

ATTACHMENT A TO ALLIANCE REPORT
Creating a State-of-the-Art Interoperable Building Regulatory System

ALLIANCE REPORT
ON THE
SUMMIT ON STREAMLINING
THE BUILDING REGULATORY PROCESS
THROUGH INTEROPERABILITY
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ALLIANCE REPORT ON THE SEPTEMBER 24, 2003, NATIONAL SUMMIT ON “STREAMLINING THE BUILDING REGULATORY PROCESS THROUGH INTEROPERABILITY”

Foreword

On September 24, 2003, fifty-five representatives from the nation’s hardware and software, construction and building regulatory communities gathered at the Down Town Association in New York City to promote greater use of information technology by the nation’s building departments and identify opportunities, challenges and potential solutions to enhancing the software used in the building regulatory process through interoperability.

This report describes the purpose of the New York City Summit, the program’s format, the output from the program’s work sessions, including recommendations made by participants for future steps that need to be taken to enhance interoperability. The report also describes the importance of streamlining the nation’s building regulatory process through the effective use of information technology and provides a listing of resources to state and local governments desiring to learn more about regulatory streamlining and information technology.

The September 24 program, “Summit on Streamlining the Nation’s Building Regulatory Process Through Interoperability,” evolved out of two years of work by the National Alliance for Building Regulatory Reform in the Digital Age. The Alliance, a public-private sector partnership, was formed to identify and remove barriers to the effective use of information technology that is used by the nation’s building regulatory authorities to streamline its processes, strengthen public safety, enhance economic competitiveness by allowing the construction industry to build faster, better, safer and at less cost.

The lack of interoperability among the hardware and software currently available to state and local governments for use in their building regulatory process was identified in early 2003 as a major factor inhibiting greater use of information technology by many jurisdictions. The output from the New York City Summit provides the nation’s building regulatory, construction and information technology industries with an action agenda for overcoming these barriers and making interoperable software possible.

The Alliance wishes to thank the Summit attendees for their participation and input to that program and for their comments in October on a draft of the raw output from each of the Summit breakout sessions from which this report was compiled. The Alliance also wishes to thank the National Institute of Standards and Technology for funding support and technical input to conduct the Summit, prepare this report and to undertake follow-up activities. Their support makes it possible for the information technology, construction and building regulatory communities to implement many of the recommended “next steps” towards streamlining the nation’s building regulatory process through interoperability. Your input to and participation in those ongoing efforts is welcomed by the Alliance. This report includes information on how you can become involved in that effort.

Executive Summary

Background

To enhance public safety and the economic competitiveness of their communities, state and local governments increasingly are looking to the nation's information technology industry to provide them with the hardware and software solutions that help them deliver services to the public and private sectors more effectively and efficiently.

In the United States today approximately 44,000 jurisdictions adopt and/or enforce building codes and standards that oversee the design, construction and rehabilitation of buildings. Several national initiatives have been undertaken to assist state and local governments in streamlining their regulatory processes to assure that those services are provided as effectively and efficiently as possible. In those efforts it has been noted that only about 7% of the jurisdictions administering building regulatory programs use hardware and software in their building regulatory processes.

A public-private partnership, the National Alliance for Building Regulatory Reform in the Digital Age, was created in 2001 to identify and remove barriers to streamlining the nation's building regulatory process through the use of information technology.

In their efforts, the Alliance identified the lack of interoperability of the hardware and software currently available to states and localities as one of several major factors limiting more widespread use of IT in the building regulatory process.

To address this issue, in August 2003 the Alliance initiated a project to bring together representatives from the nation's building regulatory, construction and software industries to identify opportunities, challenges and potential solutions to bring about greater interoperability in the hardware and software available to state and local governments.

On September 24, 2003, 55 representatives from the above three groups met in New York City for the "Summit on Streamlining the Nation's Building Regulatory Process Through Interoperability." To put the Summit in context, this report: describes the importance of effective and efficient building regulatory system to our nation (Chapter 1); provides an overview of current uses of IT by building departments (Chapter 2); offers successful examples of applying IT to the building regulatory process that jurisdictions can consider adopting, (Chapter 3); describes the origins, objectives, structure and outcome of the September 24 Summit (Chapters 4-6); looks at the next steps proposed by the Alliance in achieving interoperability (Chapter 7) and how to get involved in that effort (Chapter 8). Lastly the report concludes with listings of Alliance materials that states and localities and the information technology and construction industry's can use towards that goal.

The Summit Program & Outcome

Co-sponsored by the New York City Buildings Department, states of New York and New Jersey, National Institute of Standards and Technology, National Alliance for Building Regulatory Reform in the Digital Age, National Conference of States on Building Codes and Standards and FIATECH, the Summit opened with an overview of the need for regulatory streamlining through the more effective use of information technology.

In welcoming remarks, New York City Building Commissioner Patricia Lancaster noted that, in the wake of September 11, 2001 her city committed to move forward on several fronts, including the reengineering of their building regulatory business process and effective use of information technology, as a way to both provide greater public safety to their citizens and enhance the city's economic vitality.

The chief building regulatory officials of New Jersey and New York told attendees of their state's plans to incorporate interoperability requirements in their future software and hardware procurements and invited the software and construction industry to work with them through the Alliance to develop such requirements.

The opening of the Summit also included a vision statement offered by New York City as to what a truly interoperable construction and building regulatory system would look like; a review of work of the Alliance and background to the creation of the Summit program; and an overview of technical background materials, including a draft interoperability statement that had been prepared by the Alliance for Summit participants to review and refine.

Through a series of discussion and breakout sessions, Summit attendees reviewed and modified a draft interoperability statement and support materials prepared for incorporation by state and local governments in future procurements of hardware and software used to administer and enforce their building regulatory programs. Participants also identified the benefits to the software industry and construction and building regulators of having software and hardware being able to "talk to each other" by interchanging data across functional and jurisdictional lines through the recognition of common data exchange and functional interoperability requirements. Attendees then went on to identify challenges to interoperability and solutions to address those challenges.

The Summit concluded with a discussion of next steps the software industry and construction and building regulatory communities can take cooperatively to speed the development and use of interoperable hardware and software by state and local governments. These next steps include:

- Broadening stakeholder awareness and participation in this initiative to streamline the building regulatory process through interoperability.
- Expanding the Alliance's advisory groups with participants from the Summit and identifying and prioritizing functional interoperability requirements (defining Phase 1 data exchange requirements).

- Seeking funding to carryout the Summit’s objectives.

Besides compiling the output from the Summit in this report, the Alliance has begun to take (as noted at the end of Chapter 7) the following “next steps” in this project:

- Prioritizing functional interoperability requirements and listing next steps for the Alliance in this initiative using Summit output and follow-up work by an expanded group of jurisdictions for review and comment by the software attendees at the Summit,
- Providing a mechanism to gather input on the above from the software community. Make further revisions to the draft interoperability statement and forward it to the Alliance’s Technology Task Force for review and circulation to other representatives from the hardware and software community for their input to develop a consensus on data requirements.
- Revising the Alliance’s Model Procurement Guidelines with an updated Interoperability Statement for use by state and local governments.
- Working together with the construction, information technology and building regulatory communities to identify future work that must be done to create additional technologies and requirements to further advance the development and implementation of a state-of-the-art integrated and interoperable building regulatory and construction system.

