective money management. However, to the extent such controls and review can occur early in the process (say at an estimate stage), certainty of reimbursement for government users is increased, sufficient monies collected from the auction can be assured, and the deployment of the new service can be accelerated. Providing agencies with mandatory spending authority for the relocation payments means that agencies can begin the relocation process almost as soon as the auction receipts are paid into a fund. A relocation fund provides a centralized process for providing relocation payments to the agencies, which would be managed by the Office of Management and Budget similar to the Y2K and Emergency Response Funds.

Certainty for auction bidders and incumbents. Finally, in order to be effective, a spectrum relocation fund mechanism must provide certainty—for auction bidders as well as for the incumbents. Legislation establishing the fund must ensure that the entities bidding for spectrum are not subject to additional relocation costs for the incumbents beyond the amount they pay for the spectrum at auction. As a result, auction winners will be assured of a certainty of process enabling them to ascertain how relocation will occur and when they will gain access to the spectrum. Moreover, the fund will enable auction participants to be better able to formulate realistic business plans and help to remove unexpected roadblocks to deployment of their new service.

By spelling out the relocation and draw down process, a centralized managed fund will provide incumbents with certainty and predictability as well. By understanding when and how monies will be made available, incumbents can be more pro-active in planning for and facilitating the transition. Predictability of process also will permit incumbents to minimize any temporary out-of-pocket costs—a big concern for busy agencies with tight budgets. We anticipate working closely with the federal agencies to identify replacement spectrum or alternative technologies prior to the announcement of an auction, so that cost estimates can be as accurate as possible.

Although H.R. 1320 differs in its details from the Administration's proposal, the bill is generally consistent with these three goals. I look forward to working with the Committee to resolve any differences between the bill and the Administration's proposal and to help the Committee craft legislation embodying the most workable and beneficial relocation fund mechanism. I am sure that working together, we can ensure that legislation is passed that will address the concerns and interests of all affected parties.

Mr. Chairman and members of the Committee, I thank you again for the opportunity to testify on this important spectrum management issue. I welcome any questions you may have for me.

Mr. UPTON. Thank you very much.

STATEMENT OF STEVEN PRICE

Mr. PRICE. Chairman Upton and members of the subcommittee, I would like to thank you for holding this hearing and for inviting me to be with you. The Department of Defense appreciates that your committee is looking at spectrum issues and, in particular, spectrum reimbursement in the event of relocation.

Especially in these times we all share the same goal, to ensure that our troops are uniquely prepared to fight and win to protect freedom-loving people throughout the world. To do this we need to ensure, among other things, that access to frequency spectrum isn't a constraint on our war fighters. Spectrum is the lifeblood of our military.

During operation "Iraqi Freedom" the success we have been witnessing in our military operations is to a large extent attributable to our technologically advanced and superior systems, all of which are heavily dependent on the frequency spectrum.

Without the wireless connections we would not have been able to pinpoint and accurately target enemy leadership, find and destroy enemy air defense systems, minimize friendly fire casualties through greater situational awareness and rely on networks and information like never before.

Even though spectrum is critical to DOD's mission, our continued access to it has been under attack. In the past year DOD has been put on the defensive needing to fend off aggressive demands in the 3G debate, the ultra-wide band proceeding, the 5 GHz Y5 discussions, and many other situations. Despite these new requirements and the added workload that has resulted post 9/11, the Department of Defense has worked very hard to reach accommodation with commercial interests in these recent spectrum battles.

I can assure you that today's leadership within the Pentagon is committed to ensuring the right balance is maintained in accommodating the economic needs of our Nation while preserving critical military capabilities.

The requirements for relocation of DOD spectrum remain the same as we have articulated in the past and that we believe are well settled. We need spectrum, full reimbursement, and respect for DOD time lines. These are the principles that we hope any reimbursement trust fund bill respects.

These are our requirements because there is a significant asymmetry of risk when it comes to spectrum relocation. The person or group that wants to change the allocation bears none of the risk. The incumbent, typically DOD or other Federal agencies, bear all the risks.

These risks include the following:

When will we be required to move. Will we have adequate time to move and implement comparable military capabilities. Will we get the money to move and when. Will we need to retrain on new equipment. Will we retrain in time to be deployed in an emergency should that be necessary.

Will we be able to get host nation approvals to use their systems in the new frequency bands in all parts of the world that we might need to do. Will our allies, who brought inoperable systems who now must modify their systems to continue to interoperate as we move, also be able to do so and who will pay their bill. And on and on.

Because spectrum battles are so complex for DOD, it seems to us that the issue of cost reimbursement should be taken off the table as a concern. In some ways it is easiest to solve. Far easier, for example, than making sure that spectrum relocation doesn't harm co-

alition interoperability or degrade military capabilities in time for possible combat operations.

DOD supports the administration's trust fund legislative proposal. We believe that the Administration proposal will provide incumbent Federal entities the assurance they require, that they will be reimbursed for actual relocation costs.

In our view, a trust fund must be trustworthy. It must ensure full and timely reimbursement of all costs incurred by an incumbent that is dislocated by an auction. We seek full reimbursement, no more and no less. Actual cost. Not our guess or someone else's guess. New legislation should put incumbents at ease regarding reimbursement so that they can focus on other aspects of relocation such as for DOD ensuring that military capabilities aren't degraded, that we can continue to interoperate with our allies, and that we will be ready to deploy whenever, wherever the Nation calls.

If legislation that you are looking at accomplishes this, then we will believe it will be a major enhancement to efficient spectrum management. If not, if the incumbent cannot be assured of reimbursement for all costs associated with a forced move, then the legislation will do more harm than good. Thank you for your time.

[The prepared statement of Steven Price follows:]

PREPARED STATEMENT OF STEVEN PRICE, DEPUTY ASSISTANT SECRETARY OF DEFENSE FOR SPECTRUM, SPACE, SENSORS AND C3 POLICY, U.S. DEPARTMENT OF DEFENSE

INTRODUCTION

I would like to thank the members of this committee for holding this hearing and for inviting me to testify before you. This is a timely topic for our Department of Defense and our nation. We all share the same goal, to ensure that our troops are uniquely prepared to fight and win to protect freedom-loving people throughout the world. During operation "Iraqi Freedom", the success we have been witnessing in our military operations is to a large extent attributable to our technologically advanced and superior systems, all of which are heavily dependent on the frequency spectrum. Without the wireless connections made possible by access to spectrum, we would not have been able to pinpoint and accurately target enemy leadership, find and destroy enemy air defense systems, minimize friendly fire casualties through greater situational awareness and rely on networks and information like never before. Our unfolding success on the battlefield should serve as a reminder to everyone on the need to secure and protect the frequency spectrum used by the military.

Because access to frequency spectrum is a core enabler and a vital resource for the Department of Defense, we must ensure that all issues associated with spectrum relocation, including today's topic of reimbursement, are dealt with in a manner that supports that goal. Spectrum is one of the most critical media of modern military operations, and the Spectrum Relocation Fund proposal under consideration could be instrumental in ensuring continued access to it. The Spectrum Relocation Fund can establish the means for DoD operations to be transitioned smoothly, without interruption or degradation of our mission capabilities, whenever DoD operations are relocated to new spectrum bands to make way for commercial uses.

The Administration retransmitted to Congress a draft bill to create a Spectrum Relocation Fund and to revise the reimbursement procedures and Congressman Upton recently reintroduced the Commercial Spectrum Enhancement Act. We look forward to working with the Committee in crafting legislation to create a Spectrum Relocation Fund. We urge the committee to ensure that it contains key elements that are necessary for it to function as designed to enhance the ability of spectrum auctions to advance the efficient and effective use of spectrum by helping to maintain the Federal Government's capability.

REFORM OF SPECTRUM MANAGEMENT

I believe it is difficult to view the Spectrum Relocation Fund proposal outside of the context of overall spectrum management reform. As many of you know, those who have responsibility for spectrum in the federal government have been working extremely hard on improving our spectrum management practices—and in our view should be commended for these efforts.

This work was kicked off at the NTIA Spectrum Summit last spring. It has continued apace with the recent FCC Spectrum Task Force Report and the GAO's work in this area. Additionally, many in government and industry attended and contributed to meetings of the Center for Strategic & International Studies (CSIS) Commission on Spectrum Management. Within DoD we continue to evaluate and improve our own internal management structures and processes. On December 3, 2002 Deputy Secretary of Defense Wolfowitz approved and signed DoD's Strategic Plan for Department of Defense Spectrum Management. This was a very significant step within the Pentagon, formally highlighting the importance of spectrum issues for DoD and setting up an internal plan and process to implement it. As Deputy Secretary Wolfowitz said, "Without assured access to the spectrum our forces will not be able to meet the requirements of our operational goals in the near term, including those that directly support the Homeland Security mission, nor will we be able to realize the promise of military transformation . . . A fundamental component of achieving the goals . . . is sound management of the spectrum to which DoD has access."

Development of spectrum efficient technologies is a key component of any spectrum management solution. We are moving forward in developing what we consider to be the cutting edge of spectrum use: DARPA's neXt Generation spectrum program, known as XG. XG capitalizes on one of the factors identified by the FCC Spectrum Task Force: access to spectrum is the key limiting factor in using spectrum. In other words, spectrum may be available but there is no way to access it. XG will allow the dynamic management of spectrum use by defining access based on the dimensions of time, frequency and location. Current spectrum users routinely differentiate on the basis of frequency and location only. Enabling spectrum users to differentiate on the basis of time will allow more users to access the spectrum. This will help change the antiquated zero-sum characteristics of current spectrum allocations. When XG and other technological initiatives come to fruition, it will allow us move from a "use rights model" of spectrum use, to a "dynamic access model." This will be good for our military, other government users, and industry.

These are just some of the recent and ongoing efforts in the spectrum management domain. I look forward to discussing these initiatives with the committee at an appropriate time.

SPECTRUM RELOCATION IN GENERAL

It is critical to the national security that when pursuing any process leading to possible relinquishment of spectrum by the Department of Defense, careful and serious consideration be given to essential national defense needs.

