Communications Interoperability Performance Measurement Guide

Homeland Security

April 2011

Table of Contents

I. Introduction 2
Why Measure Communications Interoperability? 2
Who Should Use this Guide? 2
Why Use this Guide? 3
II. Understanding Performance Measurement 4
Using Performance Measures to Address Interoperability Gaps 4
Measuring Across Levels of Government 8
Mapping to the Interoperability Continuum and NECP Goals 10
Developing Performance Measures 11
Capabilities Assessments 13
III. Beyond Capabilities - Measuring Outcomes and Impacts 16
Linking to Response-Level Emergency Communications 16
Identifying Operational Impacts to Measure 16
Thinking Outside the Interoperability Continuum and NECP Goals 17
IV. Strategic Performance Management 18
Link Performance Management to Strategic Plans 18
Choose Perspectives and Map Strategy 19
Establish Accountability 20
Establish a Performance Management Framework 21
V. Conclusion 30
Leverage Governance to Support Performance Management 30
Linking Performance Management to Everyday Operations 30
Justifying Grants and Investments with Sustainable Metrics 30
Appendix A – Glossary 31
Appendix B – Tactical Interoperable Communications Scorecards 35
Appendix C – NECP Goal 1 Demonstration Criteria 36
Appendix D – Capabilities Assessment Decision Trees 40
Appendix E – Sample Capabilities Factors Data Sheet 45
Appendix F – DHS Strategic Planning Process 46
Appendix G – Linking Strategy and Performance 47
Appendix H – Example State Performance Plan 49
Appendix I – Sample Performance Report 50
Appendix J – References 53

I. Introduction

Performance measurement and management are important tools for government agencies, organizations, and private enterprise, alike, to align results with strategy. Government has increasingly turned to methods originating in the private sector to manage programs and achieve intended results. Principles of performance measurement and management have matured as applied to the public sector. Today, local, State, and Federal agencies are adopting these principles to manage resources and results.

The purpose of this guide is to help those in public safety planning apply these principles to issues of communications interoperability. Interoperable capabilities have improved in recent years through a multi-dimensional view of the issue, statewide strategic plans across the nation, and a national plan presenting a practical vision. National goals today target practical outcomes and impacts rather than mere means to these ends. This guide addresses current performance measurement efforts and presents a step-by-step process to build a performance management framework, apply it, and use results to refine strategy.

Why Measure Communications Interoperability?

Communications interoperability is a critical public safety issue that has gained the attention of emergency responders, policy makers, and the public alike. Achieving it, however, has proven to be demanding on public resources. Beyond that, most practitioners recognize that interoperability is a capability that once attained, demands continuous efforts to maintain it. Agencies across the country and all levels of government have found that interoperability is a complex combination of capabilities that vary over time, between sets of cooperators, and across incident circumstances.

We measure communications interoperability to gauge progress in attaining or sustaining this desired state. We do it to make tangible improvements in getting from our current state to the desired state. We do it to understand factors that lead to the success (or failure) of our initiatives so that we may sustain them and repeat them elsewhere. Finally, we measure progress toward interoperability to assess whether the expense involved is a fair return on our investment.

Performance management entails more than just measuring the results of initiatives. It is also about using measurement results to reshape strategy and retune the measurement process. Through it, accountability for results is established with stakeholders and across perspectives on the problem. Measurement allows us to manage communications interoperability, ideally from a strategic vantage point.

Who Should Use this Guide?

Statewide interoperability coordinators (SWICs) are the primary audience for this guide. However, anyone with responsibilities for interoperability across agencies may benefit from it. Individuals accountable for the success of broad, often expensive initiatives to provide and ensure this capability will find use in the performance management framework it presents. Interoperability governing bodies, SWICs, and others responsible for planning at various levels will find it useful for assessing progress and refining their strategies.

Why Use this Guide?

The answer is simple: Because we need emergency responders to "make timely decisions during an incident involving multiple agencies without technical or procedural communications impediments.[1]" By using a performance management system with strategic plans, better results can be expected. As importantly, better strategies will evolve, and drive better measures.

A common maxim of management is, "What gets measured, gets done". In communications interoperability, well-articulated measures of success linked to high-level strategy and valid, replicable means of measurement not only allows us to attain this critical end, but also maintain the means of achieving it in a changing environment.

Performance measures are used by program managers, agency executives, and government accountability offices to ensure strategic management and results focused on intended ends. Whether carried out under initiatives for government accountability, performance-based management, or results-based accounting, leaders at local, State, tribal and Federal levels of government use performance measures to manage resources and balance competing demands. Ultimately, performance measures support government's responsibility to attain critical ends through efficient use of public funds.

Federal requirements for strategic management and performance reporting push its agencies and others receiving Federal funds toward greater, more outcome-oriented performance measurement in programs. Many States have adopted strategic management requirements for their programs. Increasingly, grant programs require performance measures arising from Federal requirements.

This guide presents background on communications interoperability measures that we have today and a framework for moving forward. Use it to apply accepted methods of strategic performance measurement and management to improve communications interoperability.

[1] National Incident Command System 200, Unit 2: Leadership and Management.

II. Understanding Performance Measurement

Performance measurement means different things to different people. Typically, it is thought of as part of personnel management. Performance evaluations are common in most jobs today. Unfortunately, the term can often evoke adverse reactions for this reason. People can feel threatened by evaluation of their personal performance.

Performance measurement and its purpose, performance management, are related, but about much more than personal evaluations. They are at the heart of modern management theory that attempts to align organizational, programmatic, and individual performance with strategy. *Strategic management* is the integration of all other management processes to provide a coherent approach to establishing, attaining, monitoring, and updating an agency's strategic agenda.[2] For our purposes, this could be a strategic plan for communications interoperability that spans agencies and jurisdictions.

We will have more to say about strategic management later. For now, recognize that the highest level of performance measurement is in assessing attainment of strategic goals and objectives. Lesser levels involve measurement of activities or initiatives supporting strategic objectives, such as inputs and processes.

At either end of the measurement scale, performance management is about the cyclical process of measuring, assessing, and recalibrating. Processes of continual improvement are necessary for learning, growing organizations, as they are for multi-agency efforts to improve interoperability. For example, the Department of Homeland Security's (DHS) planning and implementation process for statewide communication interoperability plans (SCIPs) is cyclical, with the results of assessment and measurement fueling further strategic planning.

No plan or process is so good that it cannot use improvement. Organizations that wait to create the ideal plan or the most comprehensive measurement system never reach their goals – or the goals they reach are no longer relevant.

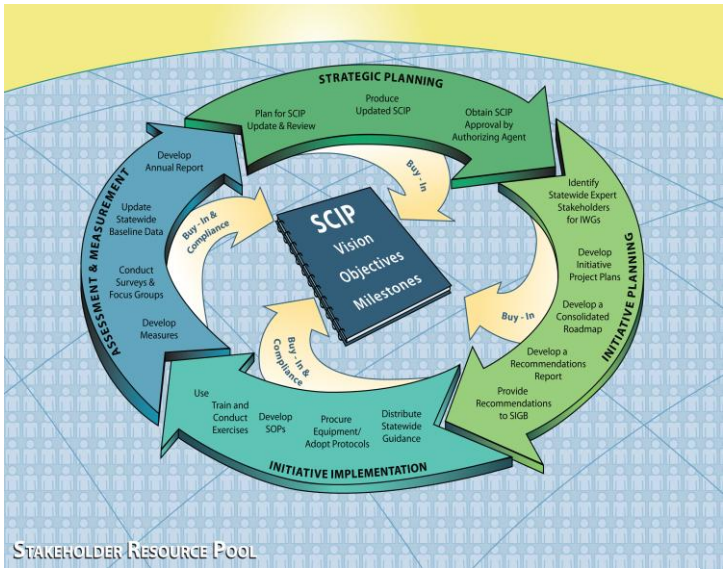


Figure 1: SCIP Planning and Implementation Lifecycle

A good plan today is better than a perfect plan tomorrow. *— General George S. Patton*

Using Performance Measures to Address Interoperability Gaps

We measure in order to understand, manage, and improve. In the process, we learn about gaps between our goals (ends) and where we are today.

Interoperability assessments have been conducted at local, State, and national levels over much of the past decade. Most have focused on the existence of capabilities, but increasing attention is being paid to their demonstrated use. In the language of performance measurement, outcomes and impacts are given higher credence than inputs, processes, and outputs. We will describe different types of measures below in "Developing Performance Measures", but first let's look at national assessments that have shaped our ideas of performance measurement for communications interoperability.

[2] Poister and Streib, 1999.

National Interoperability Baseline Survey

DHS efforts to measure communications interoperability and identify gaps started in 2006 with the National Interoperability Baseline Survey[3]. Approximately 22,400 agencies across different disciplines and levels of government received the survey, and the response rate of 30% was statistically valid[4]. The results provided the first rigorous objective view into interoperability gaps throughout the Nation.

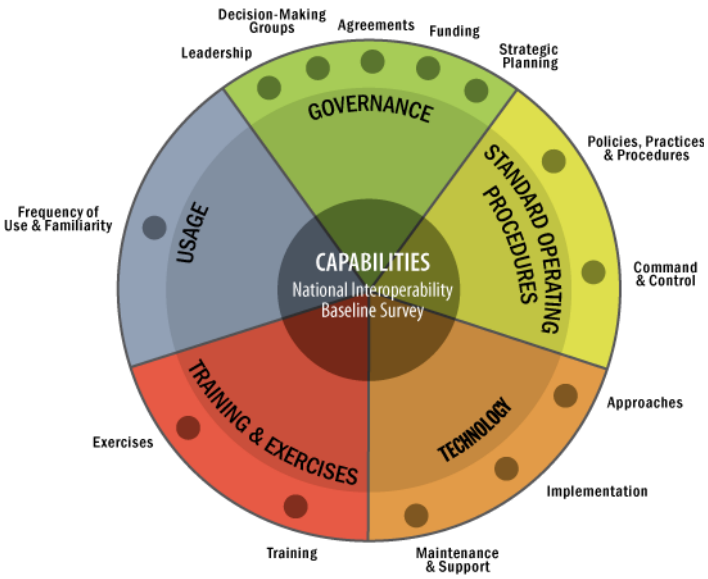


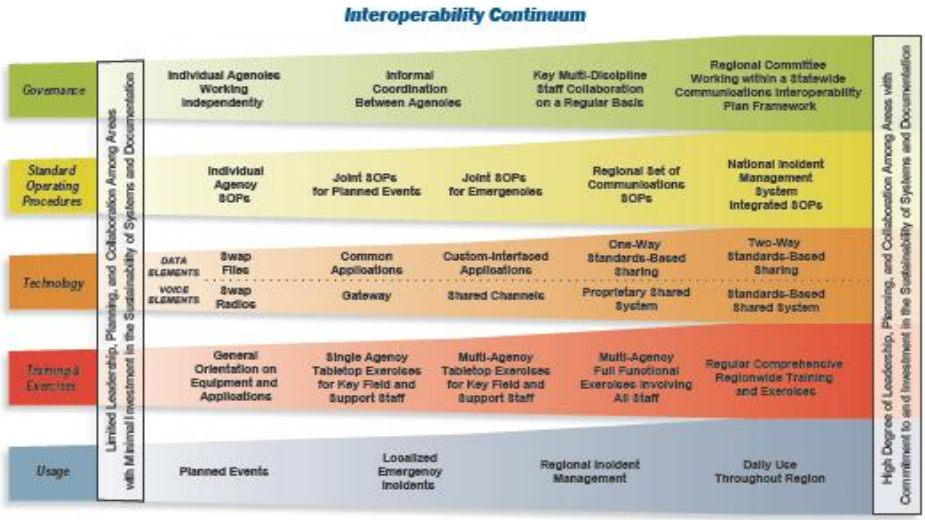
Figure 1: National Interoperability Baseline Elements

We discuss the measurement methodology further below, but it is important at this point to emphasize that good performance measures depend on a baseline. In tandem with strategic goals and objectives, a baseline allows us to assess and quantify gaps. It provides a benchmark from which to chart a course and measure progress. Contributing to the process itself, a baseline assessment allows us to test and refine performance measures.

The National Interoperability Baseline Survey used the framework of the SAFECOM *Interoperability Continuum* to examine different dimensions of interoperability. The *Continuum* defines five dimensions or lanes: Governance, Standard Operating Procedures (SOPs), Technology, Training and Exercises, and Usage.[5] SAFECOM is equally familiar as the communications program of the Department of Homeland Security providing research, development, testing and evaluation, guidance, tools, and templates on interoperable communications-related issues to local, tribal, State, and Federal emergency response agencies.

The *Continuum* depicts progressively higher degrees of development from left to right. Steps along each lane build progressively upon preceding ones.

The baseline survey and assessment sub-divided the five lanes into thirteen sub-elements to provide greater insight into factors that determine each. The sub-elements were developed by SAFECOM through teams of practitioners and tested with focus groups in several cities across the country. Other capabilities assessments since have used these sub-elements with some modifications.



[3] Information on the National Baseline Survey can be found online at http://www.safecomprogram.gov/SAFECOM/baseline/.

[4] DHS' press release for the survey can be found online at http://www.dhs.gov/xnews/releases/pr_1165602262541.shtm

[5] Further information on the SAFECOM *Interoperability Continuum* can be found online at http://www.safecomprogram.gov/SAFECOM/tools/continuum/default.htm. It has been updated since the 2006 National Interoperability Baseline survey, most notably with addition of data aspects of the technology aspect. The current version as of this writing is depicted here.

The survey methodology was carefully crafted to assure valid results that could be replicated. It examined the capacity for interoperability for each sub-element from three perspectives: inter-discipline, inter-jurisdictional, and across levels of government within the same discipline. Respondents were asked to assess their agency's state of development for each as early, moderate, full, or advanced.

SAFECOM's online self-assessment tool is based on this framework.[6]

Tactical Interoperable Communications Scorecards

DHS used a related performance measurement process in 2006 to examine both capabilities and demonstrated abilities. All jurisdictions receiving Urban Area Security Initiative (UASI) grant funding were required to complete Tactical Interoperable Communications Plans (TICPs) and validate them through limited full-scale exercises. The largest metropolitan areas in States without designated UASI regions were similarly required as a condition of State Homeland Security grant funding to complete and validate TICPs. Evaluation teams consisting of peers from other urban areas, communications subject matter experts, and exercise specialists evaluated each locality's exercise.

The results were combined with further information collected on governance, SOPs, and usage from the jurisdictions to produce a scorecard. Evaluators ascribed one of four levels of development similar to those used for the National Interoperability Baseline Assessment. The other lanes of the *Interoperability Continuum* – Technology and Training & Exercises – were addressed differently. The scorecards described prevalent technology in the regions, but did not attempt to measure it. The results of TICP validation exercises were used to assess the *Continuum's* Training & Exercises lane.

A summary report issued in early 2007 presented results for the 75 urban/metropolitan areas. Appendix B shows the scorecard layout and measures for Governance, SOPs, and Usage.[7]

---

[6] Accessible at http://www.safecomprogram.gov/SAFECOM/selfassessment/.

[7] Information on the Tactical Interoperable Communications Scorecards can be found online at http://www.dhs.gov/files/gc_1167770109789.shtm.

National Communications Capabilities Report

Congress required the DHS Office of Emergency Communications (OEC) to conduct a national communications capabilities assessment and report on results in 2007. This assessment differed from preceding ones in that it focused broadly on communications, not just interoperability. It also examined Federal and national aspects of operability. Elements of the *Continuum* and some sub-elements of the National Interoperability Baseline Survey were used. Changes to the Technology lane, in particular, were made for purposes of better evaluating technical "operability".

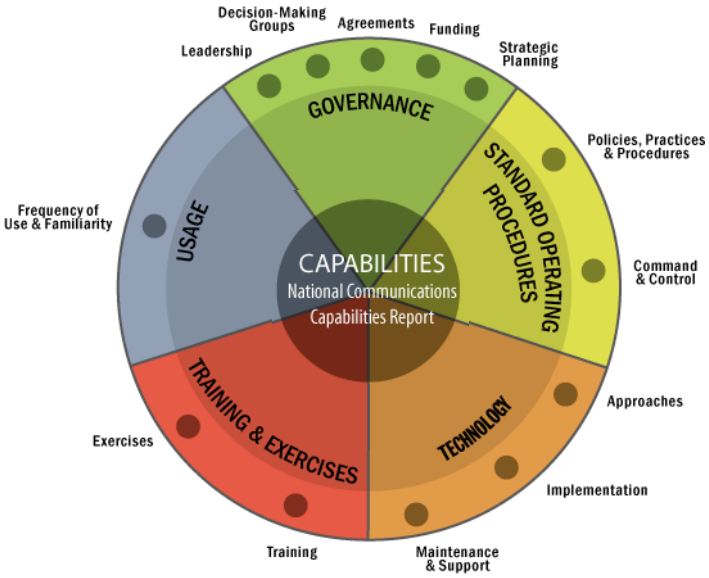


Figure 3: National Communications Capabilities Report

The National Communications Capability Report (NCCR) broadly addressed its topic as required by law. It also established an initial capabilities assessment framework following preceding work.