The Alliance issues this report and invites the reader to provide comments on its content and the work products generated for the Summit. The report closes with information on how to become involved in this initiative, some of the Summit background materials and information on how jurisdictions, the construction industry and IT community can access other Alliance technical materials, model processes and other work products to streamline their building regulatory processes.

Chapter 1 – The Nation’s Building Regulatory Process

Over 44,000 jurisdictions adopt and enforce building codes in this nation, protecting and serving over 95% of our population and regulating our nation’s \$1.1 trillion domestic building construction industry. Together, the real estate and construction industries are the largest single component of our economy, representing over 20% of the Gross Domestic Product and over 70% of our national wealth. (Data drawn from Alliance Business Case for Streamlining)

How important are building codes and standards and their effective and efficient administration by state and local governments to the nation? Consider the following:

The Current Reality – The Costs of Regulatory Inefficiency

“I have been told by firms in my state that if they miss one business cycle they are dead in today’s marketplace.” (1)

“To assure public safety and economic competitiveness of our nation, homeland security requires us to create interoperable government.” (2)

Utah Governor Michael Leavitt at: (1) the National Governors Association Winter Meeting in February 2000; and (2) the McGraw-Hill National Homeland Security Summit on May 15, 2003

“A major developer of high-rise residential structures has told us that a single day’s delay in the county’s building regulatory process costs his firm \$100,000 in added costs. This is why we have streamlined our building regulatory system.”

Sophie Zager, Director, Office of Building Codes Services, Fairfax County, VA

“It has been reported that a delay in the building regulatory process can cost our firm up to \$1,000,000 a day in the cost of money supporting one of our major chip plant construction projects and lost sales of our chips from a delayed plant opening”

Terry Dieter, an official from INTEL Corporation speaking at the Third National Forum on Building Smarter in the Digital Age, October 20, 2003, Portland, Oregon.

Despite the pivotal role that construction plays in our economy, the construction industry and the building regulatory processes that oversee it remain one of the most fragmented, least efficient and poorly understood segments of our economy.

Where they are effective and efficient, construction regulatory systems ensure public safety, affordability and quality in new and existing buildings every day and during disasters. Where they are not efficient, regulatory systems increase costs and result in poor quality and poor performing buildings. In the early 1990’s, a number of states lost industries or were

unsuccessful bidders for major industrial facilities, based in part upon the inefficient and cumbersome nature of their building regulatory system. The insurance industry estimated that poor codes and codes enforcement contributed between 30 and 40% of the over \$15.5 billion in insured losses in Florida from Hurricane Andrew. Inefficiencies such as these result in missed production cycles, buildings that are not secure against manmade and natural disasters, which negatively impact the lives and livelihoods of all Americans.

Unfortunately, in the United States today far too many building owners, designers, builders, contractors, and citizens are faced with a confusing array of building regulations and inefficient code enforcement processes that cause: significant delays in construction time, lax code enforcement, and obstructions to first responders approaching a building disaster site. Adding to such inefficiencies, most jurisdictions' building regulatory responsibilities are split (and often not well coordinated) between different agencies including: planning, design and construction safety, fire, health, environmental, and energy departments.

Economic competitiveness and homeland security require us to find ways to cut across such stove-piped administrative entities. Homeland security in particular imposes new demands for interoperability of security and public safety information including as-built building designs, building evacuation plans, and coordinated mutual aid agreements between jurisdictions to provide first responder support to manmade as well as natural disasters.

In the early 1990's some jurisdictions began making improvements in the effectiveness and efficiency of their building regulatory processes by working with the information technology community to develop and apply hardware and software to various aspects of their codes administration and enforcement programs. These efforts demonstrated the potential benefits to other jurisdictions making similar use of information technology.

By the late 1990's advances in the use of information technology to increase operating efficiencies across the private sector increased the pressure upon all levels of government, federal, state and local to reassess their operations. Even within the construction industry itself, demands for greater effectiveness and efficiency brought about change. The creation of FIATECH (Fully Integrated Automated Technology for Capital Projects) and its launching of an effort to develop a road map to bring about more effective and efficient use of information technology throughout all aspects of the life cycle of buildings added greater pressure on government to make their regulatory system more efficient as well. (See appendix for copy FIATECH – Executive Summary of Capital Projects Technology Roadmap Initiative).

The Creation of the National Alliance for Building Regulatory Reform in the Digital Age

To help promote such greater effectiveness and efficiency in the building regulatory process, in the summer of 2001, e-government initiatives of federal, state and local governments, coupled with an ongoing effort to streamline the nation's building regulatory process, brought together in Arlington, Virginia representatives from the information technology, construction and building regulatory communities to identify barriers to and explore ways of making greater use of information technology in the nation's building regulatory process.

Out of that meeting the National Alliance for Building Regulatory Reform in the Digital Age was established. The Alliance is as a public/private sector coalition of 41 national organizations, federal, state and local governmental agencies (see list of members in appendix) brought together to implement an action agenda designed to reduce the barriers to the effective application of information technology by federal, state and local governments in the oversight of the design, construction and renovation of buildings.

The Alliance's mission statement is to enhance public safety and the nation's economic competitiveness by streamlining the nation's building regulatory process through effective use of information technology enabling our nation's construction industry to build, faster, better safer and at less cost.

Chapter 2 – Overview of the Current Status of Use of Information Technology in the Building Regulatory Process – Barriers

In order to better understand how to achieve its mission, the Alliance began by building upon information gathered at its organizational meeting regarding the barriers to use of information technology by jurisdictions in the building regulatory processes.

As a part of that effort, the Alliance gathered information from the software and hardware industry, the construction industry and state/local governments concerning how widely information technology is used by jurisdictions involved in building regulatory processes.

In that compilation, the Alliance learned that approximately 7% of the over 44,000 jurisdictions that adopt and/or enforce building codes in this nation were making use of information technology for anything more than word processing, financial planning and basic document handling. Of those jurisdictions using IT, most were only using hardware and software in portions of their building regulatory process (e.g., permit processing but not field inspections or plans review) and there was minimal sharing of information among applications.

Of the nine basic regulatory processes common to state and/or local governments, software applications were largely limited to online permit processing, internal document and record handling, and, to varying degrees, the scheduling and tracking of field inspections. (The nine regulatory processes are: licensing, permit issuing, plans review, inspection, materials and equipment oversight, building maintenance reports, complaint tracking, enforcement, and equipment registration and use permitting.)

What keeps more jurisdictions from making use of information technology? What keeps those jurisdictions that do use information technology in some aspects of their building regulatory processes from using it in other applications?

The Alliance's Technology and Planning & Coordinating Task Forces asked these two questions of the software and construction industries and of state and local governments and added their input to responses to these basic questions that had been provided by attendees at the Alliance's summer 2001 founding meeting.

The most commonly identified barriers to greater use of IT by building departments were the following:

- Cost of IT during the worst financial crisis in state and local government since the Great Depression;
- Poor past experience with:
 - cost,
 - loss of control over jurisdiction's own data,
 - failure of software firm to provide support to older version of software,
 - software firm went out of business - new firm won't support;

- Failure of jurisdictions to analyze their building regulatory processes prior to purchase of software/hardware leading to unfulfilled expectations or disposal;
- An “anti-IT” culture in the jurisdictions;
- Lack of experience in acquisition of information technology;
- Lack of interoperability between hardware and software that might be used by a single jurisdiction or between regulatory or administrative departments and/or programs.