There's a real tendency to think that there's no problem in reallocating federal government spectrum, because it has been done in the past—as part of OBRA 93 and BBA 97—and the military is still performing its missions in an exemplary manner. This notion of "painless reallocations" is misguided. It is vitally important to ensure that DOD has the spectrum access it needs for readiness and the overall capability of our military. Any relocation or loss of spectrum that is essential to military capability costs the Nation either in readiness or that capability, or in lost opportunity to make other use of funds that now must be devoted to trying to figure out how to maintain the readiness or capability. Loss of needed spectrum access yields an increased expenditure of time, funds, and other resources to develop, test and implement alternative capabilities or work-arounds which may be less effective than what they replace. Loss of needed spectrum access may yield a degradation of military readiness while alternative capabilities are developed and compensatory training requirements are generated. Each time we are forced to move, we throw into turmoil interoperability with coalition partners, many of who have purchased equipment designed specifically to interoperate with ours.

Each time we are forced to "adjust" training in the United States away from operational norms to accommodate domestic frequency restraints, our training realism and effectiveness suffers. The loss of spectrum access requires DOD to expend other resources to compensate. These expenditures do not advance our cause but only allow us to tread water. Part of the answer of why the impacts of past reallocations have been absorbed lies with the work of our dedicated and talented spectrum managers. They are capable of amazing things. For example, the coordination necessary

to put up fighter cover over New York City on September 11th took only two hours. But we cannot expect miracles from them on a regular basis.

In simple terms, spectrum relocations raise many issues for our military. Cost is an important element, but not the only one. In some ways, from DoD's perspective, it is the most straightforward to solve and therefore we commend your efforts to solve it. My goal is to take cost reimbursement off the table as an issue in spectrum relocation debates and a Spectrum Relocation Fund is one mechanism to achieve that goal.

SPECTRUM RELOCATION FUND

Set within this context, the Spectrum Relocation Fund has the potential to benefit both the Department of Defense, and other affected federal agencies, and commercial industries slated to use that spectrum.

Current legislation (the National Telecommunications and Information Administration Organization Act, as amended by the National Defense Authorization Act FY 1999) provides that commercial users will pay DoD in advance for the costs of relocating operations to the replacement spectrum, including the costs of any modification, replacement or reissuance of equipment, facilities, operating manuals, or regulations. Thus, the successful bidder is responsible for paying into the General Treasury the amount of its bid and for paying relocating Federal entities a separate amount for relocation costs. At the time of auction, bidders will have available only an estimate of Federal entities' relocation costs. Moreover, the statutory provision requires negotiations between successful auction bidders and relocating federal entities to establish the final amount paid to relocating federal entities. DoD would be required to negotiate, either directly or indirectly, with all auction winners for repayment of relocation costs. During auctions, blocks of spectrum may be assigned in hundreds of service areas around the country. Reallocating and auctioning spectrum for some consumer services may involve negotiating with numerous licenseholders in many different locations. This could quickly become an unwieldy, costly, time-consuming, and uncertain process for all parties. On the other hand, under the Administration's proposal, Federal Government entities are provided funds out of a fund drawn from a pool of auction receipts and thus would eliminate the requirement for these repetitive negotiations.

The purpose of spectrum auctions is to maximize allocative efficiency in spectrum use. Therefore, the overriding goal of a Spectrum Relocation Fund must be to enhance the effective and efficient use and management of our nation's spectrum. In order to accomplish that core goal, the Spectrum Relocation Fund must provide for full and timely reimbursement for all costs associated with relocating military systems to comparable spectrum bands. A well-designed Spectrum Relocation Fund will simplify the reimbursement process and afford incumbent users a higher degree of predictability and certainty of timely receipt of all costs associated with spectrum relocations.

New legislation should put incumbents at ease regarding reimbursement so that they can focus on the other aspects of relocation, such as, for DoD, ensuring that military capabilities are not degraded, that we can continue to interoperate with coalition partners, and that we will be able to continue to train our troops in realistic settings. A trustworthy Spectrum Relocation Fund will, in practical terms, encourage federal entities to come to spectrum relocation battles with less trepidation than would otherwise be the case. If a Spectrum Relocation Fund meets these objectives, then it will advance the nation's interest in efficient spectrum allocation.

Commercial users, too, would receive benefits from greater efficiency associated with a Spectrum Relocation Fund that provides for full and timely reimbursement of displaced users. Instead of having to separately negotiate relocation costs with the government following the auction, the commercial licensees would need only to concern themselves with license payments and they would have certainty at the time of auction as to the cost of the spectrum being auctioned. No other transaction would be necessary. They would only need to assess their bid price and the cost of build out.

DOD PROTECTIONS IN SPECTRUM RELOCATION FUND LEGISLATION

The Department supports the idea of a Spectrum Relocation Fund for Reimbursement in general and specifically supports the Administration's proposal, which includes protections that DoD requires in order to accomplish our mission, at the level of effectiveness that the American public expects and that our men and women in uniform deserve. Any such statutory change, however, must ensure that existing statutory protections are maintained. Section 1062(b) of the National Defense Authorization Act for Fiscal Year 2000, provides that "[i]f, in order to make available

for other use a band of frequencies of which it is a primary user, the Department of Defense is required to surrender use of such band of frequencies, the Department shall not surrender use of such band" until several conditions are met. First, the NTIA must make available to DOD "for its primary use, if necessary, an alternative band or bands of frequencies as a replacement for the band to be so surrendered." Second, the Secretaries of Defense and Commerce, and the Chairman of the Joint Chiefs of Staff, must jointly certify to the congressional armed services and commerce committees that "such alternative band or bands provides comparable technical characteristics to restore essential military capability that will be lost as a result of the band of frequencies to be so surrendered." This certification takes into account whether the replacement spectrum for different DoD systems has suitable technical characteristics and similar regulatory status so that the displaced function can be performed with no degradation in capability.

DoD does support a Spectrum Relocation Fund and our view is that if it is to work as designed, and maintain government capabilities, it should contain provisions for the following:

Full reimbursement—DoD must be fully reimbursed for all relocation costs for a Spectrum Relocation Fund to be viable. Under the Administration's proposal and under H.R. 1320, an auction would be invalidated if the proceeds were less than 110% of the estimated relocation costs. This would help to prevent the government from having to fund relocation costs out of pocket if the auction did not attract bids sufficient to cover the costs of relocation. There is some risk inherent in the 110% threshold. It is possible that estimates of relocation costs may be too optimistic, resulting in a shortfall of funds to cover the relocation. In this situation, the auction would be completed before the Federal Government entity discovered that the estimates of relocation costs were too low. Under the Administration's proposal, this is dealt with by allowing reimbursement from all of the assets available in the fund—not just the assets available from that particular auction. Furthermore, the auction receipts would remain in the fund for a period of ten years before reverting to the general treasury. This is necessary because of the difficulty in accurately predicting relocation costs as many as five to six years in advance of actual payment of costs and reimbursement and the possibility that some costs might not be apparent until much later. Inaccurate cost estimates might result from flawed calculations, but they might just as easily stem from a change in economic circumstances that would make a particular good or service required for relocation more expensive for the government to procure. For example, a critical part, such as a semiconductor chip, might no longer be manufactured on a regular basis domestically yet, for security purposes, we might need to special order such a part from a domestic concern. This might significantly add to the costs in a way that could not have been anticipated 5 years earlier when the original cost estimate was made. We should not allow DoD capabilities to suffer due to these inherently uncertain projections. The reduction in risk to DoD provided by the ability to be reimbursed from all the assets available in the fund is a very important component of the Administration bill for DoD.

Definition of Relocation Costs—A broad definition of relocation costs, such as the definition of relocation costs in the Administration's proposal and in H.R. 1320, is necessary for reimbursement legislation to protect our spectrum dependent national security systems. These costs should obviously include the modification or replacement of equipment. There are also some additional requirements that are less obvious but are still vital for a Federal Government entity to relocate and maintain its existing capabilities. These include providing for new software, training (including training manuals), construction, site acquisition, transaction costs, and outside consultants. All these bear costs to DoD—and ultimately, to the taxpayer.

Any Federal entity will incur costs to complete engineering studies and economic analyses required to estimate relocation costs. These should be covered as well, along with any other reasonable expenses incurred in estimating relocation costs. Furthermore, if a Federal Government entity needs to accelerate the introduction of systems and equipment to relocate earlier than anticipated to accommodate an auction winner, the costs of doing so should also be covered.

There may be a period of time after an auction, and before the Federal entity completes the relocation, when the Federal entity still holds a primary allocation. If sharing with the auction winner is required at this time, a one-time cost of modification of equipment to accommodate sharing would be necessary. This should also be covered.

Sufficient Time Lines for Cost Estimates and Relocation—DoD and all federal entities must have sufficient time in advance of an auction in order to develop pre-auction cost estimates. Agencies will generally receive notice of an auction from the FCC after one or more allocation rulemakings to make the particular spectrum to be auctioned available and after replacement spectrum has been identified. How-

ever, it is important that nothing unnecessarily restricts the time between announcement of an auction and the time that agencies must provide cost estimates to the FCC.

The timeframes to prepare for the upcoming 1710-1755 MHz auction of spectrum for advanced wireless services illustrate the complex and lengthy process that will be necessary. Intense work by Executive branch agencies, led by NTIA, by the Federal Communications Commission and by the private sector took place from the autumn of 2000 until July 2002 to identify appropriate bands for 3G services. It was not until the last two months of the Viability Assessment process that alternative spectrum for most government systems to be relocated was identified. NTIA began work shortly after the July Viability Assessment to develop cost estimates for relocating federal agencies. The Department of Defense has started an intra-agency group, made up of all the relevant experts, including comptroller, acquisition, program, and spectrum offices, to develop the most reliable cost estimates possible by February 2004 for the auction tentatively planned for next year. Also prior to the auction, we anticipate that the Secretaries of Defense and Commerce and the Chairman of the Joint Chiefs of Staff will be able to make the "comparable spectrum" certification discussed above and preserved by both the Administration's proposal and HR 1320.