These three national assessments – the National Interoperability Baseline Survey, Tactical Interoperable Communications Scorecards, and the National Communications Capabilities Report – shaped performance measurement processes existing today. They provide the foundation for ongoing capabilities assessments for communications interoperability. As addressed in Section III below, performance measurement necessarily extends beyond capabilities, though.

Before moving to further discussion of today's processes and developing performance measures, we need to take a look at challenges posed by measuring interoperability across levels of government. They affect how we measure and why strategic measurement is key.

Measuring Across Levels of Government

Communications interoperability poses unique problems for performance management.

First, it involves life and death. Interagency communcations failures put responders and the public at risk. They impede tactical operations and contribute to command and control failures. Because of this, it is an emotionally charged topic that has drawn great attention.

> **Performance Measurement –**
> - Improves the **management and delivery** of products and services
> - Improves **communications** among stakeholders and customers
> - Helps justify programs and their **costs**
> - Is often a grant-funding requirement.
> - Demonstrates **accountability** and stewardship
> - Provides feedback **indicators** useful for
> - **Assessing** how well projects and activities are working in practice
> - **Diagnosing** problems
> - Provides a **framework for** better **understanding** of causes and effects between command, control, and communications during emergencies.
>
> *Adapted from Roberts, 2006.*

Second, it is inherently a multi-organizational issue. Traditional performance management is applied within an agency or organization with clear lines of authority and responsibility. Interoperability is largely an issue between and among peer agencies working together during emergencies, regardless of level of government.

National and State Strategies

The Post-Katrina Emergency Management Reform Act of 2006[8] created the DHS Office of Emergency Communications and required development of the National Emergency Communications Plan (NECP). As the first national strategic plan addressing emergency communications, the NECP builds further upon interoperability themes. It addresses communications operability, interoperability, and continuity during natural disasters, acts of terrorism, and other man-made disasters.

As the NECP was under development, States and territories nationwide were engaged in parallel strategic planning efforts. The results were statewide communications interoperability plans (SCIPs). SCIPs typically include descriptions of:

- The current state of communications interoperability and the environment that is driving needed changes
- A vision of the future state
- A series of goals and subordinate objectives to attain the future state
- Initiatives with target completion dates

The first version of the NECP likewise contained these strategic plan components when released in July 2008. Its vision, that "Emergency response personnel can communicate as needed, on demand, and as authorized at all levels of government, across all disciplines", has long been the practitioner-driven vision behind SAFECOM. It is easily understood, readily adopted, and progress in reaching it is measurable.

To reach this vision, stakeholders identified three goals in the initial release of the NECP centered on the strategic theme of *response-level emergency communications*. They held that a key performance indicator for

[8] Public Law 109–295. Section 671, entitled the "21st Century Emergency Communications Act of 2006", amends the Homeland Security Act of 2002, establishing the DHS Office of Emergency Communications and requiring development of the National Emergency Communications Plan.

whether the vision is being attained is the extent to which **the primary operational leadership during multi-agency incidents is able to manage resources and make timely decisions without technical or procedural communications impediments** – the definition provided for response-level emergency communications.

These national and State strategic documents are closely intertwined. As SCIPs are updated annually and the NECP is revised, goals and strategic objectives become further aligned. Statewide interoperability coordinators and stakeholders across the emergency response community drive strategies first locally, then across the States, and eventually nationally.

The NECP and individual SCIPs have improved management of the multi-governmental aspect of interoperability. Today, these documents constitute the Nation's primary strategic plans for improving interagency communications. They are critical for allowing performance measurement across levels of government because their goals are typically outcome-based and not defined by level of government.

Mapping to the Interoperability Continuum and NECP Goals

Since its introduction in 2004, the SAFECOM *Interoperability Continuum* has served planners and practitioners by focusing attention at all levels of government on the central factors affecting interagency communications. It continues to be a practical means for understanding needs and gaps. The five lanes of the *Continuum* provide implicit performance measures.[9]

The *Continuum* has proven to be a simple, visual means for depicting lesser and greater degrees of communications interoperability. It is often used for background during meetings to help participants with a common frame of reference. Some use it as a backdrop and have participants place stickers or otherwise indicate on the *Continuum* their assessment of the current state of interoperability in their agency, jurisdiction, or State.

The Virginia Commonwealth Interoperability Coordinator's Office has used it to depict results of its own baseline surveys and assessments in 2007 and 2009. The results of the 2009 survey were still being assessed while writing this document, but preliminary results were reported in the State's 2010 SCIP update. Figure 3 is a graphic from the update that depicts Virginia's current state using the SAFECOM *Interoperability Continuum*. The baseline survey included two parts. The first focused on dimensions of governance, SOPs, usage, and training and exercises. The second focuses on technology and will catalog capabilities across the State.

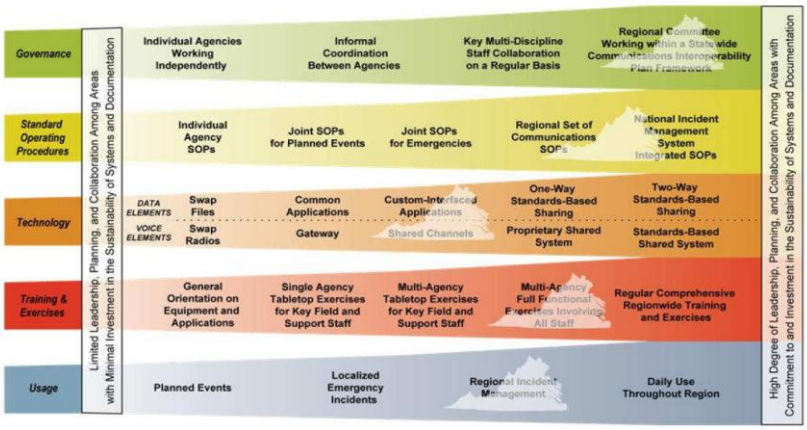


Figure 4: Virginia Baseline Survey (2009) results (Source: 2010 Virginia SCIP)

Performance measures naturally arise from the lanes of the *Interoperability Continuum*. In terms of current management concepts, they are *strategic themes*. Governance, itself, is not a goal, but certain qualities of governance are measures toward strategic goals or objectives (e.g., regional committees within the framework of a statewide plan).

The NECP's three goals revolve around progressive attainment of response-level emergency communications. As such, metrics are included in them. Goals 1 and 2 address demonstration of the capability for routine events. Goal 3 addresses it for significant incidents. Each sets a timeframe for attainment, the scope of targeted jurisdictions, and a quality measure (speed of providing). In 2009, practitioner working groups settled on criteria for evaluating demonstration of the ability. They consist of 14 primary elements and 30 questions assessing them (see Appendix C).

> **Goal 1**—By 2010, 90 percent of all high-risk urban areas designated within the Urban Areas Security Initiative (UASI) are able to demonstrate response-level emergency communications within one hour for routine events involving multiple jurisdictions and agencies.
>
> **Goal 2**—By 2011, 75 percent of non-UASI jurisdictions are able to demonstrate response-level emergency communications within one hour for routine events involving multiple jurisdictions and agencies.
>
> **Goal 3**—By 2013, 75 percent of all jurisdictions are able to demonstrate response-level emergency communications within three hours, in the event of a significant incident as outlined in national planning scenarios.

[9] Effective use of all available means of communications across the Technology lane is considered to be the highest performance along this dimension today.

In 2010, OEC is observing planned events in each UASI region to determine whether the nation has attained Goal 1. Through 2010 and 2011, SCIPs are being updated to describe statewide methodologies for assessing attainment of Goal 2. This is a performance evaluation.

Additionally, States are asked as part of the SCIP update process to conduct a capabilities assessment using measures developed through the national assessments previously described. "Capabilities Assessments" later in this section provides further details.

Developing Performance Measures

There are few rules, but many conventions in performance measurement.

The first and foremost rule is: A few good measures beat many of any quality. The use of too many measures, even high quality ones, is ultimately self-defeating. The process of managing a multitude of measures alone, not to mention their results, becomes overwhelming. The "critical few", those fueling key performance indicators, demand priority attention. Even at the highest strategic levels of the Federal government, the trend is toward fewer measures that are better understood.[10]

The second rule is that it takes a team to develop measures. Governance of strategies and efforts to improve communications interoperability are naturally team driven, anyway, but expertise across multiple perspectives is needed to create a few good measures.

The final rule is that no measure is perfect and permanent. All are forged through the processes of continual improvement that we require of our strategies and performance management processes, themselves. To paraphrase an earlier quote, a good measure today is better than an ideal measure tomorrow.

- A few good measures
- Defined by a team
- Improved continually

In developing performance measures, a few corollaries and caveats are in order. Beware of temptations to measure simply what is easy to measure. As stressed throughout this guide, measures must be strategic in nature, directly related to objectives, and convincingly relevant. Little can harm a performance management program as much as trivial measures or ones linked tenuously to strategic objectives.

Another corollary involves our notion that what gets measured, gets done. Taken negatively, this can be understood to justify a myopic view of measures and measurement at the expense of the big picture. Taken positively, it means that the process of measurement, itself, presses progress. When measures are based on the outcomes and impacts of strategic objectives, the big picture is taken care of.

Types of Performance Measures

Five types of performance measures are commonly accepted: Inputs, processes, outputs, outcomes, and impacts. While each has its appropriate use, there is a hierarchy that places impacts as the highest measurement.

The following definitions help distinguish types of measures for developmental discussions and, often, comparison.[11] Bear in mind that the fine distinctions are not as important as the fact that the team creating the measures works from the same perspective.

Input Measures are used to understand the human and capital resources used to produce the

[10] "OMB will create new performance management framework for agencies", *Government Executive*, September 24, 2009. See http://www.govexec.com/dailyfed/0909/092409e1.htm.

[11] Source: *Law Enforcement Tech Guide For Creating Performance Measures That Work* by David J. Roberts (U.S. Dept. Of Justice, Office of Community Oriented Policing Services, 2006).

outputs and outcomes. These are the raw figures associated with the dimensions of performance being measured.

Process Measures are used to understand the intermediate steps in producing a product or service.

Output Measures are used to measure the product or service provided by the system or organization and delivered to customers.

Outcome Measures are the expected, desired, or actual result(s) to which the outputs of the activities of a service or organization have an intended effect.

Impact Measures are the direct or indirect effects or consequences resulting from achieving program goals.

Measures are occasionally placed in two groups:

Process Measures: Inputs, resources, activities, efforts, workflow

Impact Measures: Outputs (products, services) and outcomes (results, accomplishments)

In use, process measures help us answer the question, "Are we doing the thing *right*?" Impact measures help us answer the question, "Are we doing the *right* thing?"

Good Performance Measures

- Provide a way to see if our strategy is working
- Focus employees' attention on what matters most to success
- Allow measurement of accomplishments, not just of the work that is performed
- Provide a common language for communication
- Are explicitly defined in terms of owner, unit of measure, collection frequency, data quality, expected value(targets), and thresholds
- Are valid, to ensure measurement of the right things
- Are verifiable, to ensure data collection accuracy

Source: Balanced Scorecard Institute (http://www.balancedscorecard.org)

Example Measures

An example may be useful for understanding the different types of measures and their relationships. See Figure 4 below.

Nationally, the value of Communications Unit Leaders (COML) in assuring interoperability during emergencies is widely recognized. Over 3,500 individuals have been trained by OEC to serve in the all-hazards Communications Unit Leader role during incidents managed under the Incident Command System (ICS). Many SCIPs include initiatives to increase the number of trained and qualified COMLs in urban areas and even statewide.

If planners adopted the presence and use of COMLs as a strategic objective for improving interoperability, a number of performance measures ranging from inputs to impacts might be used.

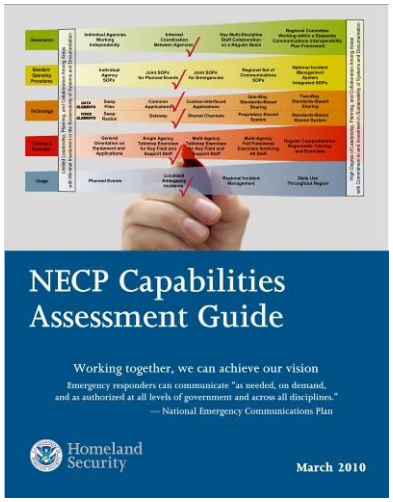
Performance Measures				
Input	*Process*	*Output*	*Outcome*	*Impact*
Number of COML classes held	Establishment of COML credentialing procedures	Number of qualified COMLs	Frequency of deployment of COMLs to incidents	Fewer instances of communications problems in after-action reports

Figure 5 – Example COML Training and Use Measures

This example entails some leaps of logic, a common requirement for performance measures and management. If all were accepted, we would be accepting that the number of classes held correlated somewhat with improved interoperability. We would also be agreeing that a formal process of credentialing that includes training with experience and frequent utilization of skills contribute further to improved interoperability The final measure of impact is yet a higher one.

The impact measure is obviously important. While it is often difficult to link a process with an outcome, it is critical to understand that correlation and causality are two different concepts. To say fewer communications problems will occur during incidents in which COMLs are used is saying there is a correlation. It stops short, appropriately, of saying one causes the other. There are undoubtedly other influences and surely are intermediate effects that would contribute to the desired impact.

Even if you do not accept the leaps between progressively higher measures, recognize that they are increasingly outcome-oriented and less process-oriented moving left to right. It is not always easy to come up with measures across the board, nor is it regularly needed. While it is easier to measure the number of COML classes held than the frequency of deployment, the classes are moot if the skills taught are not used. Ultimately, an initiative for COML training to improve interoperability during incidents is only successful if that training is routinely used during emergencies. Equally important from a strategic management point of view is that there are probably other activities needed to increase their usage.



Performance measures flow best from strategy. By using a systematic approach to defining a critical few measures aligning with strategic objectives, validity and reliability are assured.

We describe a systematic framework for performance measurement and strategic management further below.

Capabilities Assessments

Validation of NECP Goal 2 in 2011 involved statewide performance and capabilities assessments. To assist statewide interoperability coordinators, the DHS Office of Emergency Communications has prepared an NECP capabilities assessment guide. This document is intended to provide practical guidance for assessing interoperable communications capabilities useful during NECP implementation effortsOthers involved in carrying out assessments, such as communications coordinators in Urban Area Security Initiative (UASI), county, and tribal regions, will find it useful. It and annual OEC grant materials provide the definitive guidance for carrying out assessments, but the basic concepts are relevant to understanding performance measurement.

Definitions of Key Terms

For the purposes of the NECP Goals and their associated capabilities assessments, the following key terms and definitions are provided.

Area - As used here, a UASI region, tribal community, county, or county geographic equivalent.

Capabilities Assessment - The assessment of the highest levels of interoperable communications capabilities, as defined in this document, within a UASI region, county, or tribal community to evaluate progress in meeting Goals 1 and 2 of the National Emergency Communications Plan.

NECP Goals Evaluations - Assessments of progress in meeting national goals for communications interoperability established in the National Emergency Communications Plan. Goals 1 and 2 are evaluated through a two-part process involving assessment of capabilities and actual performance.

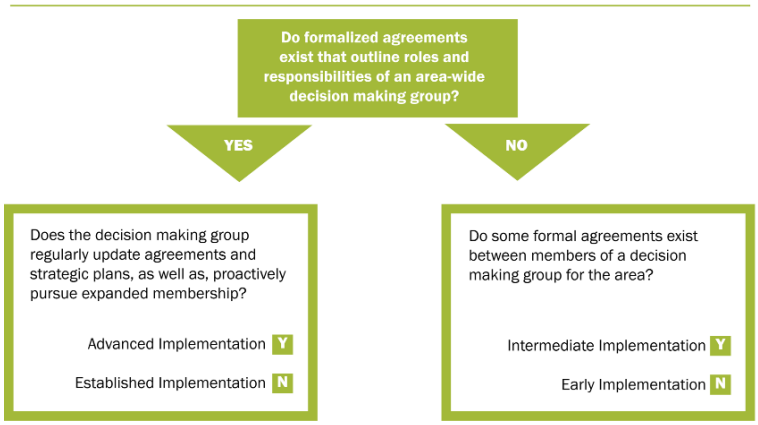
Non-UASI Jurisdictions - All counties or equivalents outside of the sixty urban areas defined in the Fiscal Year (FY) 2008 UASI Program. NECP Goal 2 targets all non-UASI jurisdictions.