At the same time, the Alliance was also gathering examples of IT success stories. To the input from jurisdictions that participated in the summer 2001 meeting, the Alliance added feedback from several Alliance partners including the National Association of State Chief Information Officers (NASCIO), the International Code Council (ICC), NCSBCS and the Association of Major City and County Building Officials (AMCBO). During 2001-2003, the Alliance compiled a number of case studies of successful uses of information technology. Chapter 3 highlights several cases and notes common elements of successful IT programs.

Chapter 3 – Lessons Learned – Successful Examples of Regulatory Streamlining Through the Effective Use of Information Technology

Since the late 1970's, jurisdictions in various parts of the country have made use of information technology in different aspects of their administration and enforcement of building codes and standards. Initially these were experiments, often with homegrown software packages. Over the past three decades, however, as both jurisdictions and the information technology industry became more sophisticated, a wide-range of off-the-shelf software packages have come into use by state and local governments to assist them in the more effective and efficient administration and enforcement of their building regulatory processes.

The Alliance has gathered and promotes a number of these as “best practices” on the Alliance portion of the NCSBCS website. Here are several examples, ranging from major restructuring of a jurisdiction's building regulatory system down to the growing national use of a simple common software package, that jurisdictions can use.

Examples

The Intel & Oregon Story

The Intel Side

One of the nation's Fortune 500 firms, the Intel Corporation, long ago fully applied information technology to the process of designing, building, and operating their computer chip plants. For Intel and other high tech firms, “speed to market” is everything.

Intel reports that a single day's delay in the opening of a chip processing facility costs the firm \$1,000,000 in time money value and labor costs.

Intel spends \$2 billion (inclusive of interest and cost of money) on the construction of a large chip facility. Included in that cost is the amount of time required by the permitting, plans review, and inspection process of the building department of either the state or local government in which that facility is being constructed. Intel designs all of their production facilities using computers. The facilities are designed to meet modern model building and fire codes as well as the special needs of the chip producer.

Intel reports that it takes between 14 and 16 days of work by their engineers and architects just to convert their building plans to meet the state or local building code of the jurisdiction in which that building is being constructed. That time frame translates into a \$14 to \$16 million cost to Intel out of its total \$2 billion project.

Given the need for speed to market and the \$1,000,000 per day costs to Intel for any delays in the construction process, the effectiveness and efficiency of the building regulatory system of states and their localities plays a major role in determining where Intel will build a new or expand an existing production facility.

When Intel is considering such construction in the United States, the corporation lets each of their existing production facilities in Arizona, New Mexico, California, and Oregon compete with each other to submit the most cost effective construction proposal. A major cost factor in those proposals is the cost and amount of time needed to move through the building regulatory system of each of those states or their local jurisdiction.

Regulatory streamlining undertaken by jurisdictions in the State of Oregon over the past few years, including online permitting processes and special inspection systems, facilitated Intel's decision two years ago to build a new chip plant on an existing Intel site in the Portland suburb of Hillsboro. Hillsboro provided Intel with online permitting, permit tracking and special rapid response inspection teams whose visits could be scheduled online.

The Hillsboro plant, which cost \$2 billion to build, was completed in just 18 months. (The building regulatory process time was reduced by 50% through the use of IT.) The plant was opened by Oregon Governor Kulongoski on April 26, 2003. At start-up, it will employ 1,000 Oregonians and expand to 2,000 when it reaches full production.

The Oregon Side: Building One-Stop Process and Regulatory Streamlining Initiative

Buoyed in part by the Intel success story, Oregon Governor Ted Kulongoski, in his inaugural address in January 2003, announced a statewide regulatory streamlining effort. The streamlining initiative focuses on process and service improvements in all areas impacting construction (building, land use, transportation, etc.).

Development of a one-stop business process for building construction approvals, with the ability to receive regulatory services anywhere in the state, through the use of common forms, procedures, and methodologies via e-commerce, combined with a process for rapid and pre-approval of special construction projects, is part of the Governor's effort to stimulate Oregon's economy.

As Oregon launched this initiative, the state estimated the potential savings in the construction industry through the use of e-commerce and regulatory streamlining. Oregon building departments in 2001 collected over \$75,000,000 in building department permit fees on approximately \$1 billion in construction activity. Oregon estimates that successful implementation of an e-commerce system and regulatory streamlining will achieve a 10% savings in building permit processing costs, with the potential for up to another 10% savings to the construction industry through reducing the delays. (A potential annual savings of \$7.5 million in processing costs, and \$100 million in overall construction costs.)

Extrapolated, if all states had construction volume equivalent to Oregon's, then the Oregon projected cost savings from their basic e-commerce initiative would equal a total national savings to the construction industry of over \$5,300,000,000 each year. Construction volume nationwide, however, is \$1.1 trillion, not \$50 billion. The potential for national savings to the construction industry from Oregon's streamlining initiative, therefore, is in the magnitude of \$15 to \$20 billion a year.

Milpitas, California: Creating Partnerships to Achieve Goals

The Silicon Valley Joint Venture streamlining initiative was launched in 1992 in an effort to restructure the regulatory system within local communities in that area of California to enable them to keep the information technology industry firms that had grown up there in the 1970's and 80's. That initiative successfully generated online permitting systems throughout the Valley, reduced the number of diverse amendments in the building codes in use within the region from 400 to 6, and retained the high tech firms that had been looking to relocate elsewhere in the nation due to the cost of the construction regulatory system.

A city of 50,000, Milpitas, California, is one of the smaller communities within Silicon Valley, yet it provides offices and production facilities for over 100,000 Californians and is the corporate headquarters for two Fortune 500 firms.

Working with its high tech and other firms, Milpitas drew from the Joint Venture Partnership to develop and launch its own private-public sector "Partnership to Achieve Goals." (A detailed PowerPoint presentation on the Partnership is available for viewing on the National Alliance portion of the NCSBCS website - www.ncsbc.org.)

The Partnership focuses on meeting the mutual needs of the private sector (the developer/owner, the architect, and the contractor) and the City of Milpitas by streamlining the building regulatory process and applying information technology including: online permitting processes, electronic plans submittals, automated voice response inspection scheduling systems and single point access, and online tracking systems for construction projects.

The restructured and now largely electronic building regulatory system successfully meets the following needs of the private sector (developer/owner, architect, contractors):

- Improved "time to market."
- Reduced engineering hours for pre-permit submittals
- Reduced engineering hours for permit tracking
- One-stop shopping for consistent answers to questions
- Efficient critical path planning
- Reduced number and cost of design and construction changes
- When changes do have to occur, lower cost for non-standard items.
- Greater consistency in the inspection process

The system also meets the following needs of the City of Milpitas:

- Enhanced public safety, energy efficiency, seismic safety, and architectural accessibility in buildings as designers, builders, and contractors get it right the first time; dramatically improving permit submittals in quality, content, and consistency. (Increased "First Pass Yield" on Permits)
- Reduced plan check time and reduced time spent on training.

- Reduction in wasted time when site is not actually ready for inspection when the inspectors show up.
- Reduced cost for development activities.
- Fee-based expediting.
- Satisfied customers means businesses stay and expand in Milpitas rather than moving elsewhere, taking jobs with them.