DoD and all federal entities must also have sufficient time for relocation of equipment. These time lines should not be based simply on an auction schedule, but must follow the time required for DoD to move to identified comparable spectrum. Failure to allow sufficient time for DoD to move increases the risk of harming DoD capabilities. Newly installed systems will need to be fully tested to ensure reliability of operation to meet mission standards and requirements before the use of existing systems is terminated. Furthermore, forcing a quick relocation will increase costs because of procurement difficulties—having to pay for expensive work-arounds and modifications due to insufficient planning time.

No Separate Appropriations Process—One of the concerns regarding current law is that the relocation payments must be appropriated before agencies can spend them, which could significantly delay the relocation process. With the Relocation Fund, the Administration and H.R. 1320 propose providing agencies with mandatory spending authority so that they can begin the relocation process as soon as the auction receipts are paid into the Fund. In our view, specific appropriations should not be necessary because the authorizing legislation will make sufficiently clear what funds may be spent for and for what purposes for appropriate controls to be maintained. Estimated costs would be available well in advance of any expenditures from the Spectrum Relocation Fund and, under the Administration's proposal, if a Federal entity were to spend more than 110% of the estimated costs, it would be required to fully justify the additional costs to OMB and to report expenditures so approved to both the authorizing and appropriating committees.

Protection From Harmful Interference—As you know, interference in radio transmissions between users can be a serious problem and can jeopardize DoD capabilities. Therefore, both the Administration's proposal and H.R. 1320 contain language calling for the FCC to condition licenses on compliance with rules forbidding the licensee from causing harmful interference with an incumbent Federal entity, during the relocation period. This will allow the commercial user to begin operations in the band before the Federal entity is entirely relocated out of it. At the same time, this provision would still provide interference protection for federal entities during the relocation transition.

Exemption from Sequestration—Another useful protection for Federal entities in the Administration's proposal is that in the event of sequestration under the Balanced Budget and Emergency Deficit Act of 1985, the Spectrum Relocation Fund would be exempt. This is necessary because if the Fund were to be sequestered, DoD would be unable to complete relocations. The resolution of the resulting logjam would likely be difficult and costly for all parties.

CONCLUSION

Thank you for holding this hearing to discuss the Spectrum Relocation Fund. The idea has great promise and could greatly enhance the way we manage spectrum. Removing obstacles to reallocating spectrum will have benefits for the government, industry and consumers. However, we must remember that finding appropriate comparable spectrum will remain a difficult task. I look forward to working with the committee in developing legislation that creates an effective Relocation Fund and ensures full protection for DoD's essential operations.

Mr. UPTON. Thank you, Mr. Price.

STATEMENT OF STEVEN K. BERRY

Mr. BERRY. Thank you, Mr. Chairman. Thank you for the opportunity to appear before you today. I am Steven Berry, Senior Vice President for Government Affairs of the Cellular Telecommunications & Internet Association (CTIA) representing all categories of commercial wireless telecommunications carriers, including cellular and personal communications services (PCS), manufacturers, and wireless Internet providers.

I just returned from CTIA's Wireless 2003 Convention, and I am pleased to report to this committee that there is a enormous sense of optimism about the future of the wireless industry. Demand for wireless continues to grow. Wireless added more than 12 million customers in 2002. That is 14,000 subscribers per hour, every hour, every day.

We now top 141 million subscribers in the United States. Wireless minutes of use continue to grow even faster, 35 percent in the year 2002. Our vibrant, competitive industry is putting new products and new services in the hands of the American consumer.

Because of the availability of an additional 90 MHz of spectrum, which will be greatly facilitated by this legislation, the wireless industry is even more confident than ever that there is a pathway to growth.

Mr. Chairman, I am here to report that the wireless industry fully supports H.R. 1320, the Commercial Spectrum Enhancement Act, and I thank all those members who are cosponsors and urge others to join as co-sponsors and urge others to join as co-sponsors.

Its passage will significantly improve the spectrum management relocation and the reimbursement process. The current process is a black hole for both Government agencies and the private sector filled with uncertainty, punctuated by unknown costs, and bereft of predictability. The current process works for no one. President Bush identified that fact in both FY03 and FY04 budgets.

I quote, "The Administration proposes to streamline this relocation process by creating a central spectrum relocation fund. Auctioner seats sufficient to cover agencies' relocation costs would be paid into the fund and the Federal agencies would be reimbursed for the relocation costs out of the fund."

The spectrum relocation legislation balances three key policy objectives. First, H.R. 1320 fully funds government relocation providing certainty essential to DOD and to all Government incumbents. Second, H.R. 1320 will result in workable time lines for both wireless industry and government incumbents. Third, your bipartisan legislation, H.R. 1320, provides certainty and accountability in developing, and sticking to, relocation cost estimates and relocation time lines.

Two years ago not even a March Madness bookie would have given you even odds that the administration and the wireless industry would be before you today collectively supporting legislation to speed the relocation process. This did not come by accident.

Beginning with the previous administration and with the focus of this Administration the National Security Council, the National Economic Council, OMB, DOD, the FCC, and especially the Department of Commerce headed by Nancy Victory's NTIA, all worked long and hard to craft a winning solution.

The proposal is a win for national security. The events of the past few weeks illustrate that the absolutely vital imperative for America's military to meet their mission goals and to be equipped with the most efficient, most effective state-of-the-art wireless capabilities. This legislation ensures our Nation's spectrum policies will accomplish this goal and fully reimburse the Department of Defense.

The proposal is a win for the economy. Mr. Chairman, 2 years ago the SEBAGO Group produced an economic study estimating that advanced wireless services could spur $500 billion in economic growth and the creation of over 400,000 jobs in the U.S. economy in a 10-year period. This legislation encourages growth, stimulates investment, and creates new jobs in the high tech sector.

This proposal is a win for consumers. As the President observed, and as we in the wireless industry believe, the current relocation process is in sore need of streamlining. Let me offer just a few practical problems this legislation would solve. First, no surprises. The U.S. taxpayer gets the full benefits of the auction spectrum.

The current process does not guarantee cost or a time table for spectrum availability up front at the very time the private sector is expected to determine how much to bid at auction for that spectrum. By the very nature this process adds uncertainty, time, and cost to relocation. Uncertainty lowers the value of the spectrum in the auction and discourages investment.

Finally, certainty. Spectrum is licensed by geographic areas. A carrier could win a license in Arizona. Carrier B could win a license in Nevada. The current process offers no fix to the very real problem of determining which auction winner pays what portion of the Government relocation possibly involving multiple Government systems that overlap over the entire southwestern United States. The proposed legislation avoids these problems by using auction funds to pay for system-wide relocations.

Finally, Mr. Chairman, the wireless industry believes the passage of H.R. 1320 will provide opportunities for all parties involved. Your bipartisan relocation legislation is a solution, a solution that is good for our national security, good for our Nation's economy, and good for the American consumer. I will look forward to answering your questions. Thank you.

[The prepared statement of Steven K. Berry follows:]

PREPARED STATEMENT OF STEVEN K. BERRY, SENIOR VICE PRESIDENT FOR GOVERNMENT AFFAIRS, CELLULAR TELECOMMUNICATIONS & INTERNET ASSOCIATION

Thank you for the opportunity to appear before you today. I am Steven K. Berry, Senior Vice President for Government Affairs of the Cellular Telecommunications & Internet Association (CTIA) representing all categories of commercial wireless telecommunications carriers, including cellular and personal communications services (PCS), manufacturers, and wireless Internet providers.

I just returned from CTIA's Wireless 2003 Convention, and I am happy to be able to report to this Committee that there is a palpable sense of optimism about the future of the wireless industry. We have hard work before us, but the wireless industry looks forward to the challenge. Our convention serves to highlight new advances currently operating abroad and new prototypes for the wireless industry here at home. Our vibrant, competitive wireless industry is putting new products in the hands of American consumers. But, the wireless industry also recognizes that the essential ingredient for us to do so—radio spectrum—exists because of the hard work and continued attention of this Committee and the Administration to sound spectrum management. Today, this Committee confronts the specific issue of our na-

tion's broken spectrum reimbursement process. I am happy to report that the wireless industry fully supports H.R. 1320, the Commercial Spectrum Enhancement Act, because, if passed into law, our nation's spectrum management and reimbursement process would be improved, and improved significantly.

The birth of modern wireless technology took place twenty years ago. Over this time period, we have seen wireless service far exceed growth expectations. Currently, there are more than 141 million wireless subscribers, each consuming more and more minutes of use, not only for traditional voice operations but also for new possibilities in the world of wireless data. Wireless remains a competitive industry and more and more American consumers are turning off their wireline phones and making a wireless phone their primary mode of communication. This tremendous growth focuses the wireless industry on our lifeblood—radio spectrum.

The spectrum management issues we face are by no means new issues. The preparations for the 1992 World Radio Conference identified the need for the U.S. to add significant spectrum for commercial uses, with that spectrum harmonized to coincide with spectrum allocations of the rest of the world. Unfortunately, for much of the next decade, the hard decisions required to deliver on this need were delayed and largely ignored. Fortunately, this spectrum process has been vigorously pursued in the past few years—beginning at the end of the previous Administration, and with notable energy and progress from the beginning of the current Administration.

Positive results have been achieved. After considerable coordination amongst the Congress, the Administration, the Department of Defense, the FCC and the wireless industry, the NTIA delivered on a plan to provide an additional 90 MHz of spectrum, pairing 1710 to 1755 MHz with 2110 to 2155 MHz. The NTIA's solution means that the wireless industry can get the spectrum needed for the wireless industry to continue to innovate and grow.

The legislation before us today would fulfill the other half of the equation—as it will allow our Department of Defense to do the same.

This legislation is the result of an extensive and deliberate process. President Bush identified the need for a new relocation mechanism in both the FY03 and FY04 Budgets, "The Administration proposes to streamline this [relocation] process by creating a central spectrum relocation fund. Auction receipts sufficient to cover agencies' relocation costs would be paid into the fund, and Federal agencies would be reimbursed for their relocation costs out of the fund."[1] President Bush submitted legislation to this Committee in July 2002. Chairman Upton introduced relocation legislation in the last Congress, in October 2002. And, the wireless industry is pleased that this legislation was re-introduced last week by Chairman Upton and other members of this Committee.