Tribal Communities - Native American Indian entities recognized by, and eligible to receive services from, the United States Bureau of Indian Affairs.[12]

Urban Area Security Initiative (UASI) Jurisdictions - For purposes of NECP Goal 1, UASI jurisdictions are those within the 60 high-risk urban areas designated by the Department of Homeland Security for Fiscal Year 2008.

Explanation of Decision Trees

Appendix D shows the decision trees for each lane of the *Continuum*. Appendix E is a consolidated factors data sheet showing all measures for each lane and stage of development. The Governance decision tree is shown below.



Three questions are presented for each of the five lanes to distinguish the four stages of development. They distinguish the key differences between measures of early, intermediate, established, and advanced implementations. The complete measures are shown below.

Capability	Early Implementation	Intermediate Implementation	Established Implementation	Advanced Implementation
Governance	Area decision-making groups are informal and do not yet have a strategic plan to guide collective communications interoperability goals and funding.	Some *formal* agreements exist and *informal* agreements are in practice among members of the decision making group for the area; Strategic and budget planning processes are beginning to be put in place.	Formal agreements outline the roles and responsibilities of an area-wide decision making group, which has an agreed upon strategic plan that addresses sustainable funding for collective, regional interoperable communications needs.	Area-wide decision making bodies proactively look to expand membership to ensure representation from broad public support disciplines and other levels of government, while updating their agreements and strategic plan on a regular basis.

Data Collection Methods

Generally, capabilities assessments for both Goal 1 in 2010 and Goal 2 in 2011 are nearly identical—varying only in scope. Both use the same stages of development to assess capabilities across lanes of the

[12] For the official list, see the Library of Congress website: http://www.loc.gov/catdir/cpso/biaind.html.

Continuum. The difference lies in the number of capability assessments that were carried out and reported to evaluate attainment of the NECP Goals. Goal 1 involves capabilities assessments of all UASI regions whereas Goal 2 involves assessment of all non-UASI jurisdictions (i.e., counties, parishes or county equivalents).

Many different people have been involved in conducting the Goal 1 and 2 capabilities assessments. The SWIC or SCIP point of contact has foremost responsibility for annual SCIP Implementation Reports to OEC which, for 2010 and 2011, include performance and capabilities assessments of, respectively, UASI and non-UASI jurisdictions. SWICs have choosen to take a more or less active role in actually carrying out assessments. Many have asked responsible regional and local officials to carry out self-assessments.

Actual assessments have involved multiple people at the regional, tribal, or county levels. By their very existence, UASI regions (Goal 1) have multi-jurisdictional governance bodies (working groups). The Urban Area Working Group (UAWG) chair is broadly responsible for capabilities assessments—communications or otherwise—but may delegate the duty to an individual or committee. The UAWG chair and person(s) carrying out the assessment must recognize that, for Goal 1, a simple assessment is sought for the region as a whole, including all jurisdictions.

Goal 2 capabilities assessments of non-UASI jurisdictions may be carried out for a single county or for a group of counties located within the same intrastate region. In the former case, an official accountable for emergency services countywide—not just a county government spokesman—may best carry out the assessment. Recognize that the task may be delegated to another individual or committee.

This is a relatively simple assessment process designed to be minimally intrusive. It may be used by thousands of individuals across the country to provide a snapshot of capabilities in conjunction with NECP Goal performance evaluations.

III. Beyond Capabilities - Measuring Outcomes and Impacts

In and of itself, interoperability is unlikely to be a strategic goal of agencies whose missions revolve around protecting public safety. Interagency communications is certainly a key resource in many operations, but only part of the interagency processes through which mutual services are delivered. The outcomes and impacts of those processes—not some technical capacity to communicate—are the appropriate subjects of performance measurement.

Communications interoperability is more than the mere capability to communicate across agencies. In the most fundamental sense, it is the absence of communications impediments in interagency operations. Inasmuch as over-communication can actually interfere with operations at times, and intra-agency communications needs typically far outweigh those between agencies, interoperability is a low performance indicator for some processes. It's not hard to imagine that high-performance indicators of some interagency operations may necessarily be very little or highly controlled interagency communications.

This is not to say that communications interoperability is unimportant. Interoperability performance measures are inseparable from measures of mutual business process performance between agencies. Communications interoperability is the condition, in fact, that needed resources *were* available. What's needed can only be determined through rigorous definition of impact measures (the right things being done) combined with process measures (things being done right).

Linking to Response-Level Emergency Communications

The NECP set very practical, outcome-oriented goals around the concept of response-level emergency communications. In recognition of critical interagency communications needs, it holds that the ability of the primary operational leadership during emergencies to manage resources and make timely decisions without communications impediments is paramount.

Any number of strategic objectives could be associated with these goals and is therefore suitable for measurement. For example, the lack of common terminology between responders from different jurisdictions or disciplines is a common impediment. To the extent that the lack of common terminology affects the primary operational leadership during incidents, response-level emergency communications may be impacted positively or negatively by initiatives to promote its development and use.

Likewise, experience shows that emergency operations in incidents managed under ICS proceed with fewer problems when Communications Unit Leaders are used. Performance measures for strategic objectives to increase the number of COMLs used could be strategic measures.

It is important to note that response-level emergency communications is only one of a number of goals that could be set at a similar level for improved interagency communications. The key is that strategic linkages can be maintained and progress measured using outcome-oriented metrics if the goals and objectives are sufficiently high. If not, we are left only with measures of inputs and processes and, maybe at best, of outputs.

Identifying Operational Impacts to Measure

Operational impacts are those that occur on or to emergency operations. Strategic objectives for communications interoperability (not to confuse "operational" with "operability") most directly serve the highest perspective in a balanced scorecard approach to management when they address operational outcomes and impacts. To identify operational impact measures, we need to understand what communications outcomes a responder may require.

An operational impact, for example, may be a responder's ability to call for help. Certain tasks in the emergency world can be extremely time-sensitive, such as a call for help. More than a need for immediate assistance, the call is time-sensitive because it may only be possible once. An associated communications

outcome may be the continuous availability of a dedicated channel with no contention potential.

Many operational impacts can be assessed. The challenge is seeing directly the operational work being done and resisting long leaps of logics between process measures and outcomes. The customer's perspective is key.

Customer satisfaction is one of the highest goals from the highest strategic perspective. If emergency responders are the consumers of communications interoperability, then their perceptions of the "product" are critical. Many different measures of satisfactory services could be made, including response-level emergency communications as the term targets a particular set of responders in particular circumstances.

Thinking Outside the Interoperability Continuum and NECP Goals

The NECP Goals were a significant, but logical, departure from the *Interoperability Continuum*. Through the concept of response-level emergency communications, they extended the process-based measure of Usage in the *Continuum*, to a very specific, critical outcome measure. They reversed the perspective from the availability of a capability to the absence of a fault (impediment).

Further extension of the *Continuum* and the NECP goals, themselves, is possible. Ultimately, it is needed to build strategic management of interoperability efforts. As much as the *Continuum* has and continues to provide a framework for understanding interoperability themes, there is much room for individual objectives and measures to grow within it.

We see this reflected in the latest revisions of the *Interoperability Continuum* that add data communications to the Technology lane. The next version of the NECP will likewise extend its perspective to further incorporate data communications.

Many SCIPs across the country press initiatives well beyond details of the *Continuum*. For example, the Standard Operating Procedures lane holds NIMS-integrated procedures at the high end of the scale. Regional interoperable communications and similar plans are increasingly being added as SCIP initiatives. These are largely unrelated to NIMS, but extend greatly interoperable SOPs.

With ends rather than means in mind, there is much room to grow beyond the *Interoperability Continuum* and NECP Goals for performance measures.

IV. Strategic Performance Management

Performance is best measured and managed under the umbrella of a strategic plan. *Strategic management* is a concept of managing using strategic objectives and performance measures from multiple perspectives. It commonly is combined with some notion of a *balanced scorecard*, a tool bringing together varied metrics for assessment from these perspectives. The idea of "dashboards" for executives and other managers that chart key performance indicators arise from these concepts.

As touched on previously, the particular value of strategic management for communications interoperability is that the subject is, first of all, one of strategic importance to emergency responders and is, secondly, one of markedly dispersed responsibilities and authorities. Insistence on managing interoperability from the top downward – tracking progress first and foremost from our goals – and resistance to measuring performance and progress through simple indicators, such as technology in use, is strategic management.

Strategic management has a solid footing in the public sector. In 1993, the U.S. Congress enacted the Government Performance and Results Act (GPRA – Public Law 103-62) requiring significant strategic planning and performance reporting from Federal agencies. The president's Office of Management and Budget (OMB) oversees the adherence of executive branch agencies to GPRA, publishing annual reports and producing summaries. "Program Assessment Rating Tool" (PART) reviews assist agencies in making programs more effective.

While efforts nationally to improve communications interoperability are largely outside of GPRA, Federal approaches to strategic management provide extensive guidance for other public sector initiatives. High amongst this guidance is increasing focus on a limited set of high-priority goals supported by meaningful measures and quantitative targets. Demonstrated progress in achieving goals and well-explained performance trends are sought.[13]

> "Most metrics are process-oriented and not outcomes-based. We do not track progress on goals that cut across agencies. Overall, too much emphasis has been placed on producing performance information to comply with a checklist of requirements instead of using it to drive change."
>
> - Jeffrey Zients, Chief Performance Officer and Deputy Director for Management, Office of Management and Budget, Before the United States Senate Budget Committee (October 29, 2009)

Link Performance Management to Strategic Plans

Performance management is linked to strategic plans when outcome-oriented measures are defined for strategic objectives.

Various approaches to strategic planning and plan design exist. Commonly, plans include mission and/or vision statements, goals, supporting objectives, and practical programs or initiatives. While vision statements are typically lofty, goals bring strategy closer to the ground as statements of needed results. Objectives get further into details, while discrete projects and initiatives are most detailed. Separate and progressive levels between goals, objectives, and initiatives allow for logical organization and different levels of management. The Department of Homeland Security used a common strategic plan development process along these lines. (See Appendix F.)

[13] "Building a High-Performing Government", Office of Management and Budget, 2009. See http://www.whitehouse.gov/omb/budget/fy2010/assets/building.pdf.

Figure 5 depicts a pyramid of typical strategic plan components with integrated performance measurement and management elements. In this example, "vision" is shown at the top and "mission", a common element for agency and organization strategic plans, is omitted. For communications interoperability where essentially every cooperator has its own agency or organization mission, a vision statement better serves as the pinnacle beneath which strategy is built.

Figure 6: Interoperability Strategy Pyramid

A performance management framework linked to strategy will include measures and targets to gauge progress toward results. The measurement process charts the trajectory from initiatives to goals and, ultimately, the strategic vision. Strategically managed, it will also establish a feedback process for cyclical recalibration. DHS explained the linkage of strategy and performance in its strategic plan through a performance management framework. (See Appendix G).

As strategic plans, the NECP and SCIPs establish the vision, goals, and objectives for programs improving communications interoperability. While a performance management framework for communications interoperability could be developed and implemented at a local or regional level, most will be done as part of a statewide strategy. The SCIP is typically the first and most comprehensive strategy for State, local, and tribal jurisdictions.

Other strategic plans and even statutes may shape interoperability strategy. For example, Iowa's Homeland Security and Emergency FY 2010 Performance Plan links performance and strategy. It includes a section on "Interoperable Communications Capabilities" with a performance measure, target, and strategies. Appendix H includes extracts from Iowa's plan.

All public sector strategic plans exist within a political ecosystem. They are affected by the ebb and flow of public opinion, funding cycles, and related initiatives. Strategies for communications interoperability are additionally influenced by cycles of technology, its adoption, and the disruptive effects of change. Performance measurement, as well as underlying strategic management, is most effective when aligned with broader cycles within which the plans exist and routinely calibrated through a feedback process. This is accomplished by building strategies upon a hierarchy of perspectives on the issue addressed.

Choose Perspectives and Map Strategy

An early contribution to the field of strategic management, *The Balanced Scorecard* [14], posited the idea that a company's mission is best attained through a process involving measurement in achieving goals across several perspectives. It stated that a balanced view of results can come only from looking at performance from multiple perspectives, suggesting four as most appropriate.

Subsequent writers have adapted the Balanced Scorecard to the public sector, maintaining that public agencies and organizations may be managed strategically in much the same manner, similarly using four perspectives. Applied to communications interoperability performance management, these might be called the Constituent/Stakeholder, Financial/Stewardship, Processes & Controls, and Interagency Development perspectives.

[14] Kaplan, Robert S., and David P. Norton, *The Balanced Scorecard: Translating Strategy into Action* (Boston: Harvard University School Press, 1996).

One approach to understanding strategic plans with their multitude of related goals and objectives across perspectives is through use of a strategy map. The map illustrates the relationship between strategic objectives. They can also be used to relate measures and key performance indicators.

In the example shown, abbreviated elements from the *Interoperability Continuum* (Governance, Procedures, Usage, and Training & Exercises) are shown in the Interagency Development and Processes & Controls perspectives. As input and process measures, they are lower on the map and contribute to higher Financial/Stewardship and Constituent/Stakeholder objectives. Among these is an analogue to the NECP Goals ("Improved Responder Communications"). The lines between items show linkages. In this example, solid lines are used to imply stronger causality.

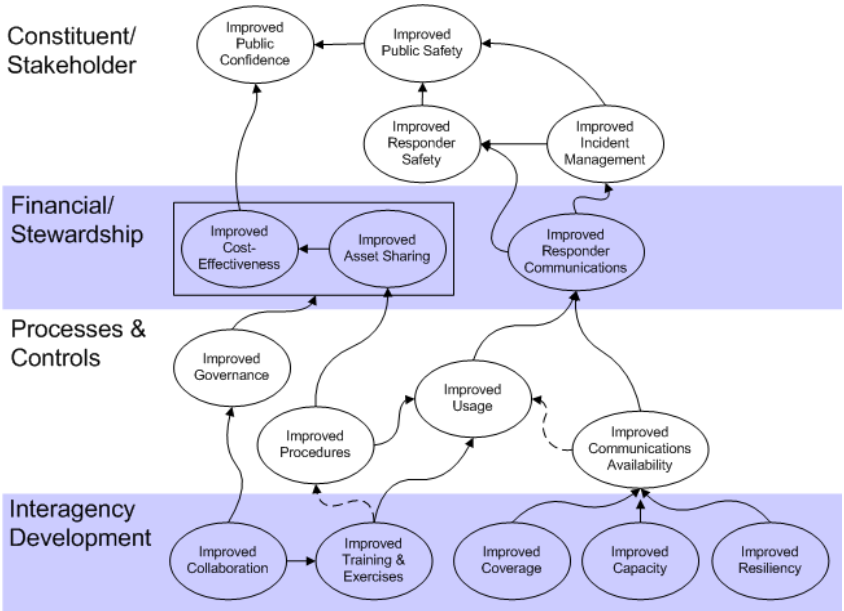


Figure 7: Interoperability Continuum Strategy Map

Such maps are the product of involved strategic planning that entails cooperative efforts to understand perspectives from goals are fulfilled. This hypothetical example purposefully shows impacts, rather than communications interoperability outcomes, at the highest perspective to demonstrate the range that could be used. It suggests, for example, that improved responder communications is not among the highest objectives, but rather is a contributor to ones such as responder safety and incident management.

A strategy map may be a graphic and useful portrayal for interoperability goals, objectives, perspectives, measures, and performance indicators.

Establish Accountability

The concept of accountability is central to strategic management. Accountability is the obligation or liability to render "an account". Since performance measurement involves much reporting out, in, and all around, it should come as no surprise that accountability pervades any framework to manage performance.

Accountability for communications interoperability is a difficult matter. SWICs and others responsible for coordinating interoperability deal with it continuously in carrying out initiatives identified in SCIPs and other strategic plans. However, interoperability governance bodies typically have limited formal authority.

Much of the challenge is due to the nature of the issue. Interoperability is a national issue that belongs to everyone and, at times, to no one. Costs to establish and maintain it are ultimately borne by all taxpayers. Citizens commonly understand that emergency responders need to communicate with those of other agencies and jurisdictions, but less commonly understand why there is a problem. Explanations of fragmented funding, spectrum, and planning are less understandable to them. What is easily understandable by all, though, is whether emergency services are effectively provided at reasonable costs.