Reflecting the success of this regulatory streamlining and information technology initiative in Milpitas, the private sector not only has continued to grow in that city but has supported the construction of a new “state-of-the-art” City Hall that incorporated high tech into the building codes divisions, zoning and planning and City Council chambers work areas.

The Los Angeles Story: Significant Savings Achieved for Both the Construction Community and the City

In the early 1990’s Los Angeles found that its construction industry was being burdened with long delays to process plans, call for and receive inspections and gain certificates of occupancy for all types of buildings - residential on through major high-rise commercial structures. Impressed with successful applications of information technology to the building regulatory processes in other cities in the state of California, the City of Los Angeles several years ago brought on board staff to undertake a detailed review of the City’s existing regulatory system and make recommended changes to that process to make it ready to effectively apply I.T. to their programs. The result of that effort was a major redesign of the City’s building regulatory process and then the phasing in of hardware and software for online permitting, IVR inspection request system and electronic plans submittals.

A partial listing of savings achieved by both the city and its construction community is as the result of that effort is as follows:

- LA handled an 88% increase in construction activity with only a 1.5% increase in staff.
- Enforcement cases closed in a year rose from 18,600 to 44,000 and brought 36,000 run down properties up to code in one year.
- Reduced the median wait-time at the permit center from 2-3 hours to 7 minutes; reduced plan check time from 10 weeks to an average of 10 days; and reduced inspection wait from 4 to 5 days to 99% of inspections being done within 24 hours of their being called in. Savings to private sector from such reductions in regulatory time in tens of millions of dollars.
- The above savings in regulatory time has helped reduce the total construction cost of residential and other structures within the city.

A Small IT Tool with a Big Impact: Energy Conservation Savings to States and Localities; State and Local Government use of REScheck and COMcheck to verify compliance with state energy code provisions provides 90% savings in labor and increased enforcement.

The Building Codes Assistance Project (BCAP) reports that 33 states now accept either or both the U. S. Department of Energy's REScheck (formerly MECcheck) and COMcheck-EZ software packages completed for new construction in their states as a way to show compliance with the state energy codes for residential and commercial structures. When completed for an individual building, the software produces both a compliance report and an inspection checklist that building departments can use in the field.

In addition, states and their localities that have adopted and maintained an energy conservation code based on the International Energy Conservation Code (IECC) are making use of DOE's "Plan Check and Field Inspection Guide" to also help assure that energy code requirements have been properly met on the construction site.

Contractors and building departments using REScheck and COMcheck-EZ have reported that once they have crossed the learning curve to use this software, they are seeing a 90% savings in the amount of time it takes them to check a building's design for energy code compliance over the traditional hand calculation methods.

These two software packages (both of which were early models circulated for national adoption in the Streamlining the Nation's Building Regulatory Process project that was the forerunner of the National Alliance) have significantly enhanced greater energy conservation code compliance in the jurisdictions that use them. The packages also have helped to familiarize state and local building code personnel and the construction industry with plans checking software, paving the way for building departments and builders to make use of plans checking software for other aspects of building design and construction as they become available in the market place.

Common Elements of Successful Applications of IT to the Building Regulatory Process

Just as the Alliance compiled a list of barriers to jurisdictions making successful use of information technology to the building regulatory process, it also has compiled a list of common elements that jurisdictions have reported as leading to successful applications of IT.

Those common elements include:

- Study and, where necessary, reengineer the building regulatory process in your jurisdiction first before you acquire hardware or software.
- Learn from the experience of others. Contact your colleagues in other jurisdictions regarding their experience with both regulatory restructuring and what software and hardware systems they are using - which ones are working well - which ones are not.
- Change the culture in your office to be IT friendly/compatible. Offer/require training.

- Work with construction community to gain their support for any necessary regulatory restructuring and for subsequent funding of hardware/software acquisition.
- Write a good procurement document and stick to it. Retain ownership of your data. Require vendor to support/service software/hardware overtime.
- Work with your software/hardware vendors as partners in the support of public safety, regulatory effectiveness and efficiency in your jurisdiction.

Alliance Identification of Areas Needing Improvement to Enhance Greater and More Effective Use of Information Technology in the Nation’s Building Regulatory Process

Since its founding, the Alliance has worked to assemble best practices and develop information, model enabling legislation, and other materials to overcome the barriers to greater and more effective use of information technology in the nation’s building regulatory process.

Chapter 2 highlighted some of the barriers to the growth and more effective use of information technology in the nation’s building regulatory process that have been identified by the National Alliance for Building Regulatory Reform in the Digital Age. Chapter 3 has highlighted some of the elements of successful uses of IT by states and localities that have been identified by the Alliance.

The origins and objectives of the September 24, 2003, New York City “Summit on Streamlining the Nation’s Building Regulatory Process Through Interoperability” covered in Chapter 4 addresses a major barrier that through the summer of 2003 the Alliance had been unable to address – the issue of the availability to state and local governments of interoperable hardware and software.

Chapter 4 – Origins, Objectives & Invitees to the New York City Summit

The Origin:

From 2001 through early 2003, the National Alliance for Building Regulatory Reform in the Digital Age developed a series of work products designed to help both building regulatory and elected officials remove barriers to more effective use of hardware and software by their building departments. (A list of those products is found in the appendix to this report.)

Among the barriers identified by state and local building departments were both assistance with what to specify in their software procurements and for state and local governments to have a standard or mechanism through which they could require that hardware and software they would purchase would be interoperable.

In the spring of 2003, with funding assistance from the U.S. Department of Energy, the Alliance addressed the first of these two issues by gathering examples of detailed procurement requirements from a wide range of state and local jurisdictions and drafting and posting on the Alliance's website, "Model Procurement Requirements for Local/State Government Acquisition of Hardware/Software for Codes Administration and Enforcement."

In undertaking that initiative the Alliance, through its Technology Task Force, researched the feasibility of including within those procurement requirements a statement on interoperability. On May 28, 2003, the Technology Task Force reviewed the outcome of their research and determined that the hardware and software industry were not prepared to provide interoperability if mandated by state and local governments in their procurements, but that steps could be taken to phase in such requirements in the near future if the Alliance and its partners developed funding resources toward such an initiative.

The Technology Task Force in their deliberations noted that there are two definitions of interoperability. One is easier to achieve than the other.

1. The first kind (less difficult to achieve) is where data can be seamlessly passed from one application to another. An example of this is the International Alliance for Interoperability's (IAI) open specification of IFC (Industry Foundation Classifications) to format and pass data about a building, that was created by the designer using some building design software package, on to the construction specifier and construction cost estimator who runs that data through a different (IFC-based) software package to determine the cost of construction materials used in the building.
2. The second kind of interoperability, and the ultimate goal of the Alliance, is more complex. This form of interoperability goes beyond open data specifications to address the functionality of the software packages, such that all of the software packages that can be used for a specific function, e.g., online permitting, can share that data with each other.

This second version would mean that such software could operate on a distributive network of servers with key based access to different people in the building design, construction and

operation process based upon their role. These individuals, especially in a disaster situation, then could work across a distributed network of servers which makes the data less vulnerable to attack or being shut down during a disaster.