The wireless industry fully supported the creation of a relocation mechanism then and fully supports the Commercial Spectrum Enhancement Act (H.R. 1320) today. We do so because this legislation meets three key policy principles:

First, H.R.1320 fully funds government relocation. This has been a bedrock principle for the wireless industry since the beginning of the process with the Defense Department and the Administration.

Second, H.R.1320 will result in workable timelines for both wireless industry and government incumbents.

Third, H.R.1320 provides certainty and accountability in developing relocation cost estimates, using auction proceeds to fund relocations, and following relocation cost and timing estimates.

This legislation accomplishes these principles and the wireless industry respectfully suggests that it deserves the support of all members of this Committee. At its core, the legislation fulfills the promise to the Defense Department and other federal spectrum incumbents to reimburse them as they move to upgrade their systems at more secure frequencies, while at the same time ensuring a timely delivery of additional spectrum to the wireless industry to roll out new, advanced services to the American consumer.

Congress, the FCC and the Administration are currently examining the importance of sound spectrum management and I believe this legislation is a real step to fulfill that goal. The FCC's Spectrum Policy Task Force Report issued in November 2002 explicitly endorses relocation legislation. The report "supports existing legislative measures that would amend the Communications Act to authorize the use of auction funds to pay relocation expenses to Federal government incumbents."[2]

The Commercial Spectrum Enhancement Act injects much needed certainty into our current reimbursement process. It streamlines the spectrum management proc-

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[1] *Budget of the United States Government, Fiscal Year 2003.* Appendix, at page 241.

[2] *Spectrum Policy Task Force Report.* Federal Communications Commission. ET Docket No. 02-135, November 2002. At page 69.

ess by creating a migration plan for the federal entity that is beneficial to government users, as well as to the wireless industry and wireless consumers. Auction revenues are used to directly fund relocation and modernization. Costs are identified with clear rights for both parties ahead of time, creating definitive timelines to expedite relocation. The practical effect is that the federal entity can upgrade and transition to more modern and efficient systems, while freeing up valuable harmonized spectrum that will bring new and innovative services to the marketplace for consumers. By making spectrum acquisition costs more proximate to access to that spectrum, deployment costs are reduced and consumers benefit. The wireless industry supports this legislation and hopes that it will become law in a timely manner.

90 MHz Process.

U.S. and international efforts to identify spectrum for advanced mobile services by the International Telecommunication Union (ITU) began as early as the 1992 World Radio Conference. Throughout the past decade, the process focused on both the quantity and location of spectrum to be made available for commercial services. This is necessary because, unfortunately, spectrum is not fungible. It matters not only how much spectrum is provided, but also *where* that spectrum is located. Spectrum must not only be technically suitable, it must also be compatible with international allocations. Consumers benefit most if additional spectrum is not only technically capable of being used for mobile functions but also is harmonized with other nations' commercial mobile spectrum allocations. Harmonized spectrum offers important economic benefits for consumers, operators and manufacturers. Larger volume means lower R&D and production costs for both handsets and network infrastructure and new products and services will get to market faster—all to the benefit of consumers.

The Congress and Executive Branch devoted significant resources to determine how best to make additional harmonized spectrum available to accommodate growth and the next generation of mobile wireless services. Efforts by the National Telecommunications and Information Administration (NTIA), the Federal Communications Commission (FCC), and the Department of Defense focused on the 1710-1850 MHz and 2110-2170 MHz bands. These bands were consistent with bands identified for commercial mobile service by the ITU, and are currently being used or plan to be used for these services in most other countries around the world.

In July 2002, Commerce Secretary Evans, along with NTIA Administrator Victory and FCC Chairman Powell, announced that 90 MHz of additional spectrum in these bands would be made available for commercial uses. Tom Wheeler, President & CEO of CTIA, stated at the time that:

> As we talk of the economy, I want to emphasize the stability that will result from this action. For too long, spectrum decisions have been an unstable dynamic driven by ad hoc budget determinations. Today's decision eliminates that instability. Thanks to the leadership of the Bush Administration there is now the certainty of knowing not only that when spectrum is needed it will be there, but also that rational planning, rather than irrational "it may never come again" splurging, is feasible for prudent managers.
>
> We are neither at the beginning, nor the end of this process. We are at a fork in the road. With this report, our government has chosen to go down the path of economic growth, increased consumer service, and improved military communication capabilities. It is a clear win for the economy, a win for consumers, and a win for national security.

I can only reemphasize these comments today. By ensuring the efficient delivery of the 90 MHz NTIA plan, H.R.1320 is a win-win-win—a win for the economy, a win for consumers, and a win for national security.

Reimbursement Mechanisms—Current & Proposed

Mr. Chairman and members of the Committee, this legislation corrects the inefficiencies embedded in our nation's current reimbursement process.

The current process is defined in two key laws. In 1993, the Omnibus Reconciliation Act of 1993 (OBRA 93) authorized the FCC to use competitive bidding (auctions) for the reassignment and licensing of spectrum frequencies for commercial mobile services. And, in 1998, Congress passed the Strom Thurmond National Defense Authorization Act for Fiscal Year 1999. The "Thurmond Act" included provisions that established the current reimbursement process when spectrum is transferred from federal government to private use. The Act authorizes federal entities to accept payments when they relocate or modify their frequency use to a non-Federal user of the spectrum.

While addressing the relocation challenge in a general way, there are several practical problems with the current process. I submit that the proposed legislation appropriately responds to these practical problems:

First, no surprises! So, the U.S. taxpayer gets the full benefits from auctioned spectrum. The current process does not guarantee either the cost or the timetable for spectrum availability at the front-end, when the private sector is expected to determine how much to bid at auction. By its very nature, this process adds uncertainty and time to the relocation process. This uncertainty lowers the value at auction.

The proposed legislation offers up-front certainty on both costs and timetables. It requires the NTIA to take actions necessary to ensure a timely relocation of the spectrum. At least six months prior to an auction, the NTIA on behalf of the affected federal entities and after OMB review must notify the FCC and Congress not only of estimated relocation costs, but also of the timelines to vacate the spectrum.

Second, detailed monitoring. While the current process requires some relocation cost estimates, these are not reviewed by the Executive Branch's CFO, the Office of Management & Budget (OMB). Worse, when it actually comes to determining the final costs, these are determined by negotiations with each Federal entity that utilizes the spectrum at issue, or by an arbitration process if the parties cannot agree. The proposed legislation adds significant OMB and NTIA review of both cost estimates and actual spending.

Third, Congressional oversight added. The current process provides only for bare-bones Congressional involvement, and then only at the very end of the process. (Certain Committees would review an Executive Branch certification that the relocation process was complete, and this only applies when Defense Department spectrum is involved. This step does not even occur for any other relocation.) Congress should be involved during the process—not at the end when it is likely that nothing can be done to fix any problems. The proposed legislation requires that relocation funds cannot be spent until 30 days after the OMB submits to the Commerce and Appropriations Committees a detailed description about how the funds will be spent and the timeline for relocation. The legislation also requires annual reports to Congress on all pending relocations.

Fourth, sound spectrum management, not budget politics. This proposed legislation reduces the incentives for budget politics to drive spectrum management by recognizing—up-front—that spectrum auctions must pay for the full cost of relocation. This process will force budgeteers to recognize only the true, or "net," receipts of an auction. This helps reduce budgeteer's temptations to force government relocations based on budget timetables instead of sound spectrum management.

Fifth, potential national security concerns avoided. The current process involves the private sector in direct relocation negotiations with government incumbents. Since relocations may involve national security systems, private sector participation may be unwise. The proposed legislation keeps the process where it belongs—among government officials.

Sixth, since spectrum is licensed according to geographic area, different carriers would get licenses covering different areas. The current process offers no fix to the very real problem of determining which auction "winner" pays what portion of a relocation involving government systems that overlap several licenses. The current process could also leave auction "winners" with a bewildering array of government incumbents that may be relocated from the same slice of spectrum. The proposed legislation avoids all these problems by using auction funds to pay for system-wide relocations.

And, seventh, no pre-judging of the services to which government spectrum will be reassigned. The proposed legislation establishes a relocation process for spectrum that is to be auctioned. The proposed legislation does not direct that all government spectrum that is to be reallocated now or in the future be auctioned. In other words, should Congress or the Administration decide in the future to reallocate some government spectrum for a "green field" of unlicensed use, this proposed legislation would not be triggered.

Conclusion

A Spectrum Relocation Fund as established by H.R.1320 will provide opportunities for all parties involved. Under the current regime, valuable spectrum remains underutilized and there is no workable path to guarantee that the Defense Department and other federal spectrum users have access to the most modern spectrum-based technologies. The current regime prevents wireless carriers from obtaining the spectrum they need to provide the new and exciting services demanded by customers. The Commercial Spectrum Enhancement Act establishes a process for spectrum planning and management to ensure the timely availability of spectrum to

meet the explosive demand for wireless communications, as well as to strengthen and modernize national security systems. The events of the past few weeks illustrate the absolutely vital imperative for America's military to be equipped with the most efficient and most effective equipment. H.R.1320, if passed into law, would help ensure that our spectrum management policies will be designed to accomplish exactly this national goal.

As CTIA offered last July when joining the Administration's announcement that 90 MHz of additional spectrum would be made available for commercial uses, the wireless industry believes that the passage of H.R.1320 would deliver a "Win-Win-Win." A win for the economy, a win for consumers and a win for national security.

Mr. UPTON. Thank you very much.

STATEMENT OF LAWRENCE K. GROSSMAN

Mr. GROSSMAN. Thank you, Mr. Chairman, for inviting me to appear before you this afternoon. I have been here before wearing other hats, as President of NBC News. Today I am here as Co-Chairman of the Digital Promise Project, the public interest initiative that my esteemed colleague, former FCC Chairman Newton Minow and I have undertaken on a pro bono basis.

Mr. Minow very much regrets that his health prevents him from being here today, but he did ask me to commend you, Mr. Chairman, which I am happy to do, on behalf of both of us for taking the lead and facilitating the reallocation of spectrum from Government to commercial use.

Also to commend Mr. Markey for his bill establishing the digital dividend trust fund.