The public expects accountability for the quality and costs of services. While communications "operability" can be clearly stated as a cost of doing business for public safety, interoperability on the other hand is often a capability held apart, something to be rolled out under special circumstances. Consequently, jurisdictions often look outside their own budgets for funding to establish and maintain it. And because interoperability is a reciprocal relationship between two or more entities – it has to go both ways – accountability for its existence is dispersed.

A second layer of accountability rests with elected officials and agency managers to ensure that emergency responders have the tools to carry out their jobs and to do that safely. The flip side of the accountability that the pubic expects is that which responders expect for communications. Agency managers, of course, are responsible for providing needed tools, but much of that is delegated to technologists. System managers and planners are accountable for both the quality and performance of communications to end-users and their cost-effectiveness to the public.

Catchball v. Dodgeball

Agencies and organizations that use strategic management are accustomed to linking accountability to performance and well-defined expectations of results. Multi-agency efforts to improve communications interoperability have evolved nationally around strategic management concepts in part due to general acceptance of the concept. Interoperability efforts often struggle, however, due to the lack of a common chain of command among participants. Responsibilities and authorities run in parallel with cooperators ultimately accountable to different executives and even different elected officials. Our federal system of government and home rule within many States assures this.

Accountability is a two-way street. Where responsibility to "render an account" exists, a reciprocal responsibility resides to provide resources to accomplish ends. There is an implicit or even explicit agreement between parties establishing and accepting responsibility that resources, leadership, and further subordinate buy-in will be provided in exchange for results.

A concept of "catchball," as opposed to the well-known game of dodgeball, is used in the field of strategic management to describe a participatory approach to decision-making between levels of an organization, agency, or initiative. Rather than dodging responsibility, participants catch it and pass it along up and down the decision-making chain, refining resource information to ensure accountability. One image is that of meaningful goals being established by leadership, meaningful measures being identified by program managers, and meaningful metrics for those measures being identified by impacted stakeholders.

Accountability is at the heart of the performance management framework presented next.

Five key aspects of accountability are:

1. Accountability is a relationship. - Accountability is a two-way street, or, as described by the Auditor General of British Columbia, "a contract between two parties."
2. Accountability is results-oriented. - In today's public and private sector organizational structure, accountability doesn't look at inputs and outputs, it looks at outcomes.
3. Accountability requires reporting. - Reporting is the "backbone" of accountability. Without it, accountability will not stand up.
4. Accountability is meaningless without consequences. - A key word used in defining and discussing accountability is obligation. Obligation indicates liability, and liability comes with consequences.
5. Accountability improves performance. - The goal of accountability is to improve performance, not to place blame and deliver punishment.

Performance-Based Management Handbook, 2001

Establish a Performance Management Framework

Performance measurement and management flow naturally from strategy and provide feedback for its refinement. It can be an overwhelming effort if not focused. A simple process and a few key measures

will make early efforts productive.

In the following, a six-step process adapted from *The Performance-Based Management Handbook*[15] is applied to the multi-jurisdictional challenge of communications interoperability. The *Handbook* is an extensive collection of materials produced by the U.S. Department of Energy for implementing the Government Performance and Results Act of 1993 (GPRA).

Figure 3: Communications Interoperability Performance Management System

Step 0: Enlist sponsorship

Before even getting started with establishing a performance management framework, sponsorship must be established. The governing body for communications interoperability, typically a SIGB, is the logical sponsor, but support may additionally be needed from the agency that staffs the governance body. Performance management can be a sizeable effort, if so chosen, but in its initial and perhaps most efficient stages, interoperability coordinators are well positioned to build the needed foundations.

Understand this: The single greatest contributing factor to failure of performance management efforts is lack of buy-in by management. SIGB members with executive responsibilities in their own agencies are ideal sponsors. Key sponsorship will come from larger agencies participating in initiatives and those putting up resources for performance measurement efforts.

Step 1: Define the vision and strategic performance objectives

An existing strategic plan, such as a SCIP, provides logical and suitable definitions for the first step. For organizational or project management, a mission statement is traditionally the starting point, but a vision statement of a desired future state is more suitable for management of multi-agency, distributed initiatives.

Vision definition can be a simple matter. One commonly exists in strategic plans. Nationwide, strategic planners have widely adopted the NECP vision.[16]

Starting small, consider initially using just a few strategic, outcome-oriented objectives. Objectives are tangible, measurable intermediaries between more abstract statements of intended results (goals) and specific program activities or projects that have budgets, timelines, and tight scopes (initiatives). The successively specific levels are useful for strategy development, mapping, and management.

Strategic plans typically establish responsibility for initiatives, if not objectives and goals. Accountability is the acorn from which the performance management oak grows.

---

[15] **Performance-Based Management Handbook, Volume 1: Establishing and Maintaining a Performance-Based Management Program**. Artley, Will, D.J. Ellison, and Bill Kennedy. U.S. Department of Energy. 2001.

[16] The NECP vision is "Emergency response personnel can communicate as needed, on demand, and as authorized at all levels of government, across all disciplines".

Start small. Select two or three objectives for performance measurement that can be easily observed and whose value is widely recognized. This provides for a gentle learning curve and credible results.

Step 2: Establish an integrated measurement system

Arising from the central strategic plan for communications interoperability, the measurement system resulting from the framework described here will be well on the way to being integrated. To be fully integrated, the strategic plan likewise incorporates it subsequently into its own planning and control mechanisms.

Task: Enlist governance support

As with most products, teamwork contributes to better results. A budding measurement system will benefit from the assistance of members of any governing body responsible for the strategic plan used. A SIGB, for example, may be the driving force for refinement of SCIP performance measures. A committee of interested members is an ideal way to proceed. Individuals with strategic management experience are ideal.

Task: Create performance measures

As mentioned in the preceding section on "Developing Performance Measures", a cross-functional team with expertise across multiple perspectives is needed to create good measures. Customers – practitioners and the public, in our case – are ideal additions to the team focused on measures for strategic objectives. Agency executives with strategic management experience will help keep measures outcome-oriented, too.

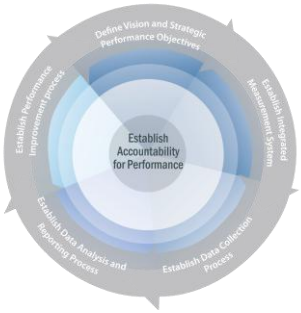
Create the "critical few" measures to keep the performance management program moving toward the final step in the framework, driving performance improvements. If and when the strategic objectives chosen for the program are met, the cyclical process of performance measurement and management described here will drive demands for updated strategy.

Task: Create a document describing the system

The measurement system, taken as a whole, describes all the people, processes, and products that will be used to manage performance. It defines performance measures and targets, establishes baselines, recognizes environmental influences that will impact results, and describes data collection, analysis, and reporting processes. Finally, it describes intended uses, such as capability gap analysis, performance improvement, and strategic plan alignment.

Subsequent steps of the framework describe further what is needed in the document.

Step 3: Establish accountability for performance



We take a detour at this point to revisit the issue of accountability for performance. While it flows first and best from strategic plans that designate responsibility for initiatives and results, it pervades all steps of the performance framework. Once a basic measurement system is sketched, responsibilities for results can be established.

Though a SWIC may feel like the proverbial chicken herder in bringing responsibilities and authorities across jurisdictions into alignment, interoperability issues arise largely because of the realities of inter-dependence in this environment of independence.

Performance management, if adopted by independent stakeholders in a common effort, can provide the means for accountability, even if responsibility and authority are dispersed. Participants– individuals, agencies, or jurisdictions– can and often do accept accountability for results, even if ultimate responsibility and authority lie elsewhere in their organizations. By definition, accountability is the obligation to "give account" or report. Within a State, regional, or even local interoperability governing board, can accept accountability if provided latitude in how things get done.

Task: Present the measurement system to the governing body

Use the committee described in Step 2 to present the measurement system document to the governing body responsible for the strategic plan used, such as a SIGB when a SCIP is used. In presenting the system, recognize that many people are initially uncomfortable with performance measurement.

Present the idea that it is intended to better assess progress in meeting strategic goals and objectives, providing meaningful results for subsequent revisions of strategy. Recognize, as we have discussed here, that performance management–as well as strategic management, itself–is a highly iterative process. It improves through practice. A basic system with a few measures easily linking initiatives with goals and simple methods of data collection and analysis will be most acceptable for starters.

Task: Formalize accountability for results and the measurement system

Seek a formal conclusion from the governing body accepting the system and accountability for results. This should be easy if the system logically follows the body's strategic plan. For example, early SCIPs contained timeframes for initiatives they laid out. Revisions in many States have provided more detail on responsibilities. Accountability for the results of measures associated with the initiatives or strategic objectives naturally follows.

Statewide interoperability governing bodies can help to instill accountability into their process from the foundation by articulating expectations in statements of their governing principles. A SIGB charter, for example, may state what is necessary and required of participants.

Accountability for maintaining the measurement system, including data collections, analysis, reporting, and integration with future strategic planning will likely rest – with you! In addition to other hats, interoperability coordinators naturally assume one for "chief performance officer". Starting small, a single individual can carry out all the tasks described here, but it may grow to involve other people. Professional assistance may eventually be needed for analysis or facilitation of strategic planning meetings to incorporate results and refine the performance management process.

In the section below entitled "Establish a data collection process", techniques for identifying suitable strategic objectives are discussed.

Step 4: Establish a data collection process

To measure anything, information is needed. Valid and reliable indicators are necessary to manage performance. The extent of effort required to get it will be directly related to the number and detail of metrics adopted. This is yet another step where practical realities must shape the measurement system.

For purposes of distinguishing our terms, information is data with meaning. Here, we use the term data to refer to the raw material from which information and, ultimately, knowledge is derived.

Task: Identify requirements and sources

The performance metrics and targets selected will strongly shape data needed to assess progress. Look for opportunities to use data already available, but don't simply build measures around what is available.

Think creatively about sources. For example, one State considers responder satisfaction with communications as a suitable measure for one of its strategic objectives. Surveys are a logical means of assessing satisfaction, but they are often costly and invasive. Rather, this State has chosen to proactively examine incident after-action reports to assess communications impacts. Others may find that after action reports and improvement plans developed as a part of an exercise and evaluation plan are useful sources of information.

Task: Define the process

Put down in writing the actual steps that will be taken to collect data, who will be responsible, and the frequency in which it will be done. If participating jurisdictions or agencies are expected to submit data unsolicited on a recurring basis, define the submittal frequency (e.g. monthly, annually) and cycle (e.g. on the first working day of each month, a particular date each year, etc.) Describe how missing data will be handled (e.g. "N/A" will be used in reports, prior information with be used with the date indicated, etc.)

This is also an appropriate place to address the costs of collecting data. The formality and extent of the performance measurement effort will dictate whether staff time is a cost accounted for, but there may be other hard expenses. For example, surveys, mailings, and even telephone calls around a large geographic area cost money. Early in the performance measurement and strategic management process these may be expenses that can be absorbed under a general coordination budget, but success may bring needs for cost accounting, if for nothing more than to gauge fiscal impacts of expanding the program.

Task: Ensure data quality

Data is examined from several perspectives before it can be considered suitable for performance measurement – or any other formal investigation, for that matter. With certain qualities, it may suitably inform us. Is the information:

- Accurate – Is it free from mistakes and errors?
- Complete – Does it contain all the necessary details? Does it cover the expected geographic area or other extent?
- Timely/current – Is it applicable to the relevant reporting period?
- Consistent – Is it consistent with data collected in the past or from other sources?

Task: Address data protection

Communications is integral to all other emergency response capabilities. As such, information on means, methods, and missing pieces is sensitive. Agencies understandably don't want every criminal and potential terrorist to have access to details of their critical capabilities.

The data collection process must address issues with access to and protection of needed information. Inquire into open records and freedom of information laws that may require special efforts to protect the data. Seek legal advice before collecting it to determine what can and must be protected. State homeland security agencies may already have policies and procedures for critical infrastructure that apply.

Start by creating a simple policy statement that can be provided to information sources for assurance. For example,

> *All data collected for purposes of assessing the adequacy of communications interoperability under the Statewide Communications Interoperability Plan are confidential and will not be redistributed. Analytical products summarizing results in meeting plan goals and objectives will be restricted for official use only.*[17]

It is important to cite legal protections that do exist. Again, seek legal advice from a source responsible for the strategic plan or otherwise at a level appropriately overseeing intergovernmental risks involved.

Task: Take a trial run

Performance management texts recommend making a trial data collection run to test methods and provide early indication of problems that may be faced. For interoperability efforts, it is logical to select a subset of agencies or jurisdictions for the test. Jurisdictions represented by SIGB members, particularly those participating with development of the performance measurement program, are a good place to start.

[17] This language is provided for example purposes, only. The Critical Infrastructure Information Protection Act of 2002 protects certain information from federal, state, and local disclosure laws. See http://www.dhs.gov/files/programs/editorial_0404.shtm.

Step 5: Establish a data analysis and reporting process

Data analysis generates information that, if appropriately communicated, allows managers to make rational decisions on the effects of strategic objectives and the value of measures. The analysis and reporting process of an integrated performance management system is more than just the mechanical tabulation and summary of data. It is an objective set of steps that will be followed and the rationale for them. This provides both for those who may need to validate the process, as well as others who may need to carry it out.

Communication of results is an art in itself. As anyone knows who has tried to fashion a survey and report on results, summarizing without obscuring and drawing conclusions supported by the data are always challenges to be faced.

The analyst's responsibility is to follow an explicit process to turn data into information. Early on, the process may be simple, amounting to little more than descriptive statistics and charts. Later, it may include more elaborate assessments over time or analysis of the impact of other variables.

Our purpose is not to make social researchers or analysts out of SWICs or others responsible for interoperability strategies, but rather to explain considerations in using performance measures.

Task: Assess the Quality of the Data

The quality of the data is always an early and important factor to assess and report. The quality measures considered in the previous step establishing the collection process should be used. Conclusions may shape subsequent analysis

Following on the earlier example of Communications Unit Leader (COML) measures, incomplete reports for some regions of a State could skew statistics of the frequency of their use during incidents. The analyst may reasonably still draw conclusions, just with a lesser confidence in applying them to regions no reporting.

Task: Analyze the Data

Rigorous, professional analysis is the ideal. The average interoperability coordinator may be satisfied if it is at least explicit and complete.

The following questions may be useful in generating information from the data:[18]

1. **How does actual performance compare to a goal or standard?** Performance measures were selected or designed based on assumptions of value and possible results. Early on, actual benchmarks are unlikely to exist so the answer will compare measures to goals.
2. **If there is significant variance, is corrective action necessary?** Variance between sources and over time may be expected – or it may be due to errors in the data collection process, mistaken assumptions, etc. The analyst's responsibility is to draw conclusions about significance and suggest corrective actions, if needed.
3. **Are new goals or measures needed?** Through every stage of the analysis and reporting process, this question needs to be held in mind. Strategic performance management relies on feedback to calibrate and recalibrate.
4. **How have existing conditions changed?** The environment in which we are measuring is

[18] Adapted from the *Performance-Based Management Handbook, Volume 1*.

dynamic. Circumstances underlying assumptions, simple matters of time and schedule during the period of measurement (e.g. holidays), and such may push analysis toward different or moderated conclusions. If conditions have changed significantly and permanently, new goals or measures may be needed.

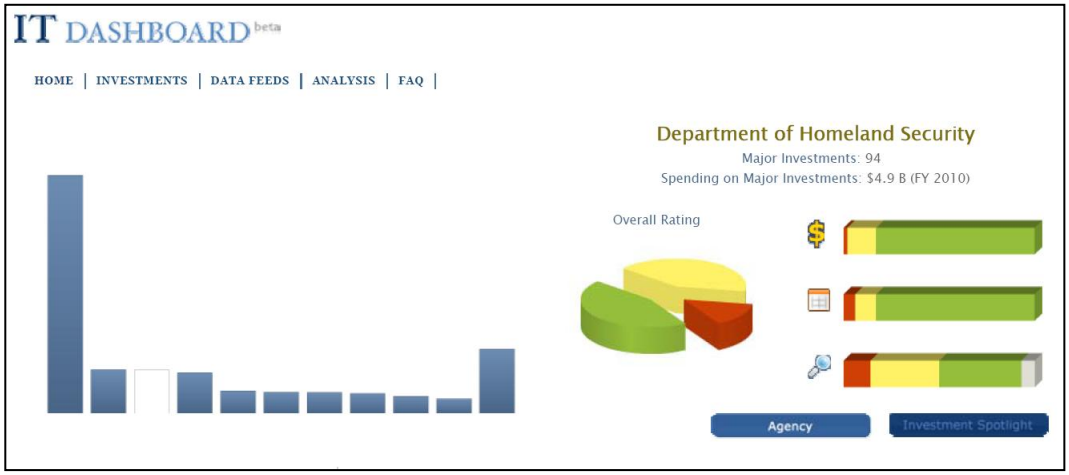
Task: Report results

The results of performance measures for interoperability strategic objectives will be of interest to many. Statewide, regional, and local interoperability governing bodies are obvious parties that will be interested. Recognize, though, that members may have varied perspectives and needs for different types of analysis. For example, the emergency responder may only be interested in the impact of COML training programs (change in after-action reports of communications problems), while a coordinator of NIMS training may be equally interested in measures of process and outputs.