In their late May 2003 meeting, the Technology Task Force recommended that the Alliance take several immediate steps:

First, the Alliance would go ahead and issue its model procurement requirements for state and local building departments without including at this time an interoperability statement. The procurement requirements, however, would include a place holder statement that at some point in the near future the procurement requirements would be updated to include interoperability requirements.

Second, the Alliance would consider establishing a mechanism through which the construction, information technology and building regulatory community would come together to discuss advantages of interoperability, challenges to achieving it, and identify steps that must be taken together to get there.

A report about this approach was circulated to Alliance members for their review and consideration.

On June 30, 2003, representatives from NCSBCS, FIATECH and the New York City Department of Buildings participated on a panel held in Washington, D.C. on Homeland Security and Technology sponsored by the Center for Digital Government. That group discussed the outcome of the May 28 meeting of the Alliance's Technology Task Force and proposed the holding in New York City in September 2003 a national summit meeting to bring together representatives from the information technology, construction and building regulatory communities to identify next steps that could be taken cooperatively towards interoperability.

With funding support from the National Institute of Standards and Technology, in August the Alliance established a Core Work Group. (See Appendix for list of Core Work Group members.) Comprised of state and local building regulatory officials, NIST, NCSBCS and FIATECH representatives, that group was charged with: reviewing existing state and local government building regulatory processes; determining which functions within those processes needed to be interoperable; and drafting an interoperability statement for inclusion in the model procurement guidelines that could be presented to an audience of state and local building regulatory officials, construction industry and hardware and software vendors at the proposed national summit.

The above materials were generated by the Core Work Group. The New York City Department of Buildings, together with the states of New York and New Jersey, agreed to host the building construction, regulatory and software communities and invited them to send representatives to a Summit meeting in that city in mid-September to review the draft interoperability statement and discuss steps that these three parties could take to advance the creation of a state-of-the art integrated and interoperable building regulatory system.

The New York City Department of Buildings offered to host the Alliance's Streamlining Summit both as a way to support this Alliance project and as a way to acquire information regarding the future direction of interoperable hardware and software that might be useful in future procurements for such products by the city.

Working together with NIST, FIATECH, New York City, the states of New York and New Jersey, NCSBCS developed an agenda for the Summit which shared background materials on interoperability being developed by the Alliance's Core Work Group and assured the opportunity for maximum input from the attendees drawn from the construction, building regulatory and information technology communities.

Summit Objectives:

As developed by the Alliance, the objectives of the Summit were to speed the development of technologies and requirements needed to advance the creation of a state-of-the-art integrated and interoperable building regulatory system by bringing together the software industry, building regulatory officials and the construction industry to:

- Share an assessment of the opportunities, priorities and challenges for streamlining and automating the building regulatory process.
- Present and refine data requirements and key principles for achieving the needed interoperability of hardware and software used in the regulation and design of buildings.
- Present and refine an interoperability statement that can be included in government procurements of hardware and software used for codes administration and enforcement.
- Discuss common actions that can be taken by participants to speed the use of interoperable hardware and software by state and local governments.

Summit Invitees:

The Alliance issued a national news release and extended formal invitations to representatives from those software and hardware firms that the Alliance knew were then engaged in providing services to state and local building departments for use in their building regulatory systems.

Invitations were also sent to state and local code officials including members of the National Conference of States on Building Codes and Standards and the Association of Major City and County Building Officials who represent the chief building regulatory personnel of the states and major jurisdictions in this nation.

FIATECH, working with its Alliance partners, identified several major firms with interest in the issue of interoperability to serve as representatives from the construction industry at the Summit.

From these invitations, 18 representatives for the software industry attended the program. Thirteen attendees came from the construction industry and 24 came from federal, state or local government. The software industry attendees estimated that the firms they represented accounted for over 80% of the volume of sales to government for software used in the building regulatory process. (See Appendix for attendees list.)

Chapter 5 – Summit Materials and Program Structure

Summit Materials:

The Core Work Group, on behalf of the Alliance, produced the following documents for distribution in advance to all Summit attendees:

1. Vision of Interoperability for Capital Facilities and Building Regulatory Processes (Produced by the City of New York Buildings Department)
2. Draft Interoperability Statement that would be included in future model procurement requirements.
3. Draft High Level Building Regulatory Process Diagram – Showing building regulatory processes that need to share data.
4. Draft Process Functional Description and Services – Describing what data needs to be interoperable.
5. Draft Listing of Common Data
6. Nine Building Regulatory Process Documentation Maps (showing data exchange points) including: Licensing, Permit Issuing, Plan Review, Inspection, Materials & Equipment Certification, Initial Registration & Inspection, Complaint Processing, Enforcement and Equipment Registration
7. A copy of the Executive Summary from the FIATECH Capital Projects Technology Roadmap Initiative.

These materials were designed to provide adequate background information to engage all of the participants in a detailed discussion regarding the need for, barriers to steps to develop a better definition of interoperability for inclusion in model procurement specifications.

Copies of the above materials are available for review on the Alliance portion of the NCSBCS website by clicking on “Summit Materials” on the banner on the homepage of the NCSBCS website.

Summit Program:

To achieve its objective, the Summit program was divided into four sections. An opening session and three breakout work sessions: late morning, early and late afternoon.

The Opening Session included a welcome from the hosts, presentations on the objective and purpose of the Summit, an introduction of the work materials to be reviewed and an overview of the meeting’s structure and objectives of each of three work sessions planned during the day.

The three work sessions were conducted as follows:

1. The morning work session focused on “Opportunities & Challenges of Interoperability.” In this session, each of the three audience categories met in separate discussion groups to draft a list of opportunities and challenges from their particular industry’s point of view: Group 1 Software/Hardware Vendors; Group 2 Construction Industry; and Group 3 State and Local Government Officials. Each of the groups also reviewed and offered comments on possible changes to the draft interoperability statement prepared for this program.

Input generated from that first work session was then shared with all attendees in a report-out session and was compiled on computers by the Summit’s facilitators. That input was then used as a point of departure for the next breakout session.

2. The early afternoon work session focused on Solutions & Milestones to Achieve Interoperability.” For this session the audience was split into three work groups with each group having equal representation from the construction, software vendors and building regulators attendee categories. Facilitators assisted each of the three groups in reviewing the output from the morning’s work session and then generating their own list of solutions and milestones to achieve interoperability.

Input generated from the second work session was compiled using computer templates (see Appendix) to ensure uniformity and then shared with all attendees in a second report-out session with all participants in attendance.

3. The late afternoon work session focused on “Expressions of Interest in Moving Forward with Recommended Solutions – Next Steps,” and was held in a plenary session. Output from the early afternoon work sessions was discussed and attendees were asked to identify next steps that they would be willing to support towards the objective of the Summit. A list of mutually agreed upon “Next Steps” was generated in this session and recorded.

The Alliance promised to compile a raw summary of all comments generated during the program, assemble the list of next steps and comments on the draft interoperability statement and provide that material to all Summit attendees for their review and comment prior to producing a report on the Summit.

Chapter 6 – Output from the Summit – Summary of Output from First Two Work Sessions

Summit Output:

Output From First Two Work Sessions

In the Summit’s opening session speakers described the importance of streamlining the nation’s building regulatory process to both the public safety of Americans and the ongoing economic competitiveness of our nation. Several speakers then noted the critical role that information technology can play in bringing about such streamlining.