The need for this spectrum transfer is evident and has been addressed effectively by others. I want to speak today briefly on a pressing need and to propose that this committee as an unprecedented and very appropriate opportunity to address in this bill two of the Nation's greatest and very closely allied priorities, the defense of the Nation and the transformation of the Nation's education and training.

Mr. Markey's companion legislation to yours sets up a trust fund to meet society's crucial educational needs. Our request is to take advantage of this golden opportunity to marry the elements of both bills in a way that is quintessential, as you put it, win/win/win. Transferring the spectrum for commercial use, helping defense, and helping education.

We should pay for the reasonable relocation cost of the military and other Federal users of the spectrum. If auctions raise more than is necessary to cover those costs, as the Congressional Budget Office and the marketplace certainly suggest is likely, we should reinvest those spectrum revenues in a parallel trust fund that will help transform education and training for the 21st century for all sectors of our society.

I have just come, Mr. Chairman, from speaking at a conference on the media and the war sponsored by the Triangle Institute of Strategic Studies in North Carolina. That conference was attended principally by special forces officers, mostly instructors from Fort Bragg.

What was striking to all of us were the profound effects that we would see this weekend of how information technologies have transformed the military and the conduct of the war, and how a similar revolution has taken place in the ability of the Nation's press to keep the public informed of what is happening as it hap-

pens by means of computer-generated intelligence, simulations, portable satellite dishes, video phones, wireless laptops, and other such recent IT break-throughs.

The comment was made by a number of those at the conference which took place at the University of North Carolina that if only the Nation's system of education and training could begin to take effective advantage of those remarkable information technologies as the Defense Department and the press have already done.

We could transform the quality and character of American teaching and learning as effectively and dramatically as we transformed the military and the media. Setting up such a trust fund is one way to address the concerns that you, Mr. Chairman, have expressed about the use of new technologies for education.

As Mr. Markey has suggested, in times of national crisis and adversity this country had the foresight to ensure that it will have prosperity in the future by making historic and transformative investments in education and training. After the American Revolution the Northwest Ordinance by passed by Congress which really began our Nation's pioneering system of public education by setting aside public land whose revenues would support that education in every new State.

In the darkest days of the Civil War we had the Land Grant Colleges Act called by historian Allan Nevins, "The most farsighted congressional legislation in the Nation's history." It provided for the sale of public lands to support the establishment of a college and university in every State making higher education accessible to farmers and workers and not just the wealthy few.

Today that Nation's system of 105 land grant colleges provides the cornerstone of American higher education. It is creation heralded American's economic ascendancy into the industrial age. In the middle of WW II Congress made its third transform to a public investment and training education, the GI Bill, which sent millions of veterans to the college of their choice.

The wisdom of this Nation's innovative investments in education in times of crisis has been borne out in each of our centuries. Today we stand at another time of great uncertainty and we also face the sweeping changes of the new information age.

The citizens who are best equipped to succeed in this global knowledge-based economy will need to have access to information technology and will need to use information technology effectively as working and learning tools throughout their lives. Education and training have become the cornerstones of prosperity and success in the new century's knowledge-based economy.

The education research and development trust fund we are urging you to include in your bill would do for education and training what the National Science Foundation does for science, NIH does for health, and DARPA does for national defense. It will support and develop innovative uses of digital technologies to enhance education, training, life-long learning, and encourage our libraries, museums, universities, and school systems to move into the digital age.

It would ensure that the Nation's vast educational and cultural heritage museums, libraries, and universities will reach beyond their walls and into the home, school, and work place even in the

poorest and most remote areas of the Nation. It would transform the Internet into an enriched tool for training, learning, and public participation. It would help achieve our ends in education for all citizens to remain competitive in the new global economy.

It would offset the America's loss of jobs currently happening to workers overseas because we don't have a competitive national IT training infrastructure. Employers require skilled and professional workers. Our systems of education and training must provide world class skill sets in these areas.

And security. Homeland security requires education and training as well on an as-needed basis to deal with possible emergencies, threats, and dangers. We have the need now for life-long learning as America's growing population of senior citizens must remain productive contributing members of society. Of course, our democracy itself thrives when an educated citizenry has access to information and the critical thinking skills to make informed choices.

Finally, Mr. Chairman, let me quote two, I think, very profound statements. One from the famous Hart-Rudman Report on national security which concluded, "Americans are living off the economic and security benefits of the last three generations investment in science and education. But we are now consuming capital. Our systems of basic scientific research and education are in serious crisis while other countries are redoubling their efforts.

"In the next quarter century," the Commission concluded, "we will likely see ourselves surpassed and a relative decline unless we make a conscious national commitment to maintain out edge. In this Commission's view, the inadequacies of our systems of research and education pose a greater threat to U.S. national security over the next quarter century than any conventional war that we might imagine.

"American national leadership must understand these deficiencies as threats to national security. If we do not invest heavily and wisely in rebuilding these two core strengths, research and education, American will be incapable of maintaining its global position long into the 21st century." For the administration under Secretary of Commerce, Philip Bond, said recently that, "Advances in technology and knowledge generation will radically transform the very nature of how we grow our economy and how we compete. Our coming challenge is to use technology to foster change throughout the entire continuum of learning, both formal and informal.

This is beyond getting computers into the schools, beyond getting the schools hooked up to the Internet, and beyond today's debate about deployment of entry-level broadband. This is about much bigger change—a new learning infrastructure." Thank you.

[The prepared statement of Lawrence K. Grossman follows:]

PREPARED STATEMENT OF LAWRENCE K. GROSSMAN, CO-CHAIRMAN, DIGITAL PROMISE PROJECT

Thank you, Mr. Chairman, for inviting me to appear before you this afternoon. My name is Larry Grossman, and I have appeared before you wearing other hats, most recently as president of NBC News, and many years earlier as president of PBS. Today I am here as Co-Chairman of the Digital Promise Project, a public interest initiative that my esteemed colleague, former FCC chairman Newton N. Minow, and I undertook on a pro-bono basis for the nation's major foundations, Carnegie,

Century, Knight, and MacArthur. Mr. Minow very much regrets that his health does not permit him to travel from Chicago to appear here today.

Mr. Minow has asked me to commend the Chairman on behalf of both of us, for taking the lead in facilitating the reallocation of spectrum from governmental to commercial users. H.R. 1320 does it effectively and appropriately. The need for this action is evident and has been addressed by others. I want to speak today of an equally pressing need, and to propose that this committee has an unprecedented and unique opportunity to address in this bill, H.R. 1320, two of the nation's greatest, and very closely allied priorities—the defense of the nation and the transformation of the nation's education and training. Mr. Upton's bill creates a trust fund from auction revenues received for licenses for the commercial use of spectrum that Federal entities vacated, to reimburse them appropriately for their costs of relocating to new frequencies.

Mr. Markey has companion legislation that sets up a trust fund to meet society's crucial educational needs. Our request is to take advantage of this golden opportunity to marry the elements of both bills in a way that is the quintessential "win/win," that will provide a remarkable public dividend for both defense and education. We should pay for the reasonable relocation costs of the military and other federal users of the spectrum, and if auctions raise more than is necessary to cover those costs, we should re-invest at least some of those spectrum revenues into a parallel trust fund that will help transform education and training for the 21st century for all sectors of our society.

I have just come, Mr. Chairman, from speaking at a conference on the war and the media, sponsored by the Triangle Institute of Strategic Studies in North Carolina. The conference was attended principally by special forces officers—mostly instructors—from Fort Bragg. What was striking to all of us were the profound effects that we could see this weekend, of how new information technologies have transformed the military and its conduct of the war, and how a similar revolution has taken place in the ability of the nation's press to keep the public informed of what is happening, as it happens, by means of computer generated intelligence, simulations, portable satellite dishes, video phones, lap tops, and other such recent IT breakthroughs. The comment was made by a number of those at the conference, that if only the nation's system of education and training could begin to take effective advantage of these information technologies, as the Defense Department and the press have already done, we could transform the quality and character of American teaching and learning as effectively as we've transformed the military and the media.

Even in times of national crisis and adversity, this country has had the foresight to insure that it will prosper in the future by making historic and transformative investments in education and training. History gives us guidance. In the period following the American Revolution, Congress passed the Northwest Ordinance, which set aside public land whose revenues would support the creation of public schools in every new state. This was the genesis of the nation's pioneering system of pubic education.

In 1862, during the darkest days of the Civil War, again using the valuable public asset of public land, Congress passed and President Abraham Lincoln signed the Land-Grant Colleges Act of 1862, called by historian Alan Nevins the most farsighted Congressional legislation in the nation's history. It provided for the sale of public lands to support the establishment of a public college and university in every state, so that higher education would be accessible to farmers and workers, not just to the wealthy few. Today, the nation's system of 105 land-grant colleges provides the cornerstone of American higher education, and its creation heralded America's economic ascendancy into the industrial age.

In the midst of World War II, Congress made its third transformative public investment in training and education. It passed, and President Roosevelt signed the GI Bill, which sent millions of veterans to the college of their choice. This landmark educational initiative was instrumental in helping America become the world's economic and political leader and its most productive society. The wisdom of the nation's innovative investments in education in time of crisis has been borne out in each century of the nation's history.

Today, we stand at another time of great uncertainty and we also face the sweeping changes of the new information age. The citizens who are best equipped to succeed in this global, knowledge-based economy will need to have access to information technology, and will need to use information technology effectively as working and learning tools throughout their lives. Education and training have become the cornerstones of prosperity and success in the new century's knowledge-based economy.

The educational research and development trust fund we are urging you to include in H.R. 1320 would do for education and training what the National Science Foundation does for science, the National Institutes of Health do for health, and DARPA does for national defense. It will support and develop innovative uses of digital technologies that will enhance education, training, and life-long learning, and encourage our libraries, museums, universities, and school systems to move into the digital age. It would ensure that the nation's vast educational and cultural heritage, housed in our museums, libraries, and universities, will reach beyond their walls and into the home, school, and workplace, even in the poorest and most remote areas of the nation and the world. It would transform the Internet into an enriched tool for training, learning, and public participation.

Following publication of our report, DO IT has been endorsed by virtually every major national educational organization, library group, and museum organization, as well as by a large roster of CEOs of important high tech companies.