Explain in the report any assumptions and conclusions about data quality. Summarize answers to the questions posed (above) during data analysis. Compare results over time and across jurisdictions, as applicable and appropriate. Report on results regularly.

Appendix I contains a sample summary report for a single performance strategic objective and two associated measures. It depicts results at a regional level with further analysis at a county level. It also provides a high-level overview of the strategic and performance management program. An executive summary such as this may be useful for audiences less familiar or interested in details of the strategic plan.

Consider use of a "dashboard" or similar graphic display, suitably based on a sound analysis process, to depict results simply and in a manner that can be rapidly understood. Always be prepared to explain in detail the numbers and process behind the pictures. The Office of Management and Budget maintains a good example of a dashboard for Federal spending on information technology online at http://it.usaspending.gov/.



The IT Dashboard displays information using a clear, easy to understand format

Step 6: Establish a performance improvement process

The final step of the framework for creating a performance management program rounds the loop: It establishes the process for performance improvement. Our previous steps prepared the way by providing not only the results of measures associated with strategic objectives, but feedback on the measures, themselves, and potentially needs for changing goals and objectives.

Communications Interoperability Performance Mangement Program
Six Steps

Continual improvement processes are at the heart of strategic performance management. Strategy will likely change as results of initiatives are assessed. Across the *Interoperability Continuum*, changes in governance, SOPs, training and exercised, technology, and frequency of use require recalibration of strategies and, thus, performance measures. Technological opportunities provide alternative means to identified ends, likewise requiring changes in initiatives and measures of their success.

Task: Incorporate performance management in governing body meetings

From a practical standpoint, the performance improvement process is established from the time strategy is set, measures chosen, and the program is put into motion. Understanding that all elements of strategy, including performance measures, are the targets of strategic performance management helps to instill the culture of change necessary.

Leaders of interoperability governing bodies will serve best in their roles as champions of strategic management as they become more familiar with performance measurement and management. This may take time and will benefit by stronger executive sponsorship. Changes of culture may be necessary before the performance management process can become institutionalized.

Task: Incorporate strategic management in regular strategic planning sessions

At least annually, conduct a formal strategic planning meeting to examine cumulative results of measurement efforts and update strategy. This is a good opportunity to both declare success for strategic objectives that have been met and sunset those no longer necessary or as important.

Task: Use the cyclical process of program planning, funding, and strategic planning.

All levels of government have legislative, funding, and program planning cycles. For example within DHS, the first Quadrennial Homeland Security Review was completed and released in 2010. It outlines the strategic framework to guide the activities of participants in homeland security toward a common end, forming both part of the ecosystem within which communications interoperability exists and shaping related initiatives. More frequently, annual or biennial State legislatures approve expenditures, sharpen accountability, and authorize new programs that every SWIC must deal with.

Finally, carefully time strategic changes to align with broader cycles in establishing the performance improvement process. Time performance assessment to support these cycles, allowing time for results to feedback into strategy while avoiding them becoming stale over time.

V. Conclusion

Performance measurement is a powerful tool for attaining and maintaining communications interoperability. Interoperability is an appropriate topic for strategic management. For success, governance bodies must be leveraged and performance management must be linked to everyday operations so its value is apparent.

Leverage Governance to Support Performance Management

The most effective lever is information. Performance measurement and strategic management provide concise, but substantive, information to decision makers. Appropriately implemented, a performance measurement program integrated with strategic management provides individuals responsible for governing interoperability initiatives not only with the information to do so, but also tools to manage strategy, itself, actively.

Communications interoperability problems are children of change. Members of governance bodies recognize this implicitly. Performance measurement in a proactive manner, linked to dynamic means to manage strategy, is an effective combination of tools in an environment of change.

As with other outreach initiatives that a governing body may use to inform stakeholders and further other initiatives, open support for a process of strategic performance management will bring its own rewards. Performance measurement requires cooperation from many for data collection. Executive sponsorship and general support of the governing body is necessary for success. As mentioned, a shortage of executive sponsorship and leadership is the single biggest cause of performance management failures.

Linking Performance Management to Everyday Operations

Whatever else we do with strategy, if we don't link performance management with everyday operations, even the most ardent supporters will lose interest. Linking performance management to operations works in two ways. First, strategy powered by outcome-based measures demonstrates its impacts more directly and, some would say, more frequently. Goals based on everyday operational matters speak loudly to the customers: Emergency responders who use communications.

The second way it works is very much similar. Performance measures based on everyday operations, not only connect more naturally to operational outcomes, but they show their relevance directly to emergency responders. They are no longer about esoteric technical issues, but about how they work.

When all is said and done, the critical question is, "Was the incident requiring emergency communications successfully resolved?" It will be the stakeholders who drive performance measurement efforts if they see its relevance to the work they do.

Justifying Grants and Investments with Sustainable Metrics

And if there were no other reason to adopt strategic performance management techniques, there is always the money. Competition for grants can be fierce. Granting agencies look for evidence of effective management techniques. Formal techniques of performance measurement and strategic management provided such evidence. Core business objectives are clearly shown as the driving factors for management and a dynamic process for adapting to change promises a grant recipient that can be successful amidst evitable project challenges.

In conclusion,

"What gets measured, gets done." *— Peter Drucker*

Appendix A – Glossary

Source: Beschen *et al* (2001) unless otherwise noted.

Balanced Scorecard (BSC) - A strategic planning and management system used to align business activities to the vision and strategy of the organization, improve internal and external communications, and monitor organizational performance against strategic goals. (*Source*: Balanced Scorecard Institute, 2010) .

Accountability – The obligation a person, group, or organization assumes for the execution of assigned authority and/or the fulfillment of delegated responsibility. This obligation includes: answering—providing an explanation or justification—for the execution of that authority and/or fulfillment of that responsibility; reporting on the results of that execution and/or fulfillment; and assuming liability for those results.

Baseline – The initial level of performance at which an organization, process, or function is operating upon which future performance will be measured.

Benchmarking –

1.) To measure an organization's products or services against the best existing products or services of the same type. The benchmark defines the 100 percent mark on the measurement scale.

2.) The process of comparing and measuring an organization's own performance on a particular process against the performance of organizations judged to be the best of a comparable industry.

Bottom Up –Starting with input from the people who actually do the work and consolidating that input through successively higher levels of management.

Cascaded Down – Starting with a top level of management, communicated to successively lower levels of management and employees.

Continuous Improvement –

1.) The undying betterment of a process based on constant measurement and analysis of results produced by the process and use of that analysis to modify the process.

2.) Where performance gains achieved are maintained and early identification of deteriorating environmental, safety, and health conditions is accomplished.

Criteria –The rules or tests against which the quality of performance can be measured.

Goal –

1.) The result that a program or organization aims to accomplish.

2.) A statement of attainment/ achievement, which is proposed to be accomplished or attained with an implication of sustained effort and energy.

Guideline – A suggested practice that is not mandatory in programs intended to comply with a standard. The word "should" or "may" denotes a guideline; the word "shall" or "must" denotes a requirement.

Impact – Characterization of the outcome of a program as it relates to specific objectives.

Lessons Learned – A "good work practice" or innovative approach that is captured and shared to promote repeat application. A lesson learned may also be an adverse work practice or experience that is captured and shared to avoid recurrence.

Measurement – The quantitative parameter used to ascertain the degree of performance.

Metric – A standard or unit of measure.

Objective – A statement of the desired result to be achieved within a specified time.

Outcome – The expected, desired, or actual result to which outputs of activities of an agency have an intended effect.

(alt.) **Outcomes** – Events or conditions external to the program and of direct importance to the public, beneficiaries and/or customers. They relate to the program's mission, purpose and strategic goals. (*Source*: OMB, 2007)

Outcome Measure – An assessment of the results of a program activity or effort compared to its intended purpose.

Output – A product or service produced by a program or process and delivered to customers (whether internal or external).

(alt.) **Outputs** – Internal program activities; products and services delivered to the public, beneficiaries. (*Source*: OMB, 2007)

Output Measure – The tabulation, calculation, or recording of activity or effort and can be expressed in a quantitative or qualitative manner.

Performance-Based Management – A systematic approach to performance improvement through an ongoing process of establishing strategic performance objectives; measuring performance; collecting, analyzing, reviewing, and reporting performance data; and using that data to drive performance improvement.

Performance Management – See performance-based management.

Performance Indicator(s) –

1.) A particular value or characteristic used to measure output or outcome.

2.) A parameter useful for determining the degree to which an organization has achieved its goals.

3.) A quantifiable expression used to observe and track the status of a process.

4.) The operational information that is indicative of the performance or condition of a facility, group of facilities, or site.

Performance Measure – A quantitative or qualitative characterization of performance.

Performance Measurement – The process of measuring the performance of an organization, a program, a function, or a process.

Performance Objective –

1.) A statement of desired outcome(s) for an organization or activity.

2.) A target level of performance expressed as a tangible, measurable objective, against which actual achievement shall be compared, including a goal expressed as a quantitative standard, value, or rate.

Performance Result – The actual condition of performance level for each measure.

Process – An ongoing, recurring and systematic series of actions or operations whereby an input is transformed into a desired product (or output).

Process Improvement – A set of management techniques for controlling and improving the effectiveness and efficiency of a process. In order to be measured, monitored, and analyzed, the process must be repeated frequently, perhaps weekly or monthly at a minimum. It must also have measurable inputs and outputs, and the process must be controllable.

Quality – A degree to which a product or service meets customer requirements and expectations.

Quality Management – The management of a process to maximize customer satisfaction at the lowest cost.

Reliability: The extent to which a measure produces the same result when used repeatedly to measure the same thing: **Source:** Rossi, P., Lispey, M., Freeman, H.,, Evaluation-A Systematic Approach, Seventh Edition, 2004.

Root Cause – The basic reasons for conditions adverse to quality that, if corrected, will prevent occurrence or recurrence.

Root Cause Analysis –An analysis performed to determine the cause of part, system, and component failures.

Self-Assessment –A systematic evaluation of an organization's performance, with the objective of finding opportunities for improvement and exceptional practices. Normally performed by the people involved in the activity, but may also be performed by others within the organization with an arms-length relationship to the work processes.

Senior Management – The manager or managers responsible for mission accomplishment and overall operations.

Stakeholder – Any group or individual who is affected by or who can affect the future of an organization, e.g., customers, employees, suppliers, owners, other agencies, Congress, and critics.

Strategic Management – The art and science of formulating, implementing and evaluating cross-functional decisions that will enable an organization to achieve its objectives. (*Source*: David, 2010)

Strategic Planning – A process for helping an organization envision what it hopes to accomplish in the future; identify and understand obstacles and opportunities that affect the organization's ability to achieve that vision; and set forth the plan of activities and resource use that will best enable the achievement of the goals and objectives.

Task – A well-defined unit of work having an identifiable beginning and end that is a measurable component of the duties and responsibilities of a specific job.

Total Quality Management –

1.) A management philosophy that involves everyone in an organization in controlling and continuously improving how work is done in order to meet customer expectations of quality.

2.) The management practice of continuous improvement in quality that relies on active participation of both management and employees using analytical tools and teamwork.

Validity: The extent to which a measure actually measures what it is intended to measure. **Source:** Rossi, P., Lispey, M., Freeman, H.,, Evaluation-A Systematic Approach, Seventh Edition, 2004.

Validation – An evaluation performed to determine whether planned actions, if implemented, will address

specific issue(s) or objective(s).

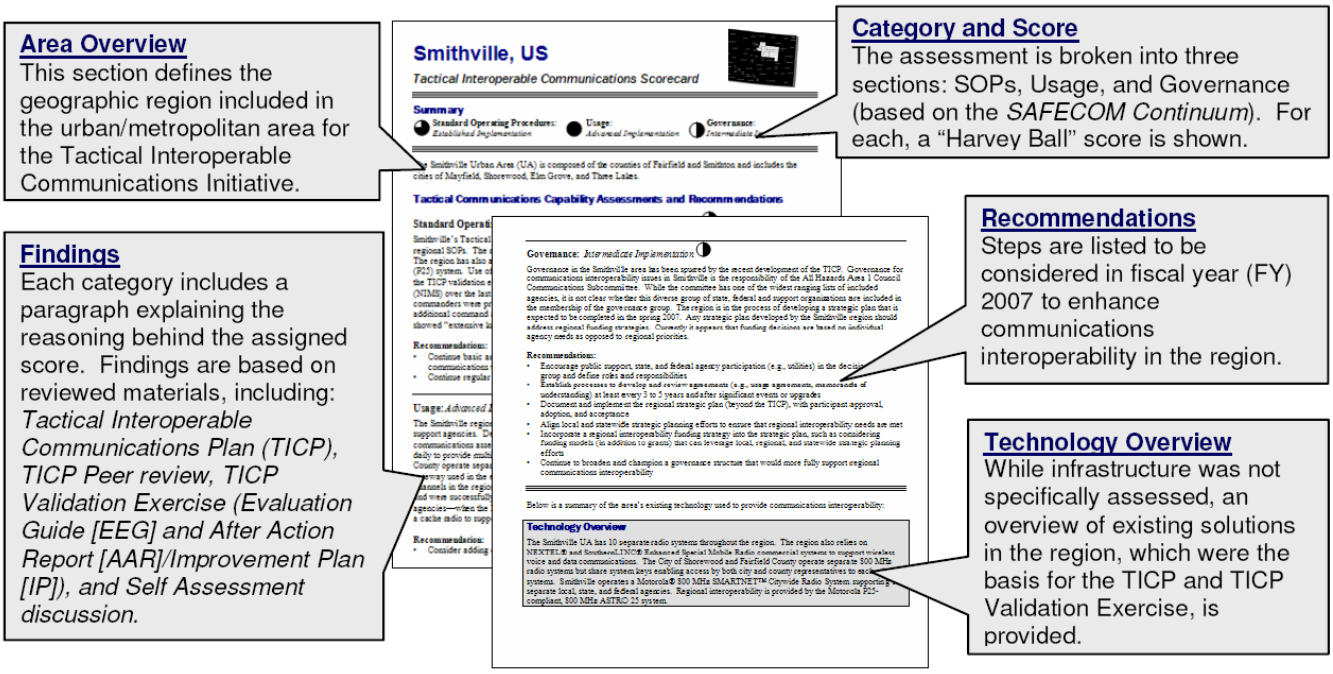
Verification –

1.) A determination that an improvement action has been implemented as designed.

2.) The act of reviewing, inspecting, testing, checking, auditing, or otherwise determining and documenting whether items, processes, services, or documents conform to specified requirements.

Appendix B – Tactical Interoperable Communications Scorecards

Tactical Interoperable Communications Scorecards issued in 2007 for 75 urban/metropolitan areas summarized the results of a capabilities assessment and performance evaluation for each conducted in 2006.



Elements	Early Implementation	Intermediate Implementation	Established Implementation	Advanced Implementation
Standard Operating Procedures (SOP)	Region-wide SOPs were developed and formalized for the first time through the TICP, but have not been disseminated to all included agencies. Some elements of NIMS/ICS procedures for command and control are in place, but understanding varies among agencies and was an area of difficulty during exercise(s).	Some existing SOPs were incorporated in the TICP and steps have been taken to institute these interoperability procedures among included agencies. Formal NIMS/ICS procedures are in place, but understanding varies among agencies leading to some issues during the exercise(s).	Existing regional SOPs were reviewed and included in the TICP, and are in use by included agencies. NIMS-compliant command and control has been instituted by all agencies and disciplines in the region. Despite minor issues, all SOPs were successfully demonstrated during exercise(s).	Regional SOPs, reviewed through the TICP process, are in place and regularly used by included agencies. NIMS procedures are well established among all agencies and disciplines. All procedures were effectively utilized during exercise(s).
Usage	Interoperable communications solutions are rarely used for multi-agency communication and difficulties were encountered in achieving interoperability during exercise(s).	First responders use interoperability solutions regularly and demonstrated the ability to achieve multi-agency communications despite some challenges during exercise(s).	First responders use interoperability solutions regularly and easily. The region demonstrated successful multi-agency (which may have included state, federal, and support organizations) communications during exercise(s).	First responders regularly and seamlessly utilize interoperability solutions. The region demonstrated successful multi-agency communications during exercise(s), including state, federal and support organizations.
Governance	Decision making groups are informal, and do not yet have a strategic plan in place to guide collective communications interoperability goals and funding.	Some *formal* agreements exist and *informal* agreements are in practice among members of a decision making group; regional strategic and budget planning processes are beginning to be put in place.	Formal agreements outline the roles and responsibilities of a decision making group, which has an agreed upon strategic plan that addresses sustainable funding for collective, regional interoperable communications needs.	Decision making bodies proactively look to expand membership to ensure representation from broader public support disciplines and other levels of government, while updating their agreements and strategic plan on a regular basis.