Officials from host New York City offered a vision of what interoperability of the hardware and software being used by both building regulatory departments and by the construction industry would mean to them and other cities across the nation. That presentation and a follow-up by speakers from NIST and the Institute for Building Technology and Safety (IBTS) in which the draft interoperability statement and other Summit support materials were reviewed, provided the background for the Summit’s first break out work session. (See Appendix for copies of Summit agenda, New York City’s “Vision of Interoperability for Capital Facilities and Building Regulatory Process”, the Draft Interoperability Statement and text from PowerPoint presentations.)

The Morning Breakout Session – “Opportunities and Challenges from Interoperability of Software for the Building Regulatory Process” (Drawn from the “Compilation of Output from Summit Breakout and Closing Sessions)

Opportunities:

Following the Breakout Session Template which described the purpose of the session and listed discussion questions, each of the three breakout groups (software/hardware vendors; construction industry; government officials) identified a number of similar items as opportunities that interoperability will provide their group, other groups present and the nation as a whole.

The benefits of interoperability most often cited included:

- A significant expansion in the size of the marketplace for software firms:
 - Expanding the current market beyond the roughly 7% of the 44,000 jurisdictions that adopt and enforce building codes by increasing the number of jurisdictions acquiring and using hardware and software in their building regulatory processes.
 - Enabling the software industry to expand services to other government programs besides building department (e.g., zoning and land use) and into private sector as well (e.g., the construction management process).

- Reducing/eliminating the need of some state and local governments to continue to write their own software for building regulatory processes.
- Facilitating the development of new technologies, new tools to leverage R & D throughout the industry.
- Reduce construction costs for construction industry by:
 - Reducing costly code violation or regulatory process errors in design construction process by facilitating linkage and interoperability of software and hardware used in both the building regulatory and construction processes. This includes access to code compliant product and material information used in construction.
 - Reducing costs associated with time delays caused by inefficient building regulatory programs. (Owner gets into their building sooner, collects rents, sells products, etc.)
 - Reducing risk management problems (design to capital management).
 - Facilitating better documentation for building maintenance and for retrofits, and rehabilitation.
 - Facilitating the introduction and use of new products and technologies.
- Significantly reduce costs to state and local governments and increase efficiency of their building regulatory processes and the concept of e-government by:
 - Reducing the need for jurisdictions to buy “one of a kind” systems that then require expensive customization. Promotes scalability and ease of upgrading software.
 - Eliminating jurisdiction dependence upon one source that may over time go out of business or cease to provide support to a software package/ or to hardware that the jurisdiction purchased and is now deemed “out of date” forcing the jurisdiction to either abandon that software and spend precious resources to purchase an upgrade or (worse yet) have to start all over again reentering data into a new software providers product.
 - Facilitating ability of jurisdiction to share critical information regarding buildings with other jurisdictions under natural or manmade disasters. This includes facilitating giving critical data on building design, contents, etc. to first responders and facilitates damage assessments and coordination with FEMA.
 - Facilitating greater use of GIS and interconnection between building department and other departments in state or local government (zoning/land use, fire marshal’s office, tax assessments, emergency management, etc.).

- Reducing consumer and construction industry complaints about the regulatory system by reducing time delays and giving greater access to uniform information about regulatory process including more uniform code interpretation.
- Making it possible to put building codes into formats for electronic plans review.
- Enabling the building department to work with construction community to balance the workload between the two and where needed facilitating access to qualified specialized regulatory inspection personnel from neighboring jurisdictions.
- Facilitating ability of jurisdiction, construction industry and consumers to all understand and comply with regulations from multiple levels of government (fed/state/county/municipal).

Challenges of achieving interoperability:

Using the uniform reporting template for this breakout session, the following common items were identified by the three groups as challenges of achieving interoperability from their group's perspective, the perspective of the other two groups at the Summit and to the nation.

The challenges to achieving interoperability most often cited clustered into two groupings: Timing/Funding and Organization/Process and included:

- Timing and Funding Challenges
 - Governments need to require interoperability in their procurements to overcome natural reluctance by industry to make their software interchangeable.
 - Need to create a realistic phased adoption approach to get different building regulatory processes to become interoperable. (Jurisdictions need to prioritize.) If you try and do everything at once, nothing will get done.
 - Jurisdictions currently lack funds to participate in process with industry to move interoperability forward.
 - Identify and obtain adequate resources to undertake this initiative.
- Organization & Process Challenges
 - Need to get a diverse array of jurisdictions together to participate in defining and prioritizing for the software/hardware industry common data exchange requirements. (Includes what data needs to be interoperable/what doesn't. What data needs to be secure/how secure?)

- Need to overcome lack of understanding of interoperability and change old habits of all stakeholders, e.g., get vendors to share their data models or data elements with jurisdictions once the above has been accomplished by jurisdictions; get governments to cooperate with each other; get different agencies in same government to cooperate with each other; get industry to support process.
- Need to get greater stakeholder buy-in among three groups (vendors, construction industry and government) to move interoperability effort forward. (Get buy-in by showing short-term and long-term benefits of interoperability.)
- Need agreement across software industry, construction industry and government on relevant specifications for interoperability (data elements, data model, mega-data model, intelligent point-to-point integration layer logic).
- Construction industry needs to streamline their end-to-end process to lower their upfront costs in the building process and increase their ability to interface with interoperable building regulatory process.
- Need to overcome copyright, data ownership issues.
- Need government to put regulations into interoperable format and model code & standards development organizations to reformat their documents to facilitate use in interoperable online plan reviews, etc.

Modifications to Draft Interoperability Statement:

In addition to gathering input in each of the three breakout groups, the morning session included the opportunity for attendees to review, discuss and recommend expansions, deletions or other modifications to the draft interoperability statement provided to attendees by the Alliance.

During their reporting back session, each group offered comments either clarifying or expanding certain sections of the draft interoperability statement. The Alliance compiled these comments into a proposed revised statement that is included in the Appendix of this report.

Comments offered in general were:

- Interoperability definition needs to clarify terms “interchangeable”, data portability” and define software environments and ownership of data.
- Consider mandating software standards.

The Early Afternoon Breakout Session – Solutions, Priorities and Milestones in Achieving Interoperability (Drawn from the Compilation of Output from Summit Breakout Sessions)

As noted earlier, during lunch the Alliance compiled all of the input from the morning breakout session and shared it with all of the attendees. The list of compiled “Opportunities and

Challenges” gathered in the morning then became the basis for the three work groups after lunch to review those challenges and propose solutions to them, offer some priorities on which challenges needed to be addressed in what order and, as time permitted, add some suggested milestones towards achieving interoperability. As time allowed, the afternoon session also would include another look at the proposed revisions to the draft interoperability statement.

Unlike the morning breakout session where everyone was divided into groups based their profession, the afternoon breakout sessions were structured differently. Each of the three breakout groups included an equal balance of representatives from: the software/hardware industry, the construction industry and state and local government building regulatory officials.

To provide uniformity in the compilation of output from the three separate groups, a template was provided. In the course of the afternoon session, however, the template was modified by several of the groups resulting in some groups spending more time than others prioritizing solutions or coming up with a mini work plan towards addressing barriers that had been identified in the morning.

The following, drawn from the Summit Output Compilation document, combines the output of all three groups into a structure that denotes:

1. General Solutions Recommendations and their Priority and Detailed Actions to Address
2. A Suggested Milestone List to follow-up on the work done at the Summit to move the nation forward towards achieving interoperability for the building regulatory process.