Earlier this year, Congress, under the leadership of Congressman Ralph Regula (R-OH), recognized the potential of the proposed educational trust, and appropriated $750,000 to the Federation of American Scientists (FAS) for the development of the Digital Opportunity Investment Trust (DOIT), which Mr. Minow and I recommended in our report, "A Digital Gift to the Nation." Mr. Markey's bill calls it the Digital Dividends Trust Fund. We have similar goals. A substantial portion of the funds for DO IT that were just appropriated by Congress will complement other monies raised by FAS, in partnership with the Learning Federation, from industry, foundations, and other sources, for the development of a carefully crafted research roadmap that explores the opportunities for technological innovation to transform learning. This could form the basis for a full-fledged program, should such a trust fund be established in H.R. 1320.

The Educational Trust Fund will have a direct, and critically needed impact on the future of American society, just as the Morrill Act and the GI Bill did. The Trust will provide research and innovation in the areas of educational technology and training, just as the NIH provides research and innovation for health, NSF provides research and innovation for science, and DARPA for defense. In this knowledge-based economy, we cannot afford not to have national leadership and coordination of research and improvement for education, training and information technology. The educational trust will be essential to American competitiveness and security in the 21st Century.

- **Education: America must make a new investment to transform education for all citizens if we are to remain competitive in the new global knowledge economy.** The leaders of the new information age will be countries that have successfully evolved from a manufacturing base to a knowledge base in all sectors of society. This means that our education system, pre-K through 16, post secondary, as well as workforce training, require a transformation in teaching and learning that fully integrates advanced strategies using technology and digital information.
- **Jobs: America is losing jobs to workers overseas because we don't have a competitive, national IT training infrastructure.** The National Policy Association forecasts that 3.3 million US IT industry jobs will go overseas in the next 15 years, costing the American economy $136 billion in wages. The new global knowledge-based economy requires citizens to have greater skills in using information technology and higher levels of complementary knowledge in reasoning, problem solving, effective communication and collaboration for jobs in all sectors of the economy. Employers require skilled and professional workers. All of our systems of education and training must provide world-class skill sets in these areas, and they are not.
- **Security: Homeland Security requires education and training on an as needed basis to deal with possible emergencies, threats and dangers.** After September 11, there is an imperative for all citizens to have access to and familiarity with information technology so that different modes of training and vital information can be imparted quickly, effectively, at any time. Safe and successful evacuation procedures, emergency procedures in the event of nuclear, chemical or biological threats, and effective training for first-responders now depend on coordinated, advanced communication technology. All citizens must be able quickly and competently to understand and utilize such technology.
- **Life-long Learning: America must provide every opportunity for our senior citizens to remain productive, contributing members of society.** The Social Security Administration estimates that by the year 2030 more than 70 million Americans will be over the age of 65—that is double the number of seniors we have today. With life expectancy estimated to soon reach into the 90's, there will be insufficient resources to provide social security and other services

to seniors unless they remain self-supporting and self-sufficient far longer into their lives. Digitization and flexible education and training through technology make it possible for "non-traditional learners" in urban and rural areas to change, adapt, extend careers, and become productive citizens over a much longer period during their lifetime.

- **Democracy: Democracy thrives when an educated citizenry has access to information and the critical thinking skills to make informed choices.** It is not enough simply to be connected to the Internet—putting information into context must go hand in hand with the availability of content. In order for Americans to be well informed in a world that is globally interconnected we must develop the skills to understand, order and review an explosion of scientific, cultural, political and economic information. Research and innovation in education are essential national priorities today. Our classrooms and classroom practices look fundamentally the same as they did one hundred years ago; we must transform the way we teach and learn to meet the needs of Democracy in the 21st Century.

What types of projects can an educational trust fund to meet these needs?

- *Visualization, Modeling, and Simulation* would enable students to learn by doing to better understand difficult or abstract concepts and apply what they learn in real-world contexts.
- *Virtual worlds* could offer sophisticated content and challenging activities that, like popular communications media, are more appealing, and engage individuals for large amounts of time. In the words of education Professor James Guthrie of Vanderbilt University, "Properly used, computer-assisted instruction can enable students to learn more and faster . . . When it [works] students benefit from interactive and online-linked instruction, and gifted teachers—construct creative, real-world spreadsheet problems and computer simulations for their classes."
- *Intelligent Tutoring Systems* could assess student strengths, weaknesses, and mastery of subject material; generate instruction material tailored to the progress of an individual student; serve as an "expert" in a subject matter area; and use a variety of pedagogical approaches—explanations, guided learning, and coaching among others.
- *Large Scale Digital Libraries and Online Museums* could offer a mind-boggling array of multimedia information objects and digital artifacts for student, teacher and scholarly use, and for building engaging curricula and learning experiences. The Smithsonian's "American Memory Project," is already having extraordinary impact in teaching our nation's history, but it is only beginning to scratch the surface of what can be made available to every school in the nation.
- *Distributed Learning and Collaboration* could provide learners with unparalleled opportunities for access to courses globally that integrate rich multi-media curriculum, expert instruction, and peer collaboration.
- *Learning management tools* could help students, teachers and other education professionals better manage learning opportunities, assignments, and tasks, scheduling analysis of student performance, interventions of teachers and other education professionals, teacher parent communications, student account management; and student portfolios.

These technologies and their potential applications in education and training promise a significant departure from our experience with education technologies. To date, much of the use of technology in education has involved imitating or supplementing conventional classroom based approaches' merely putting textbooks on CD-ROM and lectures and syllabi on the Web. Rather than offering interaction, immersions, or presence, most interactivity is limited to point and click web page references.

How will the educational trust (DO IT) help to overcome existing barriers to meeting these goals?

- It will fund much-needed research and development in the areas of information technology, software design, the process of cognition, learning and memory.
- It will help fund the digitization of America's libraries, museums, universities and other scientific and cultural repositories to preserve the foundations of American history and learning and to develop the most comprehensive learning experiences for the future.
- It will serve as a center for national leadership and coordination among business, university and Federal initiatives in these areas, which are currently operating without coordination or integration. It will provide grants and contracts to those in the private, for profit sector as well as the nonprofit sector. At a September 2002 summit convened by the Department of Commerce and Department of

Education all stakeholders, representatives of Education, Government, Industry, Technology Companies, Libraries and Museums, as well as the Department of Defense, agreed that national leadership and coordination across all sectors is an essential priority to making their efforts more rational and effective.

There are many who would say that we cannot afford to take on this task at this time. I think we cannot afford not to. Certainly, we need to begin, start modestly, as we did with past great educational initiatives in our history, and then build through the years.

The now famous Hart-Rudman Report on Homeland Security categorically states: "Americans are living off the economic and security benefits of the last three generations' investment in science and education, but we are now consuming capital. Our systems of basic scientific research and education are in serious crisis, while other countries are redoubling their efforts. In the next quarter century, we will likely see ourselves surpassed, and in relative decline, unless we make a conscious national commitment to maintain our edge. In this Commission's view, the inadequacies of our systems of research and education pose a greater threat to U.S. national security over the next quarter century than any potential conventional war that we might imagine. American national leadership must understand these deficiencies as threats to national security. If we do not invest heavily and wisely in rebuilding these two core strengths, America will be incapable of maintaining its global position long into the 21st century."

And for the Administration, Undersecretary of Commerce Philip Bond said in a recent speech, "... advances in technology and knowledge generation will radically transform the very nature of how we grow our economy and how we compete. Growth, jobs, and the competitive edge will go to those nations, those regions, those communities, those companies, and those individuals that can most quickly and most effectively generate, capture, manage, and apply knowledge."

Sec'y Bond went on to say: "... Our coming challenge is to use technology to foster change throughout the entire continuum of learning, both formal and informal. This is beyond getting computers into the schools, beyond getting the schools hooked up to the Internet, and beyond today's debate about deployment of entry-level broadband. This is about much bigger change—a new learning infrastructure."

The funding support for DO IT is modeled after the Northwest Ordinance and the Land-Grant Colleges Act of previous centuries. It, too, would use revenue from public assets—the electromagnetic spectrum, the 21st century equivalent of the public lands of previous generations—for vast educational benefit to future generations of Americans in every state. The trust, which you could help create today, would use revenues from portions of the publicly-owned spectrum. A portion of the proceeds from the commercial exploitation of this public asset would be enough to endow the Educational Trust and create a great legacy for the nation's future.

The Trust will serve as a kind of venture capital fund for educational institutions, enabling them to become true participants in the digital age. Great Britain, Japan, Singapore and other nations are already working on such initiatives, and America must not fall behind in this next great wave of educational progress. The strength of our democracy and our economic competitiveness depends on it.

In closing, we urge you to support the creation of two trusts in the legislation you will report from this committee. The first rightly reimburses the costs to the military and other federal entities for moving. By creating the second Trust, this Committee will lead the way in transforming education and training for future generations of Americans.

When we first discussed this idea with Senator Stevens, he replied, "I really get this. I went to a land grant college, on the GI Bill. This is about the next generation." And it is.

I thank you for your time and would be pleased to answer any questions you may have.

Mr. UPTON. Thank you, Mr. Grossman. I got a little help from the clock there.

I appreciate all of your testimony and, at this point, members will be recognized for either 5 minutes or 8 minutes if they deferred on their opening statements. I will recognize myself for 5 minutes.

Mr. Price, appreciate you being here. In your view, and in the Department of Defense's view, does H.R. 1320 provide for full and timely reimbursement for all cost associated with relocating military systems to comparable spectrum bands?

Mr. PRICE. Chairman Upton, that is a hard question to answer.

Mr. UPTON. I wanted yes.

Mr. PRICE. The way the process works is that there is a band identified and there is some give and take. There is roughly a band that people want to move out of. Then there is a process which we went through, it took about 2 years, to identify comparable spectrum. Then at that time there is an auction set. That is sort of where we are now and the FCC is going through its process.

We are going through right now cost estimates and we should have those by February. It will take a little less than a year to do the cost estimates. The problem is that we won't move for 5 years, 6 years, 7 years after the estimate is done. Actual cost will end up being 5 or 6 years later. With all the evolution in technology, with all the issues of our legacy park still around it is hard to know.