Appendix C – NECP Goal 1 Demonstration Criteria

Fourteen (14) observational elements have been defined for assessing demonstration of response-level emergency communications under the goals of the National Emergency Communications Plan. They were developed through various stakeholder groups, including the SAFECOM Executive Committee and Emergency Response Council, SWICs, the OEC Metropolitan Area Working Group, other internal and external practitioner working groups, and other Department of Homeland Security (DHS) agencies.

Elements						
Common Policies & Procedures						
Observation Element #1 **Interagency communications policies and procedures were common or consistent amongst all responding agencies.**						
1.1: Did policies and procedures exist for interagency communications between the involved jurisdictions, agencies and disciplines?		N/A (none exist) ☐	In some cases ☐	In most cases ☐	In all needed cases ☐	-
Dependent on 1.1	1.2: Were they written?	N/A (none exist) ☐	In some cases ☐	In most cases ☐	In all needed cases ☐	-
Observation Element #2 **Established interagency communications policies and procedures were followed throughout the event.**						
2.1: Were established interagency communications policies and procedures followed throughout the event?		N/A (none exist) ☐	None of the time ☐	Some of the time ☐	Most of the time ☐	All of the time ☐
2.2: Did established policies and procedures exist between responding agencies for request, activation, accountability, deactivation, and problem resolution of deployable interagency communications resources, such as mobile communications centers, gateways, and radio caches?		N/A (none exist) ☐	In some cases ☐	In most cases ☐	In all needed cases ☐	-
Dependent on 2.2	2.3 If so, were they followed? [Information only]	None were ☐	Some were ☐	Most were ☐	All were/N/A (none needed) ☐	-
Observation Element #3 **Interagency communications policies and procedures across all responding agencies were consistent with NIMS.**						
3.1: Were interagency communications policies and procedures across responding agencies consistent with NIMS?		N/A (none exist) ☐	Some were ☐	Most were ☐	All were ☐	-
Observation Element #4 **A priority order for use of interagency communications resources was followed as established in standard operation procedures or plans, such as the TICP.**						
4.1: Does a priority order exist for use of interagency communications resources (e.g., life safety before property protection)?		No ☐	Yes ☐	-	-	-

Dependent on 4.1	4.2: Was this prioritization of communications resource use followed?	None of the time ☐	Some of the time ☐	Most of the time ☐	All of the time/ N/A (none needed) ☐	-
Observation Element #5 **A primary interagency operations talk path was clearly established by procedure or communicated to responders early in the event.**						
5.1: Was a primary interagency communications talk path clearly established by procedures used during the event?		No ☐	Yes ☐	-	-	-
Dependent on "No" response on 5.1	5.2: If not, was such a talk path established ad hoc and communicated to responders early in the event?	No ☐	Yes ☐	-	-	-
Observation Element #6 **Common terminology and plain language were used in all interagency communications.**						
6.1: Was plain language used throughout the event?		None of the time ☐	Some of the time ☐	Most of the time ☐	All of the time ☐	-
6.2: Did any communications problems arise amongst the primary operational leadership due to a lack of common terminology?		Yes ☐	No ☐	-	-	-
6.3: Did any communications problems arise amongst other response-level emergency personnel during the event due to a lack of common terminology?		Yes ☐	No ☐	-	-	-
Observation Element #7 **Clear unit identification procedures were used.**						
7.1: Were clear unit identification procedures used amongst the primary operational leadership?		None of the time ☐	Some of the time ☐	Most of the time ☐	All of the time ☐	-
7.2: Were clear unit identification procedures used amongst other response-level emergency personnel throughout the event?		None of the time ☐	Some of the time ☐	Most of the time ☐	All of the time ☐	-
Observation Element #8 **Common channel names were used for designated interoperability channels.**						
8.1: Were common names used by all responding agencies for interagency communications channels?		None of the time ☐	Some of the time ☐	Most of the time ☐	All of the time or N/A (No such channel used) ☐	-
8.2: Were standard names as identified in the National Interoperability Field Operations Guide (NIFOG) used for Federal Communications Commission (FCC)-designated interoperability channels?		None of the time ☐	Some of the time ☐	Most of the time ☐	All of the time or N/A (No such channel used) ☐	-

Responder Roles & Responsibilities

Observation Element #9

Multiple organizations with inherent responsibility for some portion of the event were present and joined in a unified command with a single individual designated with Operations Section Chief responsibilities.

9.1: Did a single individual carry out the Operations Section Chief responsibilities in each operational period?	No ☐	Yes ☐	-	-	-

Observation Element #10

Span of control was maintained amongst the primary operational leadership: The Operations Section Chief and first-level subordinates.

10.1: Did the Operations Section Chief directly manage more than seven subordinates at any time?	Yes ☐	No ☐	-	-	-
10.2: Did first-level subordinates to the Operations Section Chief directly manage more than seven subordinates at any time?	In all cases ☐	In most cases ☐	In some cases ☐	In no cases ☐	-

Observation Element #11

Communications Unit Leader (COML) roles and responsibilities were carried out by the IC/UC or designee.

- **Necessary communications resources were effectively ordered using documented procedures.**
- **A communications plan was established by procedure or developed early in the event.**

	11.1: Was the ICS Communications Unit Leader (COML) position specifically filled during the event?	No ☐	Yes ☐	-	-	-
	11.2: Were COML roles and responsibilities carried out, either by the Incident Commander (or Unified Command), the COML, or another designee?	None were ☐	Some were ☐	Most were ☐	All were ☐	-
Dependent on 11.2	11.3: Who by position or function carried out the responsibilities? *(Narrative Response)*					
Dependent on 11.2	11.4: Were necessary communications resources effectively ordered?	None were ☐	Some were ☐	Most were ☐	All were or N/A none needed ☐	-
Dependent on 11.2	11.5: Were they ordered using documented procedures?	None were ☐	Some were ☐	Most were ☐	All were or N/A none needed ☐	-
Dependent on 11.2	11.6: Was a communications plan established by procedure or developed early in the event?	No ☐	Yes ☐	-	-	-

Dependent on 11.2	11.7: Did the communications plan meet the communications needs of the primary operational leadership? [Information only]	No ☐	Yes ☐	-	-	-

Quality & Continuity

Observation Element #12

No more than one out of 10 transmissions was repeated amongst the primary operational leadership due to failure of initial communications attempts.

12.1: Were more than one out of every 10 transmissions repeated due to failure of initial communications attempts amongst the primary operational leadership?	Yes ☐	No ☐	-	-	-

Observation Element #13

Upon failure or overload of any primary communications mode, a back-up was provided.

	13.1: Was a back-up resource available for communications amongst the primary operational leadership in case of failure of the primary mode?	No ☐	Yes ☐	-	-	-
	13.2: Did the primary mode fail during the event at any time? [Information only]	Yes ☐	No ☐	-	-	-
Dependent on 13.2	13.3: If so, was a back-up effectively provided?	No ☐	Yes ☐	-	-	-

Observation Element #14

Primary operational leadership communicated adequately to manage resources and make timely decisions during the event.

14.1: Overall, was the primary operational leadership able to communicate adequately to manage resources during the event?	None of the time ☐	Some of the time ☐	Most of the time ☐	All of the time ☐	-

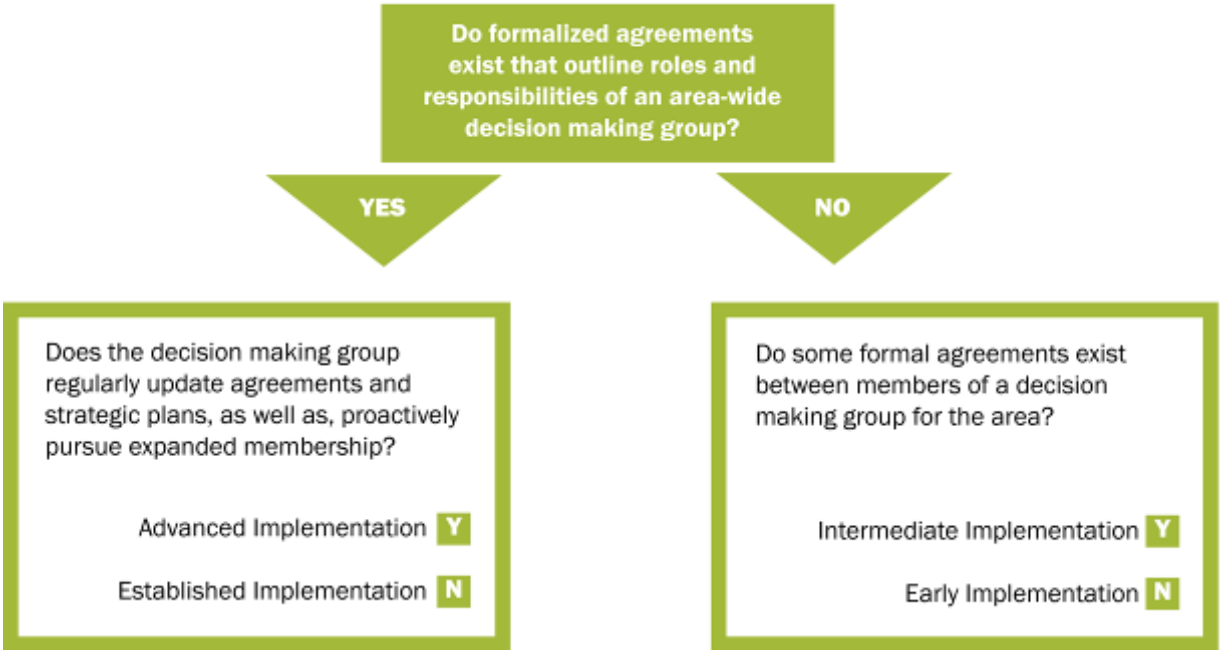
Appendix D – Capabilities Assessment Decision Trees

Governance – The Decision Making Groups

What are we measuring: The formality of and level of participation in interagency partnerships, forums, or governing bodies established to address common interoperability interests in the area.

Capability	Early Implementation	Intermediate Implementation	Established Implementation	Advanced Implementation
Governance	Area decision-making groups are informal and do not yet have a strategic plan to guide collective communications interoperability goals and funding.	Some *formal* agreements exist and *informal* agreements are in practice among members of the decision making group for the area; Strategic and budget planning processes are beginning to be put in place.	Formal agreements outline the roles and responsibilities of an area-wide decision making group, which has an agreed upon strategic plan that addresses sustainable funding for collective, regional interoperable communications needs.	Area-wide decision making bodies proactively look to expand membership to ensure representation from broad public support disciplines and other levels of government, while updating their agreements and strategic plan on a regular basis.

Decision Tree

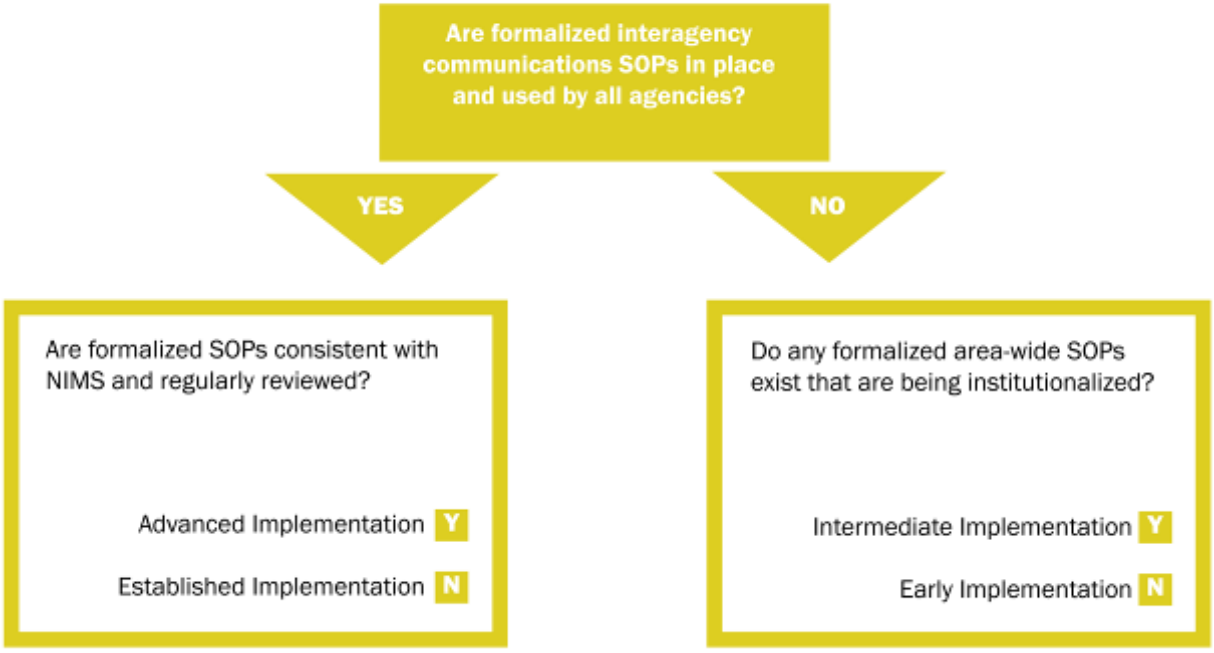


SOPs – Policies, Practices, and Procedures

What are we measuring: The level of adequacy, participation in developing, and consistency of formalized SOPs to address common interoperability interests in the area.

Capability	Early Implementation	Intermediate Implementation	Established Implementation	Advanced Implementation
SOPs	Area-wide interoperable communications SOPs are not developed or have not been formalized and disseminated.	Some interoperable communications SOPs exist within the area and steps have been taken to institute these interoperability procedures among some agencies.	Interoperable communications SOPs are formalized and in use by all agencies within the area. Despite minor issues, SOPs are successfully used during responses and/or exercises.	Interoperable communications SOPs within the area are formalized and regularly reviewed. Additionally, NIMS procedures are well established among all agencies and disciplines. All needed procedures are effectively utilized during responses and/or exercises.

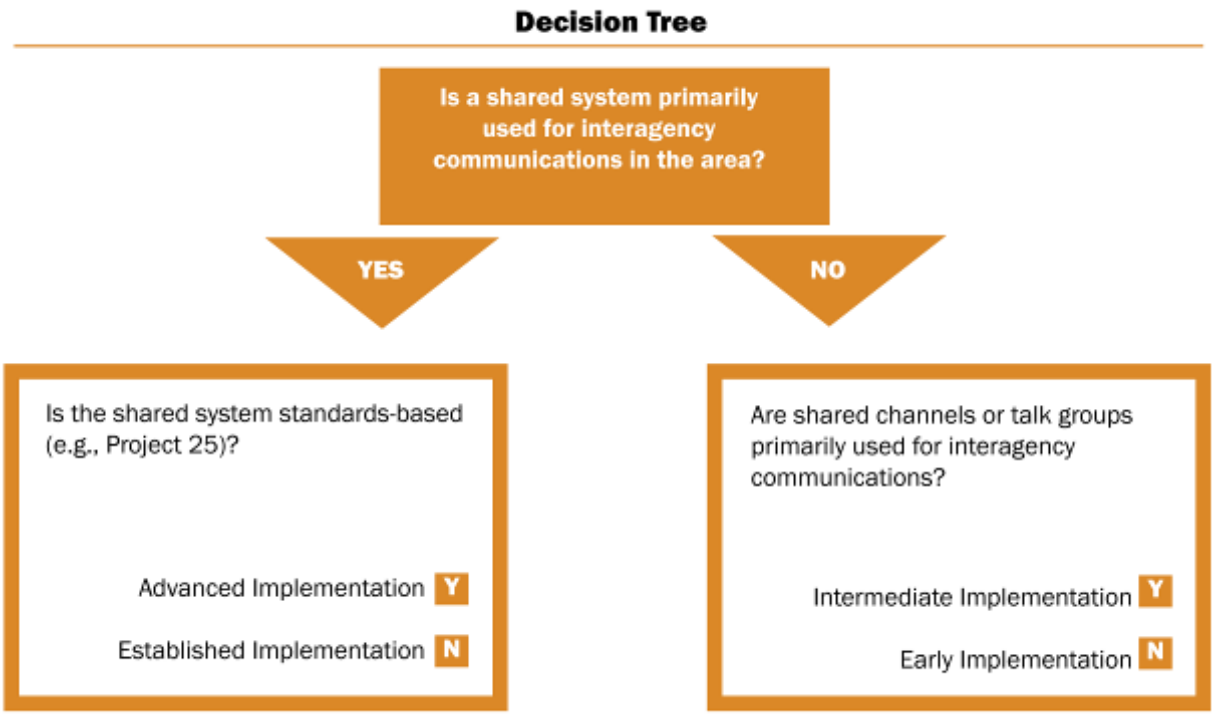
Decision Tree



Technology – Standards and Emerging Communications Technologies

What are we measuring: The technology standards and equipment that are being utilized to effectively provide interagency communications in the area.