General Solutions Recommendations, Their Priority and Detailed Actions to Address

Recommendation #1:

Expand and diversify the Core Work Group by adding jurisdictions from more diverse size, different regions, to have them review interoperability statement, identify high priority use cases (data exchanges requirements), process maps and look at gaps in current software available for use in building regulatory process.

- **Priority:** High – Do Immediately
- **Detailed Actions to Address:**
 - Identify low-hanging fruit and funding sources to address work of Expanded Core Work Group.
 - Assess points of interoperability by looking at:
 - Within each regulatory process what functions need to be interoperable? What data needs to be shared?

- How to link the points in the regulatory process that need to be interoperable? Identify data exchange points and data element integration points (e.g., mapping data points between platforms).
- Collect data element/model descriptions from the software industry (existing GIS, IAI, etc.).
- To accomplish the above: obtain, review, recommend existing use cases and process models.

Recommendation # 2

Continue to refine the draft interoperability statement and support materials developed for the Summit and share with stakeholders by broadening stakeholder involvement in this project. Involve not only as members of expanded core work group but also in a software industry advisory group both of which will define their roles in continued participation in this project to establish national goals, gain commitment for interoperability.

- **Priority:** High – Do Immediately
- **Detailed Actions to Address:**
 - Identification of Stakeholders. Stakeholders include:
 - Building Regulatory Process Jurisdictions (large and small and their employees)
 - Software/Hardware and Intermediate-ware Industry
 - Construction industry (Construction industry needs to participate in this initiative while at the same time streamlining their end-to-end processes to lower upfront costs in the building process.
 - Design professionals
 - State and local CIO's (Chief Information Officers) and their work on enterprise standards.
 - Adequate funding sources need to be identified and obtained. (One possible funding source for implementation of interoperability for small jurisdictions is to get buy-in from construction industry and have them purchase interoperable hardware/software for the jurisdiction.)
 - To obtain buy-in from stakeholders, for each stakeholder group need to:
 - Identify their pressing needs for streamlining through interoperability.
 - Identify opportunity cost – what is lost by not moving rapidly forward?
 - Identify marketing opportunity for software/hardware industry.

- Provide education to stakeholders to reduce their fear of interoperability, e.g., help software industry understand other sectors where interoperability has been adopted and succeeded or failed and show why; then apply benchmarks to this project. Help software industry understand need for interoperability from their customers perspective.
- Look at ways to reduce liability impacts on stakeholders from both the current system and from change to interoperable system.
- Identify existing resources/materials that can be leveraged/used to move forward.
- Document above findings and engage stakeholders in active research.
- Provide software industry a forum in which they can work cooperatively together on this project. Define its parameters and support technology and functional areas to achieve flexible and open specification that is sufficiently detailed to all for 3rd party implementation. Identify plan that has interoperability solutions developed incrementally. (Recognize that data exchange interoperability is achievable far more quickly than interchangeable software. Consider getting lowest common denominators first and then develop bridges between.)

Recommendation # 3:

Get jurisdictions across the nation to commit to interoperability and, where necessary, to the reengineering of their regulatory/administrative structures to facilitate and benchmark the process and make effective use of interoperable information technology as it becomes available. Included here is need for jurisdictions to standardize their procurements and consider financial incentives to software suppliers who demonstrate interoperability successes (e.g., perhaps a 10% bonus).

- **Priority:** High – Do Immediately
- **Detailed Actions to Address:**
 - Identify available funding and political support to address solution & obtain
 - Develop an approach towards gaining jurisdictions understanding and accommodation of the differences among their building regulatory processes in developing uniform interoperability procurement requirements. To accomplish above consider:
 - NASCIO involvement/support for this initiative.
 - Collect more information regarding other jurisdictions with both more and less complex regulatory maps (e.g., New Jersey and small rural jurisdiction).

- Survey building departments that are not automated. Find out why they are not and what aspects of their building regulatory process make them different from those jurisdictions that have automated. What processes are same or different from those identified by the Core Work Group for Summit?
- Describe and document proof of concept for three different sized jurisdictions – cross-jurisdictional, large city and small town.
- Develop and implement strategy for jurisdictions to use Alliance Procurement Guidelines with interoperability requirement. Strategy may include:
 - Federal government mandating interoperability for their procurements.
 - State and local governments through NASCIO, NCSBCS, AMCBO commit to and follow-up in using interoperability requirements – perhaps aggregate procurements.
 - Develop strategy that looks a broader markets outside of traditional building regulatory process (e.g. zoning & land use).

Suggested List of Milestones:

- Get raw output from Summit to attendees for their review and comment within 10 days. (October 5, 2003)
- Expand Core Work Group and establish mechanism for software industry advisory or work group to undertake recommended actions from summit – Establish within 2 months. (December, 2003)
- Share output from Expanded Core Work Group with software industry advisory group and get feedback within three months of Summit. (January 1, 2004)
- Based upon work of above groups, make further revisions to draft interoperability statement and incorporate in Alliance Model Procurement Guidelines – 4 months from end of Summit. (February 1. 2004)

There were no further proposed revisions made during the early afternoon session to the draft interoperability statement.

Chapter 7 – Next Steps From Summit Output

Output From Closing Work Session – Summit Recommendations – Next Steps

In the closing work session of the Summit, attendees discussed the output from the previous two work sessions and then answered two basic questions: What are the next steps towards achieving the Summits objectives of interoperability; and would your firm/agency support working cooperatively with other Summit attendees in taking those next steps and working towards achieving those objectives.

Moderated by Dr. Richard Jackson of FIATECH and assisted by Robert Wible of NCSBCS, the participants listed the following items as Next Steps and expressed a consensus that the attendees would work with the Alliance towards carrying them out:

A. Next Steps for the Alliance:

1. Broaden Stakeholder Awareness And Participation (Buy-In)

Make all participants aware of the benefits/business case of interoperability for each group: software industry/state and local governments and construction industry.

To expand stakeholder buy-in:

- Further develop technical materials. Define phase 1 data exchange requirements.
- Further investigate and quantify benefits. Give examples of where interoperability has been as success. Survey what other areas are exploring interoperability.
- Develop a marketing strategy that includes identification of benefits to software industry, construction industry and government.

2. Expand Alliance’s Advisory Group with Participants from the Summit

Form a vendors group to interface with the Alliance’s Core Work Group & Advisory group as future work products are developed to promote interoperability.

Expand the Core Work Group to add more diverse array of jurisdictions to:

- a. Expand work process models.
- b. Identify high priority data exchange needs.
- c. Identify other project priority needs based upon output from Summit breakout sessions and provide input on gaps in existing software now available to jurisdictions.

Identify which Summit participants and other stakeholders are willing to participate and work on which priority projects.