If the Department of Defense is tied to the estimate that was made 5 or 6 years before we actually had to move, then I would say no. If the legislation is structured in such a way that there is enough money in the trust fund and we put forward our cost and it is vetted by OMB and it meets the oversight requirements in the bill of all the detailed cost, and then the Department of Defense is allowed to take money out of the fund to meet its actual cost, then I would say the bill does accomplish that.

Mr. UPTON. I think in our bill 1320 it says, "Such revision in deposit shall be made not later than the end of the fiscal year in which the NTIA has notified the Commission that all of the entities whose relocation costs are payable from such account have either (a) completed their relocation, or (b) been determined by the NTIA." It is my understand that I think the administration's bill they were talking about was looking at a 10-year stand before reverting back to the general treasury. My sense is that the way that we have written this when relocation is complete would be more satisfactory to the administration than, in fact, the proposal that was floated to us at some point before. Is that not sound reasoning?

Mr. PRICE. We would have to look carefully at who the right decisionmaker should be, whether it should be the President, whether it should be NTIA. But the concept is fair that once we have finished the relocation, all the interference issues have been taken care of, and we have moved and we have given up the other spectrum, then we are done.

The issue comes down to, let us say, the cost are a billion dollars to pick a number, and the auction raises a billion one. If the cost estimate was off by more than 10 percent, which is conceivable, then the administration's proposal is that money from a series of auctions goes into one trust fund and it stays there so that agencies would have the opportunity if we are over 110 percent, maybe 112 percent, to take the proceeds from another auction. In that case, I candidly prefer the Administration approach that the money is in there for 10 years, a long period of time, not just when we are moving.

Mr. UPTON. The language that we have is when relocation is complete. Again, the way that we have structured this, would be both NTIA and Defense working together to come to that conclusion.

Mr. PRICE. It may well be that we can live with that. We just had some questions which we can work with your staff on as to the details of when relocation is complete. How is that decided? There is some question about is it after testing has been done. Those may be details that we can reach an agreement and we have already had some discussions with your staff on these.

Mr. UPTON. Ms. Victory, how do you think that the phrase "when relocation is complete" will be interpreted by NTIA?

Ms. VICTORY. Well, in looking at—if I could digress for just a moment. In looking at the two bills, the Administration bill and H.R. 1320, there really are two significant areas of difference. They really are fairly close. Stephen mentioned both of them. One is with respect to whether the auction proceeds are deposited in separate accounts or single account.

As he correctly mentioned, the single account approach gives you an additional cushion because if your estimates are really off in one auction and you underestimate another auction, you get to true it up whereas that would be difficult if you had separate accounts.

The other one is with respect to sort of what is the process for drawing down the funds. I think, as Stephen correctly mentioned, it is important that be a fairly streamlined process to make sure that the estimates are made fairly close in time to when the monies are going to be drawn down so that your estimates are not outdated. I think that is very key.

As far as your question how we would interpret when the relocation is complete, it is when the movement has occurred, when the new transmitters have been put up, and the operations have been switched over.

Mr. UPTON. My time has expired. Mr. Markey, I recognize you.

Mr. MARKEY. Thank you, Mr. Chairman, very much.

Mr. Grossman, we have two objectives. We have the protection of hometown and homeland security on the one hand, and also transforming out educational system and our economy, our training to prepare for and fully capture the digital economy opportunities that are presented.

Can you expand on how investing in telecommunications initiatives and educational technology can positively impact our job situation, our homeland security, and our worker security in the United States?

Mr. GROSSMAN. I certainly hope so. It is clear that is a hugely important priority, especially at this time as the Rudman-Hart Commission has suggested. And as been stated over and over again, the need for first responders to be trained, the need for the population to deal with threats to their safety, the need for information to be spread rapidly, the need for education and information to be developed on how to deal with an anthrax threat or something new that comes up becomes essential.

So the whole process, as we have done with the Defense Department by the Defense Department, as I suggested in my statement, also by the media which is doing such an amazing job using new information technology to bring to the American public what is happening so many thousands of miles away, this whole process of taking advantage of these new digital technologies, delivering them through the Internet.

I just happened as I was coming in here, Mr. Chairman, to notice in the current issue of Carnegie Foundation Reporter a major article on the whole issue of technology and education where there was a survey of 90,000 Michigan teachers who showed that most use the Internet for work but they don't integrate any of it into their teaching. It is not a matter of hardware.

It is a matter of developing the software, developing the models, developing the prototypes, and developing the standards so that can become integrated into both classroom as well as lifelong learning, work place training that is so critical for our priorities today.

Mr. MARKEY. Ms. Victory, we don't know where technology and advances will take us. What happens when there may not be a future licensee or an auction of bands that the FCC wants to reallocate from a Federal user?

Ms. VICTORY. There is a lot of spectrum out there. The beach front property below 3 GHz is certainly is certainly very crowded, but I think as we are learning all the time, technology is expanding the bounds of the usable spectrum. To the extent that Federal spectrum is fully used and effectively used and is not being reallocated, certainly there may be spectrum reallocated from certain private sector uses today or perhaps spectrum that currently isn't used because of the limitations of current technology.

Mr. MARKEY. But we structured the law before the promise of unlicensed spectrum. Now we look at changing the laws for all future Federal relocation. Should we come up with a policy that is savvy enough to encompass new innovative unlicensed opportunities that may be 5 or 10 years down the road?

Ms. VICTORY. Well, I don't think that unlicensed use is precluded by a spectrum relocation fund. This just simply provides a mechanism for cost recovery when an auction is used. Clearly with respect to the agreement that we have all been able to reach as a consensus U.S. position on 5 GHz and making 255 MHz available for unlicensed, certainly the impetus and incentives for making unlicensed available is alive and well.

Mr. MARKEY. So how do we pay Federal users if there is no auction?

Ms. VICTORY. For unlicensed spectrum it may come from Federal spectrum or it may come from private sector spectrum or spectrum that is not yet used yet. With respect to if you make Government spectrum available for unlicensed use, I think that is going to be a challenge for the FCC and NTIA to figure out how to——

Mr. MARKEY. Where do we get the money to pay the Federal user?

Ms. VICTORY. That is going to be a challenge to make Government spectrum available for unlicensed. But what I do want to emphasize is there is plenty of other spectrum available that might be made available for unlicensed, or you can have a sharing situation as well to the extent that you put certain operational limits on the unlicensed devices sharing may be possible. That is one of the things we were able to work out in the 5 GHz band.

Mr. MARKEY. Okay. Because we don't know where it is all heading, Mr. Chairman, and I hope we ultimately would be able to do this, we should just prepare from a policy perspective for either route that we might go down so that there is a mechanism in place

that we can then rely upon that will be invoked if we hit that set of circumstances rather than leaving it undiscussed to some point in the future. Thank you, Mr. Chairman.

Mr. UPTON. Thank you, Mr. Markey.

Mr. Shimkus is recognize for 8 minutes.

Mr. SHIMKUS. Thank you, Mr. Chairman. I would to read a part from the committee's synopsis of the hearing and then I would like a response, especially from probably Mr. Price and Mr. Berry first.

It says, "Within 1 year after the Federal entity is relocated, if the Federal entity demonstrates to the FCC that the new facilities or spectrum are not comparable to those which was relocated, the commercial licensee must take reasonable steps to remedy any defects or pay the cost of returning the Federal entity to its original spectrum." Mr. Berry, is that your intent of this legislation? I mean, is that your understanding what this legislation does?

Mr. BERRY. The legislation has several enhancements to the Administration's original proposal that I think actually improve that situation. For example, it doesn't change existing law. All the 2000 Defense Authorization Act requirements that identify who gets to determine DOD has adequately moved and found comparable spectrum and is, in fact, operating with full capacity to meet military needs.

That will continue to be done by the Secretary's staff and the Chairman of the Joint Chief of Staff as in current law. Also the way this statute, at least the way that 1320 is drafted, I think you will have other protections by setting separate trust funds for each auction. The trust fund stays in place until the funding is actually finished or the relocation is finished. The 110 percent trigger is just so that the auction is completed if it has gained 110 percent of the relocation cost.

If it brings more than that under Mr. Upton's legislation, I think that you would be more than capable to utilize additional funds until that spectrum relocation fund is depleted, or until that determination is made that either you can or cannot fully relocate. I think there is some protections built in to 1320 that were actually not contemplated by the Administration that I think enhances DOD's position.

Mr. SHIMKUS. So from the investor's side you think that there is enough certainty provided in this legislation without the aspect of the provisions I talked about, possible additional cost, also President's ability to reclaim spectrum based upon national defense interest or public safety. It sounds like there is less certainty than I would think that individuals in the corporate world who want to invest major sums of dollars would like. You are saying there is certainty in this language.

Mr. BERRY. I suggest that this legislation creates a greater degree of certainty and a greater degree of predictability than the current system by a long shot. As much as we need it, so does DOD and other Government users need that degree of certainty. I think both are enhanced in this legislation.

Mr. SHIMKUS. Well, then turning to Mr. Price, we have gone through these hearings before on spectrum and, of course, especially within current environment the concern will be real world

operational readiness during the transition, not just within the continental United States but worldwide.

My question also is very similar. Does the language presented in this original draft provide the Department of Defense the certainty to give up an asset that they understand and can use operationally through a transition period of time to meet the unknown future requirements of operating in really what we perceive to be a digitized battlefield which we are very close to getting there.

Mr. BERRY. Right. Thank you for that question. The first point I make, and I have made this point to the committee before, we keep talking about DOD losing spectrum because that is what we seem to have been talking about for the past few years.

I would just make the point that as the Department of Defense moves to network-centric operations, the Army is moving to a digitized battlefield, unmanned aerial vehicles, sensors pinpointing a lot of intelligence assets that we have seen deployed. Over time DOD believes we will need more spectrum, not less, in the U.S. for training, for testing, and possibly for homeland issues, as well as we deploy abroad.

This legislation, along with the comparable spectrum legislation that we already work under, I believe does provide enough certainty in terms of timing with one exception so that we do have the timeframes once we know we move.