Capability	Early Implementation	Intermediate Implementation	Established Implementation	Advanced Implementation
Technology	Interoperability within the area is primarily achieved through the use of gateways (mobile/fixed gateway, console patch), shared radios, or use of a radio cache.	Interoperability within the area is primarily achieved through the use of shared channels or talk groups.	Interoperability within the area is primarily achieved through the use of a proprietary shared system.	Interoperability within the area is primarily achieved through the use of standards-based shared system (e.g., Project 25).

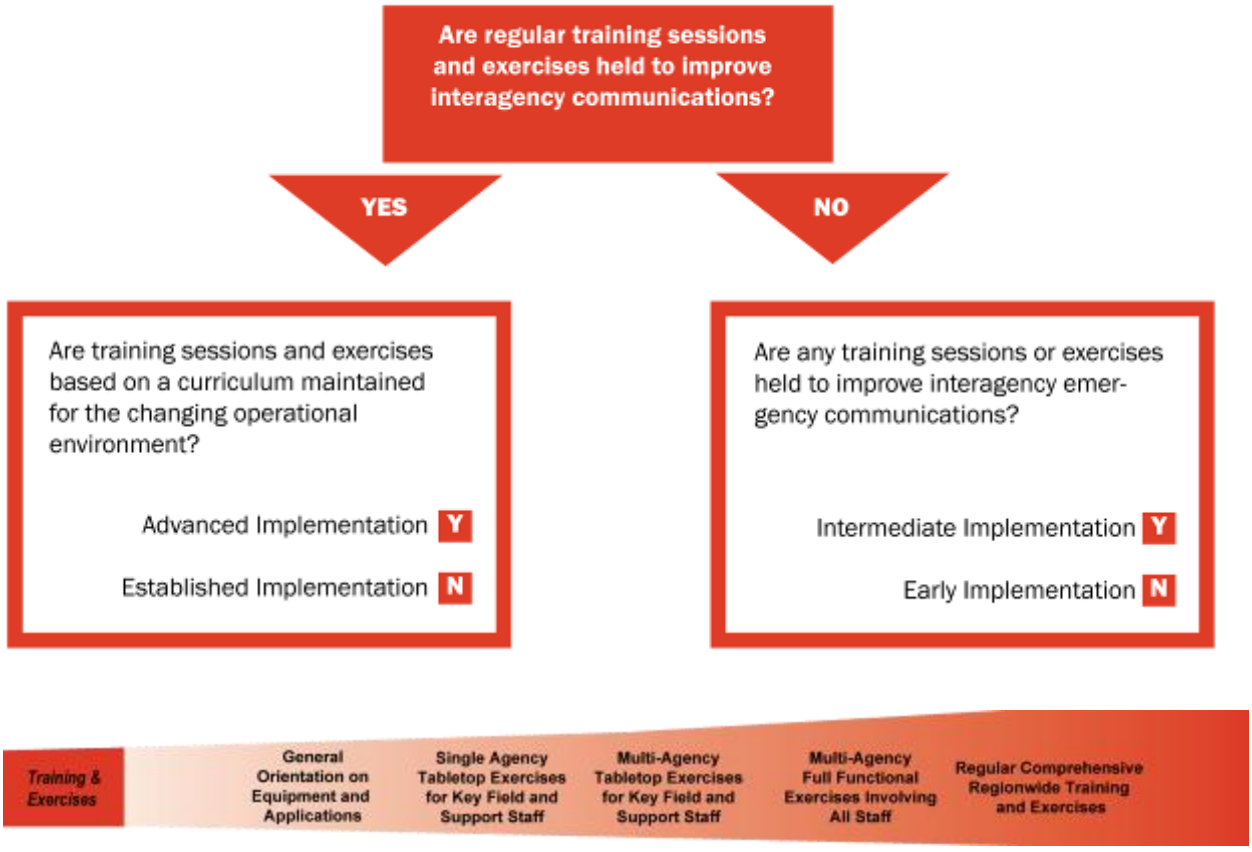


Training and Exercise – Emergency Responder Skills and Capabilities

What are we measuring: The availability and regularity of training and exercise programs for communications interoperability.

Capability	Early Implementation	Intermediate Implementation	Established Implementation	Advanced Implementation
Training & Exercises	Area-wide public safety agencies participate in communications interoperability workshops, but no formal training or exercises are focused on emergency communications.	Some public safety agencies within the area hold communications interoperability training on equipment and conduct exercises, although not on a regular cycle.	Public safety agencies within the area participate in equipment and SOP training for communications interoperability and hold exercises on a regular schedule.	Area public safety agencies regularly conduct training and exercises with communications interoperability curriculum addressing equipment and SOPs that is modified as needed to address the changing operational environment.

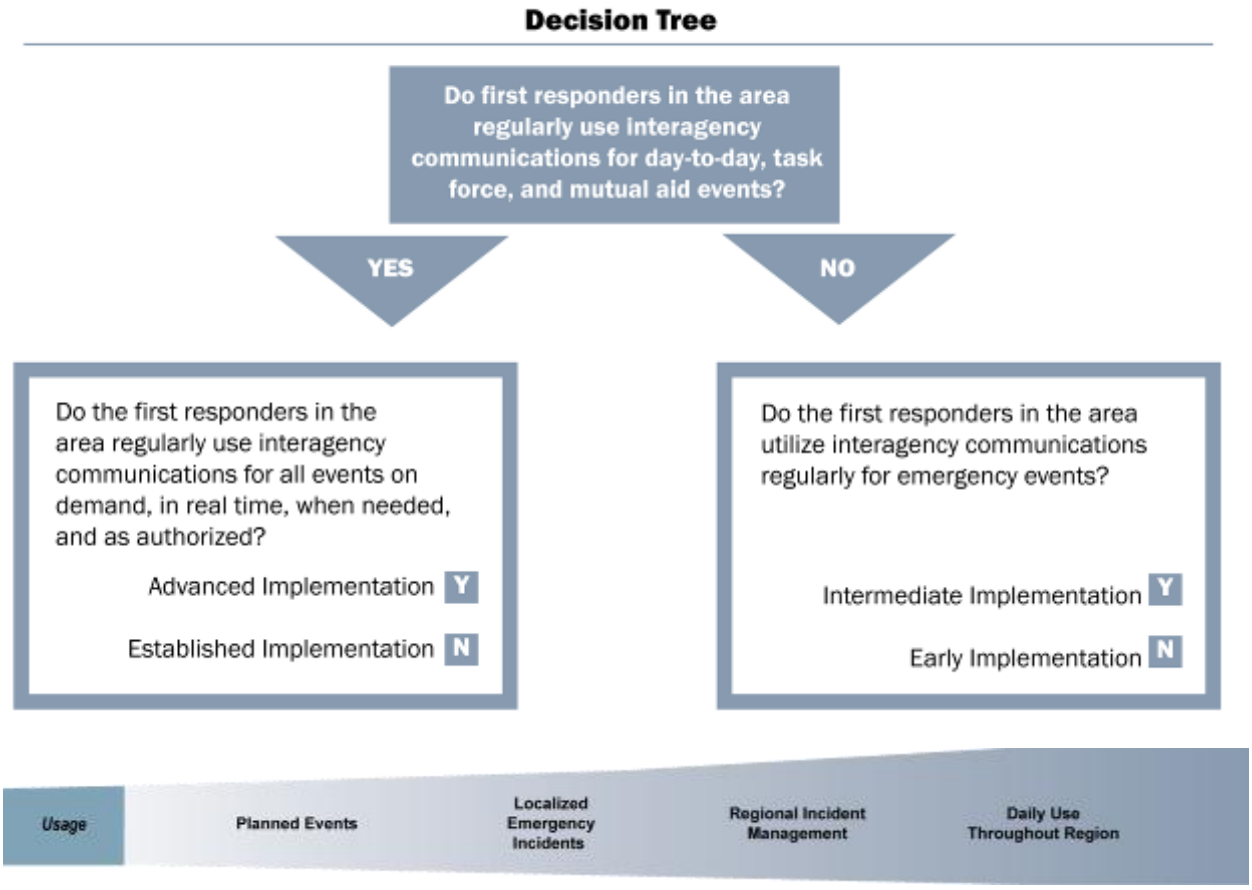
Decision Tree



Usage – Frequency of Use and Familiarity

What are we measuring: Ease and regularity of using interagency communications technologies and procedures within the area and across all types of events, including day-to-day, task force, and mutual aid operations.

Capability	Early Implementation	Intermediate Implementation	Established Implementation	Advanced Implementation
Usage	First responders across the area seldom use solutions unless advanced planning is possible (e.g., special events).	First responders across the area use interoperability solutions regularly for emergency events, and in limited fashion for day-to-day communications.	First responders across the area use interoperability solutions regularly and easily for all day-to-day, task force, and mutual aid events.	Regular use of solutions for all day-to-day and out-of-the-ordinary events across the area on demand, in real time, when needed, as authorized.



Appendix E – Sample Capabilities Factors Data Sheet

Capability	Early Implementation	Intermediate Implementation	Established Implementation	Advanced Implementation
Governance	Area decision-making groups are informal and do not yet have a strategic plan to guide collective communications interoperability goals and funding.	Some *formal* agreements exist and *informal* agreements are in practice among members of the decision making group for the area; Strategic and budget planning processes are beginning to be put in place.	Formal agreements outline the roles and responsibilities of an area-wide decision making group, which has an agreed upon strategic plan that addresses sustainable funding for collective, regional interoperable communications needs.	Area-wide decision making bodies proactively look to expand membership to ensure representation from broad public support disciplines and other levels of government, while updating their agreements and strategic plan on a regular basis.
SOPs	Area-wide interoperable communications SOPs are not developed or have not been formalized and disseminated.	Some interoperable communications SOPs exist within the area and steps have been taken to institute these interoperability procedures among some agencies.	Interoperable communications SOPs are formalized and in use by all agencies within the area. Despite minor issues, SOPs are successfully used during responses and/or exercises.	Interoperable communications SOPs within the area are formalized and regularly reviewed. Additionally, NIMS procedures are well established among all agencies and disciplines. All needed procedures are effectively utilized during responses and/or exercises.
Technology	Interoperability within the area is primarily achieved through the use of gateways (mobile/fixed gateway, console patch), shared radios, or use of a radio cache.	Interoperability within the area is primarily achieved through the use of shared channels or talk groups.	Interoperability within the area is primarily achieved through the use of a proprietary shared system.	Interoperability within the area is primarily achieved through the use of standards-based shared system (e.g., Project 25).
Training & Exercises	Area-wide public safety agencies participate in communications interoperability workshops, but no formal training or exercises are focused on emergency communications.	Some public safety agencies within the area hold communications interoperability training on equipment and conduct exercises, although not on a regular cycle.	Public safety agencies within the area participate in equipment and SOP training for communications interoperability and hold exercises on a regular schedule.	Area public safety agencies regularly conduct training and exercises with communications interoperability curriculum addressing equipment and SOPs that is modified as needed to address the changing operational environment.
Usage	First responders across the area seldom use solutions unless advanced planning is possible (e.g., special events).	First responders across the area use interoperability solutions regularly for emergency events, and in limited fashion for day-to-day communications.	First responders across the area use interoperability solutions regularly and easily for all day-to-day, task force, and mutual aid events.	Regular use of solutions for all day-to-day and out-of-the-ordinary events across the area on demand, in real time, when needed, as authorized.

Appendix F – DHS Strategic Planning Process

Extract from the U.S. Department of Homeland Security Strategic Plan, Appendix C, "Planning Process".

DHS Strategic Plan Development

The DHS Office of Strategic Plans provides a central focus for the formulation of Department-wide, long-range planning and strategic goals to safeguard the homeland. The Office of Strategic Plans uses a strategic planning process that considers the homeland security environment details, plans, authorities, reports, studies, and analysis of the current and future challenges facing DHS and the strategic vision for its future. The *Strategic Plan* addresses the present needs of DHS, as well as those that may arise in the complex homeland security arena over the next 5 years. Figure 2 illustrates the process flow for strategic plan development that is discussed below.

Figure 2

In support of the development of the *DHS Strategic Plan*, the Office of Strategic Plans conducted an assessment of the challenges and strategic issues facing DHS during the next 10 years. Through analysis of the challenges, DHS plans, DHS policies, governmental guidance, and executive level priorities, Office of Strategic Plans developed an initial mission statement, vision, and core values. Working groups, consisting of representatives from across DHS, validated this comprehensive statement of DHS's purpose, image of its future, and characteristics. The DHS participants reviewed goals and objectives that reflect the desired state of DHS in the next 10 years. They endorsed five core goals and multiple objectives that the Department aims to accomplish.

Strategic goals and objectives provide overarching guidance for executing the Department's mission. Well-defined desired strategic outcomes provide the means to assess whether the strategic goals and objectives are being met. Coordinated strategic and program performance measures enable overall organizational assessment of the Department's efforts towards its desired mission accomplishments.

Appendix G – Linking Strategy and Performance

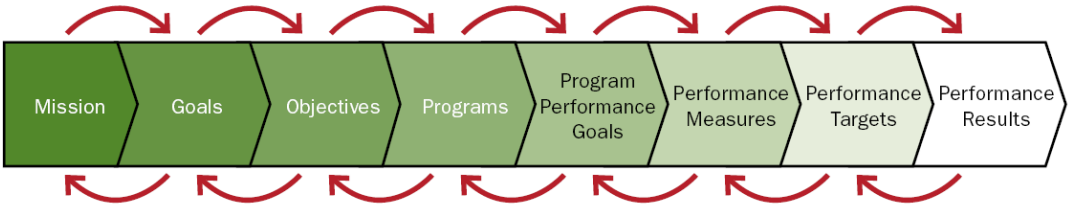
Extract from the U.S. Department of Homeland Security Strategic Plan, Fiscal Years 2008-2013, Appendix A, "Linking Strategy and Performance".

DHS is committed to strengthening our ability to report on performance results in achieving our goals and delivering value to the American public. The Department's efforts are guided by the *Government Performance and Results Act of 1993* (GPRA), which focuses on Federal management and accountability with an emphasis on outcomes and reporting on the degree to which goals are met.

DHS Performance Management Framework

Figure 1 presents the DHS performance management framework used to tie Department-wide goals and objectives to mission-oriented programs, and their associated program performance goals and performance measures. Below is the index of terms used in the DHS Performance Management Framework.

Figure 1



Mission	Describes at the highest level what the Department aims to achieve.
Goal	A goal is a statement of aim or purpose included in the Department's *Strategic Plan*. In the *DHS Annual Performance Plan*, goals are the over-arching structure used to group multiple Department objectives and their associated program performance goals. In their aggregate, program performance goals and Department objectives influence achievement of Department goals.
Objective	An objective is an outcome-oriented statement in the Department *Strategic Plan* that describes a targeted area of action to support achievement of the Department goals.
Program	A program is a group of activities acting together to accomplish a specific high-level outcome external to DHS. Programs provide the operational processes, skills, technology, the human capital, and other resources to achieve program performance goals.
Program Performance Goal	This is an outcome-oriented statement for each major DHS program that describes the value the program intends to deliver to its beneficiaries and the American public. Program performance goals are understood in terms of their associated performance measures and performance targets, which express the tangible, measurable objective against which actual achievement can be compared.
Performance Measure	This is an indicator, statistic, or metric used to gauge program performance and assess progress in meeting the program performance goal, and in turn, the objectives and goals of the Department.
Performance Target	A target is the projected level of performance for each performance measure during a fiscal year. A target is a quantifiable or measurable characteristic that communicates how well or at what level a program aspires to perform.
Performance Result	A result is the actual level of performance for each performance measure achieved during a fiscal year. Results are compared to targets to determine how well actual performance measured up to that which was planned.