3. Seek Funding to Carry-out Objectives

B. Next Steps Recommendations for New York City:

1. Look for Vendor and City Commitment to Work towards Interoperability.
2. City Should Include Work Done So Far by Alliance and Ask Vendors to Review and Comment Further.
3. Define The Lowest Common Denominator of Interoperability City Wants to Pursue at this Time and Place in Upcoming Procurement

Action by Alliance on Summit Output

What's Next? Proposed Next Steps in Alliance Project

Shortly after the Summit concluded on September 24, representatives from NIST, FIATECH, NCSBCS, New York City and IBTS met and agreed upon taking the following actions in support of the output from the Summit attendees:

- Input from software/hardware attendees at Summit will be incorporated in a final document and sent out to those members of software/hardware community that did not attend Summit for their input and comment along with information on their data requirements for permitting and other processes. (late- December, 2003)
- Input from above group and final document from Summit will be forwarded to Alliance Technology Task Force for review and circulation to software vendors/government regulators to develop consensus on data requirements – leading to definition of common format for software used in building regulatory process and final interoperability statement for inclusion in Alliance Model Procurement Guidelines. (January, 2004)
- Revised Alliance Model Procurement Guidelines with Interoperability Statement posted to Alliance website and distributed to state/local governments. (February, 2004)
- Alliance work together with jurisdictions, construction industry, software/hardware/IT community to identify future work that must be done to create additional technologies and requirements to further advance the development and implementation of a state-of-the-art integrated and interoperable building regulatory and construction system. (February, 2004)

Chapter 8 – How to Get Involved in the Alliance and Regulatory Streamlining Effort

“The Time is Now”

The above theme was selected by the Alliance as the title for their two annual progress reports to the nation’s state governors, the Federal government, and their partners in the public and private sector.

The continued homeland security threat to this nation, the ongoing threat of other disasters (both manmade and natural), coupled with the need for all communities to revitalize their economies, all add to the business case for the further development of the Alliance’s pending work products and their adoption and use by state and local buildings departments across the nation.

The “Time Is Now” for several other reasons –

First, in their inaugural or state-of-the-state addresses, seven governors in January 2003, noted that regulatory streamlining would be one of the major actions of their administration. Among those states are California, New York, Oregon, and Washington. In addition, streamlining initiatives in the building codes and standards area also are underway in Michigan and Minnesota. These efforts are being undertaken during the states’ fiscal crisis to: reduce the cost of government, increase its efficiency, and help jump-start their economies.

Second, action now in carrying out the Alliance’s national initiative supports parallel information technology actions within the construction industry itself. Those actions include the work of the following:

- FIATECH (Fully Integrated Automated Technology for Capital Projects), a private-public sector construction industry project, is working to develop and implement a national roadmap of the construction process to promote interoperability of construction information and speed-up the construction process.
- The Federal PATH (the Partnership for Advancing Technology in Housing) initiative is enhancing the use of innovative technologies including I.T. in the design, construction, regulation, and use of housing in the United States.
- CERF and the CII (Civil Engineering Research Foundation and the Construction Industry Institute) and various other associations of building owners are separately looking at greater efficiencies in the construction process through more uniform applications of information technology and other streamlining initiatives.
- NIBS/IAI (the National Institute of Building Sciences which is secretariat to the International Alliance for Interoperability, North America) is developing and supporting the adoption and use of interoperable standards for information technology hardware and software in the construction process.

- The Enterprise Integration Act which was passed in 2002 by the U. S. Congress authorizes the National Institute of Standards and Technology (NIST) to research and establish “standards and protocols to enable major manufacturing industries (including construction and housing) to electronically exchange project and standards related information.” (As of December 2003 Congress has not appropriated funding to implement this Act.)

These initiatives also add to the National Alliance’s business case for completion of its work products and the funding and launching of a proposed (submitted in April, 2002) multi-year \$8 million national streamlining implementation matching grant project which is designed to seed across the nation regulatory streamlining projects that make effective use of information technology and save our consumers and construction industry a projected \$15 billion a year in unnecessary construction costs due to regulatory delays and inefficiencies.

How Can the Alliance Help You?

You’ve read the Summit Report. Now, how can the Alliance help you? Is the building regulatory system in your state or community effective and efficient? How long does it take to issue permits, get plans reviewed and inspections done? Does your city/county work in partnership with your construction community? Have regulatory inefficiencies contributed to increased costs of new homes or building rehabilitation in your state? Are companies relocating out of state due to regulatory delays or other inefficiencies? How effective & efficient are communications across agencies in your state/locality for disaster response coordination and mutual aid agreements with other communities? Is your software/hardware firm finding it difficult to communicate with elected officials the important contribution that information technology can make to the effectiveness of their government/agency in its ability to serve the needs of its citizens?

If your community/state needs assistance in one or more of these areas, visit the National Alliance’s portion of the NCSBCS website and look at model streamlining processes and enabling legislation that may be of assistance to your state or local government.

If you are interested in learning more about the work of the National Alliance, becoming an Alliance member, helping to launch a regulatory streamlining project in your community, or assisting in the funding of the Alliance’s work, please contact Carolyn Fitch at the Alliance’s Secretariat, the National Conference of States on Building Codes and Standards, or visit the Alliance’s portion of the NCSBCS website -- www.ncsbc.org -- for more information.

Closing Comment from the Alliance – Your comments on this report are appreciated.

Thank you for reviewing this report on the September 24, 2003, Summit on Streamlining the Nation’s Building Regulatory Process Through Interoperability. Whether you attended the Summit or are an interested stakeholder, the Alliance seeks your input and comments on this report and invites your active participation in the above follow-up actions.

To share your comments or become involved in this ongoing initiative, please contact the Alliance Secretariat, NCSBCS, by emailing Robert Wible at rwible@ncsbcs.org. NCSBCS will compile feedback input received and will share it with relevant Alliance work groups.

APPENDIX:

REFERENCE SECTION – Listing of Reports and Other Background Materials Supporting the Building Regulatory Process through Effective Use of Information Technology

Documents attached:

- Agenda for New York City Summit
- New York City Department of Building's "Vision of Interoperability for Capital Facilities and Building Regulatory Processes"
- FIATECH Executive Summary, Capital Projects Technology Roadmap Initiative, March 2003
- Draft Statement of Interoperability for the Building Regulatory Process, September 17, 2003
- Summit Attendees List, September 24, 2003
- List of Members of the National Alliance for Building Regulatory Reform in the Digital Age
- List of Members of the Core Work Group
- New York City Summit Template for Breakout Sessions, September 18, 2003

List of Alliance's Work Products and Reports Available on Alliance Portion of NCSBCS website (www.ncsbcs.org):

1. Model Procurement Guidelines
2. Background Materials for New York City Summit
3. Copies of PowerPoint Presentations:
 - a. Paul Domich Associate Director, NIST BFRL
 - b. Robert Wible, Executive Director NCSBCS, Secretariat to Alliance
 - c. Mark Topping, Deputy Commissioner for Administration and Technology, NYC Department of Buildings
 - d. Greg Lindsay, IBTS and Mark Palmer, NIST BFRL
4. The Business Case for Streamlining the Nation's Building Regulatory Process through the Effective Use of Information Technology

5. Model State Streamlining Enabling Legislation
6. Listing of Jurisdictions Using Technology
7. Tools to Enhance Enforcement
8. Building Regulatory Software Listing
9. Minutes of Alliance Technology and Planning & Coordination Task Force Meetings
10. Proceedings from Second and Third National Forums on Building Smarter in the Digital Age
11. Proceedings from first I.T. Forum, May 31-June 1, 2001
12. Proposed Secure Nationwide State-Managed Database of Building Designs and Evacuation Plans for Critical Structures for First Responders
13. Models and Best Practices from the Streamlining Project