The one concern we have is there seems in the House bill as it currently stands the potential and, again, we need to work with your staffs, that if the spectrum is identified in months prior to an auction and the cost estimate is due 6 months prior to an auction, there is the potential if it hadn't been identified well before then that there is only 3 months to identify the comparable spectrum and to do the cost estimates.

That is a very tough challenge and that frankly could not be done. It is going to take us about 10 months in the 3G proceeding now. We will have our cost estimates done. We are shooting for February. The Deputy Secretary signed a note a few months ago. That is even after we know the comparable spectrum. As long as there is enough time and we do have the comparable spectrum, we are comfortable that we can meet our mission.

Mr. SHIMKUS. Ms. Victory mentioned the transmitters, but we are also talking about for a movement by the Department of Defense also the receiver end. I mean, we are talking about really replacement of wholesale equipment across the board.

Mr. BERRY. Correct, sir. This wasn't our first choice. If someone had said would you like to move or not like to move, we would not like to move so this isn't a voluntary, "Hey, here is some spectrum. We are going to give it back." But understanding the Administration's view is to balance economic need of the commercial interest with military capabilities, in the 3G debate we worked long and hard to reach an accommodation on 45 MHz.

But it is a complex process because w are moving into bands where we think it will be free of interference. We are going through those analyses right now. It relates to the issue of why the cost estimates might not be perfect because some of the legacy systems we are already finding aren't made anymore, some of the parts.

Do you reopen production lines? Do you modernize? Are we allowed to modernize based on what is on authorized relocation? It is complex business and it is also sort of an issue of first impressions because the Department has not been through this before so we don't know how accurate our cost estimate will be, at least the first time.

Mr. SHIMKUS. Right. And I know my friends in the industry know I'm very supportive of cellular side, but I am also very supportive of our national defense and security. I am glad you guys have actually gone, and NTIA and Ms. Victory, have gone to the table to try to work out a compromise.

I just want us, Mr. Chairman, to continue to be vigilant so that no one gets lost on the side of the road as we move probably for economic development in new services. I thank you for the hearing. I yield back my time.

Mr. UPTON. Thank you, Mr. Shimkus.

Mr. Stupak.

Mr. STUPAK. Thank you, Mr. Chairman. As we have been discussing, it is a complex issue and I am pleased that at least you have a bill that gives us a starting point to begin these discussions. I think this is something we needed so we could focus on this a little bit more. Since we are on the subject of spectrum policy, let me ask you, Ms. Victory, this question.

I would like to ask a little bit more about the spectrum needs of public safety agencies. I alluded to that in my opening statement. Public safety's need to access spectrum, purchase equipment, and harmonize their communications has become even more evident and urgent since September 11, and with the current budget shortfalls that we see in every State and the great concern that public safety agency funding will be cut even further, are you comfortable with the pace at which the process to allocate spectrum to public safety is proceeding?

Ms. VICTORY. The public safety process is inordinately complex. I know the FCC does have an ongoing rulemaking to take a look at the 800 MHz band and perhaps make available some additional spectrum for public safety and make their current operations a little bit more efficient.

One thing that I want to underscore is in addition to making spectrum available, you also have the very important issue of public safety interoperability. That is perhaps even more complex than the spectrum allocation issue, but I think it is very, very important if we are going to have a fully inoperable future for industry and Government, manufacturers, and State and local folks to work together to try to come up with a vision of what that future looks like.

I know there is leadership within Congress on that. I also know that within the Administration through the PSWN groups and Project Safecom there are a lot of folks focusing their attention. I hope it moves faster as well, but I know there are some good folks working on it.

Mr. STUPAK. Do you believe we should address that issue, the public safety aspect, in this bill?

Ms. VICTORY. I think that there are enough initiatives moving forward. I wouldn't know what to recommend to you at this point

to put specifically in the legislation, but I do know the folks who should be working on it are moving along and I think the FCC is hoping to have a resolution on its proceeding shortly.

Mr. STUPAK. I know Mr. Markey has spoke of a education trust fund like with excess—hopefully excess revenue that may be released from this sale of the spectrum. Do you think public safety should maybe be set up along those lines and have a trust fund, maybe an education trust fund, maybe public safety trust fund? As I said earlier, all the States are cutting everything so drastically. I think we have 47 or 50 States running deficits right now.

Ms. VICTORY. I think both goals are exceedingly laudable, but for purposes of the relocation fund, I think one of the most important things is to make sure first and foremost that the Government agencies are able to recovery their cost. To the extent there are any monies allocated for any other purpose, I think we need to complete the first order of business first making sure that the Government agencies are fully compensated for their moves.

Mr. STUPAK. Mr. Berry, did you want to add anything on that?

Mr. BERRY. Yes, sir.

Mr. STUPAK. You were nodding a little bit there.

Mr. BERRY. No. 1, I think, the concept of relocation fund, the relocation fund concept, could apply very well in the public safety sector mainly because you have a command control model. You have a dire need for maintaining the capabilities. You also have 24 MHz of spectrum that Congress directed that public safety have access to in 1995.

Because of the lack of digital TV transition, public safety has not had access to over half the spectrum that they have been allotted. They have 47 MHz nationwide. They are sliced up into little drips and drabs all over the place. They don't have continuous—contiguous spectrum to do exactly what you said. We should have inoperable high tech state-of-the-art systems for public safety and we should act on it now to deliver that spectrum to the public safety.

I think it is atrocious that we don't have that capability. The process right now of rebanding the 800 MGz should not discount the fact that Congress has already provided 24 MGz of utilization to the public safety—spectrum utilization for public safety. That should be used and used soon.

Mr. STUPAK. Thank you, Mr. Chairman, for the hearing. Maybe along with education trust fund, I think the issue of a public safety trust fund once relocation costs are assured—I'll repeat that—make sure relocation costs are assured would be something that might be valuable to explore. I look forward to working with you on that issue.

Mr. UPTON. Thank you, Mr. Stupak. I know Mr. Walden has a very important phone call that he is on. Let me just ask this question until he comes out. There has been a lot of discussion today about Mr. Markey's bill. Mr. Grossman, we appreciate your testimony and the work that you've done with a good number of folks over the years looking at this.

I would be interested, and I don't know, Ms. Victory or Mr. Price, you have heard about this particular issue before. My sense is that you have. If somehow the Markey language was included as part of H.R. 1320, do you know where the Administration might stand

with its view which includes, I think, a $5 billion cap on the bill. Ms. Victory?

Ms. VICTORY. Let me try to address that. Certainly the goal of the legislation is very laudable. At this point the Administration does not have an official position on the bill. I will say that——

Mr. UPTON. On Mr. Markey's bill or——

Ms. VICTORY. On Mr. Markey's bill. I will say that with respect to looking at the various provisions of the Markey bill there are two areas that give me concern. One I alluded to before and I think it is very important that we ensure that all of the costs of the Government entities are able to be reimbursed before any money is allocated to a different purpose. I think that is very important.

The other area that jumped out at me as well, I noted that there was a requirement in there to allocate the 1710 to 1850 band over for commercial use. Having just spent quite a bit of time trying to produce this viability assessment and plan for 3G, certainly one of the things we concluded is that for the foreseeable future it just was not feasible to allocate that entire band for commercial service. It really would have a very disastrous effect on DOD's operations.

Certainly with respect to the 3G plan that we were able to put together an allocate the 1710 to 1755 bands, that was contingent upon moving operations in that 45 MHz into the upper band so removing that from DOD's use and from the use of the other Government agencies really would threaten some of their critical operations.

Mr. UPTON. Mr. Price.

Mr. PRICE. Again, I would echo what Nancy said, that the Administration doesn't have a view on your bill as of now or the Markey legislation. I will say that a cap, any specific cap, is very troublesome on its face. I'm not sure where the number came from. DOD is not the only Federal agency that has operations in the 1710 to 1755 band.

I have heard numbers in our building bantered from $2.5 to $4.5 billion for our piece. It is going to take us until next February to do our cost estimates. This is sort of back of the envelopes plus other factors, so I'm not sure where any cap—I am not sure what the right number is. I would have no idea.

Plus the point I made earlier that we don't feel that being tied to an estimate that was done 5 years before our actual costs is the right approach. Even if we give cost estimates we won't have actually gotten information. We won't have put out RFPs and gotten information back from our prime and other contractors because you can't say now, "We want to move in 6 years. What is the quote?" Any cost estimate is really a ballpark.

It would be very hard to do—I think to have a cap. The goal is not to have a windfall for any Federal agency. All we want is our actual costs, not more and not less. If after we have completed our move, another agency has, and there is surplus, what folks decide to do with that is more or less our issue and we want to make sure that our costs are reimbursed in a forced relocation.

Mr. UPTON. Thank you very much.

Mr. Davis.

Mr. DAVIS. No questions.

Mr. UPTON. No questions. Okay. Well, I'll keep going then.

Mr. Price, you seemed to have expressed some concern with the time line in H.R. 1320 under which your agency would be required to provide cost estimates to the FCC. What time line would satisfy any of your concerns? Any or all of your concerns?

Mr. PRICE. I haven't gone through the specific dates but if 6 months before the auction the cost estimates are due, then it seems like something like 18 months before that period of time. If the comparable spectrum had been identified, then that would give us time to complete our work so that the cost estimate could be as accurate as it could be.

The estimate is important because it does set the floor for the auction. Even though we don't necessarily want to be tied for our actual funds distributed to us years later, it does set the floor so I think that kind of timeframe makes sense.

Mr. UPTON. Okay. I think this concludes our hearing. I want to thank all four of you. Ms. Victory, again, I want to commend you for your work in working with this panel, particularly in your past with getting Dot Kids bipartisan legislation through the hurdle. We look forward to working with you with the proper oversight.

Mr. Price, it has been a pleasure working with you over the last number of months. We are most delighted that the Administration is smiling at this table as we talk about this piece of legislation that we didn't see in the past. We appreciate your leadership.

Mr. Berry, your long-time work, particularly with the cellular telephone industry and the importance of this issue to all of your members knowing that we can move into the 3G with the speed that we want.

Mr. Grossman, your good work for a long, long time and expertise on so many different issues is most appreciated as well. I can assure you of that.

With that, the hearing is adjourned.

[Whereupon, at 3:27 p.m. the subcommittee adjourned.]