The Department uses performance measures at all levels to monitor progress in achieving its *Strategic Plan* and attaining program success. The long-term program performance goal established for each DHS program provides the basis for assessing contributions to achievement of Department strategic goals and objectives. Thus, individual program performance results are tied to strategic level goals and objectives which are aligned with the Department's mission.

A variety of measures are reported publicly to the President, Congress, and the American people to indicate DHS achievements, while other measures are used internally to manage the activities of DHS programs. The *Future Years' Homeland Security Program* (FYHSP), the DHS *2008 Strategic Plan*, and *DHS Annual Performance Report* provide key management and reporting mechanisms by which the Department implements its performance management framework to assess accomplishments of Department strategic objectives and goals.

The *Homeland Security Act of 2002* requires DHS to annually update and maintain a current FYHSP. The FYHSP details our five-year program resource and performance plans to meet DHS strategic goals and objectives – the FYHSP is the embodiment of the *DHS Strategic Plan*. In conjunction with developing the FYHSP, DHS compiles its *Annual Performance Report* so as to comply with the GPRA and *Office of Management and Budget (OMB) Circular A-11*. Annual reports linking DHS actual and planned performance levels and metrics, the *Strategic Plan* and long-term goals can be found at *www.dhs.gov/xabout/*.

Performance measures included in the performance plan are tracked on a quarterly basis to provide a trend toward meeting annual targets. Program managers provide data that is summarized in the *DHS Quarterly Performance Report*. This quarterly assessment not only provides actual performance data to date, but it also provides an assessment by program managers of whether they believe they are going to achieve their targets by the end of the fiscal year. If it appears that target may not be met, program managers are encouraged to initiate corrective actions to address program performance. The *DHS Quarterly Performance Report* also summarizes performance related information associated with *OMB's Program Assessment Rating Tool* (PART) and the *President's Management Agenda* (PMA).

In addition to this framework, which is currently focused largely on the individual program level, DHS is developing strategic outcome measures to measure Departmental progress in achieving its strategic objectives. These strategic outcome measures are derived by aggregating current GPRA performance measures and proposed future measures. Examples are provided in the "Goals and Objectives" section of this *Strategic Plan*.

Appendix H – Example State Performance Plan

Extracts from the State of Iowa Homeland Security and Emergency Management FY 2010 Performance Plan.

Name of Agency: Iowa Homeland Security and Emergency Management

Agency Mission: Lead, coordinate and support homeland security and emergency management functions in order to establish sustainable communities and ensure economic opportunities for Iowa and its citizens.

Core Function	Performance Measure(s) (Outcome)	Performance Target(s)	Link to Strategic Plan Goal(s)
CF: Emergency Management and Domestic Security			
Desired Outcome(s):			
To support, coordinate, and maintain local, state, and federal emergency management and domestic security activities for Iowa and its citizens	Percent of sustainable local governments	**70%**	**Goal 1**: Ensure Iowa is prepared for disasters and terrorist attacks, **Goal 2**: Minimize the impact, loss of life, loss of property, and suffering caused by disasters and terrorist attacks. **Goal 3**: Ensure that the statewide homeland security and emergency management team provides world class service to the State of Iowa that meets the needs of the citizens
	Percent of sustainable state government	**80%**	**Goal 1**: Ensure Iowa is prepared for disasters and terrorist attacks, **Goal 2**: Minimize the impact, loss of life, loss of property, and suffering caused by disasters and terrorist attacks, **Goal 3**: Ensure that the statewide homeland security and emergency management team provides world class service to the State of Iowa that meets the needs of the citizens

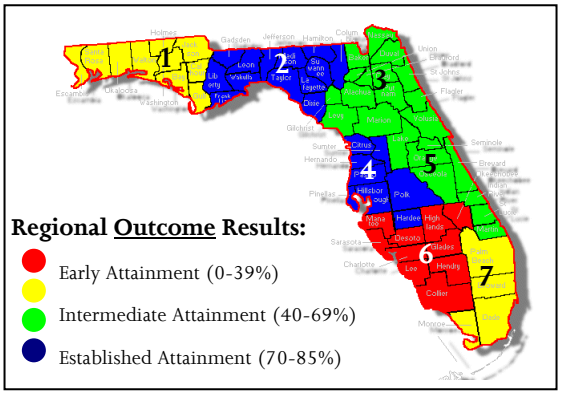
Services, Products, Activities	Performance Measure(s)	Performance Target(s)	Strategies/Recommended Actions
1. Emergency Planning Org# 583_28101			
002 - Local Emergency Response Plans	Percent of jurisdictions that have response plans that meet standards.	100%	HSEMD Strategy 1.1.D: Strengthen response plans for improved capabilities and capacities.
003 – Local Recovery Plans	Percent of jurisdictions that have recovery plans that meet standards.	100%	HSEMD Strategy 1.2.B: Collaborate with partners to ensure that necessary systems are in place in preparation for, reaction to and recovery from biological and agricultural attacks.
6. Communications and Information Org# 583_28106			
001 – Public Safety Answering Point usage of wireless call location data	Percent of Public Safety Answering Points capable of receiving and using wireless phase II 911 calls.	100%	HSEMD Strategy 2.4.E: Integrate the multiple communications systems currently used in Iowa into one comprehensive communications strategy.
003 – Interoperable Communication Capabilities	Percent of Local Jurisdictions with Interoperable Communication Capabilities for First Responders.	35%	HSEMD Strategy 2.4.A: Continue to review ways that all traditional and non-traditional responder organizations in Iowa can achieve communications interoperability. HSEMD Strategy 2.4.B: Complete the plan to achieve statewide communications interoperability and begin implementation. HSEMD Strategy 2.4.C: Establish local voice, data and video connectivity to emergency operations centers where supported by local officials. HSEMD Strategy 2.4.D: Establish, train and exercise on a tactical interoperable communications plan.

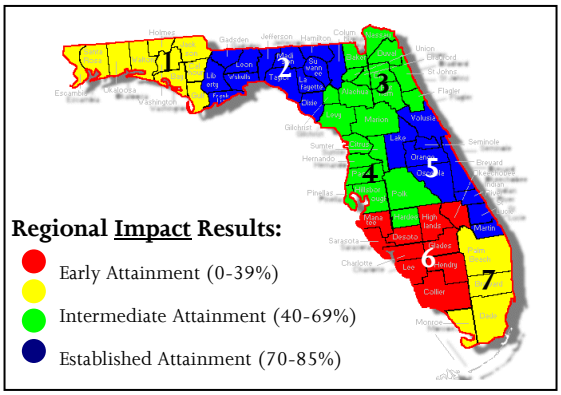
Appendix I – Sample Performance Report

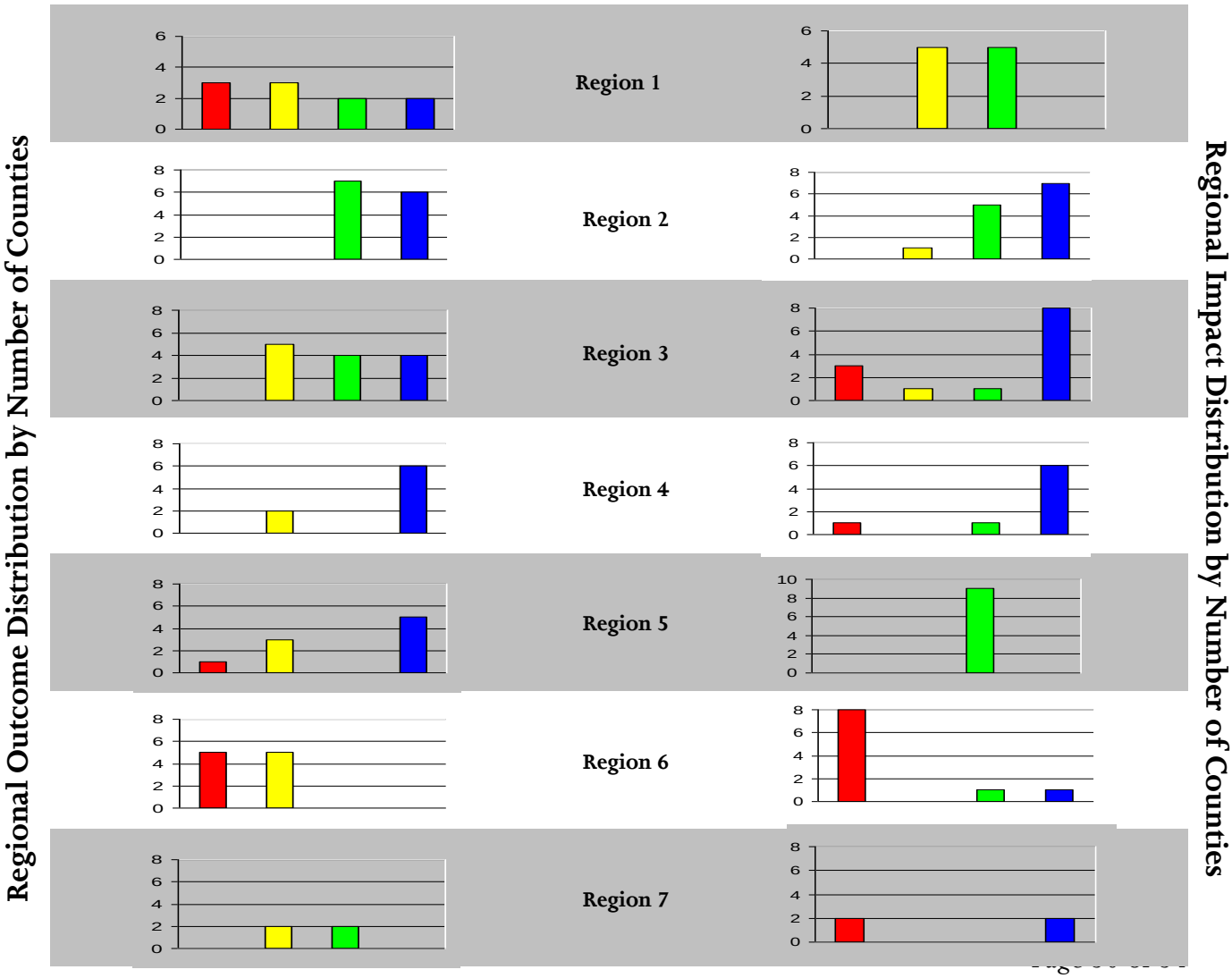
Sample Performance Report

Strategic Objective #1: *Improve multi-agency incident communications through the use of trained communications personnel on-scene.*

Outcome Measure: Frequency of COML deployment on incidents.	**Impact Measure**: Fewer communications problems in after-action reports.
Outcome Metric: Percentage of Type 3 or larger incidents with a staffed COML position.	**Impact Metric**: Percentage of after-action reports for Type 3 or larger incidents without communications problems.







Executive Summary

SCIP Strategic Objective #1 - Baseline

The Florida Statewide Communications Interoperability Plan (SCIP) is the joint strategic plan of State, local, and tribal agencies to improve interagency communications during emergencies. It establishes goals and objectives adopted cooperatively by emergency management and response agencies statewide. As an intergovernmental strategic plan, it relies on the coordinated, largely independent efforts of all agencies. Homeland security and emergency management grant funding for communications interoperability initiatives are distributed within the State in accordance with this strategic plan.

Five strategic objectives have been adopted as part of the Plan's performance management program. Each has a set of measures and associated metrics for determining progress in attaining or sustaining the objectives. The program establishes processes for data collection, analysis, and reporting.

This report provides a summary of SCIP strategic performance management and results for a single objective. It is the initial report on the objective and describes a performance baseline for stakeholders and executive audiences. Results are used in annual updates to the strategic plan, its initiatives, and performance plan.

Strategic Objective #1: Improve multi-agency incident communications through the use of trained communications personnel on-scene.

Multiple SCIP initiatives exist for training and use of on-scene communications personnel.

One outcome measure and one impact measure exist to assess progress in meeting this objective. Outcome measures evaluate the expected, desired, or actual result(s) on which the outputs of SCIP initiatives have an intended effect. Impact measures measure the direct or indirect effects or consequences resulting from achieving SCIP objectives.

- Outcome Measure: Frequency of COML deployment on incidents.
- Impact Measure: Fewer communications problems in after-action reports.

Data Collection and Analysis Summary

The Florida statewide interoperability coordinator collects data for assessment of progress in attaining this strategic objective by quarterly interviews of emergency management officials in each county and representative officials for each Regional Domestic Security Task Force ("Region"). Data is analyzed by county and Region. Summary results by Region are the averages of the results of each county. No weighting or adjustment is made for the size or number of agencies in individual counties or between regions. Results are presented as proportions or percentage for suitability in making comparisons.

The SCIP strategic performance management program establishes four levels of attainment for this objective: Early, intermediate, full, and advanced. The Statewide Interoperability Executive Committee set thresholds between levels based on a consensus of participants.

Results Summary

The results of this baseline assessment are depicted graphically in the attached charts. Across both measures used, results indicate that one Region is in the early stages of achieving this objective, two are in intermediate stages, two have fully achieved it, and two others have advanced in exceeding it.

County-by-county analysis shows a range of variance between Regions. Some Regions collectively achieving the objective include counties well behind. Analysis shows a correlation between the outcome

and impact measures that, however, varies by Region. Those varying significantly will be examined during the next evaluation cycle to determine if data collection is complete and free of bias.

Appendix J – References

Balanced Scorecard Institute Website. http://www.balancedscorecard.org/.

Designing the Future. Forrester, Jay W. December 1998. http://sysdyn.clexchange.org/sdep/papers/Designjf.pdf

Guidelines for Strategic Planning. Department of Energy. January 2006. Available in electronic format at http://www.orau.gov/PBM/links/sp-guide.pdf.

Improving NYPD Emergency Preparedness and Response. McKinsey & Company. August 2002.

Increasing FDNY's Preparedness - Executive Summary. McKinsey & Company. August 2002. Available in electronic format at http://www.nyc.gov/html/fdny/html/mck_report/toc.shtml.

Law Enforcement Tech Guide For Communications Interoperability. Hawkins, Dan M. Department Of Justice, Office of Community Oriented Policing Services. 2006. Available in electronic and printed format at http://www.cops.usdoj.gov/ric/ResourceDetail.aspx?RID=238.

Law Enforcement Tech Guide For Creating Performance Measures That Work. Roberts, David J. Department Of Justice, Office of Community Oriented Policing Services. 2006. Available in electronic and printed format at http://www.cops.usdoj.gov/ric/ResourceDetail.aspx?RID=275

National Incident Command System 200, Unit 2: Leadership and Management. Department of Homeland Security. April 2008.

National Strategy for Homeland Security. White House Homeland Security Council. October 2007. Available online at http://www.dhs.gov/xlibrary/assets/nat_strat_homelandsecurity_2007.pdf.

National Preparedness Guidelines. Department of Homeland Security. September 2007. Available online at http://www.fema.gov/pdf/emergency/nrf/National_Preparedness_Guidelines.pdf

National Response Framework. Department of Homeland Security. January 2008. Available online at http://www.fema.gov/pdf/emergency/nrf/nrf-core.pdf.

National Incident Management System (NIMS). Department of Homeland Security. December 2008. Available online at http://www.fema.gov/pdf/emergency/nims/NIMS_core.pdf.

National Communications Capabilities Report. Department of Homeland Security, Office of Emergency Communications. March 2008.

9/11 Commission Report. National Commission on Terrorist Attacks Upon the United States. U.S. Government Printing Office. July 2004. Available in electronic format at http://www.9-11commission.gov.

PART 101 Introductory Training. Office of Management and Budget. 2007. http://www.whitehouse.gov/omb/assets/omb/performance/training/2007_training_slides.pdf

Performance-Based Management Handbook, Volume 1: Establishing and Maintaining a Performance-Based Management Program. Artley, Will, D.J. Ellison, and Bill Kennedy. U.S. Department of Energy. 2001. Available in electronic format at http://www.orau.gov/pbm/pbmhandbook/pbmhandbook.html.

Performance-Based Management Handbook, Volume 4: Collecting Data to Assess Performance. Beschen, Darrell, Richard Day, Gretchen Jordan and Howard Rohm. U.S. Department of Energy. 2001. Available in electronic format at http://www.orau.gov/pbm/pbmhandbook/pbmhandbook.html.

Strategic Management Concepts. David, Fred R. Prentice Hall. 2010.

"Strategic Management in the Public Sector: Concepts, Models, and Processes", Poister, Theodore H., and Streib, Gregory D., Public Productivity & Management Review, March 1999.

Tactical Interoperable Communications Scorecards Summary Report. Department of Homeland Security. January 2007. Available in electronic format at http://www.dhs.gov/files/gc_1167770109789.shtm.

The Balanced Scorecard: Translating Strategy into Action. Kaplan, Robert S., and David P. Norton. 1996.